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

Third GREPECAS–RASG-PA Joint Meeting

Twenty-first Meeting of the CAR/SAM Regional Planning and Implementation Group

GREPECAS/21

Final Report

Asynchronous Session: 2 October-10 November 2023
In person Session: Santo Domingo, 14 to 17 November 2023

Prepared by the Secretariat

February 2024

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HISTORICAL

ii.1 Place and Date of the Meeting

ii.1.1 The Twenty-first Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/21) was held in two parts: one as an online asynchronous session from 02 October to 10 November 2023 for agenda items 1 and 2; and the second session as an in-person meeting held at the JW Marriott Hotel Santo Domingo in Santo Domingo, Dominican Republic, from 14 to 17 November 2023 for the rest of the agenda items.

ii.1.2 The Third GREPECAS–RASG-PA Joint Meeting, included under Agenda Item 2 of the GREPECAS/21 Meeting, was a joint session of the Plenary meetings of the RASG-PA and the GREPECAS and was held in the afternoon of 14 November 2023 in the same venue of the GREPECAS/21 meeting.

ii.2 Opening Ceremony

Messrs. Andrew Larsen, RASG-PA Co-Chairperson States, Alessander de Andrade Santoro, Chairperson of GREPECAS, Fabio Rabbani, Regional Director of the South American (SAM) Office of the International Civil Aviation Organization (ICAO) and Secretary of RASG-PA, and Christopher Barks, Regional Director of the North American, Central American and Caribbean (NACC) Office of the International Civil Aviation Organization (ICAO) and Secretary of GREPECAS, provided opening remarks. Mr. Héctor Porcella, General Director Ad Interim, IDAC Dominican Republic welcomed the participants to Santo Domingo and officially opened the meeting.

ii.3 Officers of the Meeting

ii.3.1 The Third GREPECAS–RASG-PA Joint Meeting was chaired by Mr. Andrew Larsen, RASG-PA Co-Chairperson States, and Mr. Alessander de Andrade Santoro, GREPECAS Chairperson. Mr. Fabio Rabbani, Regional Director of the ICAO SAM Regional Office and Mr. Christopher Barks, Regional Director of the ICAO NACC Regional Office served as Secretaries of the meeting, supported by and by the Deputy Regional Directors of the ICAO SAM and NACC Regional Offices, Messrs. Oscar Quesada and Julio Siu, with the assistance of officers from ICAO Headquarters and the NACC and SAM Regional Offices as follows.

Raúl Martínez	Regional Officer, Aeronautical Information Management (AIM), NACC Regional Office
Jorge Armoa	Regional Officer, Aeronautical Information Management / Aeronaultical Meteorology and Environment, SAM Regional Office
Fernando Hermoza	Regional Officer, Air Traffic Management and Search and Rescue, SAM Regional Office
Martin Maurino	Technical Officer, Global Aviation Safety, Headquarters

Mayda Ávila	Regional Officer, Communications, Navigation and Surveillance, NACC Regional Office
Eddian Méndez	Regional Officer, Air Traffic Management and Search and Rescue, NACC Regional Office
Javier Puente	Regional Officer, Regional Officer, Safety Implementation SAM Regional Office
Fernando Camargo	Regional Officer, Technical Assistance, NACC Regional Office
Francisco Almeida da Silva	Regional Officer, Communications, Navigation and Surveillance, SAM Regional Office
Sereya Schotborg	Regional Officer Safety Implemention, NACC Regional Office
Roberto Sosa	Regional Officer, Air Navigation Services and Safety, SAM Regional Office
Fabiana Todesco	Regional Officer, Aerodromes and Ground Aids, NACC Regional Office
Elie Tanious EL Khoury	Technical Officer, Airspace Management and Optimization, Headquarters
Virginia Tavella	Consultant, OSG/CDI/RPM, Headquarters

ii.3.2 The Twenty-first Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/21) was chaired by Mr. Alessander de Andrade Santoro, GREPECAS Chairperson. Mr. Christopher Barks, Regional Director of the ICAO NACC Regional Office served as Secretary of the Meeting, supported by Mr. Fabio Rabbani, Regional Director of the ICAO SAM Regional Office, and by the Deputy Regional Directors of the ICAO SAM and NACC Regional Offices, Messrs. Oscar Quesada and Julio Siu, with the assistance of officers from ICAO Headquarters and the NACC and SAM Regional Offices as follows.

Raúl Martínez	Regional Officer, Aeronautical Information Management (AIM), NACC Regional Office
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Francisco Almeida da Silva	Regional Officer, Communications, Navigation and Surveillance, SAM Regional Office
Roberto Sosa	Regional Officer, Air Navigation Services and Safety, SAM Regional Office
Fabiana Todesco	Regional Officer, Aerodromes and Ground Aids, NACC Regional Office
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Virginia Tavella	Consultant, OSG/CDI/RPM, Headquarters

ii.4 Working Languages

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

ii.5 Schedule and Working Arrangements

ii.5.1 Asynchronous session: the discussion of the Working Papers for agenda Item 1 and 2 was carried out on-line from 2 October to 10 November 2023, through the online platform at: https://esam.icao.int/

ii.5.2 It was agreed that the working hours for the in-person GREPECAS/21 session of the meeting would be from 08:30 to 16:00 hours daily with adequate breaks. Ad hoc Groups were created during the Meeting to do further work on specific items of the Agenda.

ii.6 Agenda

Agenda Item 1: Adoption of the Provisional Agenda and Schedule

Agenda Item 2: Third GREPECAS-RASG-PA Joint Meeting (asynchronous)

- **2.1 Follow-up on the Valid GREPECAS and RASG-PA Conclusions and Decisions**
- **2.2 Progress report of joint GREPECAS-RASG-PA Activities**
- **2.3 Air Navigation Subjects of Interest to RASG-PA and Safety Subjects of Interest to GREPECAS**
- **2.4 Working Session for the analysis of air navigation indicators included in the GASP and the safety indicators in the GANP**

Agenda Item 3: **Global and Regional Developments**

3.1 **Review of Actions Taken by the ICAO Air Navigation Commission (ANC) on the Last Report of GREPECAS**

3.2 **Work report on the CAR/SAM Regional Air Navigation Plan Vol. III and Regional Progress**

3.3 **CAR/SAM Air Navigation Services (ANS) Implementation Level**

3.4 **Preparation for the ICAO Fourteenth Air Navigation Conference (AN-Conf/14)**

Agenda Item 4: **GREPECAS Work Programme**

Agenda Item 5: **Review of the GREPECAS Management**

Agenda Item 6: **Other Business**

ii.7 Attendance

The Meeting was attended by 20 States/Territories from the NAM/CAR/SAM Regions, 14 International Organizations, totalling 98 delegates as indicated in the list of participants.

ii.8 Conclusions and Decisions

ii.8.1 GREPECAS records its action in the form of conclusions and decisions as follows:

Conclusions deal with matters, which in accordance with the Group's terms of reference require direct attention of States/Territories and/or International Organizations, or on which further action will be initiated by ICAO in accordance with established procedures.

Decisions deal with matters of concern only to the GREPECAS and its Contributory Bodies organization.

ii.8.2 **List of Conclusions**

ii.8.3 List of Decisions

ii.9 List of Working and Information Papers and Presentations

Refer to the Meeting web page:GREPECAS/21 (icao.int)

WORKING PAPERS

Number	Agenda Item	Title	Date	Prepared and presented by
WP/01 **Rev. 2**	1	Adoption of the provisional agenda and schedule	13/11/23	Secretariat
WP/02 **Rev**	2.1	Follow-up on the valid GREPECAS and RASG-PA conclusions and decisions	13/11/23	Secretariat
WP/03 **Rev.**	2.2	GREPECAS-RASG-PA Coordination	14/11/23	Secretariat
WP/04	2.3	Topics of interest for GREPECAS and RASG-PA	03/10/23	Secretariat
WP/05	2.2	GTE and PA-RAST Coordination	27/09/23	GTE Rapporteur
WP/06	3.2	Progress of the CAR/SAM Regional Air Navigation Plan - Volume III	13/10/23	Secretariat
WP/07 **Rev. 2**	3.3	CAR/SAM CNS Programmes and Projects	14/11/23	Secretariat
WP/08	3.3	Report of Progress in ANS Programs and Projects	10/10/23	Secretariat
WP/09	3.3	PBN Implementation in France: a Return of Experience	06/11/23	France
WP/10	3.3	Information on PBN and ATFM Advances in the CAR/SAM Regions	18/10/23	Secretariat
WP/11	3.3	Review and Status of the F Aerodrome Programme Projects	25/10/23	Secretariat
WP/12	3.3	Progress Report of the Met Programme	29/09/23	Secretariat
WP/13	3.3	Progress report on activities to support Search and Rescue Implementation in the CAR/SAM REGIONS	21/09/23	Secretariat
WP/14	2.3	Leveraging ICAO'S Implementation Support Products and Services to Address the needs of GREPECAS Members	09/11/23	Secretariat
WP/15 **Rev.**	3.3	Amendment of GREPECAS Projects A1 on the Implementation of the PBN	16/11/23	Secretariat
WP/16	3.4	Preparation for the ICAO Fourteenth Air Navigation Conference (AN-CONF/14)	08/11/23	Secretariat
WP/17	3.3	Digital Data Sets (DDS) Implementation Activities	10/10/23	Secretariat
WP/18	3.3	AIM DOC Update and Status (DOC 7383)	10/10/23	Secretariat

WORKING PAPERS

Number	Agenda Item	Title	Date	Prepared and presented by
WP/19 **Rev.**	4	ADS-B Implementation in CAR/SAM Regions	16/11/23	IATA
WP/20	4	GREPECAS Work Programme (Projects/Programmes And Work Programme)	10/11/23	Secretariat
WP/21	5	Considerations for improvements to the GREPECAS Work Management	02/11/23	GREPECAS Chair and Co-Chair
WP/22	3.3	Update of the Format and Procedure for ATM Contingency Plans of the CAR/SAM Regions	22/09/23	Secretariat
WP/23	4	Report of the results of the RVSM Airspace Monitoring Programme of the CAR/SAM Regions in 2022	26/09/23	GTE Rapporteur
WP/24 **Rev**.	4	Development of a Regional SBAS for Latin America (CAR-SAM)	06/11/23	Thales
WP/25	3.3	Flight Procedure Programme (FPP) in Central America	13/10/23	Central America
WP/26 **Rev. 2**	4	ADS-B in Central America	16/11/23	Central America
WP/27	3.3	Collaborative Decision Making (CDM) for Air Traffic Flow Management in Central America	13/10/23	Central America
WP/28	4	Contribution to Safety in the Wildlife Hazard Management – Wildlife Hazard Regional Guide	13/10/23	Central America
WP/29	4	Harmonization of Regulations by the States	23/10/23	Central America
WP/30 **Rev.**	3.3	Enhanced Support for Air Navigation Implementation in the Eastern Caribbean	30/10/23	ECCAA
WP/31	3.3	Adoption of the Frequency Finder 2023 Application as VHF NAV/VHF COM Frequency Management Tool	07/10/23	Secretariat
WP/32 **Rev.**	3.2	Update of Part III (CNS) of Volume II of the ANP CAR/SAM	03/10/23	Secretariat
WP/33	3.3	Capacity Enhancement for Aerodromes	30/10/23	ACI-LAC
WP/34	3.3	Adoption of ICAO Recommendations as National Standards	30/10/23	ACI-LAC
WP/35	3.3	Support to achieve Aerodrome Certification	30/10/23	ACI-LAC
WP/36	3.3	ATFM Strategy for CAR/SAM Regions	01/11/23	IATA
WP/37	3.3	Implementation of Digital– Automatic Terminal Information Services (D-ATIS) and Datalink Departure Clearance (DCL) in CAR/SAM Regions International Airports	13/10/23	IATA
WP/38	3.3	Proposed transition from RNAV 5 TO RNAV 2 of the North American and Caribbean Region Upper ATS Route Navigation Specification	13/10/23	Dominican Republic

WORKING PAPERS

Number	Agenda Item	Title	Date	Prepared and presented by
WP/39	3.3	Relevance of Licencing AIM Personnel	13/10/23	Dominican Republic
WP/40	3.3	Need to update the Aeronautical Information Regulation and Control (AIRAC) System	13/10/23	Dominican Republic
WP/41	3.3	Proposal for Implementation of a Measurable Requirement for the Language Competence Level for AIM Personnel	13/10/23	Dominican Republic
WP/42	3.3	Implementation of Measures to Ensure Continuous Improvement in the Preparation and Issuance of NOTAM	13/10/23	Dominican Republic
WP/43	3.3	ATFM SAM Portal	02/11/23	Brazil
WP/44	3.3	Concept of Operations (CONOPS) for Enhanced Traffic Management in the SAM Region	02/11/23	Brazil
WP/45	4	Urban Air Mobility	02/11/23	Brazil
WP/46	3.3	ATM Key Performance Indicators: Performance-based management in SISCEAB	02/11/23	Brazil
WP/47	3.3	Brazilian Aeronautical Search and Rescue (SAR) System: Structure Challenges and Coordination with Neighbouring States	02/11/23	Brazil
WP/48	3.3	Brazilian Proposal for CITEL Meeting on WRC-23 Agenda Item 10 Topic 2.9	02/11/23	Brazil
WP/49	3.2	GANP Performance Expert Group Updates For GANP/8	08/11/23	PEG
WP/50	3.3	Optimization of Web Access to the Publication of Aeronautical Information	13/10/23	Dominican Republic
WP/51	3.3	Decision Making for the Development of an Aviation Radio-Electric Spectrum Management Tool	3/11/23	Dominican Republic
WP/52	6	Use of Remote Sensing of Images Obtained by Remotely Piloted Aircraft (RPA) Applied to the Evaluation of Objects Projected in Airspace According to Annex 14 - Obstacle Limitation Surfaces (OLS)	02/11/23	Brazil
WP/53	3.3	Evolution of the GNSS at Low-Latitude Regions	02/11/23	Brazil

INFORMATION PAPERS

Number	Agenda Item	Title	Date	Prepared and presented by
IP/01 **Rev. 5**	---	List of Working Papers, Information Papers, and Presentations	16/11/23	Secretariat
IP/02	3.1	Review of the action taken by the Air Navigation Commission on the Report of GREPECAS/20 and RASG-PA/12 Meetings	06/11/23	Secretariat
IP/03	3.3	Actions Carried out by CAR/SAM States to Resolve Gaps in the ICARD Database	22/09/23	Secretariat
IP/04 **Rev.**	3.3	The implementation of ADS-B (Automatic Dependent Surveillance-Broadcast)	11/10/23	Secretariat
IP/05	3.2	Effective Implementation of the CAR/SAM ANP Vol. III	11/10/23	Secretariat

INFORMATION PAPERS

Number	Agenda Item	Title	Date	Prepared and presented by
Rev.				
IP/06	6	Aerodrome Certification and Inspector Techniques Course at FAA Academy	27/10/23	United States
IP/07	3.3	Reduction of CO2 Emissions through the Implementation of Operational Measures	02/11/23	Brazil
IP/08	3.3	Modernization of AERO DB in AIXM 5.1 Format	02/11/23	Brazil
IP/09	6	DIGITAL AIRSPACE SYSTEM ANALYSIS (DASA): centralizing the analysis of requests for the use of Brazilian Airspace	02/11/23	Brazil
IP/10	3.3	Civil-Military Cooperation in Air Traffic Management in Brazil: AN Integrated System	02/11/23	Brazil
IP/11 **Rev.**	3.3	Regulatory Measures Adopted in Brazil to Mitigate Interference due to the use of 5G in the 3,300- 3,700 MHz	16/11/23	Brazil
IP/12	4	Implementation of ADS-B surveillance in Brazil	02/11/23	Brazil
NI/13 **Rev.**	3.3	Listado actualizado Acuerdos de Búsqueda y Salvamento (SAR) Regionales y Locales firmados por República Dominicana **(available in Spanish only)**	16/11/23	República Dominicana
NI/14	3.3	Enrutamiento directo estratégico en la República Dominicana **(available in Spanish only)**	03/11/23	República Dominicana
NI/15	3.3	Optimización de las Rutas de Llegada de Vuelo por Instrumentos del Aeropuerto Internacional de Punta Cana, MDPC. **(available in Spanish only)**	13/10/23	República Dominicana
NI/16	3.3	Avances del Sistema de Gestión de la Seguridad Operacional de la Dirección De Navegación Aérea. **(available in Spanish only)**	03/11/23	República Dominicana
NI/17	3.3	Avances de la ATFM en La República Dominicana. **(Available in Spanish only)**	13/10/23	República Dominicana
NI/18	3.3	Implementación de radares Doppler y Productos Meteorológicos para el ATC. **(available in Spanish only)**	03/11/23	República Dominicana
IP/19	6	Activities of the Group for the Continued Improvement of ATS over the South Atlantic (SAT)	06/11/23	Secretariat
IP/20 **Rev.**	3.3	Developments in the Implementation of Automated Protocols	13/11/23	Secretariat
IP/21	6	PAPI Calibration Using Drones	02/11/23	FRACS/Heliper
IP/22 **Rev**	3.3	Proposal for the New Creation of ICAO Document on PANS-IM	14/11/23	Secretariat
NI/23	4	Sistema de Aumentación Basado en Satélite/Espacial (SBAS) en Centroamérica **(available in Spanish only)**	01/11/23	Central America
NI/24	3.3	Centroamérica reactiva el Comité de búsqueda y salvamento (COBUSA) **(available in Spanish only)**	01/11/23	Central America
NI/25	3.3	Centroamérica fortalece su espacio aéreo RVSM **(available in Spanish only)**	01/11/23	Central America
NI/26	3.3	Planificación de respuesta ante emergencias y contingencias en Centroamérica **(available in Spanish only)**	01/11/23	Central America

INFORMATION PAPERS

Number	Agenda Item	Title	Date	Prepared and presented by
NI/27	4	Panorama regional de peligro aviario y fauna de los Estados CAR & SAM - Encuesta **(available in Spanish only)**	27/10/23	CARSAMPAF
NI/28	4	Primera edición de la revista CARSAMPAF **(available in Spanish only)**	27/10/23	CARSAMPAF
IP/29	3.3	SOOOFRA: Implementation of a Free Route Airspace in CAYENNE UTA on April 15th 2023	06/11/23	France
IP/30	3.2	Working Session for the KPI's of the RASG-PA and GREPECAS	08/11/23	Secretariat
NI/31	6	Acuerdo de cooperación técnica para impartir los cursos de capacidad del sector ATC y sistemas de pistas en el Instituto Dominicano De Aviación Civil (IDAC) **(available in Spanish only)**	10/11/23	Dominican Republic
IP/32	6	Activities of the Secretariat to Address Gender Equality Issues	13/11/23	Secretariat
NI/33	4	Implementación de Sistemas ADS-B En México **(available in Spanish only)**	15/11/23	México
NI/34	3.3	Implementación de sistemas de detección de cizalladura de viento en México **(available in Spanish only)**	15/11/23	México
NI/35	6	Flota de drones para calibrar radioayudas **(available in Spanish only)**	15/11/23	México

PRESENTATIONS

Number	Agenda Item	Title	Presented by
1	4	GREPECAS Dashboards	Secretariat
2	2.3	ICAO Global Implementation Support Symposium 2024	Secretariat
3	6	Productos y servicios de apoyo a la implementación para atender las necesidades de la aviación **(available in Spanish only)**	Secretaría
4	4	FAA ADS-B Overview	United States
5 **Rev**	3.1	Air Navigation Global Developments	Secretariat
6	3.2	Effective Implememtation of the CAR/SAM ANP Vol. III	Secretariat
7	6	The influence of women in International Civil Aviation	Secrtariat
8 **Rev.**	4	ADS-B	Secretariat
9	3.3	France PBN implementation issues REX	France
10	4	SBAS Solution for CAR/SAM Regions	Thales

LIST OF PARTICIPANTS

ANTIGUA AND BARBUDA

1. Shenneth Phillips

ARUBA

2. Anthony Kirchner
3. Bryan Franca

BAHAMAS

4. Twana Lockhart

BELIZE/BELICE

5. Ellis Stanley Gideon

BRAZIL/BRASIL

6. Alessander De Andrade Santoro
7. Andre Gustavo Fernandes Pecanha
8. Luiz Felipe Thomaz Gomes Araujo
9. Wallace Gutemberg Medeiros Luz
10. Bernardo Tomaz de Castro
11. Jorge Wilson de Avila F. Penna
12. Diego Henrique de Brito

CANADA/CANADÁ

13. Andrew Larsen

CHILE

14. Gina Tillería

COLOMBIA

15. Rodrigo Zapata
16. Ivonne Vergara

Costa Rica

17. Fernando Naranjo
18. Carlos Bolaños

CUBA

19. Carlos Pérez Andino
20. Rigoberto Ochoa
21. Orlando Nevot

CURACAO/CURAZAO

22. Jacques Lasten

DOMINICAN REPÚBLIC/REPÚBLICA DOMINICANA

23. Héctor Porcella
24. Carlos Alcántara
25. Claudia Roa
26. Gender Castro
27. Bernarda Franco
28. Julio César Mejía
29. Jasmin Fabre
30. William Alsina
31. Eduardo Tejada
32. Augusto Pérez
33. José A. Pérez
34. Antony Pérez
35. Juan Ramón Cabrera
36. Santiago Castro
37. Francisco Peña
38. Ernesto De La Cruz
39. Pedro Piña

EL SALVADOR

40. Jaime Palomares
41. Andrea López
42. Marco Antonio Henríquez

FRANCE/FRANCIA

43. Ravo Randria
44. Benoit Roturier

NICARAGUA

45. Uwe Cano
46. Hector Espinoza

PANAMA/PANAMÁ

47. Agustín Zúniga
48. Ivette Iturrado
49. Ivette Prado
50. Sandra Rodríguez

TRINIDAD AND TOBAGO/TRINIDAD Y TABAGO

51. Curtis Ainsworth Peters

UNITED STATES/ESTADOS UNIDOS

52. Nicholas Reyes
53. Giles Strickler
54. Michael Polchert
55. Jessa Gottlich

URUGUAY

56. Alejandro Trujillo

ACI

57. Rafael Echevarne
58. Juan Manuel Manriquez

AIREON

59. Francisco Javier Álvarez

Air Port Team Solutions

60. Rafael Reyes

ALTA

61. Virginio Corrieri

ATECH

62. McWillian Oliveira
63. Edson Fagundes Gomes

BOEING

64. Mike Snover
65. Alvimar de Lucena Costa Junior

COCESNA

66. Roger Pérez
67. Alejandro Mena Ortega

Collins

68. Manny Gongora

EASA

69. Alfonso Arroyo Fernandez

EMBRAER

70. Paulo Manoel Razaboni

IATA

71. Julio Cesar De Souza Pereira
72. Jaime Abigantus
73. Gerardo Hueto

IFALPA

74. Ramón Armora
75. Diana Martínez

SITA

76. Kaio Quinan

THALES

77. Pablo Fernandez
78. Franck Haddad
79. Paul Yassini
80. Alessio Calicchia

ICAO/OACI

81. Fabio Rabbani
82. Christopher Barks
83. Oscar Quesada
84. Julio Siu
85. Raúl Martínez
86. Jorge Armoa
87. Fernando Hermoza
88. Martin Maurino
89. Mayda Ávila
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92. Fernando Camargo
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94. Sereya Schotborgh
95. Roberto Sosa
96. Fabiana Todesco
97. Elie Tanious EL Khoury
98. Virginia Tavella

Agenda Item 1 Adoption of the Provisional Agenda and Schedule

1.1 Under WP/01 Rev. 2, the Secretariat submitted for consideration the Draft Agenda, working method and schedule of the GREPECAS/21 meeting for consideration and approval of the Meeting. The Meeting adjusted the title of Agenda Item 1 to include the description of the asynchronous and the in-person session. Under IP/01 Rev. 5, details on the documentation for this Meeting were presented.

1.2 With the purpose of offering a greater space for discussion among the different participants, pauses between working sessions were scheduled to allow time for coffee breaks and bilateral meetings. To accommodate these spaces, the meeting was developed in a mixed format, with an initial phase of an asynchronous meeting prior to the in-person meeting, where the corresponding Working Papers (WPs) were presented allowing their analysis and comments by the participants. The asynchronous phase of GREPECAS/21 Meeting (agenda items 1 and 2) were defined with specific timelines to follow.

1.3 Finally, the in-person meeting thus focused on discussions to make decisions and conclusions as well as promoting exchange and dialogue between all participants through three specific work sessions on interest items related to safety and air navigation.

Agenda Item 2 Third GREPECAS-RASG-PA Joint Meeting (asynchronous)

2.1 Follow-up on the Valid GREPECAS and RASG-PA Conclusions and Decisions

2.1.1 Under WP/02 Rev., the Secretariat presented a follow-up executive summary that included the Conclusions and Decisions of the previous Meetings of GREPECAS and the Programmes and Projects Committee (PRCC) of GREPECAS, identifying those that were part of the Second GREPECAS–RASG-PA Joint Meeting. From the review of this Meeting all valid conclusions and decisions from the ePPRC/05 and GREPECAS/20 meetings were considered as completed or superseded, remaining only Conclusion GREPECAS/20/13 as valid, highlighting the following:

- Decision ePPRC/5/2 was superseded by Conclusion GREPECAS/21/04 and the work session results from CAR/SAM ANP Vol. III.
- Decision ePPRC/5/3 was superseded by Conclusion GREPECAS/21/25
- Conclusions GREPECAS/20/1 and GREPECAS/20/3 were superseded by Conclusions GREPECAS21/7 and GREPECAS/21/21 respectively.

2.2 Progress report of joint GREPECAS-RASG-PA Activities

2.2.1 Under GREPECAS/21 WP/03 and RASG-PA WP/07, the Secretariats of RASG-PA and GREPECAS presented a summary of the following activities that have been developed in a coordinated manner between both groups during this year:

A. Collaboration between the Scrutiny Working Group (GTE) and the RASG-PA Mid-Air Collision (MAC)
B. CAR and SAM Runway Safety Team (RST) Implementation Project
C. Implementation of Performance Based Navigation (PBN) procedures on Visual Runway – SAM
D. Implementation of Performance Based Navigation (PBN) procedures on a Visual Runway – NACC
E. Air Traffic Services (ATS) Language Proficiency Project in the CAR and SAM Regions
F. IATA/ICAO Project for the Mitigation of Controlled Flight Into Terrain (CFIT)
G. General considerations on possible interference caused by the 5G network
H. Unmanned Aircraft Systems (UAS)/ Remote Piloted Aircraft System (RPAS) related activities
I. Competency assessment of Aeronautical Information Service (AIS) personnel
J. Activities related to the prevention of turbulence-related accidents
K. Analysis of the 7th Edition of the GANP

2.2.2. The details of each activity were attached to WP/03, which can be accessed through the following link: https://www.icao.int/NACC/Documents/Meetings/2023/GREPECAS21/GRP21WP03.pdf . The Paper also raises possible activities that could be discussed in the future for the collaboration of both groups. The Meeting recognized the efforts of both Groups and highlighted their ability to conduct tasks in a coordinated manner, highlighting the importance of seeking efficiencies and minimizing duplication of efforts.

2.2.3 During the discussion of the working paper, the modifications described below arose, resulting as follows:

a) Appendix A **(**to WP/03)- Joint Activities of the Scrutiny Working Group (GTE) – Regional Aviation Safety Team – Pan America (PA-RAST) - in progress.

The collaboration between RASG-PA and GREPECAS ensures avoiding duplication of efforts by addressing safety issues related to air navigation and aerodrome infrastructure. RASG-PA is interested in mitigating the MAC, while GREPECAS seeks to do the same, but for flights in Reduced Vertical Separation Minimum (RVSM) airspace. Regional monitoring agencies provide validated Large Height Deviation (LHD) data to GREPECAS through GTE, and United States FAA/Commercial Aviation Safety Team (CAST) contributes important Traffic Collision and Avoidance System-Resolution Advisory (TCAS-RA) data through RASG-PA that provide additional visibility to operational information. Combined, these data can help States to reduce the occurrence of LHDs. CAST/Aviation Safety Information Analysis and Sharing System (ASIAS) data cannot be shared virtually and, rather than identifying mechanisms to present data virtually, collaboration between the two groups can be achieved through the MAC High Risk Category (HRC) team during Pan America Regional Aviation Safety Team (PA-RAST) meetings, which the FAA/CAST is a part of.

b) Appendix B (to WP/03) - CAR/SAM Runway Safety Team (RST) Implementation Project - in progress.

c) Appendix C (to WP/03) **-** Implementation of Performance Based Navigation (PBN) procedures on Visual Runway – SAM- completed**.**

d) Appendix D (to WP/03) - Implementation of Performance Based Navigation (PBN) procedures on a Visual Runway – NACC. - in progress.

e) Appendix E (to WP/03)- Air Traffic Services (ATS) Language Proficiency Project in the CAR and SAM regions - in progress**.** The following actions are for RASG-PA:
- Inform on the selection of the training institution.
- Inform the States on the nomination of participants for the Pilot Project

f) Appendix F (to WP/03)- IATA/ICAO Project for the Mitigation of controlled flight into terrain (CFIT)- in progress.

- The IATA/ICAO Controlled Flight into Terrain Impact Mitigation (CFIT) project description should be updated to reflect the current status of the project. The project is currently a PA-RAST collaboration led by United States ("Champion"), the surveys for the operators were carried out by ALTA and IATA, and those for the States were carried out by the ICAO (NACC and SAM). The project status should also reflect that in addition to IATA (GADM) data, the equipment also relies on US CAST (ASIAS) data.

- Other suggested changes to the appendix:
  - **Title:** RASG-PA Project for Controlled Flight Into Terrain (CFIT) Mitigations
  - **Scope and Objective**: RASG-PA is committed to promoting a collaborative approach to address key safety issues in the Pan American Region through a data-driven approach, involving aviation stakeholders from industry and government. RASGPA, through collaboration with its members, identified a safety risk attributed to CFIT and created a team to address this risk composed of members such as IATA, US CAST and ALTA, among others. In efforts to continue reducing the number of CFIT accidents, the CFIT team - through RASG-PA, in collaboration with the ICAO NACC and SAM Regional Offices, called on States and Industry stakeholders to ensure the updating databases and terrestrial systems. Continued monitoring and implementation of the CFIT Detailed Implementation Plan (DIP) is necessary for all aviation stakeholders.

- **Next steps or actions**. The RASG-PA CFIT team has issued RASG-PA Safety Advisories (RSA-07 and RSA-07b) aimed at reducing CFIT events in the LATAM/CAR region. IATA, ALTA and ICAO SAM and NACC will survey States and operators to measure the adoption of RSA recommendations.

g) Appendix G (to WP/03) - General considerations on possible interference caused by the 5G network - Completed.

h) Appendix H (to WP/03) - UAS/RPAS related activities - in progress**.**

- **Scope and Objective:** Support CAR and SAM States in the development of the corresponding regulation and integration in Traffic Management (UTM) operations of UAS.

- **Next steps or actions**: Support the CAR Region activities carried out through the NACC/WG, and the activities planned by the SAM Region through the Regional Safety Oversight Cooperation System (SRVSOP) and recommended by the SAM Office. LAC APP Support Project II – RoC 142 – Support to the SRVSOP for UAS so that the SRVSOP can continue with the implementation of UAS integration.

i) Appendix I (to WP/03)- Competency assessment of AIS personnel - in progress.

j) Appendix J (to WP/03) - Activities related to the prevention of turbulence-related accidents - in progress.
   - Under project achievements and deliverables should include the turbulence toolkit developed by PA-RAST (RASG-PA Toolkit).

k) Appendix K **-** Analysis of the 7th Edition of the GANP - Completed.

2.2.4 Finally, based on the above, the Meeting approved the following Decision:

DECISION GREPECAS/21/01	**LIST OF GREPECAS AND RASG-PA JOINT ACTIVITIES**
What: That the GREPECAS and RASG-PA Plenary Meetings approve the updated list of joint activities for submission to the Air Navigation Commission (ANC): a) Collaboration between the Scrutiny Working Group (GTE) and the RASG-PA Mid-Air Collision Working Group (MAC); b) CAR and SAM Runway Safety Team (RST) Implementation Project; c) Implementation of Performance-Based Navigation (PBN) procedures on a Visual Runway – SAM; d) Implementation of Performance-Based Navigation (PBN) procedures on a Visual Runway – NACC; e) Air Traffic Services (ATS) Language Proficiency Project in the CAR and SAM Regions; f) IATA/ICAO Project for the mitigation of CFIT type accidents; g) Activities related to Unmanned Aircraft System(s) (UAS)/ Remotely Piloted Aircraft System (RPAS); h) Aeronautical Information Service (AIS) personnel competency evaluation; and i) Activities related to the prevention of turbulence related accidents.	**Expected impact:** ☐ Political / Global ☒ Inter-regional ☐ Economic ☐ Environmental ☒ Operational/Technical

Why: To include the progress and next steps of the coordinated activities in the GREPECAS and RASG-PA reports and submit to the ANC and the ICAO Council.			
When:	Immediate	**Status:**	☒ Valid / ☐ Superseded / ☐ Completed
Who:	☐ States ☒ ICAO ☒ Other:	**Responsible**:	RASG-PA/GREPECAS Secretariat

DECISION GREPECAS/21/02	**PARTICIPATION OF THE GTE IN THE PA-RAST MEETINGS**
What: To facilitate the data exchange process, GTE members who have valuable data, participate, at minimum, in the PA-RAST meetings held in the NACC and SAM Regional Offices (twice a year).	**Expected impact:** ☐ Political / Global ☒ Inter-regional ☐ Economic ☐ Environmental ☒ Operational/Technical
Why: To facilitate the data exchange process between the GTE and the PA-RAST.	

When:	Immediately	**Status:**	☒ Valid / ☐ Superseded / ☐ Completed
Who:	☒ States ☒ ICAO ☒ Other:	**Responsible**:	GTE Members and PA-RAST

2.2.5 Under WP/05, the GREPECAS GTE Rapporteur of GREPECAS presented the progress in the collaboration in data analysis between the GTE of GREPECAS and the PA-RAST specifically related to the LHDs and TCAS-RA data, proposing actions to maintain and improve this collaboration. The Working Paper received support from members of both groups during the asynchronous phase, where the following decision was agreed upon:

DECISION GREPECAS/21/03	**TCAS-RA AND LHD REDUCTION**
What: To address the challenges identified in terms of data exchange between the GTE and PA-RAST, in order to make the most of their collaboration, GTE and PA-RAST to coordinate, with States and/or service providers of the CAR/ SAM Regions, actions to reduce the occurrence of Traffic and Anti- Collision Avoidance System – Resolution Advisory (TCAS-RA) and Large Hight Deviations (LHDs).	**Expected impact:** ☐ Political / Global ☒ Inter-regional ☐ Economic ☐ Environmental ☒ Operational/Technical
Why:	

To foster data exchange between the GTE and the PA-RAST. To address the challenges identified in terms of data exchange between the GTE and PA-RAST, in order to make the most of their collaboration.			
When:	Immediate	**Status:**	☒ Valid / ☐ Superseded / ☐ Completed
Who:	☒ States ☒ ICAO ☒ Other:	**Responsible**: GTE/PA-RAST	

2.3 Air Navigation Subjects of Interest to RASG-PA and Safety Subjects of Interest to GREPECAS

2.3.1 Under WP/04, the Meeting identified the topics of interest for both groups, RASG PA and GREPECAS, considering that operational safety risks arise during the delivery of air navigation services or the conduct of an activity (e.g., operation of an aircraft, airports or of air traffic control). Common topics of interest were focused on the integration of human factors and the classification of human action with open system concepts of safety culture and practices. It also provided safety professionals with the innovative ability to select the most effective safety management and intervention approaches.

2.3.2 Brazil and Uruguay supported that both GREPECAS and RASG-PA fully collaborate on these new topics of interest. Similar support was received from members of both groups during the asynchronous phase, that GREPECAS and RASG-PA provide support on issues related to both regional groups to avoid duplication of efforts; fostering forums or spaces for conversation on topics in which navigation and air safety are transversal and interactive; and promote joint work in the States on issues where air navigation interacts with safety, to optimize States' resources.

2.3.3 Under P/03 and WP/14, the Secretariat reminded the Meeting that, in addition to its standards development role, ICAO also provides, through its Capacity Development and Implementation (CDI) Bureau, critical support to Member States in successfully implementing those same standards.

2.3.4 The paper highlighted the diverse portfolio and capacity development and implementation support products and services available to support the needs of GREPECAS Members and urged Members to consider using them to address their implementation support needs.

2.3.5 Furthermore, the Secretariat suggested interested Members contact the CDI to explore how ICAO can help address current and future implementation challenges.

2.4 Working Session for the analysis of air navigation indicators included in the GASP and the safety indicators in the GANP

2.4.1 The joint session of the RASG-PA/13 and GREPECAS/21 Meetings was dedicated to carrying out an exercise on the RASG-PA and GREPECAS KPIs, as described in IP/30.

2.4.2 The RASG-PA-GREPECAS meetings participants were divided into groups and were assigned the task of discussing the pros and cons of a new information exchange process between RASG-PA and GREPECAS, which does not imply a commitment of additional resources, and that is efficient and sustainable over time.

2.4.3 After discussions, each group presented the result of its analysis through a series of conclusions. Although there is no absolute consensus on all the aspects raised for analysis, the results of the exercise were consolidated as follows:

a) **Clarification of needs**: It is clear that safety and air navigation information is fundamental for the analysis tasks of both groups. However, the safety indicators contained in the GASP are not necessarily sufficient or fully reflect the safety information needs of GREPECAS. The same thing happens with the air navigation indicators in the GASP.
Required action: Each group should identify the indicators required by the other area.

b) **Specialization and responsibilities**: Each group should focus on its area of specialization, but at the same time, it is vital that they share relevant information and data to improve overall effectiveness. There is a consensus that safety indicators should be measured by RASG-PA, and air navigation indicators should be measured by GREPECAS.
Required action: Based on the list of indicators prepared by each group (See item a), the other group will compile and share the information necessary to feed each of the indicators according to their area of specialty.

c) **Indicators and Metrics Harmonization:** It is crucial to harmonize the metrics used in the indicators of both plans to avoid duplication of efforts, improve efficiency in data collection, and facilitate the work of information exchange between both groups.
Required action: The indicators should adjust to the common taxonomy recognized in each specialty area.

d) **Data Consolidation:** Instead of exchanging data, both groups should consider consolidating the information in a common database that feeds a dashboard that includes updated information on the KPIs of each area, and that is accessible to both groups.
Required action: Both Secretariats should jointly analyze the feasibility of establishing a common database that is accessible to both groups.

e) **Limitations related to data collection:** The required information to feed certain indicators depends on the data provided by States. Some States have a lack of adequate capacity and processes for data collection and management.

Required action: During the preparation of the list of indicators, those indicators for which data are available should be initially considered.

Required action: It is essential to promote the State Safety Programme (SSP) implementation process to allow the strengthening of States' capacities for the safety management and air navigation data.

Agenda Item 3 Global and Regional Developments

3.1 Review of Action Taken by the ICAO Air Navigation Commission (ANC) on the Last Report of GREPECAS

3.1.1 The Secretariat, through IP/02, presented the outcome of the Air Navigation Commission (ANC) review of the reports of the GREPECAS/20 and RASG-PA/12 Meetings, conducted during the sixth meeting of the 222nd Session of the ANC on 21 March 2023.

3.1.2 The ANC noted with satisfaction that there was strong and close coordination between the GREPECAS and RASG-PA across aviation activities, in topics such as the collaboration between the GREPECAS Scrutiny Working Group (GTE) and RASG-PA Mid-Air Collision Working Group (MAC), implementation of CAR and SAM runway safety tools, implementation of PBN procedures in a visual runway – SAM and NACC, project on language proficiency in Air Traffic Service (ATS) in the CAR and SAM Regions, projects between ICAO and IATA to mitigate Controlled Flight Into Terrain (CFIT) accidents, general considerations on possible interference caused by the 5G network and Unmanned Aircraft System (UAS) and Remotely Piloted Aircraft System (RPAS).

3.1.3 Regarding the recommendations by the GREPECAS/20 meeting to the ANC, the following replies were provided:

GREPECAS Recommendation to ANC	ANC Reply
The lessons learned from the COVID-19 pandemic, and specifically the request for ICAO to implement a repository of lessons learned	The Commission recalled that references regarding lessons learned were made in several Assembly papers with subsequent directives and recommendations. The Commission agreed that the proposal be referred to the Secretariat for further analysis considering existing initiatives as it will also require extra-budgetary resources.
The unavailability of the Global Air Navigation Plan (GANP) technical layer in Spanish and other languages than English, ref Conclusion GREPECAS/20/08	Due to the importance of the GANP, the Commission agreed that this item should be raised in the Council, as it is considered a global challenge.
To establish an Ad hoc group or panel to carry out systematized and harmonized work to study and promote women in aviation and ICAO, ref. Conclusion GREPECAS/20/09	The Commission recalled A41-26 on the subject and that work is ongoing on this matter; specifically, by the Personnel Training and Licensing Panel (PTLP) and a job card was approved in this regard (PTLP.004.01 -Women and minority and ethnic groups in aviation professions).
To explore formulating a specific type of NOTAM for rocket launch and re-entry to Earth of spacecraft (Annex 15 — *Aeronautical Information Services*, Chapter 6, 5.3.2, m), ref. Conclusion GREPECAS/20/15	The Commission noted that work is ongoing with respect to NOTAM in ICAO and the Information Management Panel (IMP) had been addressing these matters. Therefore, it was agreed that this item be referred to the IMP.

GREPECAS Recommendation to ANC	ANC Reply
Related to the deficiency assessment process	The Commission recalled that the Secretariat has initiated work related to the update of the uniform methodology for the identification of air navigation deficiencies. The Commission considered it advisable to complete the deficiency assessment work, considering the advanced work of ICAO on the Air Navigation Deficiency Assessment Programme and the inclusion of a mapping between Universal Safety Oversight Audit Programme (USOAP) Protocol Questions (PQs) and Basic Building Blocks (BBBs) in the seventh edition of the GANP. The Commission requested the Secretariat to expedite the work for its review as soon as possible.

3.1.4 Under P/05, the Secretariat presented an overview of the global air navigation developments. The Meeting was apprised of the new ICAO Priority Focus Areas (PFAs). The Meeting recalled that the 41st ICAO Assembly adopted a Long-Term Global Aspirational Goal (LTAG) for international aviation of net-zero carbon emissions by 2050 in support of the UNFCCC Paris Agreement's temperature goal. The achievement of the LTAG will rely on the combined effect of multiple CO2 emissions reductions, including the accelerated adoption of new and innovative aircraft technologies, streamlined flight operations, and the increased production and deployment of Sustainable Aviation Fuels (SAF). Accordingly, the Meeting encouraged States and requested the contributory groups of GREPECAS to consider the PFAs and LTAG as part of their national and regional planning and activities, as appropriate.

3.1.5 The Meeting was provided with an overview of the Air Navigation World 2023 events (Montreal, 28- 31 August 2023 and Singapore, 23-27 October 2023) in preparation for the AN-Conf/14. The Meeting noted the upcoming ICAO provisions that will be applicable in 2024-2026. The Meeting invited States to consider the global developments and prepare for the implementation of the upcoming ICAO provisions as applicable.

3.2 Work report on the CAR/SAM Regional Air Navigation Plan Vol. III and its Regional Progress

3.2.1 Under IP/05 and P/06, for introducing the Working Session, the Secretariat informed on the work made for the CAR/SAM ANP with the regions and the industry, noting that some air navigation implementations are in progress, including the Enhanced Take-off/Landing Operations (APTA) and Free Route Operations (FRTO) Aviation System Block Upgrade (ASBU) modules. To date, most States are preparing for the formulation of Key Performance Indicator (KPI) baselines, recognizing that the provision of data by States/International Organizations should be increased and therefore, moving forward with Volume III will require redefining the tasks of GREPECAS members, and addressing issues identified in the process, including:

a) Understanding the relevance of the ANP CAR/SAM Regional Plan as an instrument for regional planning and for the establishment of international responsibilities, and the relationship of the Regional Plan with the law for establishing aeronautical charges.
b) Lack of cooperation between the State air navigation planning body and the data providers that are necessary for the formulation of KPIs. In some cases, both depend on the same administration, however, the delivery of data is not facilitated.
c) Insufficient resources, knowledge and/or technology to manage simple indicators and complex indicators (e.g., KPI17 and KPI19 need to be automated).
d) Need to improve the cost-benefit analysis in the decision-making process for the implementation of air navigation improvement elements.
e) Reorient regional planning to introduce the six-step method as a reference for GREPECAS, so that it can be verified that the agreed air navigation improvement elements will deliver the expected results.

3.2.2 The work session discussion was carried out in six groups with heterogeneous representation resulted in the following suggestions:

a) The groups unanimously underlined the importance of the Regional Air Navigation Plan, with its three volumes, as a strategic instrument for the coherent, interoperable, and cost-efficient planning of air navigation services, facilities and facilities in the CAR and SAM Regions, ensuring operational safety and environmental benefits. It is also considered to be the basis for States' commitments to the obligations set out in the Chicago Convention.
b) The Regional Plan focuses on safe, and efficient air navigation with adequate capacity, so that the growth of the Industry is promoted, leading to strengthening the air connectivity among States and regions for the State socio-economic development.
c) Volume III ANP recognizes the benefits of having a tool that deploys the performance-based planning methodology and facilitates the adoption of the global air navigation plan, in accordance with ICAO guidance.
d) The need to establish effective communication and decision-making processes in collaboration with the Industry and all stakeholders was identified, in order to understand the needs of users to address the optimization of air navigation in the regions. This collaborative process should be prioritized from the earliest stages of planning and maintained through the next stages until implementation.
e) The importance of facilitating the work of the States and Territories involved in planning through more flexible and easy-to-understand processes was established, considering that currently the CAR/SAM Regions are implementing elements of the GANP (Airport Accessibility (APTA), Free Route Operations (FRTO), Network Operations (NOPS)) and in the same dynamic tasks are assumed to calculate performance indicators at the baseline level. At the same time, it was identified that administrations have difficulties in nominating planners to work on these tasks on a dedicated basis. Actions were recommended for changes in organizational culture.
f) The importance of data and its processing to obtain indicators was highlighted. To this end, the need for collaboration between stakeholders to share data was highlighted. The actors are the providers of Service Level Agreements (SLAs), airports, industry and other data sources, to support the tasks of the planning bodies of the States. At the same time, data sharing between States and regions is required.

g) The need to consider the positive impact of the implementation of improvements resulting from CAR/SAM planning on the implementation of the North American (NAM) Region and other adjacent regions was identified. Specific coordination is required for this harmonization.

3.2.3 In view of the above, the Meeting adopted the following conclusion, superseding CONCLUSION GREPECAS/20/07, item c) and actions agreed from the ePPRC/5 Meeting on this matter:

<table>
<tr><td colspan="2">CONCLUSION GREPECAS/21/04
ACTIONS FOR THE PROGRESS OF VOLUME III OF CAR/SAM REGIONAL AIR NAVIGATION PLAN</td></tr>
<tr><td>What:
That,
a) States/Territories to prioritize resources for the permanent activity of work teams in each State, responsible for the management of Volume III of the CAR/SAM RANP and the respective KPIs;
b) States and the industry to ensure the participation and CDM processes that integrate all stakeholders in the planning of Vol. III and implementation of air navigation improvements;
c) the State Air Navigation Planning Authority and data providers/sources coordinate data collection and management of KPIs to be inserted in the Planning Tables of Vol. III
d) ICAO NACC and SAM Regional Offices strengthen the assistance concerning Vol. III, including dissemination of the relevance of the CAR/SAM ANP to ensure cost-efficient and interoperable implementations, as well as the contribution of such planning to the socio-economic development objectives in each State; and
e) ICAO facilitate that the CAR/SAM States evaluate the impact of the CAR/SAM Regional Air Navigation Planning on the airspace structure, as well as the new airspace concepts being implemented in the NAM Region.</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☒ Economics
☒ Environmental
☒ Technical/Operational</td></tr>
<tr><td colspan="2">Why:
To advance in the development of Volume III of the CAR/SAM Regional Air Navigation Plan with the participation of all States and stakeholders, and to move towards the definitive implementation of the six-step approach to performance-based planning stipulated in the GANP, and to ensure cost-efficient and interoperable implementations, as well as the contribution of such planning to the socio-economic development objectives in each State.</td></tr>
<tr><td>When: Immediately</td><td>Status:
☒ Valid / ☐ Invalid / ☐ Completed</td></tr>
<tr><td>Who: a) States/Territories
b) States and the Industry</td><td></td></tr>
</table>

c) States Air Navigation Planning Authority and data providers. d) ICAO NACC and SAM Regional Offices e) ICAO	

3.2.4 Under WP/06, the Secretariat informed the outlines the activities undertaken to continue with the insertion of data and baselines of KPIs in the initial version of the CAR/SAM ANP Volume III, approved by GREPECAS/20. The activities carried out in the CAR and SAM Regions to strengthen the capacities of the States for this activity were presented. The challenges identified were analysed and actions were proposed to promote the active development of this Volume III. A new version for Volume III, revision (version 0.1) for the Volume III, was presented incorporating data from the CAR Region. In this regard the Meeting approved and adopted the following decision:

DECISION GREPECAS/21/05	**APPROVAL OF VERSION 0.1 OF CAR/SAM RANP VOLUME III**	
What: Version 0.1 (**Appendix A** to this report) of the CAR/SAM RANP Volume III, including data and information from the States of the CAR Region, is approved.		**Expected Impact:** ☒ Politics/ Global ☒ Inter-regional ☒ Economics ☒ Environmental ☒ Technical/ operational
Why: To update the necessary information for the planning of improvements in air navigation services and facilities, through an amendment to Volume III of the CAR/SAM RANP, including data and information from the CAR Region, in accordance with the established procedure for Volume III.		
When: Immediately	**Status:** ☒ Valid / ☐ Superseded / ☐ Completed	
Who: ☒ States ☒ ICAO ☐ Other:		

3.2.5 Continuing with the review of the CAR/SAM ANP, under WP/32 (Rev.), the Meeting agreed that the information in the CAR/SAM RNP, Volume II, Part III (Introductory text and CNS Tables) should be reviewed and consolidated by the CAR/SAM States, for subsequent approval by GREPECAS, using a new format for the CNS Tables – specific requirements. As a result, the Meeting approved the following conclusion:

<table>
<tr><td colspan="3">CONCLUSION GREPECAS/21/06</td><td colspan="2">UPDATE OF THE INFORMATION OF PART III (CNS) OF VOLUME II OF THE AIR NAVIGATION PLAN CAR/SAM</td></tr>
<tr><td colspan="3">What:
That States/Territories, through their designated ANP Focal Points, and in coordination with the ICAO NACC/SAM Regional Offices update Part III (CNS) of Volume II of the ANP CAR/SAM, considering adopting a new file format for CNS tables.</td><td colspan="2">Expected impact:
☐ Political / Global
☒ Interregional
☐ Economic
☐ Environmental
☒ Technical/Operational</td></tr>
<tr><td colspan="5">Why:
To ensure that Part III (CNS) of Volume II of the ANP CAR/SAM is duly updated and published, to ensure the preparation and implementation of Volume III of the Plan.</td></tr>
<tr><td colspan="2">When: April 2024</td><td colspan="3">Status: ☒ Valid / ☐ Not valid / ☐ Completed</td></tr>
<tr><td colspan="3">Who: ☒ States/Territories ☒ ICAO ☐ Other:</td><td colspan="2">Responsible: States/Territories ANP Focal Point and NACC/SAM Regional Offices</td></tr>
</table>

3.2.6 Under WP/49, the ICAO GANP Performance Expert Group (GANP-PEG), responsible for reviewing the guidance contained in ICAO Doc 9883 and recommending improvements to the GANP, shared that to date, they are preparing contributions for the eighth edition of the GANP scheduled for 2025, aiming to improve the description of the six-step planning process, update the glossary of key terms and, as necessary, update the GANP key performance indicators and that it was identified that the recommended indicators require specialized data flows.

3.2.7 The Meeting took note of the activities of the GANP-PEG aimed at maximizing the benefit of performance-based planning. The Secretariat was tasked with establishing the periodic consultations for the GANP-PEG on the development and management of the KPIs of Volume III of the CARSAM RANP, as well as support to States, and to coordinate the delivery of updates and annual reports for GREPECAS, and contributory bodies.

3.3 CAR/SAM Air Navigation Services (ANS) Implementation Level

3.2.8 Under WP/10, the Secretariat presented a report on the evolution of GREPECAS implementation activities in CAR/SAM Regions, related to the PBN Programme, as well as the evolution of activities related to the ATFM Programme projects, highlighting:

a) CAR Region:

- Following the analysis of the current airspace structure of the CAR Region and taking into consideration the development of a roadmap to achieve the ASBU element - FRTO – B1/1 - Free Route Airspace (FRA); the ICAO NACC/WG Airspace Optimization Task Force (AO/TF) amended its name and associated work plan of the A1 CAR project from Implementation of Performance Based Navigation (PBN) to CAR/SAM Airspace Optimization – (Transition to Free Route Airspace). The AO/TF has drafted an Optimized Airspace Concept for the CAR Region which includes a plan to transition to FRA. PBN Implementation has been incorporated as part of the transition to FRA and therefore the PBN objectives outlined in the previous work plans have been amended into the new work plan – details in WP/10 Appendix A. The draft optimized Airspace Concept for the CAR Region is presented as WP/10 Appendix B.
- As part of the AO/TF, the CANSO IATA ICAO Free Route Airspace (CIIFRA) Team coordinated the trials of optimized routes through the region between ANSPs and Airline Operators. The trials proved to be very successful in reducing fuel consumption, CO2 emissions and the overall operating costs to the operators.
- Since 2022, a new concept has been introduced into airspace optimization, Strategic Direct Routing (SDR). During the AO/TF/3/ATFM/TF/5/CIIFRA/7 Meeting held in September 2023, guidelines were provided to Air Navigation Service Providers (ANSPs) to start SDR trials (WP10 Appendix C). Additionally, several ANSPs began developing their own SDR trial/implementation plans and are expected to provide their plans to the ICAO NACC Regional Office by 31 December 2023.

b) SAM Region:

Progress of Project A2 - Air Navigation Systems in support of the PBN

- For the period 2019 – 2023, a total of 223 instrument runway thresholds were reached in the SAM Region international airports, with an implementation average of PBN approaches of 92.4%.
- It was reported the implementation of the improved version of the SAM Region Receiver Autonomous Integrity Monitoring (RAIM) Availability Prediction Service (SATDIS) software in the Member States of Project RLA/06/901.
- The need was identified for refresher courses for design staff, the renewal of specialized equipment/software, updating work plans, and the horizontal cooperation between States and industry to promote PBN implementation.

Progress of Project B1- Improving the balance between demand and capacity:

- The implementation of ATFM in the SAM Region has been strengthened through data management activities and demand-capacity analysis, with tests for the calculation of GANP performance indicators, referring to Peak Airport Capacity (KPI09) and Peak Airport Performance (KPI10), promoting studies on cross-border ATFM.

- Since June 2021, Sub Group 3 – ATFM (SG3) was established to develop ATFM Operations Plan (OPSAM) to structure actions during the recovery phase of operations in the SAM Region, to adjust ATC and Airport capacity.
- A Workshop/Meeting for the SAM Region on Flexible Use of Airspace (FUA) and Civil-Military Cooperation in the ATM was held in Lima, Peru, in 2023 to consolidate the advancement of the implementation of the FUA in the SAM Region and strengthening the safety, economic and environmental aspects of civil and military operations in the airspace, highlighting that the SAM Region must prioritize activities for the adoption of the provisions of ICAO Doc 10088.

3.2.9 Under WP/15, Decision 20/01 of GREPECAS/20 was reviewed on grouping all CAR and SAM initiatives under a single GREPECAS Program, in order to develop in a harmonized and interoperable manner, together with industry, the concepts for the optimization of airspace that encompass ASBU modules/elements, mainly the APTA and FRTO. The importance of including the evaluation of CNS/ATM enablers and the optimization of longitudinal separation in continental space was also highlighted. The Meeting recognized that, to enhance the implementation of the elements of APTA and FRTO, it is necessary to:

a) support and reorient the optimization of the airspace structure of the CAR/SAM Region in a harmonized and coherent manner, strengthening the ongoing implementations;
b) promote the activities of the CAR/SAM States and organizations for the effective implementation of Volume III of the CAR/SAM ANP; and
c) generate environmental benefits through fuel savings and reduction of CO2 emissions.

3.2.10 Consequently, in responding to Decision GREPECAS/20/01, the following Decision was adopted:

DECISION GREPECAS/21/07	**APPROVAL OF THE CAR/SAM AIRSPACE OPTIMIZATION PROGRAMME AND THE NEOSPACE-1 PROJECT**
What: That, a) the adoption of the Airspace Optimization Programme and the NEOSPACE-1 project (**Appendix B** to this report) is approved, replacing the A-1 Programme and Projects; b) the NEOSPACE-1 project develop an Action Plan for the implementation of the Project, integrating the participation of States, Regional Implementation Groups, Industry, and all concerned parties by GREPECAS/22; and c) the industry and Data providers provide data for the metrics and performance indicators required for the NEOSPACE-1 Project in GREPECAS/22.	**Expected impact:** ☐ Political / Global ☒ Inter-regional ☒ Economic ☒ Environmental ☒ Operational/Technical
Why: To increase the optimization of the CAR/SAM airspace in terms of efficiency, capacity, safety and environmental protection, and to facilitate the implementation of Volume III of the CAR/SAM RANP.	

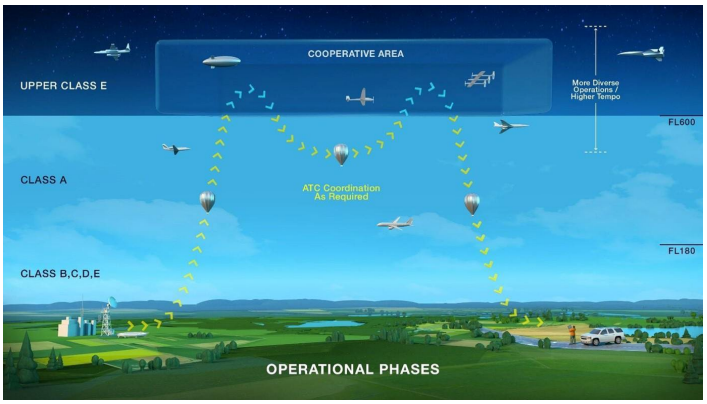
When:	a) Immediately b) GREPECAS/22 c) GREPECAS/22	**Status:**	☒ Valid / ☐ Superseded / ☐ Completed
Who:	a) ☒ States ☒ ICAO ☒ Other: b) NEOSPACE-1 project coordinator c) Industry and Data providers/sources for KPIs		

3.2.11 France presented WP/09, supported by P/09, to describe its experience with the implementation on a wide scale of Performance Based Navigation (PBN) procedures within Metropolitan France airspaces, in particular for approach and landing operations as well as an update on the latest discussions on this topic in Europe (workshop organized by Eurocontrol) and at the level of the ICAO Air Navigation Commission. These projects are in line with the EU regulation which aims at an exclusive use of PBN in the airspace of EU Member States for all operations, including Cat I landings, by June 2030. In this context, France benefits from an important return of experience in PBN approach operated through Satellite Based Augmentation System (SBAS) and Barometric Vertical Guidance Navigation (Baro-VNAV).

3.2.12 The integrity and precision of the SBAS signal used both in lateral and vertical guidance ensure a high level of safety of SBAS PBN approaches within a wide geographical area. SBAS also has the capability to support Cat. I operations when conventional navigation systems such as ILS are not available. The barometric vertical guidance in Baro-VNAV relies on the barometric-altimeter reference manually entered by the pilot. Recently, France has seen an increase in the occurrence of serious Baro-VNAV approach incidents due to human errors. In this regard, the ICAO EURNAT Europe Aviation System Planning Group (EASPG) has published the EUR_OPS Bulletin 2023_001 on risks related to altimeter setting errors during APV Baro-VNAV and non-precision approach operations.

3.2.13 Under WP/38, Dominican Republic proposed to change the navigation specification of the NACC Region's upper ATS routes from RNAV 5 to RNAV 2. Most of the States in the NACC region have implemented PBN-based STAR and SID procedures, with RNAV 1 being the most common navigation specification. This indicates that most operators performing PBN standard arrivals and departures procedures are able to obtain operational approval for RNAV 2 with no major difficulty. NAVAID infrastructure requirements for RNAV 2 include GNSS, DME/DME and DME/DME/IRU, providing a variety of navigation aids in an upper ATS routing environment. GREPECAS shall evaluate the proposed transition from RNAV 5 to RNAV 2 of the ATS route navigation specification in upper airspace

3.2.14 Under WP/44, Brazil informed that in view of the disruptive leap, it is necessary to establish guidelines for implementing Enhanced Traffic Management (ETM) through an ETM Concept of Operations (ConOps) to meet the demand of this sector. Higher Airspace has well-defined characteristics regarding low atmospheric density. However, there is no consensus among States regarding vertical limits. Some States adopt 60,000 feet as a lower limit and other States 66,000 feet. In this volume of airspace, technological advances have allowed the use of high-altitude platform systems (HAPS). The ETM concept of operations is a direct response to the pressing need to coordinate, optimize and ensure the safety of air operations in a complex and rapidly evolving environment.



3.2.15 Under NI/14, Dominican Republic informed regarding the Strategic Direct Routing in the Dominican Republic and its contribution to the reduction of aviation CO2 emissions and users operating costs. Many elements must be considered to guarantee operational safety in the airspace with simultaneous operations flying direct from point to point. Adequate risk management and testing at times and levels of low traffic flow may be the key to starting the implementation of this concept.

3.2.16 Similar under NI/15, Dominican Republic presented the implementation of new instrument flight arrival routes to the Punta Cana, reducing the flight distance of aircraft coming from the Miami oceanic airspace and the workload of the air traffic controllers.

3.2.17 Under WP/46, Brazil presented the ongoing activities for the development of performance-based management in the Brazilian Airspace Control System (SISCEAB) and the main actions taken to optimize such management. Brazil offered places in its ATM performance indicators course for 2024 (date to be defined) to expand technical cooperation in the NAM/CAR/SAM Regions and facilitate harmonized development in this area. At the same time, the importance of benchmarking between Regions and States was highlighted, which has an impact on improving the capacities of the States to promote Volume III of the Regional Plan. A link to the website was given to the Meeting: https://performance.decea.mil.br/

3.2.18 Under IP/29, France informed that FRA has been introduced in CAYENNE UTA on April 15th, 2023. As well, announced the implementation of AIDC with neighbouring ANSPs (Trinidad and Tobago, Senegal, Brazil) and the development of satellite-based ADS-B which would allow for a reduction of horizontal separation minima.

3.2.19 Under WP/27, the Meeting was informed of the implementation by the Central American States and the Central American Corporation of Air Navigation Services (COCESNA) of a Collaborative Decision Making (CDM) process with the purpose of maintaining operational safety and efficiency in the provision of Air Traffic Service in the subregion. The following activities have been carried out to implement collaborative decision making in Central America:

a) Identified information resources and data exchange.

b) Developed and documented regional procedures including the definition of roles and responsibilities.
c) Designated representatives from Member States to participate in the CDM.
d) Provided CDM training to representatives.

3.2.20 On 6 September 2023, CDM began in Central America, with the participation of experts from the ANSPs of Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and COCESNA. The information collected is also used to exchange information with other regional initiatives such as CADENA (CANSO ATFM Data Exchange Network for America). The next step for CDM in Central America is to involve representatives of airlines with major presence in the Central American region.

3.2.21 Under WP/36 IATA stressed that, according to Doc. 9971, the three elements of ATM planning that should feed into the ATFM system are traffic forecasting, performance targets, and the overall outcome of ATM planning. IATA outlined the proposal to implement an ATFM tactical coordination mechanism (H24) for responses to contingency situations or unforeseen events, which cause a significant impact on one or more CAR/SAM Flight Information Regions (FIRs). The proposal focuses on mitigating the effects of these imbalances, making it possible to define alternatives that can reduce or eliminate impacts, based on alternative routes, exclusion of certain flights from restrictive measures, relaxation of restrictive measures, etc.

3.2.22 It was noted that this proposal has been presented and analysed in the high-level forums (GREPECAS, RAAC, NACC/DCA), however, it is necessary to organize specific activities to develop operational initiatives of the ATFM, including the tactical coordination mechanism, within the agenda of the working groups in both regions, preparing documentation and guides. On the other hand, there are airspaces in the CAR/SAM Region that require improved design, in terms of sectorization and ATC capacity, to facilitate the use of optimal flight paths when flight restrictions are imposed. The importance of making efforts for the implementation of ATFM, in accordance with the guidance provided in Annex 11, Doc. 4444 and Doc. 9971 was stressed as a contribution to Meeting the infrastructure-related part and operational efficiencies of the Long-Term Aspirational Goal (LTAG) to achieve net-zero.

3.2.23 In view of the above, it was emphasized the operational implementation of the ATFM service in an effective manner, and primarily within the scope of the ACCs of the Regions, to progressively promote collaborative work between ATFM units at the Regional and Interregional levels, aiming at the implementation of the cross-border ATFM concept.

3.2.24 Under WP/43, Brazil presented the initiative of the ATFM SAM Portal, a collaborative web application that will allow interested parties to interact and exchange information related to the cross-border ATFM service. At the same time, the Portal will develop interfaces to facilitate the integration of the services of CAR and SAM Regions. The ATFM portal is an initiative of the SAM/IG regional implementation group, and its development, future improvements and maintenance are carried out between the Member States Project RLA/06/901. The main objective of the Portal is to promote communication, collaboration and coordination among all stakeholders, at Regional and Interregional level, sharing information to improve the efficiency of air operations in the airspace of the SAM Region, through the following functionalities:

a) promoting ATFM's regional integration;
b) sending messages between ATFM dependencies in real-time;

c) monitoring of air traffic demand and declared ATC capacity;
d) monitoring of ATFM measures;
e) monitoring of meteorological phenomena in airspace; and
f) monitoring of events with a significant impact on footfall.

3.2.25 From these contributions, and in order to promote the ATFM service in the CAR/SAM Regions, the Meeting adopted the following Conclusion:

<table>
<tr><td colspan="2">CONCLUSION GREPECAS/21/08</td><td colspan="2">OPERATIONAL DEVELOPMENT OF THE ATFM SERVICE IN CAR/SAM REGIONS</td></tr>
<tr><td colspan="3">What:
That,

a) States/Territories and users prioritize resources for ATFM implementation, including the allocation and training of human resources;

b) ICAO NACC and SAM Regional Offices develop a diagnosis on the operational implementation of the ATFM service effectively in the CAR and SAM Regions, and encourage collaborative work between ATFM units at the Regional and Interregional levels by GREPECAS/22; and

d) States/Territories and users initiate the implementation of the optimization of the ATFM and CDM coordination tools</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☒ Economic
☒ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="4">Why:
a) To improve capacity and efficiency, as well as to make optimal use of the ATM/CNS and airport infrastructure installed.
b) To promote the implementation of the ATFM in the CAR/SAM Regions in accordance with ICAO provisions, as a contribution to the fulfilment of the infrastructure matters and operational efficiencies stipulated in the Aspirational Long-Term Objective (LTAG).
c) To constitute an effective ATFM tactical coordination mechanism for responses (H24) to contingency situations or unforeseen events.</td></tr>
<tr><td colspan="2">When: GREPECAS/22</td><td colspan="2">Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td colspan="2">Who:
a) CAR/SAM States, Territories and users
b) ICAO NACC and SAM RO: CAR/SAM States, Territories and users</td><td colspan="2">Responsible:</td></tr>
</table>

3.2.26 Under IP/10, Brazil reported that it is developing new systems and updating standards for the full implementation of the FUA in the short term. Among these efforts, a tool is being developed to manage the use of airspace by different stakeholders, and a regulatory framework is being discussed to support this type of activity and provide new definitions of airspace classifications. The aforementioned tool has initially been called 'Analysis of the Digital Airspace System' (DASA) and is developed at DECEA's Digital Transformation Advisory Office (ATD).

3.2.27 Under IP/17, progress achieved by the ATFM of the Dominican Republic was informed. The implementation of Air Traffic Flow Management (ATFM) for Air Traffic Control Services in Dominican Republic has made it possible to optimize the use of airspace in periods in which demand exceeds capacity, avoiding delays on the ground and in the air, applying the necessary measures to contribute to the reduction of the workload of air traffic controllers, the reduction of CO2 emissions and the reduction of costs for air operators.

3.2.28 Under IP/25, the Central American States presented the efforts of COCESNA to reduce the operational safety risk in the RVSM Airspace of the MHCC FIR derived from LHDs by strengthening its aeronautical surveillance system. The installed infrastructure and data exchanges with adjacent FIRs provide total and redundant aeronautical surveillance coverage within the MHCC FIR and of at least 50NM to the surrounding area. Full aeronautical surveillance coverage expands the air traffic controller's situational awareness, strengthening operational safety in RVSM airspace by reducing the probability of generating LHD to adjacent FIRs and the severity of LHDs committed by other ANPS at the same time to the Central American airspace. As a result, the number of reported LHDs involving Central America has decreased and the vast majority of these have a LOW rating.

3.2.29 With WP/22, the Secretariat provided details on the action plan proposed by GREPECAS for the development of the ATM contingency plans for the CAR/SAM Regions, its progress, the challenges it faces in its current state, while proposing actions to update it considering the evolution of the air navigation systems. The Meeting recalled that GREPECAS/13 decided to approve an action plan for the development of ATM contingency plans. This action plan was comprised of three phases:

- Phase I - Development of ATM contingency plans
- Phase II - Harmonization of ATM contingency plans with neighbouring States/Territories/International Organizations
- Phase III - Submission of ATM contingency plans to the ICAO Regional Offices.

3.2.30 Most States/Territories in the CAR/SAM Regions that have used the GREPECAS template for the development of their contingency plans, have established an ATS contingency routes scheme to be used in the case of total disruption of ATS, where air operators would fly through affected airspace without ATS surveillance or two-way communications. This ATS contingency routes scheme requires coordination with adjacent ATS units to become effective. This coordination is normally reflected through bilateral Letters of Agreement (LoAs).

3.2.31 During the Third NAM/CAR Regional Contingency and Emergency Planning and Response Meeting (NAM/CAR/CONT/3), held in Mexico City, Mexico, from 9 to 11 May 2023, some States called the attention of the challenges they face with the use of contingency routes where no surveillance and communication services are being provided. Since the use of these routes (along with responsibilities and procedures) need to be agreed upon by the Air Navigation Service Providers (ANSPs) that will utilize these routes, LOAs will be needed to document the approval/agreement of all ANSPs involved. Given the time that has elapsed since the contingency procedures approved by GREPECAS were published, the NAM/CAR/CONT/3 Meeting considered it appropriate to present to the GREPECAS, the difficulties regarding the regionally adopted contingency procedures, as well as to make recommendations that promote its updating in the current context of operations. This will ensure stakeholders' expectations are considered, to guarantee improved levels of services, as far as practicable. In this regard, the Meeting adopted the following conclusion:

<table>
<tr><td colspan="2">CONCLUSION GREPECAS/21/09</td><td colspan="2">ACTIONS TO STRENGTHEN CONTINGENCY PLANNING IN THE CAR/SAM REGIONS</td></tr>
<tr><td colspan="3">What:
That,

a) The ATM Contingency Plan Template* (Appendix C to this report) be approved; and

b) State/Territories and IATA, led by the Secretariat develop and promote a comprehensive strategy to improve contingency planning in the air navigation services of the CAR/SAM Regions, including guidelines for the establishment of level 1 and level 2 contingency plans by GREPECAS/22.

* Conclusion 13/68, GREPECAS/13.</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="4">Why:
To improve the response of air navigation services to possible degradations or interruptions, to promote operational a safe and orderly air traffic flow, in line with ICAO Annex 11, Attachment C, and to improve contingency planning in the air navigation services of the CAR/SAM Regions</td></tr>
<tr><td>When:</td><td>GREPECAS/22</td><td>Status:</td><td>☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td>Who:</td><td colspan="2">a) ☒ States ☒ ICAO ☒ Other
b) ☐ States ☒ ICAO ☐ Other: IATA</td><td></td></tr>
</table>

3.2.32 Under IP/26, the Central American States, presented the planning and response to emergency situations and contingencies for the Central American States and COCESNA where communication, coordination, and collaboration are some of the best defences. Currently, the States of the Central American region and COCESNA have planning in case they experience "ATC zero". Likewise, the Department of Civil Aviation of Belize and the Honduran Civil Aviation Agency have operational

agreements with COCESNA, for the coordination of traffic in their respective airspaces in emergency situations and/or contingencies (technical/operational failures).

Search and Rescue (3.2.33 The Secretariat presented, under WP/13, the progress of SAR activities in the CAR/SAM regions and requests the support of States to monitor their achievement, recalling that Decision GREPECAS/20/02 approved the project on the implementation of the search and rescue service (SAR) for the CAR and SAM Regions. This project seeks to enable greater visibility and support for related activities, communicating to the ICAO Council in a more objective manner the progress of SAR implementation in the CAR/SAM Regions. The following progress was highlighted:

CAR Region

- The Fourth Meeting of the SAR Implementation Task Force of the NACC/WG (NACC/WG/SAR/TF/4) was held at the ICAO NACC Regional Office, from August 7 to 11, 2023, including a workshop on basic SAR concepts - focusing on the coordination of SAR operations, and the deployment of SAR response mobile units and also the simulation of two SAR scenarios applying the analysis concepts for the location of lost aircraft and coordination activities at the scene of an accident. The provision of SAR services in the Eastern Caribbean is one of the main priorities for the CAR Region, specifically in the Search and Rescue Region (SRR) of Piarco.
- France reported plans for an interregional SAR exercise (SAREX) for May 2024. This SAREX will involve the SAR Regions of Cayenne, Paramaribo and Piarco, as well as the rescue sub-centres (RSC) of Martinique and Guadeloupe. The RCC Piarco, and the States and Territories under the Piarco SRR, were asked to actively participate in this exercise.
- The NACC/WG/SAR/TF/4 meeting addressed the new capabilities in smartphones for automatic emergency notification, mainly those carried out via satellite. The potential benefit of this technology was analysed, as well as the possible challenge it could bring to search and rescue services, due to the increase in the reception of messages outside the channels established until now.
- Guide was incorporated into the CAR Region SAR Plan with basic guidelines of the Global Aeronautical Distress and Safety System (GADSS), including the sequence of events of the activation of Autonomous Distress Situation Monitoring (ADT). If aircraft will fly with ADT devices in 2023, there is an operational urgency to provide basic procedures and guidance to air traffic services units and RCCs as soon as possible.
- ICAO NACC Office, with support from the United States Coast Guard, plans to conduct another workshop on GADSS implementation in early 2024.

SAM Region

- In line with the recommendations of the NACC/WG/SAR/TF/3 Meeting, an international SAREX exercise was carried out from July 24 to 28, 2023, with the participation of Argentina, Brazil and Paraguay, which covered the development and improvement of skills in search, location and rescue coordination in air emergencies. Independent drills were carried out for each State during the first three days and on the fourth day a joint theoretical drill was carried out to evaluate and improve individual and collective capacities. As a result, the level of preparation of the services was demonstrated and cooperation between Argentina, Brazil and Paraguay was strengthened.

- The first week of August 2023, the ICAO SAM RO carried out a technical visit to the SAR services of Venezuela, located in the Maiquetía rescue coordination centre (RCC), as well as the mission control centre (MCC). The SAR has professional personnel trained at the University Institute of Civil Aviation (IUAC), rescue personnel, and specialists.

3.2.34 From this SAR discussion, the Meeting considered important to highlight the following:

a) Encourage the coordination of operational procedures between the Piarco RCC, the RSCs under their SRR and the neighbouring RCCs, as well as the signing of the SAR agreements pending in the CAR and SAM Regions.
b) Promote the development of SAR exercises, mainly outside the vicinity of aerodromes, as tools to test SAR plans, with the objective of testing operational procedures, verifying existing weaknesses and opportunities for improvement.
c) Support the CAR/SAM interregional SAREX organized by France for May 2024.

3.2.35 Under WP/47, Brazil presented information on Brazil's Aeronautical SAR System (SISSAR), its structure and importance to the SAM Region. The Meeting was informed on the most relevant current challenges, which include the proper coordination of the RAS between adjacent States through permanently updated Contact Points (POCs) and operational arrangements in place. The Secretariat took note of this requirement and was appointed to verify the list of POCs of the SAR services, to share it at the level of the SAM and CAR Regions.

3.2.36 Under IP/24, the Central American States presented the efforts of COCESNA to reactivate and increase operational safety by strengthening SAR coordination in its area of responsibility and their SAR emergency messaging monitoring systems through the SAR Tracking System platform.

3.2.37 With IP/13, the Dominican Republic presented its updated list of regional and local SAR agreements.

Other ATM implementations

3.2.38 The Secretariat presented IP/03 with information regarding the work carried out to resolve gaps in the International Codes and Routes Designators (ICARD) database following the Five-Letter Name Code (5LNC) unique identification requirements.

3.2.39 Under IP/16, Dominican Republic informed on their ANSP SMS in relation to the growth of the operational safety culture in its various areas, achieved through increased personnel training, higher reporting of operational safety incidents, and enhanced risk and change management efforts - reactive and proactive mitigation measures.

CNS Implementation matters

3.2.40 Under WP/07 Rev 2., the Secretariat summarized some of the CNS activities carried out:

- Frequency Management: The NACC and SAM Regional Offices, in response to Conclusion GREPECAS/20/05 "Creation of an ad-hoc group for the development of a regional project for frequency management" created a project for the joint frequency management in the CAR/SAM regions. The Meeting agreed to adopt the following conclusion to gradually consolidate a new technical tool to assist States:

CONCLUSION GREPECAS/21/10	**STRENGTHENING OF FREQUENCY MANAGEMENT FOR THE USE OF AIR NAVIGATION SERVICES**
What: That, to increase States' support to the activities of the Aeronautical Frequency Management Project; and expand the Project scope with the activity on specifying an application (software) for technical/operational management and planning of the assignment of aeronautical frequencies for the CAR/SAM Regions; the GREPECAS Aeronautical Frequency Management Project amend its scope to include the study for alternatives, evaluation of costs, and proposing the minimum software implementation requirements, for its presentation at the GREPECAS/22 meeting.	**Expected impact:** ☐ Political / Global ☒ Inter-regional ☒ Economic ☐ Environmental ☒ Operational/Technical
Why: To strengthen the importance of aeronautical frequency management and for CAR/SAM States to have standardized and regionally harmonized management mechanisms	
When: GREPECAS/23	**Status:** ☒ Valid / ☐ Superseded / ☐ Completed
Who: ☒ States ☒ ICAO ☒ Other:	GREPECAS Aeronautical FREQ Management Project

- The scheduled CAR and SAM activities for the mitigation of risks due to the implementation of 5G technology communications were reported as completed, permitting States to manage and monitor these mitigations and assess the risks.
- The NACC and SAM Offices jointly coordinated with Eurocontrol for the access to the "BADA" aircraft databases. Each CAR/SAM State can request access to the BADA database for purposes of updating their Air Traffic control centre databases aircraft performance data. Each State must arrange for access through the appropriate Regional Office.
- A NAM/CAR/SAM Workshop on the Development of Regulation/Standards for the Implementation of Automatic Dependent Surveillance - Broadcasting (ADS-B) was carried out in 2023 to States, conducting an update on the ADS-B implementation status and providing guidelines for completing each State ADS-B action plan.
- Software systems have been implemented to monitor ADS-B data and correct errors. The development of an ADS-B monitoring data evaluation system to certify the quality of the

monitored information was proposed including a project with the support of experts from the NAM/CAR/SAM Regions.

- Considering that in 2024 the CAR/SAM States must strengthen, as an Ad hoc Group, for the management of which each State defines its contact points responsible for managing the aeronautical frequency spectrum, the Meeting agreed to adopt the following conclusion to consolidate a new technical tool to assist States on this task.

<table>
<tr><td colspan="2">CONCLUSION GREPECAS/21/11</td><td colspan="2">DEVELOPMENT OF TERMS OF REFERENCE FOR A TOOL FOR THE ASSESSMENT OF SURVEILLANCE DATA FROM THE CAR AND SAM STATES</td></tr>
<tr><td colspan="3">What:

That An Ad hoc Group of experts composed by Brazil, Dominican Republic, United States, Uruguay and COCESNA, led by ICAO develop Terms of Reference (ToRs) for an application (technical tool) to support CNS staff on the evaluation of data from surveillance systems, especially those originating from ADS-B sensors by GREPECAS/22.</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☒ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="4">Why:
To validate the quality of surveillance data information, to ensure that the data entering the air traffic control centres is correct and that it supports air traffic control operations effectively.</td></tr>
<tr><td colspan="2">When: GREPECAS/22</td><td colspan="2">Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td colspan="2">Who: ☐ States ☒ ICAO ☒ Other:</td><td colspan="2">Responsible: Ad hoc Group</td></tr>
</table>

CNS Frequency Management matters

3.2.41 Under WP/31, The Secretariat proposed that, within the framework of the GREPECAS Project for the Regional CAR/SAM Management of the Radio Spectrum for Aviation, the application "Frequency Finder 2023" be adopted as an initial management tool for VHF NAV and VHF COM frequencies, for all States/Territories and Organizations of the CAR and SAM Regions, to support the timely update of ICAO COM 2 and COM 3 Lists. Brazil pointed out the necessity for using Frequency Finder 2023 application by all CAR/SAM States to achieve a consolidated database of VHF NAV and VHF COM frequencies, previously managed with COM 2 and COM 3 Lists.

3.2.42 The Secretariat informed that a CAR co-Coordinator for GREPECAS Project for the Regional CAR/SAM Management of the Radio Spectrum for Aviation has been designated. Brazil volunteered to be the co-Coordinator for the SAM Region.

3.2.43 From the above, the Meeting endorsed the following conclusion:

CONCLUSION GREPECAS/21/12	**USE OF THE FREQUENCY FINDER 2023 APPLICATION AS A MANAGEMENT TOOL FOR VHF NAV AND VHF COM FREQUENCIES USED IN THE AERONAUTICAL CONTEXT**	
What: That States/Territories, a) transition the Frequency Finder 2023 runtime application (or subsequent versions) as the basic tool for the management of VHF NAV and VHF COM frequencies in the aeronautical context. b) assign "FF Focal Points" to coordinate internally the updating of information to subsequently submit these updates to the corresponding Regional Offices; and c) forward any proposed changes, via e-mail, by March 2024 to the ICAO ROs, who will upload it to the global database.		**Expected impact:** ☐ Political / Global ☒ Interregional ☐ Economic ☐ Environmental ☒ Technical/Operational
Why: To have a more efficient management of the frequencies used in the aeronautical context, using an updated computerized tool, more effective than the methods previously used (COM2 and COM 3 Lists).		
When: All for March 2024	**Status:** ☒ Valid / ☐ Not valid / ☐ Completed	
Who: ☒ States ☐ ICAO ☐ Other:		

3.2.44 Under WP/48, Brazil informed of their contribution to the preliminary agenda item 2.9 of the 2027 World Radiocommunication Conference (WRC-27), which was submitted at the 42nd CITEL PCC.II Meeting held on August 28th and September 1st, as detailed as shown in table 1:

Table 1- CITEL Interamerican Proposals (IAP) for WRC-23 aeronautical issues

DOC	AGENDA ITEM	IAP	SUPPORT	TOTAL
120r3	1.6	- ADD DRAFT NEW RESOLUTION [A16] (WRC-23) - ADD 43 – 43.XX - SUP RESOLUTION 772 (WRC-19)	BRA, BAH, CAN, GTM, MEX, PRG, TRD, URG USA, CLM	10
147r3	1.7	- 75.2-137.175 MHz - MOD ARTICLE 5 - Frequency Allocations - ADD 5A17, 5B17, 5C17 - MOD APPENDIX 5 OF RR – ANNEX 1 - SUP RESOLUTION 248	BRA, CAN, MEX, TRD, URG, USA, GTM, BAH, CLM	9
121r2	1.9	- ADD APPENDIX 27 - 27/18A - MOD APPENDIX 27 - 27/18A.1 - MOD APPENDIX 27 - 27/57 - MOD APPENDIX 27 - 27/57 1.2 - MOD APPENDIX 27 - 27/58 1.2.1 - MOD APPENDIX 27 -27/60 2.1 - SUP RESOLUTION 429	BRA, BAH, BLZ, CAN, CLM, GTM, MEX, PRG, TRD, URG, USA	11
149r1	1.10	- NOC ARTICLE 5 Frequency Allocations - 15,4 – 15,7 GHz - NOC ARTICLE 5 Frequency Allocations - 22-22.21 GHz - SUP RESOLUTION 430	BRA, BAH, CAN, JMC, MEX, USA, CLM, URG, PRG	9
139r3	10 WBHF	- ADD NEW RES [AI WRC-27] - ADD NEW RES [WBHF]	ARG, BRA, BAH, BLZ, CAN, CHL, CLM, EQA, JAM, GRD, GTM, KNA, MEX, PRG, URG, USA	16
151r1	10 – topic 2.9 NO MS 1.3 GHz	- DD NEW RES [AI WRC-27] - SUP RESOLUTION 250	BRA, BLZ, CAN, EQA, PRG, URG	6

3.2.45 Under WP/51, Dominican Republic reported on the activities supporting the Ad-hoc Group for the Development of the Regional Project for the Management of Aeronautical Frequencies, commenting that although activities and the use of the Frequency Finder tool for frequency management have been carried out to update the COM lists, some State had identified deficiencies and lack of robustness of the Frequency Finder tool currently in use.

3.2.46 Under IP/11, Brazil informed on the temporary mitigation measures adopted in Brazil to ensure safe coexistence between 5G stations and radio altimeters used in aviation, providing solutions to the issue of potential interference to aeronautical radio altimeters operating in the 4,200- 4,400 MHz frequency band, caused by IMT 5G stations currently operating or planned to operate in the 3,300- 3,700 MHz band, and how and when restrictions currently imposed on certain critical airports may be withdrawn.

CNS - DATIS and DCL Matters

3.2.47 Under WP/37, the Meeting discussed the information presented by IATA related to the implementation of the Digital– automatic terminal information services (D-ATIS) and Datalink departure clearance (DCL) in CAR/SAM regions at international airports. The benefits provided by these systems include reducing the workload of the pilot and air traffic controller, providing operational safety barriers that mitigate or eliminate potential misunderstanding of critical flight safety information that is exchanged between such professionals. However, IATA reported that most international airports in the CAR/SAM region have not yet implemented D-ATIS, and, in some cases, it has been partially or incompletely implemented.

3.2.48 The importance of CAR/SAM States moving towards the full implementation of D-ATIS and DCL services in ATS units at international airports, based on priorities and cost-benefit assessments was emphasized. In this regard, it was agreed on the need to have more specific technical and operational information on the associated costs of the D-ATIS and DCL services and facilities, for adequate decision-making. To this end, the preparation of regional CAR/SAM guidance material might be promoted, which can be developed collaboratively with the support of regional implementation groups; the NACC/WG and the SAM/IG, in conjunction with the Secretariat, Industry, service providers, ANSPs and States. In this regard, the Meeting adopted the following conclusion:

<table>
<tr><td colspan="2">CONCLUSIÓN GREPECAS/21/13</td><td colspan="2">ACTIONS TO ADVANCE THE IMPLEMENTATION OF THE D-ATIS AND THE DCL</td></tr>
<tr><td colspan="3">What:
That the Secretariat to prepare a regional CAR/SAM guidance document, in collaboration with all stakeholders, including guidelines to facilitate cost-benefit analysis, on the implementation of the Automatic Terminal Information Service by Data Link - ATIS digital (D-ATIS) and Departure Clearence by Data Link (DCL) by GREPECAS/22.</td><td>Expected impact:
☐ Politics / Global
☒ Interregional
☒ Economics
☒ Environmental
☒ Technical/Operational</td></tr>
<tr><td colspan="4">Why:
To promote the implementation of D-ATIS and DCL services for ATS units at international airports, with a view to obtaining safety barriers that eliminate possible failures in the understanding of critical flight safety information, in pilot-controller communication.</td></tr>
<tr><td>When:</td><td>GREPECAS/22</td><td>Status:</td><td>☒ Valid / ☐ Invalid / ☐ Completed</td></tr>
<tr><td>Who:</td><td colspan="2">☐ States ☒ ICAO ☒ Other:</td><td>Responsible: NACC/WG and SAM/IG</td></tr>
</table>

Technical Assistance to the E/CAR States

3.2.49 Under WP/30 Rev., the Eastern Caribbean Civil Aviation Authority (ECCAA) on behalf of Antigua and Barbuda, Dominica, Grenada, Saint Lucia, Saint Kitts and Nevis and Saint Vincent and the Grenadines, presented insights into the challenges encountered by the Eastern Caribbean subregion

concerning the implementation of requirements for Air Navigation Services and request support from the GREPECAS.

3.2.50 The Meeting recalled that to address implementation support needs more specifically in the Eastern Caribbean, the Eastern Caribbean Civil Aviation Technical Group (E/CAR/CATG) was established. The purpose of the E/CAR/CATG is to foster the implementation of the CAR/SAM Air Navigation Plan (ANP) in the Eastern Caribbean subregion. Despite the support received through E/CAR/CATG, there are still important challenges to address for this subregion. More complex aspects for ANS such as the training of technical personnel, the certification of aerodromes, the implementation of management systems, both quality and safety, the provision of meteorological services, the development of aeronautical charts and the design of instrument flight procedures, present challenges that are very difficult to address individually.

3.2.51 The ECCAA and the ECCAA Member States requested the Secretariat the development of specific projects to address the needs of the provision of air navigation services in the Eastern Caribbean. The ICAO NACC RO shall continue and strengthen the support/ assistance to the E/CAR Region for enhancing the ANS implementation and compliance.

CNS – Automated Protocols

3.2.52 Under the IP/20 Rev, the Secretariat informed on the status of Automated Protocol implementation in the CAR/SAM Regions:

- The implementation level of the CAR Region is 61.77%, with a greater emphasis on States that are already ready to implement. In this regard, Cuba, Jamaica, the Central American States, and COCESNA were requested to expedite the implementation work of these communication channels with the objective of putting them into operation as soon as possible.
- Activities related to AIDC implementation in the SAM Region are carried out by the ATM/AIDC Subgroup of the Interoperability Task Force (INTEROP TF). Starting in 2023, an attempt was made to promote the establishment of communications, mainly between adjacent centres that use the same system (same manufacturer). In this regard, support has been given to Brazil, Paraguay, and Venezuela with the objective of establishing communication between Amazon (Brazil) ACC – Maiquetía (Venezuela) ACC; as well as between Asunción (Paraguay) ACC – Curitiba (Brazil) ACC. Likewise, it is expected to advance with the AIDC operational establishment between control centres that use systems manufactured by different companies, such as Barranquilla (Colombia)ACC – ACC Maiquetía (Venezuela), and Lima ACC – Santiago ACC.

CNS – ADS-B Implementation

3.2.53 Under WP/19, IATA conducted a follow-up on the proposals presented during GREPECAS/20 concerning ADS-B implementation, as well as presented principles to be applied in the ADS-B planning and implementation. IATA Indicated that ADS-B implementation should be part of an integrated planning, including, at least, communication, navigation, and ATM systems/procedures to implement concrete airspace user benefits such as enhanced air traffic flow management, optimized air traffic separation provision, FRTO (e.g., User Preferred Routings – UPR, Strategic Direct Routing – SDR and Free Route Airspace – FRA). IATA recommended to follow up ICAO Circular 326 and the GANP Six Steps Method (Doc 9883) as guidance material in the process of ADS-B planning and implementation.

3.2.54 Under WP/26, the Central American States informed on their actions for improving air traffic services in the different airspaces of the Central American FIR, through the implementation of Satellite-based ADS-B and the establishment of a regulation to ensure the equipment of aircraft with the required features.

3.2.55 United States presented P/04 about their implementation of ADS-B:

- The U.S. ADS-B mandate has been in effect since 01/01/2020.
- The ADS-B ground infrastructure deployment is complete.
- The FAA continues to leverage ADS-B Out to: – Implement Wide Area Multilateration (WAM) rather than Radar – Successful deployment of Trajectory-Based Display Mode (TBDM), the backbone for enroute facilities to be able to provide 3NM separation below FL230. – Successful deployment of 3NM below FL230 at ARTCC's.
- Continue to enhance operational efficiency and safety in the airspace: – Reduce overlapping legacy radar coverage across the NAS. – Enhance situational awareness on the airport surface. – Reduce 1030/1090 MHz spectrum congestion – ADS-B In applications (e.g., CAVS, CAS, etc.).
- Benefits with the ADS-B Implementation:
  - Reducing Separation: Enable 3nm separation standards in en route airspace where it was not available before. – Radar Divestiture: Overlapping ADS-B and legacy radar coverage provides the FAA with the opportunity to right-size our surveillance infrastructure across the NAS.
  - Surface Surveillance: Continue to leverage ADS-B infrastructure on the airport surface to enhance situational awareness for ATC, pilots, and vehicle operators.
  - ADS-B In Applications: ADS-B In brings the opportunity to implement various applications that transform the ability of controllers and pilots to increase efficiency of spacing operations in the NAS. – Collision Avoidance: The next generation of collision avoidance capabilities, ACAS-X, is leveraging ADS-B technologies to enhance aviation safety and accommodate new entrants into the NAS.

3.2.56 Under IP/04 the Secretariat complemented the discussion informing on the ADS-B Implementation, its effective operational application, the possible phasing out of radar systems in the CAR/SAM Regions, Industry concern about the costs of equipping fleets and the cost-benefit of this new technology versus having a technology that would provide an additional layer of surveillance. It was recalled that GANP ASBU indicates that ADS-B technology is primarily intended to support the provision of Air Traffic Services and operational applications at reduced cost and increased surveillance coverage.

3.2.57 Under IP/12, Brazil shared the Brazilian experience and challenges in the implementation of national ADS-B systems, their regulation and signal monitoring. The strategic program of DECEA (Brazilian Department of Airspace Control) for the evolution of Brazilian air traffic management, SIRIUS-BRASIL, aligned with the recommendations contained in Document 9750 and with ASBU, considered the implementation of various surveillance systems to meet the identified operational demands, contributing to the evolution of future ATM concepts. The implementation of new surveillance systems aims to raise the quality of the service provided, reducing costs and allowing a careful assessment of where it would be convenient to maintain radar coverage, considering strategic factors and cost/ benefit ratio.

3.2.58 Under IP/33, Mexico shared information about the status of implementation of ADS-B and their surveillance services Mexico is working on the installation and implementation of the ADS-B surveillance systems and their regulations simultaneously, with the objective of making both coincide with the entry into force of the regulation. There are currently fifteen (15) ADS-B sensors installed throughout Mexico. By 2025, it is expected to significantly increase air surveillance coverage for routes in lower and upper airspace, improving air traffic services by reducing separations and optimizing the use of Mexican airspace.

3.2.59 The working session on ADS-B implementation – under agenda item 4 - complements the ADS-B status and implementation issues.

AGA implementation

3.2.60 Under WP/11, the Secretariat presented the progress of the Aerodrome F program projects in the CAR and SAM Regions:

- Project F1: Certification and Operational Safety of Aerodromes, observed in the CAR and SAM Region a slight increase in the number of certified aerodromes, in 2023. There are 98 certified aerodromes in the CAR region, which represents 66%, and 57 certified aerodromes in the SAM region, which represents 55.77%.
- Project F2: Aerodrome Planning, the Secretariat in discussions with IATA has Completed the project deliverables, the “Guidance Material — Airport Advisory Committees”, whose purpose is to provide States that do not have these committees a guide for its implementation. As such, the Meeting adopted the following conclusion:

CONCLUSION **GREPECAS/21/14**	**PROVISION OF COMMENTS AND ENDORSEMENT OF THE GUIDE OF AIRPORT ADVISORY COMMITTEES**
What: That States/Territories: a) review the guide (presented in **Appendix D** to this report) and propose improvements on Airport Advisory Committees to the Secretariat by March 2024; and b) analyse the feasibility of incorporating this guide into national procedures and provide considerations in this regard to the Secretariat by GREPECAS/22.	**Expected impact:** ☐ Political / Global ☒ Inter-regional ☒ Economic ☐ Environmental ☒ Operational/Technical

Why: The provision of sufficient airport infrastructure in accordance with traffic forecasts is essential to guarantee the sustainability of regional air navigation planning. Such planning implies the need to incorporate the main operational actors to allow the proposed capacity to meet demand expectations and offer value for its required investment. The guide proposes a mechanism to facilitate this. To promote collaborative airport planning for the benefit of the regions and the objectives of the Regional Air Navigation Plan		
When:	a) March 2024 b) GREPECAS/22	**Status:** ☒ Valid / ☐ Superseded / ☐ Completed
Who:	☐ States ☒ ICAO ☒ Other: Organizations	

- Project F3: Airport Collaborative Decision Making (A-CDM) Implementation, the Project Coordinator (Peru), with the Secretariat support, has prepared a survey to States on the status of the review and approval process of flight programming, with the purpose to evaluate a mechanism to determine what aerodromes are forced to implement this ASBU. Based on the survey results, the ICAO AGA Coordinator will propose modifications to the F3 project B. Therefore, the Meeting adopted the following decision:

DECISION **GREPECAS/21/15**	**MODIFICATIONS TO THE CAR/SAM F3 PROJECT**	
What: That, to support A CDM implementation, the F3 Programme coordinator modify F3 Project considering the questionnaire on A-CDM conducted by ICAO.		**Expected impact:** ☐ Political / Global ☒ Inter-regional ☒ Economic ☐ Environmental ☒ Operational/Technical
Why: To date, F3 Project has focused efforts on promoting the A-CDM concept and prepared an implementation guide accepted by the GREPECAS States. However, the new project coordinator proposes new activities to facilitate harmonized adoption, as well as the methodology to decide which airport should implement A-CDM.		
When:	30 March 2024	**Status:** ☒ Valid / ☐ Superseded / ☐ Completed
Who:	☐ States ☒ ICAO ☐ Other: GREPECAS F3 Project Coordinator	

3.2.61 ACI-LAC, through WP/33, WP/35 and WP/34, informed that with the expected growth in demand forecasted to approximately 19 billion passengers passing through the airports in 2040, the aviation ecosystem is going to have to significantly improve and develop the capacity available globally. Aerodromes are key nodes in the transport system that cater to this demand but need collaboration from all stakeholders to ensure best use of available capacity. Operation improvements, as well as appropriate

capital development projects, are going to be the foundation upon which this future oriented capacity will need to be built.

3.2.62 ACI-LAC informed that the certification of aerodromes, including the implementation of an effective Safety Management System (SMS) by the aerodrome operator, remains a challenge for certain States and aerodromes. The ACI APEX in Safety Programme strives to offer a flexible, collaborative and easily applicable solution based on the peer review concept of exchanging knowledge and information amongst experts, for States and Aerodrome Operators to move towards becoming certified. The ACI APEX in Safety programme, endorsed by ICAO, opens the opportunity for State to work with industry experts to identify the gaps in regulatory application or technical and operational challenges that may still need to be resolved to allow for an aerodrome to become certified.

3.2.63 ACI-LAC highlighted the potential issues arising from the adoption of ICAO Annex 14 Recommendations as National Standards without a technical or risk assessment, sharing examples of ICAO Annex recommendations sometimes enacted as National Standards without clear safety benefits:

a) Recommendation 3.5.4 for a 240 m RESA (intended for code 3 and 4 aerodromes but sometimes unnecessarily mandated for smaller aerodromes);
b) Recommendation 3.9.12 - Strength of a taxiway should be at least equal to that of the runway (even when some of the taxiways are intended for use by aircraft smaller than the design aircraft of the runway);
c) Recommendations on runway, taxiway and turn pad shoulders for certain code letters (regardless of current width of runway, taxiway or turn pad); and
d) Recommendation 9.2.40 on the number of rescue and firefighting vehicles according to aerodrome category.

3.2.64 ACI-LAC suggested that as much as possible States should consult with aerodrome operators on the feasibility and necessity of enacting Annex 14 Recommendations as National Standards. Therefore, the Meeting approved the following conclusion:

CONCLUSION GREPECAS/21/16	**ADOPTION OF ICAO RECOMMENDATIONS RELATED TO AERODROMES**
What: That States/Territories implement a process for conducting a regulatory impact analysis when adopting ICAO Recommended Practices related to aerodromes as national regulations.	**Expected impact:** ☐ Political / Global ☒ Inter-regional ☒ Economic ☒ Environmental ☒ Operational/Technical

Why: To adopt Recommended Practices when they enhance safety, security, efficiency, sustainability to the operations, as long as that they are feasible to implement, avoiding unnecessary costs, and to promote adequate consultation processes to consider alternative means of compliance to improve aviation safety.	
When: Immediately	**Status:** ☒ Valid / ☐ Superseded / ☐ Completed
Who: ☒ States ☐ ICAO ☐ Other:	

MET implementation

3.2.65 Under WP/12, the Secretariat informed of the progress of the GREPECAS MET Program, highlighting:

- NACC and SAM Regional Offices have been working in coordination with the States and the ET-AVI Group of the World Meteorological Organization. In this context, the Meeting noted that workshops related to SIGMET messages and an assessment of the current status of implementation of the quality management system applied to MET processes (QMS/MET) have been carried out.
- follow up on the implementation of the BBBs of the MET area, being necessary to increase the implementation of the BBBs in the meteorological service providers.
- the status of implementation of the OPMET message exchange in IWXXM format, reporting that the OPMET Bank in Brasilia is able to receive and issue OPMET information in IWXXM format via AMHS and the Internet. In addition, interoperability tests have been carried out between Brazil, Cuba, and the United States. It was also reported that the States of Paraguay and Uruguay are already able to exchange OPMET messages in IWXXM format.
- IATA inquired about the process of verification of TAF forecasts, and whether it is included in the quality management systems. It commented that, in some cases, the forecasts included in the TAFs, the percentage of compliance is very low, and affects the planning of operations, even more considering that, according to Annex 6, under certain conditions, flights may consider not to include "alternate airports". The Secretariat took note of IATA's comment and requested information from the States that present their forecast compliance gap, to coordinate with them, procedures to review the skill of their forecasts.
- the proposed restructuring of the ICAO MET documentation, through Amendment 81 to Annex 3 - Meteorological Services for International Air Navigation, as well as the creation of Doc 10157 - PANS-MET. The Meeting was also informed about the realization of a workshop related to Doc 10157 - PANS-MET.

3.2.66 Considering the above, the Meeting adopted the following conclusion:

CONCLUSION GREPECAS/21/17	**STATE IMPLEMENTATION OF NEW ICAO ANNEX 3 STANDARDS AND RECOMMENDED PRACTICES (SARPs) AND RELEVANT MET REQUIREMENTS**	
What: That, States/Territories, a) implement actions to disseminate the new requirements included in Amendment 81 to ICAO Annex 3 and Doc 10157 - PANSMET, as well as to promote their implementation; b) verify the implementation status of the BBBs in the MET area; c) streamline the implementation processes for the exchange of OPMET messages in IWXXM format; and d) complete the QMS/MET implementation and certification processes by GREPECAS/22.		**Expected impact:** ☐ Political / Global ☒ Inter-regional ☐ Economic ☐ Environmental ☒ Operational/ Technical
Why: Contracting States are required to ensure an adequate organization of Air Navigation Services (ANS), particularly the International Air Navigation Meteorological Service, and to properly implement the SARPs of ICAO Annex 3.		
When: GREPECAS/22	**Status:** ☒ Valid / ☐ Superseded / ☐ completed	
Who: ☒ States ☐ ICAO ☐ Other:		

3.2.67 Under IP/07, Brazil reported the reduction of CO2 emissions obtained through the implementation of several operational measures by DECEA, using the methodology presented in Doc 9988, "Guidance on the development of State action plans for CO2 emission reduction activities" and as part of the activities of DECEA's Sirius Program.

3.2.68 Under IP/18, Dominican Republic presented their project for the implementation of Doppler Radars and meteorological products for the ANSP with the installation of 3 Meteorological Doppler radars, strategically located in the three terminal areas within which the main airports of the Dominican Republic are located. The information and products generated by these radars will be shared with all stakeholders, but above all with the National Meteorological Office (ONAMET), as well as with all State agencies responsible for the National System for Disaster Prevention, Mitigation and Response. This project will allow Dominican Republic to strengthen aeronautical meteorology.

3.2.69 Mexico informed, under IP/34, the work and progress made in the implementation of Meteorological Information Systems for the detection of Wind Shear at airports in Mexico. This aligns with the block upgrades methodology of the aviation system (ASBU) in the field of Meteorological Information.

AIM implementation.

3.2.70 The Meeting was informed, through WP/08, the actions carried out by the Secretariat for the implementation of the AIS to AIM Transition Roadmap, highlighting:

- AIM/AIS Documentation issued and updated by ICAO to provide a framework of reference for the implementation of AIM as well as to introduce reference documentation for capacity building for AIM personnel.
- training activities carried out by the Secretariat, with support from Regional Projects.
- the completion of Phase 2 of the AIS to AIM transition roadmap is essential as an enabler of SWIM and noted with concern the delay in some States.
- The evaluation of the scorecards related to AIS implementations and noted that the follow-up to SNOWTAM implementation has not been included in the scorecards. Considering the above, the Meeting decided to adopt the following conclusion:

<table>
<tr><td colspan="2">CONCLUSION GREPECAS/21/18</td><td colspan="2">COMPLETION OF PHASE 2 OF THE AIS ROADMAP TO AIM AND AIS AND INCLUSION OF SNOWTAM IN GREPECAS DASHBOARDS</td></tr>
<tr><td colspan="3">What:
That,

a) States/Territories conclude the implementation digital data sets, e-AIP and all Phase 2 steps and report it to the respective ICAO NACC and SAM Regional Offices by the third quarter of 2024;
b) ICAO include said information in the GREPECAS dashboard SNOWTAM implementation data by January 2024; and
c) ICAO continue, through Workshops and Seminars, disseminating the new ICAO documentation on the AIS/AIM Quality Management System, AIS/AIM Staff Training and PANS-IM by GREPECAS/22.</td><td>Expected impact:
☒ Political / Global
☒ Interregional
☐ Economic
☐ Environmental
☒ Technical/Operational</td></tr>
<tr><td colspan="4">Why: The implementation of Phase 2 of the AIS to AIM Transition Roadmap seeks to have all AIM enablers implemented for SWIM, and considering that, according to the GANP, SWIM enablers should be in place by the end of 2024.</td></tr>
<tr><td>When:</td><td>a) Complete all processes by the third quarter of 2024
b) January 2024
c) GREPECAS/22</td><td colspan="2">Status: ☒ Valid / ☐ Invalidated / ☐ Completed</td></tr>
<tr><td>Who:</td><td colspan="3">☒ States ☒ ICAO ☐ Others:</td></tr>
</table>

AIM – DDS implementation

3.2.71 Under WP/17, the most advanced States in the implementation of Digital Data Sets (DDS) were urged to share their good practices in the planning and publication process of their DDS through the preparation and execution of a CAR/SAM Workshop for the implementation of DDS. The Meeting recalled GREPECAS/19 Conclusion 19/3 "Implementation of the Digital Data Sets (DDS), the Data Catalogue, the Standard Model for Aeronautical Information Exchange and the e-AIP", as reference for this implementation.

3.2.72 ICAO Secretariat monitors this implementation, detecting opportunities for improvements in the process, or direct support from developed States with more progress on DDS to the States that are beginning the path towards the construction of the DDS, the Secretariat invited the Meeting to organize the holding of a Workshop be complemented with technical visits to their information management units, in order to complement the information transmitted, during the Workshop, with practical sessions in a State that has advanced the implementation of the DDS. Brazil offered the Meeting its support to be the sponsor of the Workshop on DDS for the CAR and SAM States, for the first half of 2024, based on the Data Catalogue and the Exchange Models, in all their domains in an electronic environment.

AIM – Documentation review

3.2.73 Under WP/18, the Meeting noted the request for review of the data and contact points provided by the States to Doc 7383 with the purpose of updating it or to recommend to the ANC, for the decision of its discontinuation or replacement by another Document that allows users and/or other States to access updated Aeronautical information organized according to their requirements. The CAR/SAM AIM task forces/working groups recommended the Secretariat to consult the ANC on the validity of information that has not been updated in almost ten years, especially in consideration of technological changes in the field of international aviation and therefore the information and data requirements of Users, in new electronic formats. Considering the above, the Meeting adopted the following decision:

DECISION GREPECAS/21/19	**REVISION OF DOCUMENT 7383 - AERONAUTICAL INFORMATION SERVICE PROVIDED BY THE STATES**
That: That the Secretariat coordinate. the revision of Doc 7383 - *Aeronautical Information Services*, as it needs updating, and/or discontinue the document and manage it as a database by GREPECAS/22.	**Expected impact:** ☒ Political / Global ☒ Interregional ☐ Economic ☐ Environmental ☒ Technical/Operational
Why: The latest version of Doc 7383, available on the ICAO website dates from 2014. It is necessary to revise and update it or consider its management as a Database to be in line with the restructuring of the current AIS documentation and align it with the latest amendments;	

When:	GREPECAS/22	**State:**	☒ Valid / ☐ Invalidated / ☐ Completed
Who:	☐ States ☒ ICAO ☐ Others:		

AIM – AIXM implementation

3.2.74 Under IP/08, Brazil informed that, through the Institute of Aeronautical Cartography - ICA, Brazil has been developing and promoting, its Aeronautical Information Database, AeroDB. Brazil also informed that, with the upgrade of AIXM to version 5.1 and the modernization of AeroDB, an important task has arisen for ICA: to migrate its entire database from the AIXM 4.5 model to the 5.1 model. Similarly, it was informed that DECEA is actively participating in the implementation and adoption of standards such as AIXM and SWIM in Brazil.

AIM – FPP implementation

3.2.75 Under WP/25, the Central American States informed on the importance of implementing the Flight Procedure Program (FPP) in Central America (CA) as a collaborative regional initiative to facilitate efficient, cost-effective, and sustainable management in the realm of Instrument Flight Procedure Design (PANS OPS, Doc 8168). The regional challenges and deficiencies for FPP were identified, such as limited technological resources, a shortage of trained personnel, etc., that constrain the sustainable capacity for the design of Instrument Flight Procedures (IFP).

3.2.76 The implementation of PBN by CA States reflects an imbalance between demand and capacity in the IFP design domain, including the high cost of third-party procedure design services, among other aspects. COCESNA has committed to supporting the CA FPP initiative and assisting its Member States, and in later phases of the project, the rest of the CAR States, promoting the implementation of instrument flight procedures developed with technological tools and Quality Assurance (QA) systems. With the establishment of CA FPP with the support of COCESNA, the Central American States will sustainably and cost-effectively gain the following benefits:

a) Increase the number of national PBN implementation plans;
b) Increase the number of PBN IFP in accordance with ICAO Assembly A37-11;
c) Improve the approval rate of PBN operations;
d) Significantly improve competencies in procedure design, airspace, and regulatory approval (PBN operational approval, IFP design approval);
e) Increase in the number of PBN procedures implemented and Aeronautical Information Publications (AIP) of the States;
f) Increase in the number of local operators approved for PBN operations;
g) . Demonstrate evidence of improved safety and efficiency of IFR flight operations.

AIM – AIS/AIM license

3.2.77 Under WP39, Dominican Republic share their proposal for the implementation of licensing for AIM personnel. The Meeting took note of the arguments of Dominican Republic to assert that AIS/AIM personnel qualify to receive a license, since they can be evaluated in one of the standard

parameters of Annex 1 (language proficiency) and of Annex 15 and that, in addition, the results of their performance have an impact on operational safety.

3.2.78 The Meeting agreed that the arguments put forward by Dominica Republic are reasonable, but it was also recalled that the ICAO Licensing Panel has recommended not to proliferate licenses, in addition to the existing ones, since there are other mechanisms for the evaluation of the competencies necessary for the performance of professionals in other areas, such as the implementation of the quality management system, a standard included in ICAO Annex 15.

AIM – AIRAC review

3.2.79 Under WP/40, Dominican Republic proposed the revision of the Aeronautical Information Control and Regulation System (AIRAC) deadlines foreseen for the advance publication of changes in air navigation facilities, equipment, and services. The Meeting took note of the arguments to justify the proposed revision of the AIRAC system deadlines. Dominican Republic pointed out that, since its implementation in 1964, until today, the deadlines established in the AIRAC system have remained unchanged, despite the changes experienced in all aspects related to air navigation services. They also argued that the advance of information technology and its widespread use by States and other service providers would allow for a significant reduction in the AIRAC system deadlines. Likewise, and for the same reasons, the time required by the AIS offices to process, format and distribute the data received from the originators can be reduced. The Meeting considered that the request for review by the Aeronautical Information Panel may be conducted to the Air Navigation Commission

AIM – AIS/AIM language proficiency

3.2.80 Under WP/41, Dominican Republic proposed to implement a measurable language proficiency requirement for Aeronautical Information Services personnel, due to the risk that deficiency of this proficiency represents for air operations. The request of the Dominican Republic is based on the requirement of Doc 8126, 7th Edition of 2022, which, in its Part III, 2.4.1, stipulates, among other considerations, that the AIP, including its amendments and supplements, must be published in English.

3.2.81 In addition, the Meeting was proposed to use, by analogy, Level 4 of language proficiency, according to Table 1.1 Expert, Advanced and Operational Levels, ATTACHMENT A, ICAO LINGUISTIC COMPETENCY RATING SCALE, of ICAO Annex 1, for new entrants to the AIS service and to encourage personnel already working in the AIS to adapt their language proficiency to this requirement, until a document for the measurement of this proficiency is defined.

3.2.82 The Meeting agreed that there should be a language proficiency measurement tool for AIS personnel, but not to equate it to a Level 4 because it is for operational use, for communications between air traffic controllers and pilots. The Meeting agreed to leave a window open for future discussions on the need for AIS personnel to have a level of English proficiency to ensure proper performance in the preparation of documents and delivery of pre-flight briefings in the English language.

AIM – NOTAMs

3.2.83 Dominican Republic, through WP/42, informed the achievements made in support of the ICAO global campaign to eliminate the proliferation of NOTAMs with permanence in NOTAM banks beyond the required period (three months), designing the INFORMATIVE NOTAM, product, which has the same distribution and scope as the NOTAM, but only for domestic and international users with local representation. This product is distributed through channels other than those used for NOTAM distribution and is not part of the AIP.

AIM – AIP website

3.2.84 Dominican Republic, through WP/50 proposed the development of a harmonized web page model in the CAR/SAM Regions for the standardized aeronautical information products, with the objective of facilitating access to this aeronautical information/data. The Meeting noted that ICAO documentation clearly indicates what information and sessions a State's AIP should contain, whether in physical, pdf or electronic format. States should ensure that the structure of the AIP, as well as its contents, are aligned with the ICAO documentation for AIS/AIM, agreeing that it would be convenient to promote the development of a single web page design for the presentation of the standardized version of the AIP, but the structure is a technical decision of the State. However, the Meeting emphasized that, as long as the structure is aligned with the ICAO documentation on this issue, it is considered to comply with the technical specifications.

AIM – AIS/AIM documentation

3.2.85 Under IP/22 Rev., the Secretariat presented the proposal of amendment of some ICAO Annexes and documents and the creation of the PANS-IM and its impact on AIS/AIM documentation. The first edition of PANS-IM focuses on information exchange. Although this edition includes some elements of information gathering and processing, the fundamental provisions of these activities are addressed in various information domains.

3.4 Preparation for the ICAO Fourteenth Air Navigation Conference (AN-Conf/14)

3.4.1 The Meeting noted, through WP/16, that the fourteenth Air Navigation Conference (AN-Conf/14) will be held in Montreal, Canada, from 26 August to 6 September 2023. The Meeting was apprised of the AN-Conf/14 Agenda and the Guiding principles for the preparation and conduct of AN-Conf/14 that should be followed. The Meeting encouraged States to commence the preparation of participating in the AN-Conf/14. Accordingly, the Meeting agreed to the following Conclusion:

CONCLUSIÓN GREPECAS/21/20	**TELECONFERENCES IN PREPARATION FOR THE FOURTEENTH AIR NAVIGATION CONFERENCE AND COORDINATION MECHANISM FOR POTENTIAL ANCONF WORKING PAPERS**
That: That ICAO coordinate, through one or more teleconferences, the preparation and submission of States working papers and/or information papers for the Fourteenth Air Navigation Conference, including its respective coordination with international civil aviation organizations from the CAR/SAM Regions by 30 June 2024.	**Expected impact:** ☒ Political / Global ☒ Interregional ☐ Economic ☐ Environmental ☒ Technical/Operational
Why: In order to consolidate the most relevant regional expectations, priorities and actions. Active participation of States, in the Fourteenth Air Navigation Conference, should be promoted and supported in coordination with NACC and SAM Regional Offices**.**	
When: 30 June 2024	**State:** ☒ Valid / ☐ Superseded / ☐ Completed
Who: ☒ States ☒ ICAO ☐ Others:	

Agenda Item 4: GREPECAS Work Programme

Working session for the design of the roadmap for the operational and efficient use of ADS-B in the CAR/SAM Regions

4.1 To introduce the working session, under P/08 and IP/04 Rev, the Secretariat presented information on the Implementation of ADS-B, its effective operational application and the possible phasing out of radar systems in the CAR/SAM Regions. Industry is also concerned about the costs of equipping fleets and the cost-benefit of this new technology versus having a technology that would provide an additional layer of surveillance. The documentation reviewed in agenda Item 3.3 on ADS-B was also considered.

4.2 The working session look for the design of the roadmap for the operational and effective use of ADS-B in the CAR/SAM Regions, proposing a GREPECAS Project Document to address the challenges of implementing ADS-B and phasing out radar systems in the South America and Caribbean Region, fostering collaboration, knowledge sharing and problem solving among participants, exercising active listening during discussions, to understand different points of view.

4.3 The ADS-B working session was conducted in five different Groups that provided the following information:

1. Benefits of the ADS-B implementation:

a) Increased situational awareness
b) Increase Search and Rescue Speed (Case of Chile)
c) Radar + ADS-S: Increase Service Availability especially in outage times
d) Improved accident investigation
e) Reduce Aircraft Separation so more Flights
f) Optimize Route and Air Space (direct routes)
g) Reduce fuel
h) Reduce the CO2
i) Proof of Concept with IATA to measure the financial benefits
j) All participants (ANSP and IATA) Clear View of where and when ADS-B is helpful and can negotiate a timeframe for mandate
k) ADS-B provides better data for the planning process

2. Identified Challenges

a) Analyse the specific challenges faced in implementing ADS-B and phasing out radar systems in the region
b) Identify specific operational gains/scenarios (Operational Safety - LHD/TCAS, Efficiency/Capacity

c) Reduction of longitudinal separation and FRTO
d) Identified Distinct operational scenarios: example - Markets with significant share of domestic flights and markets with significant share of international flights (to/from USA). States with robust surveillance infrastructure, States with surveillance infrastructure in need of improvement and States with no surveillance
e) Definition of criteria for radar phase-out (end of life, elimination of radar back-up systems ("single channel")
f) Identification of actual aircraft fleet capacity based on specific documentation
g) Aircraft/operator approval documentation - mainly general aviation
h) Procurement of ATM systems

3. The Group discussion assessed the following information:

a) To evaluate technical and operational conditions for the ADS-B implementation.
b) For new implementation do a risk analysis, financial evaluation
c) Establish a backup coverage of the surveillance information taking into account new ADS-B coverage.
d) Need development and ADS-B legislation, for all regions.

4. Suggested steps for the implementation of ADS-B in the CAR Region:

a) Establish an implementation date (a 3-year period is proposed for the upper level in which at least 80% of the States in the region have implemented ADS-B)
b) It was recommended that this target be established for upper airspace (FL290 Up)
c) Establish a 5-year target date for the rest of the airspaces
d) Establishment of homogeneous requirements for the region in the target airspace
e) There is a need to establish or have an implementation guide for States, with as much detail as operationally possible
f) For each implementation. develop a comprehensive project plan, including deliverables, activities, timelines, and project governance to address the challenges and requirements of ADS-B implementation and radar phasing out.

5. For the actual implementation, it was recommended to:

a) Do an analysis with all stakeholders to integrate an action plan for regional implementation.
b) Take advantage of the ADS-B infrastructure that already exists.
c) Work in a regulation by regional implementation, in Flight Level 290 and above.
d) In attention to the information evaluated, it was recommended to work together to improve the ADS-B operational concept document.
e) Adopt version 2 (DO260B) as the minimum version for regional ADS-B implementation.

4.4 Resulting from the working session discussions and analysis, the Meeting adopted the following conclusion:

CONCLUSION GREPECAS/21/21	**DEVELOPMENT OF AN ACTION PLAN FOR THE ADS-B IMPLEMENTATION**
What: That States/Territories, led by ICAO, a) review the existing Operational Concept for the ADS-B Implementation in the CAR and SAM Regions, including its operational objectives, b) support the development of model regulations for ADS-B; c) integrate all different stakeholders in the process; and d) develop an action plan incorporating activities, accountability, and milestone dates by 15 August 2024.	**Expected impact:** ☐ Political / Global ☒ Inter-regional ☒ Economic ☐ Environmental ☒ Operational/Technical
Why: ADS-B is an enabler to several of the operational improvements foreseen in the GANP ASBUs, current many States have implemented ADS-B infrastructure as a surveillance mean. To obtain the benefits of ADS-B implementation regional agreements and priorities for the CAR and SAM States	
When: 15 August 2024	**Status:** ☒ Valid / ☐ Superseded / ☐ Completed
Who: ☒ States ☒ OACI ☒ Others: IATA	

GREPECAS Work Programme- improvements

4.5 The Secretariat, through WP/20, presented the reviews the activities and improvements to the GREPECAS Work Programme, assessing its status of implementation and proposing several adjustments/ recommended actions (**Appendix E**) to optimise the work of the Regional Group and to enhance the relevance for States and the industry for the implementation of air navigation services. Based on the above, the meeting approved the following decision:

DECISION GREPECAS/21/22	**ACTION TO FOLLOW UP AND IMPROVE THE ACTIVITIES OF THE GREPECAS WORK PROGRAMME**
That: That the Secretariat proceed with the recommended actions on the GREPECAS work programme contained in Appendix E to this report, including the respective updates to the GREPECAS Procedural Handbook by GREPECAS/22.	**Expected impact:** ☐ Political / Global ☒ Interregional ☒ Economic ☐ Environmental ☒ Technical/Operational
Why: To optimise the performance and work of GREPECAS in terms of its support and relevance to States in the implementation of the GANP and regional air navigation goals/priorities.	
When: GREPECAS/22	**Status:** ☒ Valid / ☐ Superseded / ☐ Completed

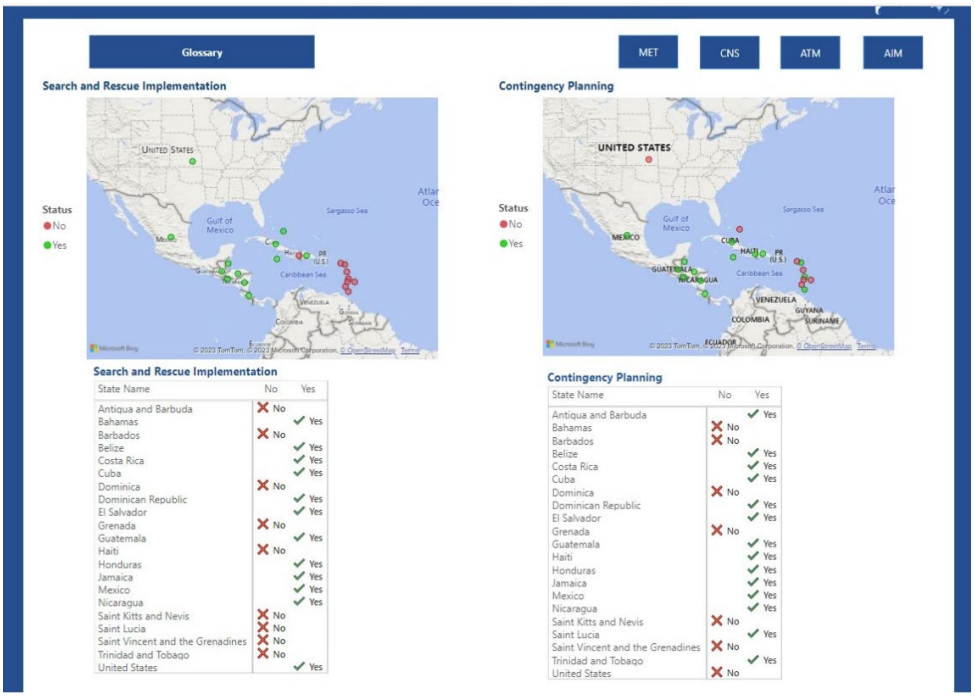
Who:	☐ States ☒ ICAO ☐ Others:

GREPECAS Work Programme- Dashboards

4.6 Under P/01, the Secretariat presented the progress with GREPECAS Dashboards, recalling that these dashboards are to report, monitor and follow up on the implementation of the different Air Navigation Services (ANS):

- Air Traffic Management.
- Communications, Navigation and Surveillance
- Aeronautical Information Management
- Aeronautical Meteorology;
- Search and Rescue; and
- Aerodrome and Ground Aids (AGA)- to be developed

4.7 GREPECAS Dashboards are being implemented under the ICAO iSTARS 4.0 Platform on the Secure Portal (https://portal.icao.int/). They will allow the implementation of a measuring system for the State to visualize the current level of implementation, and the expectations and/or implementation goals.



GREPECAS Work Programme- Subsidiary Group reports

GREPECAS Scrutiny Working Group *GTE Report*

4.8 The GTE Rapporteur presented under WP/23 the activities of the GTE since GREPECAS/20 Meeting highlighting:

- The GTE, in coordination with CARSAMMA, evolved to be generators of operational safety data for decision-making by States and service providers in the CAR/SAM Regions.
- From 11 to 15 September 2023, the twenty-third meeting of the GTE was held in Lima, Peru, which was attended by representatives of 16 States/Territories and International Organizations of the CAR/SAM and NAM Regions, with a total of 23 delegates.
- LHD reports accumulated over a 12-month period, between January and December 2022, were used for the safety assessment. The result of the vertical collision risk assessment - CRM (Collision Risk Model) for the period 2022 was 1,255 x 10-9, so the risk has remained within the acceptable operational safety level of 5 x 10−9 fatal accidents per flight or loss of standard vertical separation of 1,000 ft. The FIRs La Paz (Bolivia), Piarco (Trinidad and Tobago), Asunción (Paraguay), Guayaquil (Ecuador) and Port-au-Prince (Haiti) reflect in 2022 their risk above the Target Level of Safety (TLS).
- Although the CAR/SAM Regions have remained within the acceptable level of operational safety (5 x 10−9), it is necessary for the GTE to work together to ensure that all FIRs achieve this objective. In this sense, the GTE requested from CARSAMMA an analysis of the quantitative factors that influenced the CRM calculations of the FIRs mentioned above to be mitigated.
- LHDs with Code "E" (error/coordination failure between ATC units) were the most frequent in 2022, with 685 events, followed by Codes "B" The flight crew ascended/descended without ATC authorization (8), "I" Deviation due to turbulence or other meteorological phenomenon (5), "H" Deviation due to failure of onboard equipment that led to an unintentional or undetected change in flight level (3), "J" Deviation due to RA TCAS (3), "M" Other cases (3). The high number of "E" codes demonstrates the need for better coordination between adjacent air traffic organizations.
- The FIRs that reported the most in 2022 were: FIR PANAMÁ (Panama), GUAYAQUIL (Ecuador), BOGOTÁ (Colombia), AMAZÓNICA (Brazil), LIMA (Peru) and SANTO DOMINGO (Dominican Republic). Only those six (6) FIRs add up to 414 reports or 58.2% of the general total.
- The increase in traffic volume between 2021 and 2022, the constant growth of the reporting culture in the region's FIRs and the implementation of new coordination technologies (AIDC) influenced the increase in LHD events during 2022. Likewise, shows the lack of implementation of surveillance systems in some FIRs in the CAR/SAM Regions. The trend analysis showed significant increases in the number of events suffered by the FIRs of Amazónica (Brazil) 54 reports, Bogotá (Colombia) 80 reports, Guayaquil (Ecuador) 88 reports and Panama (Panama) 116 reports.
- In the analysis of the 2022 events, some related to the failure of coordination due to technical issues of the equipment used for the transfer, specifically the AMHS or the AIDC, were also identified. One of these failures refers to aircraft with flight plans with direct routing, which do not contain entry and exit points of all the FIRs that they fly over, which causes errors in automated coordination, increasing their operational risk. The GTE echoes on the challenges faced by operational safety in the implementation of direct flights between States.

4.9 Based on the information provided in this paper, the meeting approved the following conclusion:

<table>
<tr><td colspan="3">CONCLUSION
GREPECAS/21/23 SUPPORT THE WORK OF THE GREPECAS GTE</td></tr>
<tr><td colspan="2">What:

That :
a) States/Territories promote female participation in the different groups and activities of ICAO;
b) States/Territories continue current strategies for the mitigation of Code E (error/coordination failure between Air Traffic Control (ATC) units) Large Height Deviations (LHDs), including the implementation of Air Traffic Services Inter-facility Data Communication (AIDC) and RADAR data sharing;
c) States/Territories implement multilateral action plans for the reduction of LHDs, jointly addressing the root causes of the events reported;
d) States/Territories learn from the failures that have occurred due to the presentation of flight plans with direct routing;
e) States/Territories remind responsibilities related to the submission of the data required by the monitoring agencies; and
f) Mexico and United States implement procedures to ensure the exchange of LHD events that occur with Flight Information regions (FIRs) from other States</td><td>Expected impact:

☒ Political / Global
☐ Inter-regional
☒ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="3">Why:
To enhance safe operations in RVSM airspace of the CAR/SAM Regions</td></tr>
<tr><td>When:</td><td>Immediately</td><td>Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td>Who:</td><td>☒ States ☒ ICAO ☐ Other:</td><td></td></tr>
</table>

CARSAMPAF Report

4.10 CARSAMPAF informed, through IP/27 and IP/28, the status of the implementation of bird strike reporting systems, the establishment of National Committees, and the integration of Wildlife Management into Operational Safety Surveillance Programs in the CAR/SAM Regions. The information was gathered through a regional survey developed by CARSAMPAF, reviewed by the ICAO and the States, and sent for completion.

P4.11 In addition, the CARSAMPAF informed the publication of the first edition of the CARSAMPAF Magazine, through which it shares experiences, impressions, studies, and research from individuals interested in bird and wildlife hazard management. It also presents the results of activities of CARSAMPAF activities, making valuable information available to the interested public and the general audience. This information is highly useful for guiding and directing wildlife risk management programmes at the States and airport/aircraft operator levels, aiming to promote a culture of bird and wildlife hazard awareness to another level.

4.12 Under WP/28, the Central American States presented the progress made to improve safety focused on the Wildlife Hazard Regional Guide (PAF), created to make awareness of the knowledge, good practices, technologies, and considerations that support the mitigation of wildlife hazard, which are integrated in the PAF. This document was prepared with the support of COCESNA, Civil Aviation Authorities, Member States, and the Environment Management (GMA), with the objective of promoting the strengthening of the knowledge of the actors in the region to reduce strikes with birds. The Regional PAF integrates information on the different elements that must be considered to manage birds and other animals efficiently and respectfully.

GREPECAS Work Programme- Other Matters

4.13 Under WP/24 Rev., Thales Alenia Space (TAS) informed on their SBAS solution. CAR/SAM is one of the last regions not being equipped despite SBAS is a standard in civil aviation. TAS has developed a technology ready now, compatible with ionosphere hard conditions affecting the CAR/SAM Regions, relying on extensive use of Galileo, and compatible with existing aircraft equipment. SBAS is by nature a regional integration project and a perfect topic for technological cooperation, a wide TEST BED with all the CAR/SAM States involved should be initiated quickly for civil aviation but also in other areas of economic interest (agriculture, maritime, oil & gas, etc.).

4.14 Brazil, through WP/53, addressed issues related to the Global Navigation Satellite System (GNSS), more specifically its augmentation systems, and presented the analysis carried out to evaluate the viability of the use of these technologies. The analysis demonstrated a strong impact of ionospheric effects on satellite signals in low-latitude regions and the challenges imposed by the ionosphere for the implementation of SBAS in low-latitude regions have not yet been overcome by currently available technologies. Brazil highlighted that the concept of dual frequency multiple constellations (DFMC) brings with it the expectation of a solution for the implementation of augmentation systems in this portion of the globe.

4.15 Under IP/23, the Central American States informed about the various projects in which COCESNA participated related to SBAS, as well as efforts to extend other existing SBAS to the Central American subregion. Valuable results have been obtained through these projects, serving as inputs for future developments that will enable the implementation of these systems in the region to leverage operational benefits.

4.16 From these updates and considering the advance of technological solutions for GNSS augmentation, the Meeting considering the existing GREPECAS Project on this subject, adopted the following decision:

<table>
<tr><td colspan="3">DECISION
GREPECAS/21/24 UPDATES TO PROJECT GREPECAS A2 GNSS AUGMENTATION</td></tr>
<tr><td colspan="2">What:

That the Secretariat:
a) update Project A2 with the available information on GNSS Augmentation;
b) collect GNSS updates and circulate a summary of this information prior to GREPECAS/22 meeting; and
c) include a working session activity in Project A2 in the agenda of GREPECAS/22 including activating Project A2 for the CAR Region by September 2024.</td><td>Expected impact:

☒ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="3">Why:

To update the information on GNSS Augmentation and define the subsequent steps regarding GREPECAS Project A2.</td></tr>
<tr><td>When: By September 2024</td><td colspan="2">Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td>Who: ☐ States ☒ ICAO ☒ Other:</td><td colspan="2">Supported by COCESNA, IATA</td></tr>
</table>

4.17 Under WP/29, the Central American States informed that air operators belonging to a Holding Company are being affected by the compliance with the different standards existing in the region, a situation that should not occur, since the States must comply through their regulations with the Annexes established by the ICAO, which would result in a common standard. Therefore, harmonization of standards in aviation is essential to ensure safety, efficiency, and competitiveness in the industry, resulting in benefits for both Civil Aviation Authorities, airlines and the economy, according to the Chicago Convention.

4.18 Brazil, through WP/45, presented a vision of Urban Air Mobility (UAM) and proposed the creation of a group of regional representatives to exchange projects, work, and experiences on the subject. Brazil reminded the Meeting that, in today's world, the main challenge is to integrate new types of aircraft into the airspace structure. In this regard, electric aircraft with vertical take-off and landing capability, known as Electric Vertical Take-Off And Landing (eVTOL), due to their sustainable characteristics and lower environmental impact, are a novelty that has attracted the attention of the aeronautical industry and investors from all over the world. To enable the integration and feasibility of eVTOL aircraft air operations, the concept of advanced air mobility (AAM) is being developed, a concept that includes the use of these new types of aircraft in urban air mobility (UAM).

4.19 Brazil informed the Meeting that, to prepare for this new air operations environment, work is underway in different countries to enable the transition to the ATM of the future in a carefully planned manner to support the growing volume of air operations in urban environments. Brazil indicated that the implementation of the UAM concept requires a restructuring of the airspace in which this concept is applied, as well as gradual technological and regulatory improvements in the provision of services to users to increase the number of flights, while maintaining operational safety levels compatible with the requirements for air operations.

4.20 The Meeting recalled that, responding to the demand of several countries, ICAO, during the 41st Assembly held in 2022, decided to establish a group of experts to form a study group related to the topic of advanced air mobility (AAM-SG). The Meeting also highlighted that, some States and Agencies are developing regulations for eVTOL aircraft, for example, the Federal Aviation Administration (FAA) and the European Union Aviation Safety Agency (EASA). Similarly, DECEA continues to conduct studies to prepare the Brazilian Airspace Control System (SISCEAB) for this new stage of global aviation.

4.21 Brazil considered that, given the progress of the work carried out in different countries, it would be convenient to create a group of interregional experts from the CAR/SAM Regions to meet periodically to share information on the progress of the AAM-SG group, experiences, projects and proposals for the conceptualization and regulation of eVTOL aircraft operations. The Meeting agreed to the Secretariat working to establish this inter-regional expert group through fast-track procedures of GREEPECAS and to report on progress in GREPECAS/22.

Agenda Item 5 Review of the GREPECAS Management

Under WP/21, the GREPECAS Chairperson presented a proposal to improve the current management of GREPECAS, seeking to optimize its efficiency and effectiveness, as well as the relevance of the Group's work towards the States on the implementation of air navigation matters.

5.2 The Meeting recalled that the establishment of the PPRC, by GREPECAS, was carried out with the objective of approving, following up, supervising, and closing the Projects. The PPRC Meetings were to be carried out virtually. The tasks entrusted to it were that of a GREPECAS Project Review Board (Project Board). However, due to the new periodicity of GREPECAS Plenary meetings now being annual and that the implementation of activities does not necessary occur as quickly in months but between annual meetings, the Meeting reconsidered the operation of a formal meeting such as the PPRC, concluding that:

a) with the modification of the GREPECAS Terms of Reference (ToRs) concerning the annual periodicity of the GREPECAS Plenary meetings, the original purpose of the PPRC become redundant; and

b) the work of GREPECAS, with its focus on programmes and projects, require a dedicated Project Review session that fulfils the role of "Project Management" and implements the four key processes of "Project Management" (initiation, stage boundaries, ad hoc management, and project closure). This shall be included in each of the GREPECAS Plenary agendas.

5.3 In this regard, to optimize resources and the concentration of GREPECAS work, it was agreed to eliminate the PPRC and replace it with a Project evaluation session within the GREPECAS plenary meeting. In order to establish this session, the GREPECAS Procedures Manual should be updated, including the GREPECAS ToRs, as well as its Work Programme, in order to establish clear functions and objectives for this session, avoiding any duplication of activities.

5.4 Similarly, regarding the GREPECAS Management matters, the Meeting exchanged ideas, opinions and comments on the current GREPECAS Plenary methodology with the on-line session (asynchronous session) and the in-person session, particularly with the working sessions implemented in this meeting. The main highlights were:

a) The asynchronous session was very beneficial to States for allowing a more extensive State experts participation in the exchange of comments to the documentation and its analysis.
b) The dates/duration of the asynchronous shall be reviewed for a proper duration for the exchange of ideas.
c) The working sessions in GREPECAS Plenary were very dynamic and inclusive for participants to exchange and work on specific topics and have a more productive discussion for defining/agreeing on actions and implementation matters.
d) The in-person session of GREPECAS Plenary was unanimous agreed to continue, as the in-person exchange was very valuable and the networking for enhancing coordination and advancing the

implementation. It was suggested that the in-person session be focused on matters not resolved at the asynchronous sessions and for critical topics that required the in-person exchange of views.

e) For the GREPECAS Plenary and to optimize the excessive numbers of papers, a similar filter with criteria implemented for the 2024 AirNav Conf should be implemented for the new Plenary meetings, recognizing the importance of the respective implementation mechanism existing in each region, in the NAM/CAR with the NACC/WG and in SAM with the SAM/IG Project.

f) The procedure/timelines and details for the on-line, working sessions and the in-person session of GREPECAS Plenary shall be clearly describe and written down for its more effective implementation.

g) The Meeting recognized that one of the biggest challenges for a timely execution of the GREPECAS Plenary meeting are the limited resources of the Secretariat and particularly in the translation of the documentation to be bilingual. In this regard, the Meeting agreed that States and Territories to send documents in both languages (English and Spanish) to GREPECAS meetings following the meeting timelines.

5.5 Based on the above discussions and comments the Meeting adopted the following Decision:

<table>
<tr><td colspan="2">DECISION
GREPECAS/21/25 AMENDMENTS TO GREPECAS MANAGEMENT FOR ENHANCING ITS EFFICIENCY AND EFFECTIVENESS</td></tr>
<tr><td>What:
That, to formalize the enhancements to GREPECAS management:

a) GREPECAS members approve the elimination of the PPRC and its replacement to include a Project Management follow-up session during GREPECAS Plenary Meeting,

b) States/Territories and GREPECAS participants submit any meeting documentation to GREPECAS Plenary in both languages, English and Spanish by GREPECAS/22;

c) the Secretariat define the procedure, timelines and details for the implementation of the online/asynchronous session, in-person sessions and working sessions of GREPECAS Plenary by GREPECAS/22; and

d) GREPECAS update the GREPECAS Procedural handbook accordingly concerning actions of items a, b and c by GREPECAS/22.</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="2">Why:
To enhance the GREPECAS Managements and increase the efficiency of GREPECAS meetings</td></tr>
</table>

When:	a) immediately b) GREPECAS/22 c) GREPECAS/22 d) GREPECAS/22	**Status:** ☒ Valid / ☐ Superseded / ☐ Completed
Who:	☒ States ☒ ICAO ☐ Other:	GREPECAS Secretariat

Agenda Item 6 Other Business

ICAO South Atlantic (SAT) Group

6.1 Under IP/19, the Secretariat informed about the activities executed by the South Atlantic (SAT) Group and its contributory bodies, the Implementation Management Group (SAT IMG) and the Safety Oversight Group (SAT SOG).

6.2 The SAT IMG and the SAT SOG are promoting optimization of services and the strengthening of operational safety in said airspace, including the AORRA. Moreover, it focuses on maintaining harmonization of the implementations of advanced air navigation concepts with the adjacent North Atlantic (NAT) Region. The documents, papers, and material referred to SAT SOG and SAT IMG meetings are available in the ICAO Portal https://portal.icao.int/ , under the groups “SATIMG” and "SATSOG" (all CAPS no space).

Dominican Republic- Brazil Collaboration on ATC Training

6.3 Dominican Republic, through IP/31 presented information on the training of ATC personnel, related to the methodology for calculating the capacity of the ATC sector and runway system, developed at the Dominican Institute of Civil Aviation (IDAC) and taught by the Department of Airspace Control (DECEA), in response to the collaboration agreed for such purposes.

6.4 From 4 to 29 September 2023, with the objective of fulfilling the technical cooperation mission, a delegation of Brazilian specialists was sent by DECEA to the Dominican Republic, to teach capacity courses in the ATC sector and the system of runways for 25 students from the Dominican Institute of Civil Aviation (IDAC). The target audience for this course was air traffic controllers from control towers, approach control, area control centres and professionals who work with air traffic flow management. The courses were divided into theoretical and practical phases. The objective of the theoretical phases of the ATC sector and runway systems capacity courses was to teach the specific content necessary for students to develop measurement activities using data collection and analysis techniques.

6.5 In addition to teaching capacity courses in the ATC sector and the runway system, the DECEA team carried out capacity studies of the runway system at the Las Americas and Punta Cana Airports, as well as collecting data on sector dwell times (T), communications times (Tcom) and secondary task times (TTS) for the Santo Domingo ACC sectors and for the sectors of the Las Américas, Punta Cana and Cibao Terminals. The preliminary results of the analyses of these collections were discussed with the supervisors, instructors and operators of each control body evaluated through the collaborative decision making (CDM) process to adjust the capacity values found in accordance with the specificities of each ATC sector and airport.

Gender Equality

6.6 In reference to Conclusion GREPECAS/20/09 and in support to gender equality – promoting the participation of women in the global aviation sector, the Secretariat presented, under P/07 and IP/32, information and actions about Gender Equality, highlighting the importance of it as an issue of both men and women for having the same opportunities and rights.

6.7 The Meeting recalled that ICAO is an agency of the United Nations (UN) that supports and promotes the strategic objectives of the United Nations with the aim to create a more dignified and equal world for human beings. ICAO Gender Equality Programme is based on the United Nations 2030 agenda for Sustainable Development Goals (SDGs) and particularly on Sustainable Development Goal #5 – to achieve gender equality and to empower all women and girls. This ICAO Programme has the following objectives:

a) Build capacity and to raise awareness on gender equality.
b) To improve gender representation.
c) To increase gender accountability; and
d) To increase engagement with external partners.

6.8 The Secretariat informed on gender equality related activities recently conducted by ICAO NACC/SAM Regional Offices:

a) Gender equality promotion on the Mexican Aerospace Fair – FAMEX;
b) ICAO USOAP Audits with a greater representation of females in audit teams;
c) Approval of funds by the Multi-regional Civil Aviation assistance programme (MCAAP); and
d) Working groups to promote union of aviation organizations that pursue the same objectives.

6.9 The Secretariat invited everyone to support the objectives which are included in the gender equality programme and to participate in the ICAO gender equality activities.

2024 ICAO Global Implementation Support Symposium (GISS)

6.10 The Secretariat, through P/02, informed on the Third ICAO Global Implementation Support Symposium (GISS), that will be on Punta Cana, Dominican Republic, 30 April to May 2, 2024. The theme is “Optimizing Aviation Capacity: Strategies for Implementation Success”. This third edition of the GISS will delve into strategies and practices aimed at enhancing capacity. Discussions will focus on pivotal implementation support activities, ranging from the development of modernized airport infrastructures capable of accommodating higher passenger traffic while maintaining stringent safety and sustainability standards, to optimizing air traffic management systems for efficient operation, to nurturing a skilled and

adaptable workforce capable of mastering evolving technologies and operational intricacies. Additionally, panel sessions on training will explore the significance of continuous learning and talent retention in driving effective capacity projects. Collaborative resource mobilization approaches will also be highlighted to ensure long-term viability.

Use of Drones

6.11 Brazil, through WP/52, presented that the use of drones in the acquisition of aerial photogrammetric restitution and images emerges as a technology for obtaining cartographic information in three-dimensional format, aiming at the verification of objects projected in the airspace, which may cause adverse effects on the safety or regularity of air operations at a particular aerodrome or heliport. With the geoprocessing of the images coming from drones it is possible to build digital terrain models and elevation, in addition to obtaining accurate planaltimetric coordinates to verify and validate processes of analysis of Objects Projected in the Airspace.

6.12 The analysis of objects projected in airspace from drone images provides airport administrators with more accurate and less costly cartographic solutions in the assessment of urban expansion around the airport. In large cities, sometimes it is difficult to evaluate new implementations due to the complexity of access for verification by conventional topography. In addition to high costs with topography, transportation, equipment and operator safety teams, the assessment of obstacles in the ground does not allow the covering of all areas of influence of the protection surfaces.

6.13 Thus, the use of aerial photogrammetry with drones emerges as an effective method to reduce costs and it allows cartographic evaluation at any time. Finally, it is possible to use drones for individualized 3D mapping of each feature, enabling impact mitigation studies of a given obstacle, as the need for removal or demolition.

6.14 Under IP/21, the France Aviation Civil Services in association with Heliper presented information about the implementation of the calibration of visual aids to navigation and in particular Precision Approach Path Indicators (PAPIs) using drones and the CAVOC method used by France Aviation Civil Services in association with Heliper that was certified by the French DGAC. The Meeting was invited to learn about the CAVOC method and to look at its deployment in Latin America in order to facilitate the regular calibration of aids to navigation in the most efficient and economical way.

6.15 Under IP/35, Mexico informed that the Air Navigation Services in Mexican Airspace, (SENEAM) acquired a fleet of 11 drones for conducting real-time calibration, adjustment, monitoring, and control operations of VOR and ILS radio aids deployed at airports. This is aimed at maintaining navigation, approach, and airport landing operations with the highest standards of operational safety.

Aerodrome Certification and Safety Inspection Techniques (ACSIT) course

6.16 United States), through IP/06, reported that it will offer the Aerodrome Certification and Safety Inspection Techniques (ACSIT) course, March 13-20, 2024, at the FAA Academy in Oklahoma City, Oklahoma. The FAA is offering free tuition and travel expenses for one (1) participant per eligible ICAO NACC Member State (up to sixteen (16) participants). The FAA intends to work with the ICAO NACC Regional Office to send official State Letters requesting one (1) nomination per eligible State, for participants. The Aerodrome Certification and Safety Inspection Techniques course is intended to provide participants with the knowledge and skills needed to conduct inspections and to enhance audit and self-inspection programs at their respective aerodromes. This course is intended for delivery to staff of international aviation authorities and/or aerodromes who are developing and/or executing inspection programs.

Digital Airspace System

6.17 Under IP/09, Brazil reported on the Digital Airspace System (DASA), a digital product that aims to improve the flow of analysis of requests for the use of airspace for different purposes, based on the standardization and automation of processes. The main points presented were the contextualization of the operational scenario in which DASA emerged; the digitalization of the processes for analysing airspace use requests; the modules that make up the DASA platform (DASA-MAP, DASA-GAD, DASA-GIS, DASA-AUTO, DASA-MOBILE and DASA-ADMIN); DASA's interactions with the flexible use of airspace and the results.

Next GREPECAS Meeting

6.18 In coordination with RASG-PA, the next in-person plenary meetings of RASG-PA (RASG-PA/14) and GREPECAS, (GREPECAS/22) in 2024 will be held during the week of 11 to 15 November at a venue to be defined in the South American Region.

APPENDIX-APÉNDICE A
(available in English only)

TEMPLATE APPROVED BY THE COUNCIL
on 18 June 2014

CAR/SAM AIR NAVIGATION PLAN

VOLUME III

VERSION 0.1

(Draft submitted for approval by GREPECAS /21)

Note 1: The text highlighted with yellow indicates general guidance supplied by ICAO HQ, to fill out the template.

Note 2: The text highlighted with green indicates improvements proposed by Secretariat for the **template** (still to be validated by ICAO HQ), in order to facilitate the understanding of the Volume III paragraphs and tables, in terms of the properly application of the performance-based planning.

Note 3: Regarding the editorial presentation of the proposed changes (applied to version 0), the reviewed text is arranged to show deleted text with a line through it and new text highlighted with grey, as shown below:

1.	~~Text to be deleted is shown with a line through it~~.	text to be deleted
2.	New text to be inserted is highlighted with grey shading.	new text to be inserted
3.	~~Text to be deleted is shown with a line through it~~ followed by the replacement text which is highlighted with grey shading.	new text to replace existing text

CAR/SAM AIR NAVIGATION PLAN

VOLUME III

TABLE OF CONTENTS

CAR/SAM ANP, VOLUME III
PART 0 – INTRODUCTION

1. INTRODUCTION

1.1 The background to the publication of ANPs in three volumes is explained in the Introduction in Volume I. The procedure for amendment of Volume III is also described in Volume I. Volume III contains dynamic/flexible plan elements related to the application of a performance-based approach for a cost-effective and benefit-driven modernization of the air navigation system in line with the Global Air Navigation Plan (GANP).

1.2 Collaborative decision-making is key for a cost-effective modernization of the air navigation system and ensures that all concerned aviation stakeholders are involved and given the opportunity to influence decisions in order to reach defined performance objectives. Volume III guides the aviation community in the application of performance management process and identification of relevant and timely operational improvements to a given region's air navigation system including some within the Aviation System Block Upgrade (ASBU) framework.

1.3 The information contained in Volume III is, therefore, related to:

- Planning: objectives, priorities, targets and needs planned at regional or sub-regional levels;
- Monitoring and reporting: performance and implementation monitoring of the agreed targets. This information should be used as the basis for reporting purposes (i.e.: global and regional air navigation reports and performance dashboards); and/or
- Guidance: providing regional guidance material for the implementation of specific system/procedures in a harmonized manner.

1.4 GREPECAS is responsible for managing and updating Volume III on a regular basis.

CAR/SAM ANP, VOLUME III

PART I - GENERAL PLANNING ASPECTS (GEN)

1. PLANNING METHOD

1.1 A performance-based approach is results-oriented, helping decision makers set priorities and determine appropriate trade-offs that support optimum resource allocation while maintaining an acceptable level of safety performance and promoting transparency and accountability among stakeholders.

1.2 The Thirteenth Air Navigation Conference recommended the ICAO encourage the planning and implementation regional groups (PIRGs) to embrace a performance-based approach for implementation and adopt the six-step performance management process, as described in the Manual on Global Performance of the Air Navigation System (Doc 9883), by reflecting the process in Volume III of all regional air navigation plans. Recommendation 4.3/1 — Improving the performance of the air navigation system refers.

1.3 Although there are several ways to apply a performance-based approach, ICAO advocates for a globally harmonized performance management process based on six well-defined steps. The goal of this cyclic six-steps method is to identify optimum solutions based on operational requirements and performance needs so that the expectations of the aviation community can be met by enhancing the performance of the air navigation system and optimizing allocation and use of the available resources.

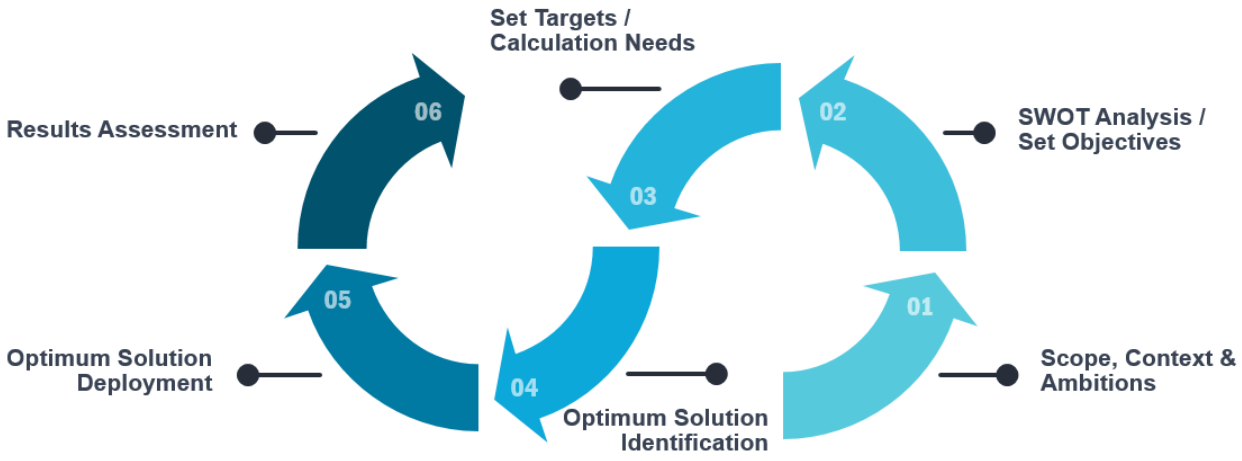


Figure 1 Six-step performance management process

1.4 Steps 1 and 2 serve to know your system, its strengths, weakness, opportunities and threats as well as how it is performing in order to set objectives. The catalogue of performance objectives that is part of the GANP global performance framework facilitates the definition of objectives.

1.5 Based on these objectives, targets can be set in step 3. An analysis of this data leads to the identification of potential solutions, in step 4, to achieve the targets by addressing the weakness and threats of the system. Once a set of potential solutions have been identified, a cost-benefits analysis, environmental impact assessment, safety assessment and human factor assessment should be performed to identify the optimum solution. In the GANP performance framework, a list of KPIs, linked to the relevant objectives in the performance objectives catalogue, is provided to set targets though the quantification of objectives (See list

below). A list of potential solutions to be consider as part of step 4 is the ASBU framework with its functional description of the operational improvements and their associated performance benefits.

KPI01	Departure punctuality	KPI11	Airport throughput efficiency
KPI02	Taxi-out additional time	KPI12	Airport/Terminal ATFM delay
KPI03	ATFM Slot adherence	KPI13	Taxi-in additional time
KPI04	Filed flight plan en-route extension	KPI14	Arrival punctuality
KPI05	Actual en-route extension	KPI15	Flight time variability
KPI06	En-route airspace capacity	KPI16	Additional fuel burn
KPI07	En-route ATFM delay	KPI17	Level-off during climb
KPI08	Additional time in terminal airspace	KPI18	Level capping during cruise
KPI09	Airport peak capacity	KPI19	Level-off during descent
KPI10	Airport peak throughput		

1.6 Step 5 manages a coordinated deployment of the agreed solution by all stakeholders based on the previous steps. Regional plans might need to be developed for the deployment of solutions by drawing on supporting technology requirements.

1.7 Finally, step 6 consists of monitoring and reporting the performance of the system after the full deployment of the solution.

1.8 This is an iterative planning process, which may require repeating several steps until a final plan with specific regional targets is in place. This planning method requires full involvement of States, service providers, airspace users and other stakeholders, thus ensuring commitment by all for implementation.

Review and evaluation of air navigation planning

2.1. The progress and effectiveness against the priorities set out in the regional air navigation plans should be annually reported, using a consistent reporting format, to ICAO.

2.2. Performance monitoring requires a measurement strategy. Data collection, processing, storage and reporting activities supporting the identified global/regional performance metrics are fundamental to the success of performance-based approaches.

2.3. The air navigation planning and implementation performance framework prescribes reporting, monitoring, analysis and review activities being conducted on a cyclical, annual basis.

Reporting and monitoring results

2.4. Reporting and monitoring results will be analyzed by the PIRGs, States and ICAO Secretariat to steer the air navigation improvements, take corrective actions and review the allocated objectives, priorities and targets if needed. The results will also be used by ICAO and aviation partner stakeholders to develop the annual Global Air Navigation Report. The report results will provide an opportunity for the international civil aviation community to compare progress across different ICAO regions in the establishment of air navigation infrastructure and performance-based procedures.

2.5. The reports will also provide the ICAO Council with detailed annual results on the quality of service provided worldwide as well as the performance areas which require more attention. This will serve as input for the triennial policy adjustments to the GANP and its priorities.

CAR/SAM ANP, VOLUME III

PART II – PERFORMANCE MANAGEMENT PLANNING AND ANS IMPLEMENTATION (PMP)

1. STEP 1: DEFINE SCOPE, CONTEXT AND SET AMBITIONS

General

1.1 The purpose of Step 1 is to reach a common agreement on the scope and (assumed) context of the regional air navigation system on which the performance management process will be applied, as well as a common view on the general nature of the expected performance improvements.

Geographical scope

1.2 The geographical scope is defined in Volume I and in particular in the following tables:

- Table GEN I-1 — List of Flight Information Regions (FIR)/Upper Information Regions (UIR) in the Region
- Table ATM I-1 — Flight Information Regions (FIR)/Upper Flight Information Regions (UIR) of the Region
- Table SAR I-1 — Search and Rescue Regions (SRR) of the Region
- Table AOP I-1 — International aerodromes required in the Region
- Table PMP III CAR/SAM - 1 – List of CTA/TMA in the Region

(Optional. Please note that, if it is decided that this level of granularity is required in the Region, the rest of the performance management process will be applied at this level of granularity for consistency purposes. If this table is not developed, the PMP will be applied at an FIR level)

Homogeneous areas and/or major traffic flows

1.3 The homogeneous ATM areas and major traffic flows/routing areas identified are given in:

- Table GEN II-1 — Homogeneous areas and major traffic flows identified in the Region

Time Horizon

1.4 Volume III of the CAR/SAM ANP provides short term **(5 *years*)** and medium term **(10 *years*)** implementation planning.

Traffic forecast

1.5 A uniform strategy has been adopted by ICAO for the purpose of preparing traffic forecasts and other planning parameters in support of the regional planning process.

- ***(include traffic forecast for the Region from ATB)***

1.6 In the CAR/SAM Region, in addition to the ICAO forecast, the following forecast from ***(source)*** is used for planning purposes. ***(if applicable)***

Political (high level) ambitions

1.7 The expectations of the global aviation community are defined in 11 Key Performance Areas (KPAs). The GANP considers all these areas through the performance ambitions. Although all these areas are equally important, as they are interrelated and cannot be considered in isolation, some areas are more visible to society than others.

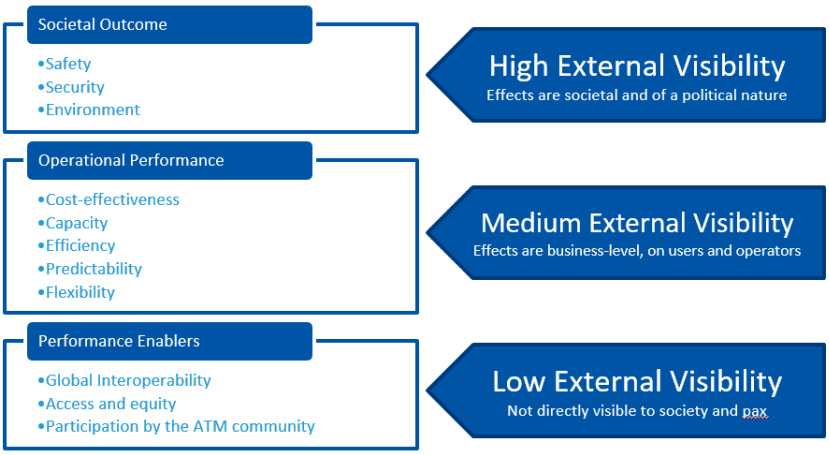


Figure 2 The 11 KPAs of the GANP

1.8 The regional air navigation plan public's perception of safe air travel is key to the prosperity of the aviation sector, which is why, safety is critical when planning the implementation of air navigation operational improvements. To determine if these improvements can be implemented in a safe manner, a safety risk assessment provides information to identify hazards that may arise from, for example:

a) any planned modifications in airspace usage;
b) the introduction of new technologies or procedures; or
c) the decommissioning of older navigational aids.

1.9 A safety risk assessment also enables the assessment of potential consequences. Based on the results of a safety risk assessment, mitigation strategies may be implemented to ensure that an acceptable level of safety performance is maintained. Any operational improvement should be implemented only on the basis of a documented safety risk assessment.

1.10 Fatalities resulting from acts of unlawful interference also affect the public's perception of aviation safety. The cumulative improvements to aviation security globally enhance the safety, facilitation and operational aspects of the international civil aviation system.

1.11 Some safety and environment considerations can be found in Volume I.

1.12 After political consultation the following set of performance ambitions have been prioritized within the ***(NAME)*** Region, ***(DECLARATION)*** refers.

- ***(include the set of ambitions in a set of KPAs) TBD***

2. STEP 2: KNOW YOUR SYSTEM – SWOT ANALYSIS AND REGIONAL OBJECTIVES

General

2.1 The purpose of Step 2 is to develop a detailed understanding of the performance behaviour of the system (this includes producing a list of opportunities and issues), and to decide which specific performance aspects are essential for meeting the general expectations. The essential performance aspects are those which need to be actively managed (and perhaps improved) by setting performance objectives.

SWOT analysis

2.2 A SWOT analysis allows the development of an inventory of present and future opportunities and issues (weaknesses, threats) that may require performance management attention.

2.3 A SWOT analysis, requires the identification of:

- Strengths: internal attributes of a system or an organization that can help in the realization of ambitions or in meeting expectations.
- Weaknesses: internal attributes of a system or an organization that are a detriment to realizing ambitions or meeting expectations.
- Opportunities: are external conditions that help in the realization of ambitions or in meeting expectations.
- Threats: external conditions that are a detriment or harmful to realizing ambitions or meeting expectations.

2.4 Once the strengths, weakness, opportunities and threats are identified, action can be taken to target and exploit or remove these factors. The SWOTs in the CAR/SAM Regions can be found in **Table PMP III-1**.

Regional objectives

2.5 The performance framework of the GANP includes a catalogue of performance objectives to facilitate the definition of objectives. Considering the objectives defined in the catalogue and based on the SWOT analysis, the CAR/SAM Regions defines, within in the key performance areas prioritize in step 1, the objectives within **Table PMP III-2** to be pursued by the States within the Region.

3. STEP 3: QUANTIFY OBJECTIVES, SET TARGETS AND CALCULATE NEEDS

General

3.1 The purpose of Step 3 is to ensure that objectives are specific, measurable, achievable, relevant and time-bound (SMART) so that targets can be set and needs calculated.

List of regional indicators

3.2 The way to ensure that objectives are specific and measurable is by defining indicators. Indicators are the means to quantitatively express performance as well as actual progress in achieving performance objectives. Indicators need to be defined carefully:

- Since indicators support objectives, they should not be defined without having a specific performance objective in mind.
- Indicators are not often directly measures. They are calculated from supporting metrics according to clearly defined formulas. This leads to a requirement for cost data collection and flight data collection. If there is a problem with data availability to calculate these supporting metrics:
    - Set up the appropriate data reporting flows and/ or modelling activities, to ensure all supporting metrics are populated with data as required to calculate the indicator(s) associated with the objective; or
    - If this is not possible, aim for a different kind of performance improvement, by choosing a different performance objective, as constrained by data availability.

3.3 In order to facilitate this task, ICAO has defined a series of KPIs link to the catalogue of performance objectives within the 11KPAs. The ICAO KPIs associated to the performance objectives in the CAR/SAM Regions are in **Table PMP III- 3**.

Performance baseline in the CAR/SAM Regions

3.4 The only way of knowing an operational environment and identifying the existence of a problem is by collecting, processing and analysing data. The value of these indicators would be your performance baseline. The performance baseline for the CAR/SAM Regions can be found in **Table PMP III-4**.

Regional targets and calculation of needs

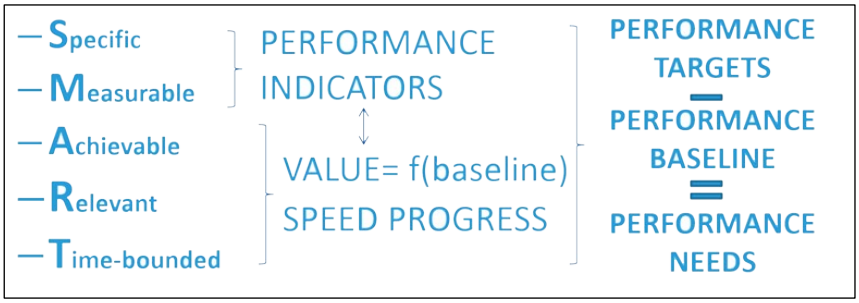
3.5 Performance targets are closely associated with performance indicators, they represent the values of performance indicators that need to be reached or exceeded to consider a performance objective as being fully achieved.

3.6 To understand how challenging it is to reach your target, you should know your performance baseline. The difference between the baseline and the target is called the needs/performance gap.

3.7 The time available to achieve performance objectives is always limited. Therefore, targets should always be time-bounded.

3.8 The target and the time available to reach the target determine the required speed of progress for the performance objective. Care should be taken to set target so that the required speed of progress is realistic.

3.9 Based on the information submitted and after consideration by all stakeholders, the targets and needs in **Table PMP III-5** have been agreed for the CAR/SAM Regions.



4. STEP 4: SELECT SOLUTIONS

General

4.1 The purpose of this step is to combine the knowledge of baseline performance, opportunities and issues with the performance objectives and targets, in order to make decisions in terms of priorities, trade-offs, selection of solutions and resource allocation. The aim is to optimize the decisions to maximize the achievement of the desired/required (performance) results.

Select solutions

4.2 Based on the agreed targets, States should perform a SWOT analysis at each operational environment to develop an inventory of present and future opportunities and issues that may require attention. The list then needs to be analyzed in a performance oriented way, to assess/ quantify the impact of drivers, constraints, impediments, etc. on the objectives under consideration. To what extent, when and under which conditions do these contribute to or prevent the required performance improvements.

4.3 States should consider the operational improvements (ASBU elements) within the ASBU framework as potential solutions to improve the selected objectives/KPIs in the operational environment under analysis. In order to help States with this task, ICAO has develop the Air Navigation System Performance Analysis (AN-SPA) tool, available for free at: https://www4.icao.int/ganpportal/ANSPA/Reports

4.4 Please note that the ASBUs are a list of potential solutions and therefore it might happen that the optimum solution for the operational environment under analysis is not within this list.

4.5 Once a list of potential solutions has been developed, it is important to do a safety assessment and an environmental impact assessment to analyze the feasibility of implementing that specific solution in the operational environment under analysis. ICAO has developed the following guidance to assist States to perform a safety assessment and an environmental impact assessment:

4.5.1 Safety assessment:

4.5.1.1 The 4th edition of the Safety Management Manual (SMM), was updated and published in October 2018 to provide supporting guidance for Amendment 1 to Annex 19 – Safety Management, including:

- Upgraded provisions for the protection of safety data, safety information and related sources;
- Integration of the 8 critical elements into the State Safety Programme (SSP) components; and
- Enhanced provisions for Safety Management System (SMS).

4.5.1.2 It also provides expanded guidance on the scope of Annex 19 its applicability, including discretionary SMS applicability, as well as the development of safety intelligence. In addition, to address the needs of the diverse aviation community implementing safety management and following a recommendation stemming from the 2nd High-level Safety Conference (HLSC/2015), the Safety Management Implementation (SMI) public website (www.icao.int/SMI) has been launched to complement the SMM. The SMI website serves as a repository for the sharing of practical examples, tools and educational material, which are being collected, validated and posted on an ongoing basis to support the effective implementation of SSP and SMS. An e-book version of the SMM in all ICAO languages is also available on the website.

4.5.2 Environmental impact assessment guidance:

4.5.2.1 This guidance identifies high-level principles that facilitate the robust definition and application of specific assessment approaches, methodologies and their respective metrics. The focus of these principles is on changes that relate to aircraft and ATM operational initiatives and may involve all phases of

flight (e.g. Gate-to-Gate). The general principles of this guidance can be applicable to air navigation aspects arising from infrastructure proposals and major changes to airspace capacity or throughput, as well as operational changes. While the boundaries of an air navigation services environmental analysis are based on the needs of the study, for the purposes of this guidance material "air navigation services environmental assessment" is to be interpreted in the broadest possible sense and refers to impacts arising from changes to where, when, and how aircraft are operated.

https://store.icao.int/catalogsearch/result/?category_id=2&q=10031

4.5.2.2 Once the feasibility study has been done, we will still need to do a cost-benefit analysis to identify the optimum solution/s. ICAO has developed some guidance and a tool to assist you on this task:

4.5.3 Cost-benefit analysis:

https://data.icao.int/cba

4.5.3.1 Once the optimum solution(s) has(ve) been identified, States should report them to ICAO and they are reflected in **Table PMP III-6**.

5. STEP 5: IMPLEMENT SOLUTIONS

General

5.1 Step 5 is the execution phase of the performance management process. This is where the changes and improvements that were decided upon during the previous step are organized into detailed plans, implemented, and begin delivering benefits.

Select solutions

5.2 Once the optimum solution/s has/have been identified, it is the moment to start the execution phase of the performance management process. This is where the changes and improvements that you decided were the optimum solution for your problem during the previous steps are organized into plans, implemented and begin delivering services to achieve the expected performance. During this execution phase, it is important to keep track of the project deployments (time, budget, …).

5.3 Depending on the mature and magnitude of the change, this could mean:

- In the case of small-scale changes or day-to day management:
    - Assigning management responsibility for the implementation to an individual;
    - Assigning responsibility and accountability for reaching a performance target to an individual or organization
- In the case of major or multi-year changes:
    - Refining the roadmap of selected solutions into a detailed implementation plan, followed by the launching of implementation projects
    - Ensure that each individual implementation project is operated in accordance with the performance-based approach. This means launching and executing the performance management process at the level of individual projects. Each project derives its scope, context and expectations (see Step 1 of the process) from the overall implementation plan.

5.4 This can imply to overcome high-level political challenges, find funding and resources or look for external technical support.

5.5 In this step, States are expected to report on the status on the implementation by updating **Table PMP III-7**.

6. STEP 6: ASSESS ACHIEVEMENTS

General

6.1 The purpose of Step 6 is to continuously keep track of performance and monitor whether performance gaps are being closed as planned and expected.

Assess achievements

6.2 Once the project is implemented, it is time to assess the benefits from the implementation. This means measuring the performance of the operational environment under analysis once the solution/s has/have been deployed.

6.3 The purpose of this step is to continuously keep track of performance and monitor whether performance gaps are being closed as planned and expected.

6.4 First and foremost, this implies data collection to populate the supporting metrics with the data needed to calculate the performance indicators. The indicators are then compared with the targets defined during Step 3 to draw conclusions on the speed of progress in achieving the objectives.

6.5 This step also includes monitoring progress of the implementation projects, particularly in those cases where the implementation of solutions takes several years, as well as checking periodically whether all assumptions are still valid and the planned performance of the solutions is still meeting the (perhaps changed) requirements.

6.6 With regard to the review of actually achieved performance, the output of this step is simply an updated list of performance gaps and their causes. In practice, the scope of the activity is often interpreted as being much wider and includes recommendations to mitigate the gaps.

6.7 This is then called performance monitoring and review, which in addition to this step, includes step 1, 2 and 3.

6.8 For the purpose of organizing performance monitoring and review, the task can be broken down into five separate activities:

- Data collection
- Data publication
- Data analysis
- Formulation of conclusions; and
- Formulation of recommendations.

6.9 States should report on the benefits accrued from the implementation of the solutions in **Table PMP III-8.** This would constitute the baseline for the next iteration of the performance management process.

Table PMP III-CAR/SAM-1 – List of CTA/TMA in the CAR/SAM Region

EXPLANATION OF THE TABLE

Column

1 States in **Table GEN I-1**

2 List of FIRs by State within **Table ATM I-1**.

3 CTAs/TMAs

4 Remarks

Column		
1	STATE	Name of State
2	FIR/UIR	Name of FIR/UIR
3	CTA/TMA	Name of CTA/TMA
4	Remarks	Remarks, notes

STATE	FIR/UIR	UTA/CTA/TMA	Remarks
1	**2**	**3**	**4**
France – French Antilles (St Barthelemy)	San Juan FIR		
France – French Antilles (St Martin)			
Netherlands (Saba)			
Netherlands (Sint Eustatius)			
Sint Maarten (Kingdom of the Netherlands)			
United Kingdom (Anguilla)			
United Kingdom (British Virgin Islands)			
United States (Puerto Rico)			
United States (Virgin Islands)			
Antigua and Barbuda	Piarco FIR		
Barbados			
Dominica			
France – French Antilles (Guadeloupe)			
France – French Antilles (Martinique)			
Grenada			
Saint Kitts and Nevis			
Saint Lucia			
1. Saint Vincent and the Grenadines			
Trinidad and Tobago			
United Kingdom (British Virgin Islands)			

STATE	FIR/UIR	UTA/CTA/TMA	Remarks
1	2	3	4
United Kingdom (Montserrat)			
Argentina	**Comodoro Rivadavia FIR**	Comodoro Rivadavia North CTA	
		Comodoro Rivadavia South CTA	
		Comodoro Rivadavia TMA	
		Rio Gallegos TMA	
		Ushuaia TMA	
	Córdoba FIR	Córdoba North CTA	
		Córdoba South CTA	
		Cordoba TMA	
		Salta TMA	
	Ezeiza FIR	Ezeiza CTA I	
		Ezeiza CTA II	
		Ezeiza CTA III	
		Ezeiza CTA IV	
		Baires TMA	
		Mar del Plata TMA	
		Neuquen TMA	
		Rosario TMA	
		San Carlos de Bariloche TMA	
	Mendoza FIR	Mendoza CTA	
		Mendoza TMA	
	Resistencia FIR	Resistencia CTA	
		Resistencia TMA	
		Foz TMA	Tripartite Argentina- Brazil - Paraguay
Aruba (Kingdom of the Netherlands)	Curaçao FIR	Curaçao Lower Terminal Control Area (TMA) Curaçao Upper Terminal Control Area (TMA) Juliana Terminal Control Area (TMA)	
Curaçao (Kingdom of the Netherlands)		Beatrix Control Zone (CTR) Aruba	
Netherlands (Bonaire)		Flamingo Aerodrome Control zone (CTR) Bonaire Hato Control Zone (CTR) Curacao Juliana Control Zone (CTR) St. Maarten	

STATE	FIR/UIR	UTA/CTA/TMA	Remarks
1	2	3	4
Bahamas	Nassau FIR		
Belize	Central American FIR	Belize_TMA 1	
Costa Rica		Belize_TMA 2	
El Salvador		Coco CTA Sector W Coco CTA Sector E Coco TMA Liberia TMA El Salvador TMA MGGT Lower Flight Region Mundo Maya Intl. TMA La Aurora TMA Bonito TMA La Mesa TMA Roatan TMA Toncontin TMA Sandino TMA	
Guatemala		Belize CTR	
Honduras		Coco	
Nicaragua		Coco CTR Pavas CTR El Salvador CTR Ilopango CTR La Aurora CTR Mundo Maya CTR San Jose CTR Goloson CTR La Mesa CTR Palmerola CTR Roatan CTR Toncontin CTR Managua CTR	
United Kingdom (Bermuda)	New York Oceanic West FIR		
Bolivia	**La Paz FIR**	La Paz CTA	
		Cochabamba TMA	
		La Paz TMA	
		Santa Cruz TMA	
Brazil	**Amazonica FIR**	Amazonica CTA	
		Amazonica UTA	
		Rio Branco TMA	
		Porto Velho TMA	
		Boa Vista TMA	

STATE	FIR/UIR	UTA/CTA/TMA	Remarks
1	2	3	4
		Manaus TMA	
		Belem TMA	
		Macapa TMA	
		Santarem TMA	
		Cuiabá TMA	
		Sao Luis TMA	
		Amazonica TMA	Bipartite Brazil - Colombia
	Atlantico FIR	Atlantico UTA	
	Brasilia FIR	Brasilia CTA	
		Brasilia UTA	
		Brasilia TMA	
		Belo Horizonte TMA	
	Curitiba FIR	Curitiba CTA	
		Curitiba UTA	
		Porto Alegre TMA	
		Foz TMA	Tripartite Argentina- Brazil - Paraguay
		Curitiba TMA	
		Florianópolis TMA	
		Campo Grande TMA	
		Rio de Janeiro TMA	
		Sao Paulo TMA	
	Recife FIR	Recife CTA	
		Recife UTA	
		Fortaleza TMA	
		Natal TMA	
		Recife TMA	
		Maceio TMA	
		Aracaju TMA	
		Salvador TMA	
		Porto Seguro TMA	
		Vitoria TMA	
Jamaica	Kingston FIR		
United Kingdom (Cayman Islands)			
	Antofagasta FIR	Santiago Oceanic OCA*	*Oceanic ACC delivers ATC in Oceanic Control Area (OCA). see AIP-Chile Vol I
		Iquique UTA	
		Antofagasta TMA	
		Arica TMA	

STATE	FIR/UIR	UTA/CTA/TMA	Remarks
1	2	3	4
Chile		Iquique TMA	
		Calama TMA	
		Atacama TMA	
	Isla de Pascua FIR	Santiago Oceanic OCA*	
		Isla de Pascua TMA	
	Puerto Montt FIR	Santiago Oceanic OCA*	
		Puerto Montt UTA	
		Puerto Montt TMA	
		Temuco TMA	
		Balmaceda TMA	
	Punta Arenas FIR	Santiago Oceanic OCA*	
		Punta Arenas UTA	
		Punta Arenas TMA	
		Puerto Williams TMA	
		Isla Rey Jorge TMA	
	Santiago FIR	Santiago Oceanic OCA*	
		Santiago UTA	
		Santiago TMA	
		Concepcion TMA	
		La Serena TMA	
Colombia	**Barranquilla FIR**	Barranquilla UTA	
		Barranquilla CTA	
		Barranquilla TMA sector NORTE Barranquilla TMA sector SUR	
		San Andrés TMA	**To be analyzed**
	Bogota FIR	Bogota UTA	
		Bogota TMA sector OESTE Bogota TMA sector NORTE Bogota TMA sector SUR	
		Cali CTA	
		Medellin CTA	
		Amazonica TMA	Bipartite Brazil - Colombia
		Bucaramanga TMA	
		Cali TMA	
		Cucuta TMA sector Sur Cucuta TMA sector Norte	
		Medellin TMA	
		Pereira TMA	
		Villavicencio TMA	
		Andes TMA	

STATE	FIR/UIR	UTA/CTA/TMA	Remarks
1	2	3	4
		El Yopal TMA	
Cuba	Habana FIR	Camaguey TMA Habana TMA Santa Clara TMA Santiago TMA Baracoa CTR Bayamo CTR Jardines CTR Cienfuegos CTR Cayo Largo CTR Agramonte CTR Maceo CTR Guantanamo CTR Marti CTR Holguin CTR Moa CTR Manzanillo CTR Gerona CTR Playa Baracoa CTR Santa Clara CTR Varadero CTR	
Dominican Republic	Santo Domingo FIR	Las Americas TMA Cibao TMA Punta Cana TMA Las Americas CTR Puerto Plata CTR Punta Cana CTR La Romana CTR Santiago CTR Barahona CTR El Higuero CTR El Catey CTR	
Ecuador	**Guayaquil FIR**	Guayaquil UTA	
		Guayaquil CTA	
		Guayaquil TMA	
		Manta TMA	
		Quito TMA	
French Guiana	**Cayenne FIR**	Cayenne CTA	
		Cayenne TMA	
Guyana	**Georgetown FIR/UIR**	Georgetown UTA	
		Georgetown CTA	
		Timehri TMA	

STATE	FIR/UIR	UTA/CTA/TMA	Remarks
1	2	3	4
Haiti	Port Au Prince FIR	Port-au-Prince TMA Port-au-Prince CTR Cap-Haitien CTR	
Mexico	Mazatlán Oceanic FIR	Acapulco TMA Cancun-Cozumel TMA Ciudad del Carmen TMA Ciudad Juarez TMA Ciudad Obregón TMA Ciudad Victoria TMA Culiacan TMA Chihuahua TMA Durango TMA Guadalajara TMA Hermosillo TMA Ixtapa-Zihuatanejo TMA La Paz TMA Los Mochis TMA Aguas Calientes TMA Manzanillo TMA Matamoros TMA Mazatlan TMA Merida TMA Mexico TMA Monterrey TMA Morelia TMA Nuevo Laredo TMA Oaxaca TMA Puerto Vallarta TMA Queretaro TMA Reynosa TMA Saltillo TMA San Jose del Cabo TMA San Luis Potosi TMA Tampico TMA Tijuana TMA Torreon TMA Tuxtla Gutierrez TMA Veracruz TMA Villahermosa TMA	

STATE	FIR/UIR	UTA/CTA/TMA	Remarks
1	2	3	4
	Mexico FIR	Del Norte International CTR Acapulco CTR Aguascalientes CTR Cuernavaca CTR Culiacán CTR Chihuahua CTR Guadalajara CTR Hermosillo CTR Ixtapa-Zihuatanejo CTR León CTR Manzanillo CTR matamoros CTR Mexico CTR Monterrey CTR morelia CTR nuevo laredo CTR Oaxaca CTR Puebla CTR Puerto Vallarta CTR Queretaro CTR Queretaro CTR Saltillo CTR San Luis Potosí CTR Tampico CTR Tepic CTR Toluca CTR Veracruz CTR	
Panama	**Panama FIR**	Panama CTA	
		Panama TMA	
		San Andres TMA*	*Under Colombia responsibility. TMA is within FIR/**CTA Panama.** **To be analyzed**
Paraguay	**Asunción FIR/UIR**	Asuncion TMA	
		Foz TMA	Tripartite Argentina- Brazil - Paraguay
Peru	**Lima FIR**	Lima UTA	
		Lima CTA	
		Arequipa TMA	
		Chiclayo TMA	
		Cusco TMA	
		Iquitos TMA	
		Juliaca TMA	

STATE	FIR/UIR	UTA/CTA/TMA	Remarks
1	2	3	4
		Lima TMA	
		Pisco TMA	
		Pucallpa TMA	
		Tacna TMA	
		Trujillo TMA	
Suriname	**Paramaribo FIR**	Paramaribo CTA	
		Pengel TMA	
United Kingdom (Turks and Caicos Islands)	Miami Oceanic FIR		
United States			
Uruguay	**Montevideo FIR**	Montevideo CTA	
		Carrasco TMA	
United States	Houston FIR		
	Houston Oceanic FIR		
	Miami FIR		
Venezuela	**Maiquetia FIR**	Maiquetia CTA	
		Barcelona TMA	
		Maiquetia TMA	
		Maracaibo TMA	
		Margarita TMA	

Table PMP III-1 – Strengths, weakness, opportunities and threads in the CAR/SAM Region

EXPLANATION OF THE TABLE

Item

1 Strengths: internal attributes of a system or an organization that can help in the realization of ambitions or in meeting expectations.

2 Weaknesses: internal attributes of a system or an organization that are a detriment to realizing ambitions or meeting expectations.

3 Opportunities: are external conditions that help in the realization of ambitions or in meeting expectations.

4 Threats: external conditions that are a detriment or harmful to realizing ambitions or meeting expectations.

5 Relationship of the SWOT attributes and conditions with the eleven Key performance area - KPAs.

(1) STRENGHTS	**Remarks**
• National Plans aligned with global plans and supporting regional implementation • Industry maturity and operating models (airlines, airports) • Potential human resources available • Robust regional infrastructure, implementation experience and harmonized services • Regional Integration and Harmonization with Horizontal Cooperation Mechanisms	
(2) WEAKNESS	**Remarks**

• Gaps in plan implementation (ANS, CNS, Technology, Training, budgets) • Limited human talent management policies (hiring, training and retention of sufficient and competent human resources) • Difficulty in institutional communication, collaboration and alignment between CAR and SAM. • Different levels of maturity in the implementation of ANS and airport management models. • Weak alignment and little communication between global plans (GANP, GASP, GASEP). • Language and cultural barriers between regions. Lack of timely publication of ICAO Documents in all official languages	•
(3) OPPORTUNITIES	**Remarks**
• Greater collaboration in Technology, ICAO Technical Cooperation, innovation-research-development (I+R+D), multilateral financing, training/joint virtual meetings. • Trend towards the automation of processes and services with a focus on innovation, sustainability and harmonization • The low transitory demand allows improving activities, focusing on innovation and better preparation to generate resilience (administration, procedures, ATM, etc.). • Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators. • Put civil aviation as a development engine on the State and Regional agenda.	•
(4) THREADS	**Remarks**
• Slow industry/airline recovery (> 2024). Reorganization of the aeronautical market, competition for markets. • Changes in passenger behavior • Negative impact on aviation due to political, environmental or economic changes (fuel, etc.) • New disruptions that may negatively affect aviation (natural disasters, climate change, outbreaks, war/conflict, cyber attacks, economic downturn)	•

(5) Relationship of the SWOT attributes and conditions with the eleven Key performance areas

11 Key Performance Areas	STRENGHTS	WEAKNESS	OPPORTUNITIES	THREADS
Capacity	○ Robust regional infrastructure, implementation experience and harmonized services ○	○ Gaps in plan implementation (ANS, CNS, Technology, Training, budgets) ○ Limited human talent management policies (hiring, training and retention of sufficient and competent human resources) ○	○ Greater collaboration in Technology, ICAO Technical Cooperation, innovation-research-development (I+R+D), multilateral financing, training/joint virtual meetings. ○ Trend towards the automation of processes and services with a focus on innovation, sustainability and harmonization ○ The low transitory demand allows improving activities, focusing on innovation and better preparation to generate resilience (administration, procedures, ATM, etc.).	○ Negative impact on aviation due to political, environmental or economic changes (fuel, etc.) ○ New disruptions that may negatively affect aviation (natural disasters, climate change, outbreaks, war/conflict, cyber attacks, economic downturn)

11 Key Performance Areas	STRENGHTS	WEAKNESS	OPPORTUNITIES	THREADS
			○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators. ○ Put civil aviation as a development engine on the State and Regional agenda.	
Efficiency	○ National Plans aligned with global plans and supporting regional implementation ○ Industry maturity and operating models (airlines, airports) ○ Potential human resources available ○ Robust regional infrastructure, implementation experience and harmonized services ○ Regional Integration and Harmonization with Horizontal Cooperation Mechanisms	○ Gaps in plan implementation (ANS, CNS, Technology, Training, budgets) ○ Limited human talent management policies (hiring, training and retention of sufficient and competent human resources) ○ Difficulty in institutional communication, collaboration and alignment between CAR and SAM. ○ Different levels of maturity in the implementation of ANS and airport management models.	○ Greater collaboration in Technology, ICAO Technical Cooperation, innovation-research-development (I+R+D), multilateral financing, training/joint virtual meetings. ○ Trend towards the automation of processes and services with a focus on innovation, sustainability and harmonization ○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators. ○ Put civil aviation as a development engine on the State and Regional agenda	○ Slow industry/airline recovery (> 2024). Reorganization of the aeronautical market, competition for markets. ○ Negative impact on aviation due to political, environmental or economic changes (fuel, etc.) ○ New disruptions that may negatively affect aviation (natural disasters, climate change, outbreaks, war/conflict, cyber attacks, economic downturn)

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11 Key Performance Areas	STRENGHTS	WEAKNESS	OPPORTUNITIES	THREADS
Predictability	○ Industry maturity and operating models (airlines, airports)	○ Gaps in plan implementation (ANS, CNS, Technology, Training, budgets)	○ Greater collaboration in Technology, ICAO Technical Cooperation, innovation-research-development (I+R+D), multilateral financing, training/joint virtual meetings. ○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators. ○ Put civil aviation as a development engine on the State and Regional agenda	○ Negative impact on aviation due to political, environmental or economic changes (fuel, etc.) ○ New disruptions that may negatively affect aviation (natural disasters, climate change, outbreaks, war/conflict, cyber attacks, economic downturn)
Safety	○ National Plans aligned with global plans and supporting regional implementation ○ Regional Integration and Harmonization with Horizontal Cooperation Mechanisms	○ Gaps in plan implementation (ANS, CNS, Technology, Training, budgets) ○ Weak alignment and little communication between global plans (GANP, GASP, GASEP). ○	○ Greater collaboration in Technology, ICAO Technical Cooperation, innovation-research-development (I+R+D), multilateral financing, training/joint virtual meetings. ○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators.	○ New disruptions that may negatively affect aviation (natural disasters, climate change, outbreaks, war/conflict, cyber attacks, economic downturn)

11 Key Performance Areas	STRENGHTS	WEAKNESS	OPPORTUNITIES	THREADS
			○ Put civil aviation as a development engine on the State and Regional agenda	
Security	○ National Plans aligned with global plans and supporting regional implementation ○ Regional Integration and Harmonization with Horizontal Cooperation Mechanisms	○ Gaps in plan implementation (ANS, CNS, Technology, Training, budgets) ○ Weak alignment and little communication between global plans (GANP, GASP, GASEP). ○	○ Greater collaboration in Technology, ICAO Technical Cooperation, innovation-research-development (I+R+D), multilateral financing, training/joint virtual meetings. ○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators. ○ Put civil aviation as a development engine on the State and Regional agenda	○ New disruptions that may negatively affect aviation (natural disasters, climate change, outbreaks, war/conflict, cyber attacks, economic downturn)
Enviroment	○	○	○ Greater collaboration in Technology, ICAO Technical Cooperation, innovation-research-development (I+R+D), multilateral financing, training/joint virtual meetings. ○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators.	○ Negative impact on aviation due to political, environmental or economic changes (fuel, etc.) ○

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11 Key Performance Areas	STRENGHTS	WEAKNESS	OPPORTUNITIES	THREADS
			○ Put civil aviation as a development engine on the State and Regional agenda	
Cost effectiveness	○ Industry maturity and operating models (airlines, airports) ○	○	○ Greater collaboration in Technology, ICAO Technical Cooperation, innovation-research-development (I+R+D), multilateral financing, training/joint virtual meetings. ○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators. ○ Put civil aviation as a development engine on the State and Regional agenda	○ Negative impact on aviation due to political, environmental or economic changes (fuel, etc.) ○
Interoperability	○ National Plans aligned with global plans and supporting regional implementation ○ Robust regional infrastructure, implementation experience and harmonized services ○ Regional Integration and Harmonization with Horizontal Cooperation Mechanisms	○ Gaps in plan implementation (ANS, CNS, Technology, Training, budgets) ○ Difficulty in institutional communication, collaboration and alignment between CAR and SAM. ○ Different levels of maturity in the	○ Greater collaboration in Technology, ICAO Technical Cooperation, innovation-research-development (I+R+D), multilateral financing, training/joint virtual meetings. ○ Trend towards the automation of processes and services with a focus on innovation, sustainability and harmonization	○ Negative impact on aviation due to political, environmental or economic changes (fuel, etc.) ○

11 Key Performance Areas	STRENGHTS	WEAKNESS	OPPORTUNITIES	THREADS
		implementation of ANS and airport management models. ○ Weak alignment and little communication between global plans (GANP, GASP, GASEP). ○	○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators. ○ Put civil aviation as a development engine on the State and Regional agenda	
Access and equity	○	○	○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators. ○ Put civil aviation as a development engine on the State and Regional agenda	○
Participation by the ATM community	○	○	○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators. ○ Put civil aviation as a development engine on the State and Regional agenda	○
Flexibility	○	○	○ Timely availability of ICAO technical documentation in	○

11 Key Performance Areas	STRENGHTS	WEAKNESS	OPPORTUNITIES	THREADS
			the official languages. New GANP - ASBU four layers and indicators. ○ Put civil aviation as a development engine on the State and Regional agenda	

Table PMP III-2 – List of performance objectives by KPA for the CAR/SAM Region

EXPLANATION OF THE TABLE

Column

(1) ICAO defined 11 Key Performance Areas. *Include the list of KPAs and its definition*.

(2) Focus Areas. These focus areas have been selected from the catalogue of performance objectives.

(3) Performance Objectives. These objectives have been selected from the catalogue of performance objectives.

(4) Remarks

(1) KPA s	(2) Focus Areas	(3) Performance Objectives	(4) Remarks
Efficiency	Flight time & distance	Apply en-route speed reduction if traffic is already airborne	
Efficiency	Flight time & distance	Avoid taxi-out additional time resulting from adverse conditions	
Efficiency	Flight time & distance	Avoid taxi-in additional time resulting from adverse conditions	
Efficiency	Flight time & distance	Overcome route selection inefficiencies associated with route network design	
Efficiency	Flight time & distance	Facilitate direct routing of portions of the flight (if this does not cause network problems)	
Capacity	Capacity, throughput & utilization	Improve what's needed to reduce longitudinal separation minima	***PBN implementation in progress. PBCS when required***

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(1) KPA s	(2) Focus Areas	(3) Performance Objectives	(4) Remarks
Capacity	Capacity, throughput & utilization	Overcome capacity limitations attributable to route network design	***PBN implementation in progress***
Capacity	Capacity, throughput & utilization	Take advantage of increased navigation precision (airspace with PBN operations) to implement route networks and airspace structures with smaller lateral and vertical safety buffers	***PBN implementation in progress***
Capacity	Capacity, throughput & utilization	Increase airport peak arrival capacity	***ACDM implementation project (to be analyzed)***
Capacity	Capacity, throughput & utilization	Equip additional RWY ends with instrument approaches	***PBN implementation in progress***
Capacity	Capacity, throughput & utilization	Reduce approach minima (ceiling & visibility)	***PBN implementation in progress***
Capacity	Capacity, throughput & utilization	Increase airport arrival rate	***PBN implementation in progress***
Capacity	Capacity, throughput & utilization	Apply merging & synchronisation of arrival flows	***Point merge implemented (Brazil, Colombia)***
Predictability	Punctuality	Increase the number (%) of flights adhering to the planned take-off time	
Predictability	Punctuality	Increase the number (%) of scheduled flights adhering to the scheduled ON-block time	

(1) **KPA s**	**(2)** **Focus Areas**	(3) **Performance Objectives**	(4) **Remarks**
Predictability	Variability	Reduce gate-to-gate flight time variability of frequent scheduled flights	
Safety	*To be incorporated*		
Security	*To be incorporated*		
Enviroment	*To be incorporated*		
Cost effectiveness	*To be incorporated*		
Interoperability	*To be incorporated*		
Access and equity	*To be incorporated*		
Participation by the ATM community	*To be incorporated*		
Flexibility	*To be incorporated*		

Table PMP III-3 – List of KPIs by performance objective and KPA for the CAR/SAM Region

EXPLANATION OF THE TABLE

Column

1 KPAs and Focus Areas from **Table PMP III-2**.

2 Performance Objectives from **Table PMP III-2**.

3 KPIs based on the ICAO list of KPIs. ***If there is a KPI you would like to introduce, please submit it for coordination with the global performance expert group***

4 Remarks

(1) **KPA & Focus area**	**(2)** **Performance objectives**	**(3)** **KPI s**	**(4)** **Remarks**
Efficiency Flight time & distance	Apply en-route speed reduction if traffic is already airborne	KPI08	
Efficiency Flight time & distance	Avoid taxi-out additional time resulting from adverse conditions	KPI02	
Efficiency Flight time & distance	Avoid taxi-in additional time resulting from adverse conditions	KPI13	
Efficiency Flight time & distance	Overcome route selection inefficiencies associated with route network design	KPI04	
Efficiency Flight time & distance	Facilitate direct routing of portions of the flight (if this does not cause network problems)	KPI05	

(1) KPA & Focus area	(2) Performance objectives	(3) KPI s	(4) Remarks
Capacity Capacity, throughput & utilization	Improve what's needed to reduce longitudinal separation minima	KPI06	
Capacity Capacity, throughput & utilization	Overcome capacity limitations attributable to route network design	KPI06	
Capacity Capacity, throughput & utilization	Take advantage of increased navigation precision (airspace with PBN operations) to implement route networks and airspace structures with smaller lateral and vertical safety buffers	KPI06	
Capacity Capacity, throughput & utilization	Increase airport peak arrival capacity	KPI09	ASBU element impact non defined in GANP6
Capacity Capacity, throughput & utilization	Equip additional RWY ends with instrument approaches	KPI10	
Capacity Capacity, throughput & utilization	Reduce approach minima (ceiling & visibility)	KPI10	
Capacity Capacity, throughput & utilization	Increase airport arrival rate	KPI10	
Capacity Capacity, throughput & utilization	Apply merging & synchronisation of arrival flows	KPI10	
Predictability (Punctuality)	Increase the number (%) of flights adhering to the planned take-off time	KPI01	ASBU element impact non defined in GANP6

(1) KPA & Focus area	(2) Performance objectives	(3) KPI s	(4) Remarks
Predictability (Punctuality)	Increase the number (%) of scheduled flights adhering to the scheduled ON-block time	KPI14	ASBU element impact non defined in GANP6
Predictability (Variability)	Reduce gate-to-gate flight time variability of frequent scheduled flights	KPI15	ASBU element impact non defined in GANP6

Table PMP III-4 – Performance baseline within the CAR/SAM Region
EXPLANATION OF THE TABLE

Column

1 States in **Table GEN I-1**

2 List of FIRs/ CTAs/TMAs/Airports by State within **Table ATM I-1** or **Table PMP III-CAR/SAM-1** and **Table AOP I-1**.

3 Value for the list of KPIs in **Table PMP III-3.**

4 Remarks

Legend: -- KPI calculation is in progress

++ KPI is not yet developed

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01 (Var 2A)	**KPI02**	**KPI04**	**KPI05**	**KPI06**	**KPI08**	**KPI09**	**KPI10**	**KPI13**	**KPI14**	**KPI15 (Var 1)**	
BRAZIL	SBGR	83,8%	3,7					34	26	1,8	54,6%	5,9	**BASELINE 2021 (average all flights > DEP+ARR in SBGR)**
	SBBR	90,5%	3,1					48	26	1,6	65,0%	5,5	**BASELINE 2021 (average all flights > DEP+ARR in SBBR)**
	SBGL	80,0%	3,0					30	6	1,5	64,1%	5,9	**BASELINE 2021**
	TMA SAO PAULO			++	++	--	3,9						**BASELINE 2021 (SBGR, SBKP, SBSP)**
	TMA BRASILIA			++	++	--	3,6						**BASELINE 2021 (SBBR)**
	TMA Rio de JANEIRO			++	++	--	2,9						**BASELINE 2021 (SBRJ, SBGL)**

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01 (2A)	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
PERU	SPJC	87%	3.57					35	23	1.68	61%	++	
	SPZO	72.09%	3.78					6	5	0.85	69.65%	++	
	TMA LIMA			++	++	--	++						
	TMA CUSCO			++	++	11 (CHS)	++						CHS= hourly sector capacity
	FIR LIMA			++	++	++							

<<<

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01 (2A)	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
CHILE	SCEL	31.7%	++					++	++	++	++	++	
	SCIE	32.9%	++					+	++	++	++	++	
	SCFA	31.5%	++					++	++	++	++	++	
	TMA SANTIAGO			++	++	++	++						
	TMA CONCEPCION			++	++	++	++						
	TMA ANTOFAGASTA			++	++	++	++						
	FIR ++			++	++	++							

<<<

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
ARGENTINA	SABE	73.7%	2.4					39	14	2.0	92.2%	5.7	2019 BASELINE
	SAEZ	57.9%	3.5					29	10	3.1	81.1%	5.7	2019 BASELINE
	TMA BAIRES			++	++	--	--						
	FIR TODAS			0.6%	0.84%	++						5.4	2019 BASELINE

>>>>

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
DOMNINICAN REPUBLIC	MDPC	++	++					40	++	++	++	++	TBD
	MDSD	++	++					35	++	++	++	++	TBD

>>>>

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs										(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
COSTA RICA	MROC	++	++					**RWY 07** VMC: 33 IMC: 16 **RWY 25** VMC: 20 VMC: 15 **07/25** IMC: 06 Runway 07 for landings and runway 25 for takeoffs.	--	++	++	++	Costa Rica is currently part of flight data investigation group, to understand what KPI's are more feasible to be calculated with the available information from Radar systems. The KPI 10 marked – is most likely to be developed in the future than the others. This may change as the project moves forward.
	MRLB	++	++					**RWY 07** VMC: 22 IMC: 10 **RWY 25**	--	++	++	++	

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
								VMC: 20 VMC: 10					

>>>>

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
EL SALVADOR	MSLP	++	++					8	++	++	++	++	TBD

>>>>

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
GUATEMALA	MGGT	++	++					12	++	++	++	++	TBD

>>>>

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
BELIZE	MZBZ	++	++					15	++	++	++	++	TBD

>>>>

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
HAITI	MTPP	++	++					14	++	++	++	++	TBD
	MTCH	++	++					8	++	++	++	++	TBD

>>>>

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
HONDURAS	MHLM	++	++					5	++	++	++	++	TBD

>>>>

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
NICARAGUA	MNMG	++	++					++	++	++	++	++	TBD

Table PMP III-5 – Performance targets and needs within CAR/SAM Region

EXPLANATION OF THE TABLE

Column

1 States in **Table GEN I-1**

2 List of FIRs/CTAs/TMAs/Airports by State within **Table ATM I-1** or **Table PMP III-CAR/SAM- 1** and **Table AOP I-1**.

3 Targets for the list of KPIs in **Table PMP III-3.** ***(include the value of the regional targets/needs for the different operational environments identified in step 1)***

4 Remarks

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs TARGETS											(4) Remarks
		KPI01 (Var 2A)	**KPI02**	**KPI04**	**KPI05**	**KPI06**	**KPI08**	**KPI09**	**KPI10**	**KPI13**	**KPI14**	**KPI15 (Var 1)**	
BRAZIL	SBGR	≥ 80%	≤3 min					--	--	≤3 min	--	≤ 10 min	
	SBBR	≥ 80%	≤3 min					--	--	≤3 min	--	≤ 10 min	
	SBGL	≥ 80%	≤3 min					--	--	≤3 min	--	≤ 10 min	
	TMA SAO PAULO			++	++	--	≤ 4 min						
	TMA BRASILIA			++	++	--	≤ 4 min						
	TMA Rio de JANEIRO			++	++	--	≤ 4 min						

>>>>

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs TARGETS											(4) Remarks
		KPI01 (2A)	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
PERÚ	SPJC	≥ 80%	≤4 min					--	--	≤3 min	≥ 80%	++	
	SPZO	≥ 80%	≤4 min					--	--	≤3 min	≥ 80%	++	
	TMA LIMA			++	++	--	++						
	TMA CUSCO			++	++	--	++						
	FIR LIMA			++	++	++							

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(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs TARGETS											(4) Remarks
		KPI01 (2A)	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
CHILE	SCEL	≥ 32%	++					++	++	++	++	++	
	SCIE	≥ 33%	++					+	++	++	++	++	
	SCFA	≥ 32%	++					++	++	++	++	++	
	TMA SANTIAGO			++	++	++	++						
	TMA CONCEPCION			++	++	++	++						
	TMA ANTOFAGASTA			++	++	++	++						
	FIR ++			++	++	++							

<<<

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs TARGETS											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
ARGENTINA	SABE												
	SAEZ												
	TMA BAIRES												
	FIR TODAS												

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(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
DOMNINICAN REPUBLIC	MDPC	++	++					--	++	++	++	++	TBD
	MDSD	++	++					--	++	++	++	++	TBD

>>>>

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
COSTA RICA	MROC	++	++					--	++	++	++	++	TBD
	MRLB	++	++					--	++	++	++	++	TBD

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(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
EL SALVADOR	MSLP	++	++					--	++	++	++	++	TBD

>>>>

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
GUATEMALA	MGGT	++	++					--	++	++	++	++	TBD

>>>>

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
BELIZE	MZBZ	++	++					--	++	++	++	++	TBD

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(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
HAITI	MTPP	++	++					--	++	++	++	++	TBD
	MTCH	++	++					--	++	++	++	++	TBD

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(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
HONDURAS	MHLM	++	++					--	++	++	++	++	TBD

>>>>

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
NICARAGUA	MNMG	++	++					++	++	++	++	++	TBD

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Table PMP III-6 – Deployment planning: selected ASBU Elements / Operational Improvements for the CAR/SAM Region

EXPLANATION OF THE TABLE

Column

1 States in **Table GEN I-1**

2 List of FIRs/ CTAs/TMAs/Airports by State within **Table ATM I-1** or **Table PMP III-CAR/SAM - 1** and **Table AOP I-1**.

3 Selected ASBU elements /operational improvements for each operational environment.

Please note that the ASBU elements are a set of operational improvements, however, there could be other improvements outside of the ASBU framework that might address identified issues and opportunities and therefore contribute to achieve the pursued level of performance.

4 Dependencies and relations: see type description for each element in GANP Layer 2

5 Year when implementation of the selected solution is planned to start.

6 Year when implementation of the selected solution is foreseen to be completed.

7 Remarks

(1) STATE	(2) FIR/CTA /TMA/AIRPORT	(3) ASBU Elements / Operational Improvements	(4) Dependencies and relations	(5) Start Year	(6) End Year	(7) Remarks
BRAZIL	SBGR SBBR SBGL	SURF-B0/1	----			KPI02, KPI13
	SBGR SBBR SBGL	APTA-B0/1	AMET-B0/1 AMET-B0/2 NAVS-B0/3			KPI10
	SBGR SBBR SBGL	APTA-B0/2	AMET-B0/1 AMET-B0/2			KPI10
	SBGR SBBR SBGL	*TBD*	*TBD*			KPI09
	SBGR SBBR SBGL	*TBD*	*TBD*			KPI01
	SBGR SBBR SBGL	*TBD*	*TBD*			KPI14
	SBGR SBBR SBGL	*TBD*	*TBD*			KPI15
	TMAs SAO PAULO, BRASILIA, RIO DE JANEIRO	RSEQ-B0/1	AMET-B0/1 AMET-B0/2 ACDM-B0/1 ACDM-B0/2			KPI08
	TMAs SAO PAULO, BRASILIA, RIO DE JANEIRO	FRTO-B1/2	APTA-B0/1 APTA-B1/1 SNET-B0/1			KPI06
	TMA SAO PAULO	RSEQ-B0/3	AMET-B0/1			KPI10
	FIR ATLANTICO	CSEP-B1/3	COMI-B0/3 COMI-B0/4			KPI06

(1) STATE	(2) FIR/CTA /TMA/AIRPORT	(3) ASBU Elements / Operational Improvements	(4) Dependencies and relations	(5) Start Year	(6) End Year	(7) Remarks
			COMS-B0/1 COMS-B0/2 NAVS-B0/3			

(1) STATE	(2) FIR/CTA /TMA/AIRPORT	(3) ASBU Elements / Operational Improvements	(4) Dependencies and relations	(5) Start Year	(6) End Year	(7) Remarks
PERÚ	SPJC SPZO	SURF-B0/1	-----			KPI02, KPI13
	SPJC SPZO	TBD	TBD			KPI09
	SPJC SPZO	TBD	TBD			KPI01 KPI14
	TMA LIMA, CUSCO	FRTO-B1/2	APTA-B0/1 APTA-B1/1 SNET-B0/1			KPI06
	FIR LIMA	FRTO-B1/2	APTA-B0/1 APTA-B1/1 SNET-B0/1			KPI06

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(1) STATE	(2) FIR /TMA/AIRPORT	(3) ASBU Elements / Operational Improvements	(4) Dependencies and relations	(5) Start	End	KPI
CHILE	SCEL	RSEQ-B0/2 = Departure Management	AMET-B0/1 AMET-B0/2 ACDM-B0/1 ACDM-B0/2 SURF-B1/4 WAKE-B2/1 WAKE-B2/4 WAKE-B2/8 SURF-B0/2 APTA-B0/2 NOPS-B0/5	2022	2025	KPI02 - Taxi-out additional time
	SCEL	RSEQ-B0/1 = Arrival Management	AMET-B0/1 AMET-B0/2 WAKE-B2/1 WAKE-B2/4 WAKE-B2/7 SURF-B0/2 SURF-B1/4 ACDM-B0/1 ACDM-B0/2	2022	2025	KPI10: Airport peak throughput
		APTA-B1/1 = PBN Approaches (with advanced capabilities)	APTA-B0/1 AMET-B0/1 AMET-B0/2	2023	2026	KPI10 - Airport peak throughput.
	SCEL	APTA-B1/2 = PBN SID and STAR procedures (with advanced capabilities)	APTA-B0/1 AMET-B0/1 AMET-B0/2	2023	2026	KPI11: Airport throughput efficiency
	SCEL	ACDM-B0/1 = Airport CDM Information Sharing (ACIS)	AMET-B0/1 AMET-B0/2 SURF-B0/2	2025	2027	No specific KPI available in GANP 6° Ed for intended performance
	SANTIAGO	FRTO-B0/1= Direct routing (DCT)	NOPS-B0/1 FRTO-B0/2 FRTO-B0/4 FICE-B0/1	2023	2027	KPI04: Filed flight plan en-route extension
	SANTIAGO	FRTO-B0/2 = Airspace planning and Flexible Use of Airspace (FUA)	FRTO-B0/1 NOPS-B0/1	2024	2027	KPI04: Filed flight plan en-route extension
	SCEL	NOPS-B0/1 = Initial integration of collaborative airspace	AMET-B0/1 FRTO-B0/2	2024	2027	KPI05 - Actual en-route extension

(1) STATE	(2) FIR /TMA/AIRPORT	(3) ASBU Elements / Operational Improvements	(4) Dependencies and relations	(5) Start	End	KPI
		management with air traffic flow management				
	SCEZ/OCA	CSEP-B1/3 = Performance Based Longitudinal Separation Minima	COMI-B0/3 COMI-B0/4 COMS-B0/1 COMS-B1/1 COMS-B0/2 COMS-B1/2 NAVS-B0/3	2023	2026	KPI06: En-route airspace capacity
	SCEZ/OCA	CSEP-B1/4 = Performance Based Lateral Separation Minima	COMI-B0/3 COMI-B0/4 COMS-B0/1 COMS-B1/1 COMS-B0/2 COMS-B1/2 NAVS-B0/3	2023	2026	KPI06: En-route airspace capacity
	SCEZ/SANTIAGO/SCEL	TBD	TBD	2023	2025	KPI01: Departure punctuality
CHILE	SCIE	APTA-B1/1 = PBN Approaches (with advanced capabilities)	APTA-B0/1 AMET-B0/1 AMET-B0/2	2023	2026	KPI10 - Airport peak throughput.
	SCIE	APTA-B1/2 = PBN SID and STAR procedures (with advanced capabilities)	APTA-B0/1 AMET-B0/1 AMET-B0/2	2023	2026	KPI11: Airport throughput efficiency
	SCEZ/CONCEPCIÓN	FRTO-B0/1= Direct routing (DCT)	NOPS-B0/1 FRTO-B0/2 FRTO-B0/4 FICE-B0/1	2023	2027	KPI04: Filed flight plan en-route extension
	SCEZ/CONCEPCIÓN	FRTO-B0/2 = Airspace planning and Flexible Use of Airspace (FUA)	FRTO-B0/1 NOPS-B0/1	2024	2027	KPI04: Filed flight plan en-route extension
	SCIE	NOPS-B0/1 = Initial integration of collaborative airspace	AMET-B0/1 FRTO-B0/2	2024	2027	KPI05 - Actual en-route extension

(1) STATE	(2) FIR /TMA/AIRPORT	(3) ASBU Elements / Operational Improvements	(4) Dependencies and relations	(5) Start	End	KPI
		management with air traffic flow management				
	SCIE	TBD	TBD	2023	2025	KPI01: Departure punctuality
CHILE	SCFA	APTA-B1/1 = PBN Approaches (with advanced capabilities)	APTA-B0/1 AMET-B0/1 AMET-B0/2	2023	2026	KPI10 - Airport peak throughput.
	SCFA	APTA-B1/2 = PBN SID and STAR procedures (with advanced capabilities)	APTA-B0/1 AMET-B0/1 AMET-B0/2	2023	2026	KPI11: Airport throughput efficiency
	SCFZ/ANTOFAGASTA	FRTO-B0/1= Direct routing (DCT)	NOPS-B0/1 FRTO-B0/2 FRTO-B0/4 FICE-B0/1	2023	2027	KPI04: Filed flight plan en-route extension
	SCFZ/ANTOFAGASTA	FRTO-B0/2 = Airspace planning and Flexible Use of Airspace (FUA)	FRTO-B0/1 NOPS-B0/1	2024	2027	KPI04: Filed flight plan en-route extension
	SCFA	NOPS-B0/1 = Initial integration of collaborative airspace management with air traffic flow management	AMET-B0/1 FRTO-B0/2	2024	2027	KPI05 - Actual en-route extension
	SCFA	TBD	TBD	2023	2025	KPI01: Departure punctuality

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(1) STATE	(2) FIR/CTA /TMA/AIRPORT	(3) ASBU Elements / Operational Improvements	(4) Dependencies and relations	(5) Start Year	(6) End Year	(7) Remarks
Costa Rica	MROC MRLB	SURF – B0/1 Basic ATCO tools to manage traffic during ground operations	There are currently no dependencies.	2024	2024	KPI02, KPI13, KPI 20, KPI 21
	MROC MRLB	FRTO – B0/1 – Direct Routing (DCT)	NOPS-B0/1 - Initial integration of collaborative airspace management with air traffic flow management FRTO-B0/2 - Airspace planning and Flexible Use of Airspace (FUA) FRTO-B0/4 - Basic conflict detection and conformance monitoring FICE-B0/1 - Automated basic inter facility data exchange (AIDC)			KPI 04
	MROC MRLB		FRTO – BO/1 Direct routing (DCT) FRTO-B0/2 - Airspace planning and Flexible Use of Airspace (FUA) AMET-B0/1 - Meteorological observations products	TBD	TBD	-

(1) STATE	(2) FIR/CTA /TMA/AIRPORT	(3) ASBU Elements / Operational Improvements	(4) Dependencies and relations	(5) Start Year	(6) End Year	(7) Remarks
		FRTO – B0/3: Pre-validated and coordinated ATS routes to support flight and Flow.	AMET-B0/2 - Meteorological forecast and warning products AMET-B0/4 - Dissemination of meteorological products			
	MROC MRLB	APTA – B1/2: PBN SID and STAR procedures (with advanced capabilities)	APTA-B0/2 - PBN SID and STAR procedures (with basic capabilities) AMET-B0/1 – Meteorological observations products AMET-B0/2 - Meteorological forecast and warning products	TBD	TBD	
	MROC MRLB	DAIM – B1/1 Provision of quality-assured aeronautical data and information	No relations	TBD	TBD	

(1) STATE	(2) FIR/CTA /TMA/AIRPORT	(3) ASBU Elements / Operational Improvements	(4) Dependencies and relations	(5) Start Year	(6) End Year	(7) Remarks
	MROC MRLB	DAIM – B1/2 Provision of digital Aeronautical Information Publication (AIP) data sets	DAIM-B1/1 - Provision of quality-assured aeronautical data and information	TBD	TBD	
	MROC MRLB	DAIM – B1/3 Provision of terrain data sets.	DAIM-B1/1 - Provision of quality-assured aeronautical data and information	TBD	TBD	
	MROC MRLB	DAIM – B1/4 Provision of obstacle data sets.	DAIM-B1/1 - Provision of quality-assured aeronautical data and information	TBD	TBD	
	MROC MRLB	FICE – B0/1 Automatic basic interfacility data exchange. (AIDC)	COMI-B0/7 - ATS Message Handling System (AMHS)	2023	TBD	Developed in cooperation with COCESNA.
	MROC MRLB	RSEQ – B0/1 Arrival management	AMET-B0/2 - Meteorological forecast and warning products ACDM-B0/1 - Airport CDM Information Sharing (ACIS) ACDM-B0/2 - Integration with ATM Network function	TBD	TBD	All relations are operational, only the ones that are part of Block 0 are taken into consideration.
	MROC MRLB	ASUR – BO/1 Automatic Dependent Surveillance Broadcast – (ADS - B)	NAVS-B0/3 - Aircraft Based Augmentation Systems (ABAS)	TBD	TBD	Developed by COCESNA

(1) STATE	(2) FIR/CTA /TMA/AIRPORT	(3) ASBU Elements / Operational Improvements	(4) Dependencies and relations	(5) Start Year	(6) End Year	(7) Remarks
	MROC MRLB	ASUR – BO/2Multilateration cooperative surveillance systems (MLAT)	No dependencies	TBD	TBD	Developed by COCESNA
	MROC MRLB	ASUR ASUR – B0/3 Cooperative Surveillance Radar Downlink of Aircraft Parameters (SSR-DAPS)	No dependencies	Implemented		Implemented by COCESNA.
	MROC MRLB	AMET-B0/1 - Meteorological observations products	ASUR-B0/3- Cooperative Surveillance Radar Downlink of Aircraft Parameters (SSR-DAPS)	2024	2024	

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Table PMP III-7 – Implementation progress on the selected operational improvements of the ASBU elements / Operational Improvements for the CAR/SAM Region
EXPLANATION OF THE TABLE

Column

1 States in **Table GEN I-1**

2 List of FIRs/CTAs/TMAs/Airports by State within **Table ATM I-1** or **Table PMP III-CAR/SAM - 1** and **Table AOP I-1**.

3 Selected ASBU elements/operational improvement for each operational environment.

Please note that the ASBU elements are a set of operational improvements, however, there could be other improvements outside of the ASBU framework that might address identified issues and opportunities and therefore contribute to achieve the pursued level of performance.

4 Year when implementation of the selected solution is planned to start **PMP III-6**.

5 Year when implementation of the selected solution is foreseen to be completed **PMP III-6**.

6 Implementation progress:

- Completed (100%): the development or improvement is reportedly fulfilled (it is either in operational use or there is reported on-going compliance)
- Ongoing (1-99%): implementation is reported on-going, however not yet fully completed
- Planned (0%): a planned schedule and proper (approved and committed budgeted) actions are specified within the agreed data for completion but implementation has not yet kicked off
- Late (0-99%): part or all of the actions leading to completion are “planned” to be achieved after the end year date; or the implementation is ongoing but will be achieved later than that data or the end year date is already exceeded.

7 Remarks

STATE	FIR/CTA /TMA /AIRPORT	ASBU Elements / Operational Improvements	Start Year	End Year	Implementation progress	Remarks

Table PMP III-8 – Performance benefits accrued form the implementation of the selected ASBU elements / Operational Improvements for the CAR/SAM Region

EXPLANATION OF THE TABLE

Column

1 States in **Table GEN I-1**

2 List of FIRs/ CTAs/ TMAs/Airports by State within **Table ATM I-1** or **Table PMP III- CAR/SAM - 1** and **Table AOP I-1**.

3 Selected ASBU elements/operational improvements for each operational environment.

Please note that the ASBU elements are a set of operational improvements, however, there could be other improvements outside of the ASBU framework that might address identified issues and opportunities and therefore contribute to achieve the pursued level of performance.

4 Value after implementation for the list of KPIs in **Table PMP III-3.**

5 Remarks

STATE	FIR/CTA /TMA/AIRPORT	ASBU Elements/operational improvements	KPI s						Remarks

APPENDIX – APÉNDICE B
CAR/SAM PROJECT/PROYECTO CAR/SAM

Región / *Region* CAR/SAM	**DESCRIPCION DEL PROYECTO /*PROJECT DESCRIPTION***	**N° NEOSPACE - 1**	
Programa/*Programme*	**Título /*Title***	**Inicio/ Start**	**Término/ End**
Optimización espacio Aéreo CAR/SAM ***CAR/SAM Airspace Optimization***	Implantación de módulos APTA y FRTO del GANP para incrementar la performance de la eficiencia, la capacidad y la seguridad operacional *Implementation of APTA and FRTO modules of the GANP to increase performance of efficiency, capacity, and safety* Coordinadores del proyecto/ *Project coordinators* ✓ Julio Cesar de Souza Pereira (IATA) ✓ Eddian Méndez (CAR) ✓ Fernando Hermoza (SAM)	ENE 2024 *JAN 2024*	DIC 2027 *DEC 2027*
1. Objetivos **Objectives**	Reconociendo el actual progreso de actividades de implantación de ciertos elementos de los módulos APTA y FRTO del **GANP[1],** se requiere: a) Apoyar y reorientar la optimización de la estructura del espacio aéreo de Región CAR/SAM de una manera armonizada y coherente, fortaleciendo las implantaciones en curso. b) Impulsar las actividades de los Estados y organizaciones CAR/SAM para la implantación efectiva del Volumen III del ANP CAR/SAM. c) Generar beneficios medioambientales mediante ahorro de combustible y reducción de emisiones CO2. Recognizing the current progress of implementation activities for certain elements of the APTA and FRTO modules of the **GANP[2],** it is required: a) Support and reorient the optimization of the airspace structure of the CAR/SAM Region in a harmonized and coherent manner, strengthening ongoing implementations. b) Promote the activities of the States and CAR/SAM organizations for the effective implementation of Volume III of the ANP CAR/SAM. c) Generate environmental benefits by saving fuel and reducing CO2 emissions.		
2. Alcance **Scope**	✓ Iniciar y/o reforzar la implantación de elementos seleccionados del módulo FRTO del **GANP[3]:** a) para incrementar la performance en el área **Eficiencia**, en las áreas focales; tiempo de vuelo, distancia y vuelo vertical, incidiendo en ahorros de combustible y emisión de CO2; y b) para incrementar la performance en el área **Seguridad Operacional,** en objetivos específicos de evitar desviaciones en la navegación lateral/horizontal, y mejorar la detección temprana de autorizaciones del ATC conflictivas.		

1 *Ver portal GANP: https://www4.icao.int/ganpportal/*
2 *See GANP portal: https://www4.icao.int/ganpportal/*
3 *El proyecto inicia con la planificación de módulos FRTO y APTA de Bloques 0 y 1. A partir de 2025, se incorpora el Bloque 2 de acuerdo con el GANP.*

Región / *Region* CAR/SAM	DESCRIPCION DEL PROYECTO /*PROJECT DESCRIPTION*	N° NEOSPACE - 1	
Programa/*Programme*	**Título /*Title***	**Inicio/ Start**	**Término/ End**
Optimización espacio Aéreo CAR/SAM ***CAR/SAM Airspace Optimization***	Implantación de módulos APTA y FRTO del GANP para incrementar la performance de la eficiencia, la capacidad y la seguridad operacional *Implementation of APTA and FRTO modules of the GANP to increase performance of efficiency, capacity, and safety* Coordinadores del proyecto/ *Project coordinators* ✓ Julio Cesar de Souza Pereira (IATA) ✓ Eddian Méndez (CAR) ✓ Fernando Hermoza (SAM)	ENE 2024 *JAN 2024*	DIC 2027 *DEC 2027*
	✓ Iniciar y/o reforzar la implantación de elementos seleccionados del módulo APTA del GANP (Aproximación, SID/STAR, CDO y CCO) para incrementar la performance en el área **Capacidad,** en las áreas focales; capacidad, rendimiento y utilización. ✓ Evaluar e implementar los habilitadores CNS/ATM necesarios a FRTO y APTA ✓ Optimizar la separación longitudinal en espacio continental, para incrementar la performance en el área **Eficiencia y Capacidad.** ✓ Initiate and/or reinforce the implementation of selected elements of the GANP FRTO module[4]**:** a) to increase performance in the area **Efficiency**, in the focal areas; flight time, distance and vertical flight, focusing on fuel savings and CO2 emissions; and b) to increase performance in the area **Safety**, in specific objectives of avoiding deviations in lateral/horizontal navigation and improving the early detection of conflicting ATC authorizations. ✓ Initiate and/or reinforce the implementation of selected elements of the GANP APTA module (Approach, SID/STAR, CDO and CCO) to increase performance in the area **Capacity,** in the focal areas; capacity, performance and utilization. ✓ Evaluate and implement the necessary CNS/ATM enablers to FRTO and APTA ✓ Optimize longitudinal separation in continental space, to increase performance in the **Efficiency and Capacity area.**		
3. Métricas de soporte **Supporting metrics**	✓ Número de rutas SID/STAR PBN implantados, donde sea requerido para Aeropuertos Internacionales (Aplicación de técnicas CCO y CDO) ✓ Número de rutas RNAV/RNP implementadas (nuevas rutas/mejora de especificación de navegación/reemplazo de rutas convencionales). ✓ Número de Regiones de información de vuelo que han implementado enrutamiento directo estratégico (EDE). Volumen de espacio aéreo implementado. ✓ Número de Regiones de información de vuelo que han implementado Espacio Aéreo de Ruta Libre (FRA). Volumen de espacio aéreo implementado. ✓ Número de rutas preferidas por el usuario UPR implantadas.		

[4] *The project starts with the planning of FRTO and APTA modules of Blocks 0 and 1. From 2025, Block 2 is incorporated according to the GANP.*

Región / *Region* CAR/SAM	DESCRIPCION DEL PROYECTO /*PROJECT DESCRIPTION*	N° NEOSPACE - 1	
Programa/*Programme*	**Título /*Title***	**Inicio/ Start**	**Término/ End**
Optimización espacio Aéreo CAR/SAM ***CAR/SAM Airspace Optimization***	Implantación de módulos APTA y FRTO del GANP para incrementar la performance de la eficiencia, la capacidad y la seguridad operacional *Implementation of APTA and FRTO modules of the GANP to increase performance of efficiency, capacity, and safety* Coordinadores del proyecto/ *Project coordinators* ✓ Julio Cesar de Souza Pereira (IATA) ✓ Eddian Méndez (CAR) ✓ Fernando Hermoza (SAM)	ENE 2024 *JAN 2024*	DIC 2027 *DEC 2027*
	✓ Porcentaje de umbrales con aproximaciones APV en Aeropuertos Internacionales. ✓ Reducción de consumo de combustible y emisiones CO2 ✓ Otras métricas que sean aplicables. ✓ Number of SID/STAR PBN routes implemented, where required for International Airports (Application of CCO and CDO techniques) ✓ Number of RNAV/RNP routes implemented (new routes/improved navigation specification/replacement of conventional routes). ✓ Number of Flight Information Regions that have implemented strategic direct routing (EDE). Volume of airspace implemented. ✓ Number of Flight Information Regions that have implemented Free Route Airspace (FRA). Volume of airspace implemented. ✓ Number of routes preferred by the UPR user implemented. ✓ Percentage of thresholds with APV approaches in International Airports. ✓ Reduction of fuel consumption and CO2 emissions ✓ Other metrics that are applicable.		
4. Indicadores clave de performance del GANP (KPI) **GANP Key performance indicators (KPI)**	o De acuerdo con la planificación del proyecto, serán seleccionados elementos de FRTO y APTA y respectivos indicadores KPI (proceso de planificación basada en performance del GANP y del Doc. 9883). Las metas (targets) de mejora en la performance requieren la definición de una línea base para los KPI. A partir de dicha línea base, es factible establecer las ambiciones de mejora de performance para un determinado KPI, en un lapso definido. o Se muestran debajo KPI propuestos para proyecto (los Estados/Organizaciones, de acuerdo con sus necesidades, pueden calcular/monitorear otros KPI del GANP o desarrollar sindicadores propios) o According to the project planning, FRTO and APTA elements and respective KPI indicators (GANP and Doc. 9883 performance-based planning process) will be selected. Performance improvement targets require the definition of a baseline for KPIs. From this baseline, it is feasible to establish performance improvement ambitions for a given KPI, within a defined period. o Proposed project KPIs are shown below (States/Organizations, according to their needs, can calculate/monitor other GANP KPIs or develop their own indicators)		

Región / *Region* CAR/SAM	DESCRIPCION DEL PROYECTO /*PROJECT DESCRIPTION*	N° NEOSPACE - 1	
Programa/*Programme*	**Título /*Title***	**Inicio/ Start**	**Término/ End**
Optimización espacio Aéreo CAR/SAM ***CAR/SAM Airspace Optimization***	Implantación de módulos APTA y FRTO del GANP para incrementar la performance de la eficiencia, la capacidad y la seguridad operacional *Implementation of APTA and FRTO modules of the GANP to increase performance of efficiency, capacity, and safety* Coordinadores del proyecto/ *Project coordinators* ✓ Julio Cesar de Souza Pereira (IATA) ✓ Eddian Méndez (CAR) ✓ Fernando Hermoza (SAM)	ENE 2024 *JAN 2024*	DIC 2027 *DEC 2027*

MODULO APTA

Indicador Básico - Capacidad

KPI 10 – Rendimiento máximo del aeropuerto

Indicadores Avanzados - Eficiencia

KPI 17 - Nivelación durante el ascenso

KPI 19 - Nivelación durante el descenso

APTA MODULE

Basic Indicator - Capacity

KPI 10 – Airport peak throughput

Advanced Indicators - Efficiency

KPI 17 – Level-off during climb

KPI 19 - Level-off during descent

MODULO FRTO

Indicadores Básicos- Eficiencia

KPI 04 - Extensión en ruta del plan de vuelo presentado

KPI 05 - Extensión en ruta

Indicadores Básicos – Seguridad Operacional

KPI20 – Número de accidentes de aeronaves

KPI23 – Número de eventos airprox/alertas TCAS/pérdida de separación/cuasi colisión en el aire/ colisión en el aire (MAC)

Indicadores Avanzados - Eficiencia

KPI 17 - Nivelación durante el ascenso

KPI 19 - Nivelación durante el descenso

Indicador Avanzado – Capacidad

KPI 06 – Capacidad de espacio aéreo en ruta

FRTO MODULE

Basic Indicators - Efficiency

KPI 04 – Filed flight plan En-route extension.

KPI 05 – Actual en-route Extension

Basic Indicators – Safety

KPI20 – Number of aircraft accidents

KPI23 – Number of airprox events/TCAS alerts/separation loss/mid-air near collision/mid-air collision (MAC)

Advanced Indicators - Efficiency

KPI 17 – Level-off during climb

KPI 19 - Level-off during descent

Advanced Indicator – Capacity

KPI 06 – En-route Airspace capacity

Región / *Region* CAR/SAM	DESCRIPCION DEL PROYECTO /*PROJECT DESCRIPTION*	N° NEOSPACE - 1	
Programa/*Programme*	**Título /*Title***	**Inicio/ Start**	**Término/ End**
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5. Estrategia **Strategy**	○ La ejecución de las actividades del Proyecto será coordinada a través de las comunicaciones entre miembros del Proyecto, los Coordinadores del Proyecto y el Coordinador del Programa a través de reuniones de los grupos de implantación en CAR y SAM. Se consideran otros eventos o entregables (estudios, material guía, Talleres, etc.). ○ Se deberá realizar reuniones de coordinación semestrales entre el SAMIG/GESEA y el NACC WG/AOTF. ○ El proyecto reconoce la necesidad de seguir apoyando la recuperación de la conectividad aérea en CAR y SAM, a través de optimización de la eficiencia y capacidad. Se prevé robustecer la armonización interregional e intrarregional para la implantación de FRTO y APTA. ○ A la vez, el proyecto fomenta el trabajo de los Estados/Organizaciones para fortalecer sus capacidades en materias de planificación basada en performance, impulsando la formulación, calculo y monitoreo de indicadores KPI del GANP, con lo cual se avanza en la gestión del **Volumen III**[5] del Plan Regional ANP CAR/SAM. Ver debajo en línea 6 los procesos para realizar esta transición. ○ Se prevé un trabajo colaborativo con todas las partes interesadas; ANSP, Estados, Usuarios, Aerolíneas, Organizaciones e Industria. ○ The execution of the Project activities will be coordinated through communications between Project members, the Project Coordinators, and the Program Coordinator through meetings of the implementation groups in CAR and SAM. Other events or deliverables (studies, guidance material, workshops, etc.) are considered. ○ Biannual coordination meetings should be held between SAMIG/GESEA and NACC WG/AOTF. ○ The project recognizes the need to continue supporting the recovery of air connectivity in CAR and SAM, through optimization of efficiency and capacity. It is expected to strengthen interregional and intraregional harmonization for the implementation of FRTO and APTA. ○ At the same time, the project promotes the work of States/Organizations to strengthen their capacities in performance-based planning, promoting the formulation, calculation and monitoring of GANP KPI indicators, which advances in the management of Volume III6 of the ANP CAR/SAM Regional Plan. See below on line 6 the processes to make this transition.		

[5] *En el Volumen III, se estipulan los elementos del plan dinámicos/flexibles proporcionando guías de planificación de la implementación para sistemas de navegación aérea.*

[6] *Volume III stipulates the dynamic/flexible plan elements by providing implementation planning guidelines for air navigation systems.*

Región / *Region* CAR/SAM	DESCRIPCION DEL PROYECTO /*PROJECT DESCRIPTION*	N° NEOSPACE - 1	
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	o Collaborative work with all stakeholders is envisaged; ANSP, States, Users, Airlines, Organizations, and Industry.		
6. Metas **Targets**	Se avanzará progresivamente desde el uso de métricas de soporte hacia la gestión de indicadores KPI seleccionados del GANP, en el contexto de ambiciones de mejora de performance. Se definen tres procesos: o Proceso 1 (no más allá de diciembre 2025): Se estipulan y monitorean las metas definidas en base a métricas de soporte. Simultáneamente, los Estados refuerzan y/o completan actividades de cálculo de líneas base para KPI seleccionados. o Proceso 2 (no más allá de diciembre 2026): Se monitorean las metas definidas en base a métricas de soporte. Estados completan las líneas base de KPI, y se inicia monitoreo de dichos indicadores. o Proceso 3 (no más allá de diciembre 2027): Establecimiento de monitoreo de metas en base KPI. Las Métricas de soporte se utilizan sólo como referencia complementaria del progreso de implantación. Progress will be made progressively from the use of supporting metrics to the management of selected GANP KPIs, in the context of performance improvement ambitions. Three processes are defined: 1. Process 1 (no later than December 2025): Defined targets are stipulated and monitored based on supporting metrics. Simultaneously, States reinforce and/or complete baseline calculation activities for selected KPIs. 2. Process 2 (no later than December 2026): Defined targets are monitored based on supporting metrics. States complete the KPI baselines, and monitoring of these indicators begins. 3. Process 3 (no later than December 2027): Establishment of target monitoring based on KPIs. Support metrics are used only as a complementary reference for the implementation progress.		
7. Justificación **Justification**	o GREPECAS/20 identificó que las actividades en región CAR/SAM están avanzando en conjunto con la Industria, y la armonización entre ellas debería comenzar lo antes posible. Se concordó que dichas iniciativas deben ser agrupadas bajo un único Programa de GREPECAS, para desarrollar de manera armonizada e interoperable los conceptos para la optimización del espacio aéreo que abarcan, además de la implantación PBN, varios módulos/elementos operacionales del GANP. o El presente proyecto se enfoca en las áreas clave (KPA) de **Capacidad, Eficiencia** y **Seguridad Operacional** con el propósito de reducir la brecha entre la trayectoria de vuelo real y la trayectoria optima deseada por los usuarios. Asimismo, implementar rutas y procedimientos de vuelo por instrumentos que incrementen la ratio de llegadas del aeropuerto e incrementen la accesibilidad al aeropuerto, a la vez que se garantiza la seguridad operacional.		

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	○ El proyecto apoya la optimización de la estructura del espacio aéreo de regiones CAR/SAM que se encuentra en progreso desde inicios de la implantación del módulo APTA en 2013, así como la implantación del módulo FRTO que se inició a través de varias iniciativas en CAR y SAM después del periodo de pandemia, con miras a respaldar la recuperación y sostenibilidad de la Industria, así como restablecer la conectividad aérea. ○ Simultáneamente, se impulsa la implantación efectiva del Volumen III del ANP CAR/SAM. ○ GREPECAS/20 identified that activities in the CAR/SAM region are advancing together with the industry, and harmonization between them should begin as soon as possible. It was agreed that these initiatives should be grouped under a single GREPECAS Program, to develop in a harmonized and interoperable manner the concepts for the optimization of airspace that cover, in addition to PBN implementation, several modules/operational elements of the GANP. ○ This project focuses on the key performance areas (KPA) **Capacity, Efficiency and Safety** in order to reduce the gap between the actual flight path and the optimal trajectory desired by users. Likewise, implement routes and instrument flight procedures that increase the airport's arrival ratio and increase accessibility to the airport, while ensuring operational safety. ○ The project supports the optimization of the airspace structure of CAR/SAM regions that is in progress since the beginning of the implementation of the APTA module in 2013, as well as the implementation of the FRTO module that was initiated through several initiatives in CAR and SAM after the pandemic period, with a view to supporting the recovery and sustainability of the Industry, as well as restoring air connectivity. ○ At the same time, the effective implementation of Volume III of the ANP CAR/SAM is promoted.		
8. Proyectos relacionados **Related projects**	A2 - Sistemas de Navegación Aérea en apoyo de la PBN. B1 - Mejorar el equilibrio entre la demanda y la capacidad. A2 - Air Navigation Systems in support of PBN. B1 - Improving the balance between demand and capacity.		

Resultados Entregables *Deliverables*	Referencia al GANP *GANP references*	Responsable (s) Accountables	Estatus * Status *	Fecha entrega *Delivery date*	Comentarios *Comments*
Elaboración de material guía regional sobre implantación del módulo FRTO, y conceptos EDE y UPR Development of regional guidance material on implementation of the FRTO module, and EDE and UPR concepts	Elementos seleccionados del módulo FRTO Selected FRTO module elements	Oficinas Regionales Estados Industria *Regional Offices* *States* *Industry*			
Hoja de ruta implantación FRTO Región CAR/SAM. FRTO implementation roadmap CAR/SAM region.	Elementos seleccionados del módulo FRTO Selected FRTO module elements	Oficinas Regionales Estados Industria *Regional Offices* *States* *Industry*			
Revisión de la hoja de ruta implantación APTA Región CAR. Review of the APTA CAR Region implementation roadmap.	Elementos seleccionados del módulo APTA Selected elements of the APTA module	Oficinas Regionales Estados Industria *Regional Offices* *States* *Industry*			En el marco de la Resolución A-37-11 de la Asamblea. Within the framework of Assembly Resolution, A-37-11.
Revisión de la hoja de ruta implantación APTA Región SAM. Review of the APTA SAM Region implementation roadmap.	Elementos seleccionados del módulo APTA Selected elements of the APTA module	Oficinas Regionales Estados Industria *Regional Offices* *States* *Industry*			En el marco de la Resolución A-37-11 de la Asamblea. Within the framework of Assembly Resolution, A-37-11.

* *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 estimado se requiere adoptar medidas mitigatorias.*
** Grey* *Task not started.*
Green *Activity in progress according to schedule.*
Yellow *Activity started with some delay but would be arriving on time in its implementation.*
Red *The implementation of the activity has not been achieved in the estimated period; it is necessary to adopt mitigating measures.*

APPENDIX C
CONTINGENCY PLAN TEMPLATE
ATM REGIONAL CONTINGENCY PLAN FOR CTA/UTA/FIR

OBJECTIVE

1. This contingency plan contains arrangements to ensure the continued safety of air navigation in the event of partially or total disruption of ATS and is related to ICAO Annex 11- *Air Traffic Services*. The contingency plan should be designed to provide alternative routes, using existing ATS infrastructure in most cases, which will allow aircraft operators to fly through or avoid airspace within the (XXX) Control Area (CTA)/Upper Control Area (UTA)/FIR.

AIR TRAFFIC MANAGEMENT

ATS Responsibilities

2. Tactical ATC considerations during periods of overloading may require re-assignment of routes or portions thereof.

3. Alternative routes should be designed to maximize the use of existing ATS route structures and communication, navigation and surveillance services.

4. In the event that ATS cannot be provided within the (XXX) CTA/UTA/FIR, the Civil Aviation Authority (CAA) shall publish the corresponding NOTAM/ASHTAM indicating the following:

a) time and date of the beginning of the contingency measures;
b) airspace available for landing and overflying traffic, and airspace to be avoided;
c) details of the facilities and services available or not available and any limits on ATS provision (e.g., ACC, Approach (APP), Tower (TWR) and Flight Information Service (FIS)), including an expected date of restoration of services if available;
d) information on the provisions made for alternative services;
e) ATS contingency routes;
f) procedures to be followed by adjacent ATS units;
g) procedures to be followed by pilots; and
h) any other details with respect to the disruption and actions being taken that aircraft operators may find useful.
i) Emergency contact information for the relevant ATS authority.

5. In the event that the CAA is unable to issue the NOTAM, it shall designate an alternate CTA/UTA/FIR who will be responsible for issuing the NOTAM, under the LoA or Memorandum of Understanding (MoU) with other State or International Organization, of closure airspace upon notification by corresponding CAA or the ICAO NACC Regional Office.

Separation

6. Separation criteria will be applied in accordance with the Procedures for Air Navigation Services in Doc 4444 – *ATM – Air Traffic Management* and the Regional Supplementary Procedures (Doc 7030).

Level Restrictions

7. Where possible, aircraft on long-haul international flights shall be given priority with respect to cruising levels.

Other measures

8. Other measures related to the closure of airspace and the implementation of the contingency scheme in the (XXX) CTA/UTA/FIR may be taken as follows:

a) suspension of all VFR operations;
b) delay or suspension of general aviation IFR operations; and
c) delay or suspension of commercial IFR operations.

TRANSITION TO CONTINGENCY SCHEME

9. During times of uncertainty when airspace closures seem possible, aircraft operators should be prepared for a possible change in routing while en-route, familiarization of the alternative routes outlined in the contingency scheme as well as what may be promulgated by a State via NOTAM, Aeronautical Information Circular (AIC), Supplement (SUP) or AIP.

10. In the event of airspace closure that has not been promulgated, ATC should, if possible, broadcast to all aircraft in their airspace, what airspace is being closed and to stand by for further instructions.

11. ATS providers should recognize that when closures of airspace or airports are promulgated, individual airlines might have different company requirements as to their alternative routings. ATC should be alert to respond to any request by aircraft and react commensurate with safety.

TRANSFER OF CONTROL AND COORDINATION

12. The transfer of control and communication between ATS units should be at the common FIR boundary unless there is mutual agreement between adjacent ATS units. ATS providers should also review current coordination requirements in light of contingency operations or short notice of airspace closure. The bilateral letter of agreements should include requirements to ensure all procedures, coordination, and agreements are properly documented between all facilities involved.

PILOTS AND OPERATOR PROCEDURES

13. Pilots need to be aware that in light of current international circumstances, a contingency routing requiring aircraft to operate off of normal traffic flows, could result in an intercept by military aircraft. Aircraft operators must therefore be familiar with international intercept procedures contained in ICAO Annex 2 –*Rules of the Air*, paragraph 3.8 and Appendix 2, Sections 2 and 3.

14. Pilots need to continuously guard the VHF emergency frequency 121.5 MHz and should ensure transponders are operational at all times during flight, regardless of whether the aircraft is within or outside airspace where Secondary Surveillance Radar (SSR) is used for ATS purposes. Transponders should be set on a discrete code assigned by ATC or select code 2000 if ATC has not assigned a code.

15. If an aircraft is intercepted by another aircraft, the pilot shall immediately:

a) follow the instructions given by the intercepting aircraft, interpreting and responding to visual signals in accordance with international procedures;
b) notify, if possible, the appropriate ATS unit;
c) attempt to establish radio communication with the intercepting aircraft by making a general call on the emergency frequency 121.5 MHz and 243 MHz if equipped; and
d) set transponder to code 7700, unless otherwise instructed by the appropriate ATS unit.

16. If instructions received by radio from any source conflict with those given by the intercepting aircraft, the intercepted aircraft shall request immediate clarification while continuing to comply with the instructions given by the intercepting aircraft.

OVERFLIGHT APPROVAL

17. Aircraft operators should obtain overflight approval from States/Territories/International Organizations for flights operating through their jurisdiction of airspace, where required. In a contingency situation, flights may be rerouted at short notice and it may not be possible for operators to give the required advanced notice in a timely manner to obtain approval. States/Territories/International Organizations responsible for the airspace in which contingency routes are established should consider making special arrangements to expedite flight approvals in these contingency situations.

CONTINGENCY UNIT

18. The ATM national contingency unit assigned the responsibility of monitoring developments that may dictate the enforcement of the contingency plan and coordination of contingency arrangements is:

Name of Agency:
Contact Person:
Telephone:
Fax:
Email:

19. During a contingency situation, the National Contingency Unit will coordinate with the adjacent ATS units and liaise with the ICAO NACC Regional Office as appropriate.

20. The ICAO NACC Regional Office shall:

a) closely oversee the situation and coordinate with all affected States/Territories/International Organizations and the IATA Regional Office, so as to facilitate the provision of air navigation services to international aircraft operations in the CAR Region;
b) take note of any incidents reported and take appropriate action;
c) provide assistance as required on any issue with the CAAs involved in the contingency plan; and
d) keep the President of the Council of ICAO, the Secretary General, Strategic Planning Coordination and Partnerships (SPCP) Office and Director/Air Navigation Bureau (D/ANB) continuously informed on developments, including activation of the contingency plan.

CONTINGENCY ROUTING SCHEME

21. Aircraft operators should file their flight plans using the alternative contingency routes listed in the scheme below in order to operate in the airspace under the jurisdiction of (XXX).

Present ATS ROUTE	**CONTINGENCY ROUTINGS**	**FIRs INVOLVED**
In lieu of:	**(ATS unit)** provides ATC on the following routings: ***CR1:*** ***CR2:*** ***CR3:***	**XXX**: In coordination with **XXX**
In lieu of:	**(ATS unit)** provides ATC on the following routing: ***CR4:***	**XXX**: In coordination with **XXX**

22. All aircraft should establish and maintain contact on published VHF or HF frequencies with the (*XXX*) ATS unit (APP/ACC/FIC) responsible for the airspace being traversed.

List of points of contact of all concerned States/Territories/International Organizations, IATA and ICAO NACC Regional Office.

State /International Organization	***Point of contact***	**Telephone**	**E-mail**
		Tel.	
		Tel.	
		Tel.	
IATA		Tel.	
ICAO (Regional Office)		Tel.: AFTN:	

International Civil Aviation Organization (ICAO)
ICAO South American Office (SAM)
ICAO North American, Central American and Caribbean Office (NACC)

GUIDANCE MATERIAL

AIRPORT CONSULTATIVE COMMITTEES

Version 1.3

Date: 26/September/2023

Developed as part of the GREPECAS F2 Project
on Airport Planning for the ICAO CAR and SAM Regions

ADPLAN Project – Airport Consultative Committees

The designation and manner in which information is presented in this publication should not be interpreted as reflecting any opinion on the part of ICAO regarding the legal status of any country, territory, city, or area, including its governing authorities, or the demarcation of its borders or boundaries

1 Generalities

1.1 Project Sheet

Project Identification	
Program	F - Aerodromes (AGA)
Project Code	GREPECAS F2
Project Title	Airport Planning
Project Acronym	ADPLAN
Document Identification	
Document title:	Guidance material for Airport Consultative Committees
Version:	1.3-ENG
Date:	26/September/2023
Location:	
File name:	*GREPECAS CARSAM ACC Guidelines_1.3.ENG.docx*
Contact person:	SAM Region Fabio Salvatierra De Luca ICAO SAM Regional Office, Lima- Peru fsalvatierra@icao.int sam_aga@icao.int CAR Region Fabiana Todesco ICAO NACC Office, Mexico D.F. Mexico ftodesco@icao.int
Organization:	ICAO

This document is only valid on the day it was printed.

1.2 Revision history

Version	Date	Reviser	Status*	Commentary
1.0		FS	Work draft	New document
1.1	20/01/23	IATA (SG), FS	Work draft	IATA Inputs
1.2	18/09/23	IATA, FT, FS	Draft	Final revisions
1.3	26/09/23	IATA, FT, FS	Preliminary Proposal	

** Status caption:*
***Work draft**: Document under preparation by a team member; **Draft:** Document submitted for review and preliminary approval; **Preliminary proposal:** Document authorized by the Project Manager (Secretariat); **Final for publication**: Document authorized by the Sponsor (GREPECAS)*

1.3 Approvals

Function	Name/Entity	Date

2 Table of Contents

3 Abbreviations and Acronyms

ACC	Airport Consultative Committees
ADPLAN	Aerodrome Planning
AGA	Aerodromes and Ground Aids
ANP	Air navigation plan
AOC	Airport Air Operators Committee
CAR	ICAO Central American and Caribbean Region
CRPP	GREPECAS Programs and Projects Review Committee
GANP	Global air navigation plan
GREPECAS	CAR/SAM regional planning and implementation group
ICAO	International Civil Aviation Organization
NACC	ICAO North American, Central American and Caribbean Office
SAM	ICAO South American Region

4 Background

Based on the **Declaration to Promote Connectivity Through The Development And Sustainability Of Air Transport In The Pan-American Region – Vision 2020-2035 (IWAF / 4)**, endorsed by the Pan American States in Fortaleza, Brazil in 2018; the Aviation sustainable development in the Region depends on its operations capacity and efficiency availability, through coordinated actions, aligned with the Global Air Navigation Plan.

Airports are an important link in the process to ensure the necessary capacity and efficiency for aircraft operations to take place. For their part, the CAAs, in their regulatory role of civil aviation, serve as propelling engines to guarantee that the needs of the sector are met by the different actors outside of aviation, but that they can impact and could be impacted, as in the case of the urban planning authorities, tourism, neighboring communities, among others.

In September 2018, a Seminar and Workshop on Airport Planning for the SAM Region (code 18ADPLAN) was held at the ICAO SAM Regional Office premises.

As a result of the event, the group agreed that the SAM Region should adopt a vision to address the airport infrastructure problems that were clearly identified at the event. This agreed vision was:

"To be a Region recognized worldwide for the collaborative planning of its airports, which guarantees timely and balanced capacity to bring the benefits of air transport to the entire population of South America."

That said, in July 2019 the GREPECAS Programs and Projects Review Committee (CRPP/5) meeting ratified Decision CRPP/05/06 that approved a new F2 Project under the GREPECAS AGA Program related to the Airport Planning initiatives implementation for the CAR and SAM Regions.

Referring to the Project approved Business Case, one of the main expected results is that *"States will implement provisions to ensure that selected airports have updated master plans in consultation with interested parties"*.

This guide contemplates a work initially prepared by the GREPECAS Secretariat, with the support of IATA, with the purpose of guiding the States of the CAR and SAM Regions that haven't implemented consultation mechanisms for airport projects, to have a guidance to do so.

This guide is mainly aimed at those capital (infrastructure) and operational investment projects that have an impact on air operations, so it is oriented towards the creation of a committee in its nature made up of those who operate at the airport. However, it is accepted that in some types of projects there is a need to involve other interested parties in the investments of an airport, such as the neighboring community. For these cases, a different analysis is required, which is not the subject of this guide. The reader is recommended to consult ICAO Document 9184 part 2 - Land use and environmental management available on the portal https://store.icao.int .

The guide has been based on best practices taken from the transport departments of the United Kingdom (UK), Australia and contributions from industry such as IATA, as well as contributions from specialists on the subject and representatives of GREPECAS Member States.

5 Executive Summary

A large part of the Civil Aviation Authorities, when understanding the importance of consultative processes and collaboration between the actors of the system, requires that the infrastructure master planning produced by the airport operator is carried out in an open and transparent manner, guaranteeing effective consultation with airport users (airlines, air navigation providers, airport users, etc.), urban planning authorities and with their local communities.

Airport Consultative Committees (ACCs) are an acceptable mechanism in several States where airports should interact with stakeholders regarding infrastructure development.

For this reason, the GREPECAS Member States approved under the F2 Project on Airport Planning (CRPP/5 Meeting), 4 work packages, each one related to a product expected by the project, among which is a work on consultative process guides.

Guidance Material	Consultative Processes Guide	Project Regulation	Implementation Support
•Guidance material for States to align local Master Plans with National and Regional Plans	•Guidance material for States to support a collaborative consultative approach to airport planning.	•Regional regulation project aligned to annex 14 vol. I including new requirements for aerodrome master planning so that States can harmonize with their local regulations.	•Capacity building and knowledge transfer to State and airport experts in the airport planning area

This document presents a proposal for Work Package #2– **Consultative Processes Guide.**

This **Guidance Material** is intended to assist those involved in the establishment, operation, management, and participation in Airport Consultative Committees. While States recognize that each Airport Consultative Committee must work in a way that best suits the local circumstances in which it operates, this document sets out some specific principles and standards that committees can use to ensure they operate effectively, efficiently and constructively, seeking a result that best meets local needs, including those of airports, airlines and the State.

6 Airport Consultative Committee (ACC) Definition

ACCs are structured forums that provide an opportunity for the exchange of information between aerodrome operators, airlines, air navigation providers and other parties directly involved in the operation. They make **recommendations** to aerodrome management and other bodies when appropriate, as well as being a mechanism offering an opportunity to reach a common understanding among interested groups on issues that may impact them, such as aerodrome master planning, infrastructure projects review of traffic forecasts, and evolution of CAPEX and OPEX plans.

As the committee does not have executive powers, its role is more like that of an 'advisor', to offer medium and long-term strategic directions and encourage the airport to act on its recommendations, noting items that need consideration, in addition to being objectively critical of the areas in which the airport could implement international best practices, operational and cost efficiencies.

Also, depending on the national regulatory environment, the ACC can provide the Authority/State with the recommendations and instruments to guarantee compliance with national requirements including due consultation with parties directly interested in the operation of the airport and to guarantee that planning is aligned with the long-term objectives established by the State.

7 ACC objectives

Expected objectives of this ACC consultation include:

i. allow the aerodrome operator, airlines and air navigation service providers and other venues to exchange information and ideas;
ii. ensure that a capital investment (CAPEX) proposal at the airport has been fully explored among all stakeholders, the concerns of interested/affected parties have been identified and possible alternatives have been explored, including maintaining the status quo (i.e. scenario 'do nothing');
iii. enable aerodrome operators, communities in the vicinity of the aerodrome, local authorities, local business representatives, aerodrome users (including airlines and direct service providers) and other interested parties to exchange information and ideas;
iv. enable aerodrome operators to identify, share, take into account and monitor potential trends, perceptions and challenges that may arise over time with specific interest groups;
v. minimize unnecessary and costly disputes;
vi. alignment of interests and objectives with airlines and authorities;
vii. that all related groups have the same information, reducing asymmetries and improving the quality of decisions.

However, it is important to note that the ACC is not intended to:

- detract from or limit the regulator's responsibility in making and implementing necessary regulatory decisions;
- detract from or limit the responsibility of the aerodrome owner and/or operator to manage the aerodrome;
- prevent interested parties from raising concerns directly with the aerodrome or through other channels.

8 Terms of reference

It is recommended that each ACC establish terms of reference consistent with the role and purpose described above.

It is recommended that the ACC include in its terms of reference provisions about the following principles:

ACC Principles

8.1 Independence

Although it is usually the aerodrome operator who moderates ACC activities, it is important that the process be open and transparent, in which there is openness to receive comments and constructive criticism, facilitating the representation of the entire industry to maintain trust of interested parties.

The committee must be transparent and free to express its points of view on the different aspects discussed. The committee will aim to work towards a consensus vision that represents the interests of users. When consensus is not possible the committee will provide a clear view of the different opinions.

8.2 Representative

The ACC size and membership will depend on local circumstances but should be both manageable and sufficient to achieve its objectives efficiently.

Although personal experience can be helpful, members should represent the strategic views of their broader organization (unless they have been appointed as independent committee members), and the long-term objectives of the industry, consulting with other members of the organization before meetings and providing feedback afterwards.

Ideally, each organization should appoint a senior representative to the ACC, who will coordinate the activities and information needs within their own entities. Thus, it seeks to guarantee full understanding of the scope of the plans discussed. It is important that, to the extent possible, members have the authority to speak on behalf of their organization, as well as coordinate the participation of experts in different subjects, when necessary, in the development of the sessions.

For existing aerodromes, it is advisable to have the assistance of a representative of the operating committee who provides the local perspective, both strategic and operational.

8.3 Include subject matter experts

While members themselves are not expected to be experts on all issues the committee discusses, members should seek to gain a general understanding of the issues involved and should have a deeper understanding of the area they represent. All members should take an interest in the issues being discussed at the meetings and be prepared to seek the advice of others.

It is often helpful if members are allowed to be accompanied by technical advisors or consultants who have experience in the topics discussed and/or other relevant specific knowledge.

Depending on the size of the aerodrome and the issue to be considered, the committee may consider appointing an appropriate consultant with experience in the topics discussed and/or another relevant specific knowledge to act as a specialist advisor to the committee as a whole.

8.4 Transparency

Committees should be as open and transparent as possible about the issues they discuss and the conclusions they reach.

The local community at large and airport users should be aware of the advisory committee's existence and its role in relation to aerodrome operations, as well as how to contact at least the Secretary of the committee.

8.5 Constructive and effective

To the extent possible, the committee should take a constructive role on issues, taking the opportunity to influence issues where appropriate.

8.6 Terms of reference

The terms of reference may include, among other, the following:

i. plans for future development, phases and investment triggers being taken to implement the airport Master Plan or develop a new plan;
ii. conceptual, schematic, and detailed designs of the different infrastructure areas (track system, taxiways, passenger terminals, air cargo processes, etc.)
iii. proposals to increase or change the airport's operation schemes (attention to new modalities, etc.);
iv. operational and cost impacts of the proposed development and on existing operations (both during construction and future);
v. potential impacts on rates associated with planned investments;
vi. noise (including aircraft noise) and environmental issues;
vii. land transportation and access problems;
viii. access issues for passengers, including people with disabilities;
ix. planning, regulatory and policy changes affecting the airport;
x. improvements or changes to airport facilities;
xi. airport procedures for effective complaint handling;
xii. reports from the Civil Aviation Authority on issues affecting the community;
xiii. the airport's contribution to the local, regional and national economy; and
xiv. strategies to ensure that the broader community is informed about the issues discussed at the ACC.

9 Committee Organization

It is recommended that ACCs meetings be held once a year if there are no specific projects for discussion, and a minimum of 2 times a year if there is an ongoing capital investment program (CAPEX). However, depending on the speed of the projects and if the committee considers it, the frequency of these meetings could be changed so that they are sufficient to address the issues raised. Additionally, at times of high activity in development programs, sub-working groups dependent on the ACC may be formed to allow for more frequent meetings to discuss specific topics.

The committee should have a **Committee Chair**, who should be elected in an open and transparent manner with the involvement of the committee itself. The President should preferably be a senior representative of the airport or of an airline with local operation. It is important that the Chair promotes a space for openness and discussion, that is impartial and able to command the respect of other committee members, furthermore, should be able to bring together a wide range of viewpoints and articulate coherent conclusions by the Committee.

The Secretariat, whose main functions are to organize and provide resources to support the effective work of the committee, including the provision of means (rooms, digital media, etc.), convocation,

preparation of minutes and reports, filing and communications, etc. Based on the experience of some States, the airport operators are expected to take the Secretariat role.

Finally, the members of the committee will take part in the discussions and decision making, as stipulated in the terms of reference.

9.1 Membership

The Secretary of the committee shall ensure that the interested parties are duly represented in the ACC. Usually, each interested party chooses or appoints a representative of the ACC. Members can be appointed indefinitely or for specific terms.

The ACC size and membership will depend on local circumstances but should be manageable and sufficient to achieve its objectives.

ACC membership should include individuals who can provide representative views of:

- **Aerodrome operators**: entity responsible for the administration, operation and management of airport infrastructure.
- **Air operators** Airlines (cargo, passengers, other operators) and their representatives are the main users of airports and an important source of income for airport operators. While airlines are customers of airports, they are also business partners, as the business strategies of both airlines and airports are closely linked and the success of one often depends on the success of the other. The forecasts, type of operation and needs of the airlines should be a fundamental part of the analysis of infrastructure projects.
- **Airport authorities:** the various airport authorities that carry out activities such as border control, customs, migration, phytosanitary controls, police, security entities, among others, should be consulted regarding their specific demands on the design, especially within the terminal.
- **Air navigation service providers:** consider a representation of the ANSP operating at the aerodrome.
- **Civil Aviation Authorities:** in charge of both the regulatory part and the national airport planners (if they are not in the AAC, invite the Secretariat or government department in charge of said planning).
- **Concession managers (if applicable):** In some States the Airport Concession Manager is an entity independent of the AAC.

Also, ACCs can invite other interested parties who, depending on the topics discussed, have contributions to the consultation process:

- **Other airport users depending on the topic to be discussed**: To the extent possible, a wide range of airport users should be invited to participate in the committees, or at least their opinions should be taken into account. This may include, but is not limited to: retailers, aviation schools, freight transport companies, ground handlers, as well as those involved in any general aviation operating from the airport.
- **Local, environmental, urban planning and other authorities**: Local Authority members have an important representation role on behalf of their constituents, particularly when representing communities close to or impacted by airport operations. They should represent the full range of issues relevant to their authority, including planning, economic and environmental interests in ACCs. meeting agendas preparation and distribution;

9.2 Secretariat

The functions assigned to the Secretariat will include:

- communication of the arrangements made for the ACC, including any framework documents, such as procedural arrangements and terms of reference, to members
- preparation, distribution and publication of minutes of ACC meetings;
- preparation and distribution of meeting agendas;
- ensure that ACC members are notified of meetings and have the opportunity to prepare for the meetings;
- support the activities of the President, as necessary.
- coordinate input to assist ACC on policy, technical and other support issues, where agreed;
- maintain complete records of ACC activities; and
- prepare an annual report on the operations and achievements of the ACC and publish this report on the airport's website (or on the ACC's own website, if one exists).

10 References

Some references used for the preparation of this document.

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APPENDIX E
ADJUSTMENTS/RECOMMENDED ACTIONS (TO OPTIMISE THE WORK OF THE REGIONAL GROUP AND TO ENHANCE THE RELEVANCE FOR STATES AND THE INDUSTRY FOR THE IMPLEMENTATION OF AIR NAVIGATION SERVICES

GENERAL:

a) Review of amendments to ICAO Annexes and Documents
b) Follow up Programme to national and regional air navigation plans aligned with the GANP
c) Participation in the Assembly and Air Navigation Conferences
d) Strengthening the Data Analysis Working Group (DAWG)

MET Area

a) Modifications in MET Documentation to include PANS-MET (Amendment 81 to ICAO Annex 3)
b) Modifications in Volcanic Ash Reporting (QVA and Sulfur Dioxide Density)
c) Creation of Severe Events Advisory Centres.

AIS Area

a) Mainly, the task is the preparation of the System Wide Information Management (SWIM) Regulatory Framework (SWIM)
b) To Improve System concerning to Airmen Notices to (NOTAM)

AGA Area

a) Implementation of ACR/PCR (2024)
b) Major changes to Obstacle Limitation Surfaces (to be reviewed by ANC)
c) Provisions for ground handling services
d) Improvements in visual aids for air navigation
e) Improved operational safety through enhanced visual aids to mark construction works at aerodromes
f) Guidance for airports in mountainous areas (new work programme)
g) Evolution of Collaborative Decision-Making concepts for aviation (Total Airport Management) (new work programme)
h) Vertiports (new work programme)
i) Global Provisions for the Design, Certification and Operations of Water Aerodromes (new work programme)
j) Airport Emergency Plans, Airport Emergency Plans and Assistance to Aircraft Accident Victims and their Families (new work programme)

ATM Area

a) Consolidation of the implementation of Performance Based Navigation (PBN), in departure/arrival segments, approaches and Terminal Area (TMA) structures. Implementation of Area Navigation (RNAV) in upper and lower regional CAR/SAM airspace
b) Optimization of the efficiency and operational safety of Continental and Oceanic airspace
c) Implementation of the Air Traffic Flow Management (ATFM) service based on the cross-border concept. Integration of CAR/SAM services
d) Harmonized planning and implementation of the Free Route Operations (FRTO) module of GANP, Block 0, based on DCT, Flexible Use of Airspace (FUA), User Preferred Routes (UPR) and Conflict Detection and Monitoring elements (new programme)
e) Concept of Operations Induction (CONOPS) on Air Traffic Management for UAS (UTM)

CNS Area

a) Review the Basic Building Blocks (BBB) for Communications, Navigation and Surveillance (CNS) according to the new version of GANP, version 7
b) Support the implementation tasks for the automation of Air Traffic Services Inter-Facility Data Communications (AIDC);
c) Support the completion of the implementation of the Air Traffic Services (ATS) Message Handling System (AMHS)
d) Provision of information to support the development of legislation for Automatic Dependent Surveillance-Broadcasting (ADS-B)
e) Management of frequencies for aviation services
f) Supporting the development of States' air navigation plans
g) Provide guidance in the regional implementation of CNS infrastructure
h) Support the implementation of Annex 10, Volume VI (Communication Systems and Procedures Relating to Remotely Piloted Aircraft Systems C2 Link)
i) Support the tasks of evaluation and implementation of cybersecurity measures for the area of air navigation.