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

WORKING PAPER

GREPECAS/22 — WP/47.
13/11/24

Fourth GREPECAS–RASG-PA Joint Meeting and
Twenty-second Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/22)
Virtual Phase (Asynchronous, 16 September to 18 October 2024)
In-Person Phase (Lima, Peru, 20 to 22 November 2024)

Agenda Item 7: Results from the Virtual Phase

RESULTS FROM THE VIRTUAL PHASE

(Presented by the Secretariat)

EXECUTIVE SUMMARY	
This working paper presents the results from the virtual phase of the meeting (Agenda Items 1 to 6 refer) for consideration and approval by the Meeting.	
Action:	The suggested actions are presented in Section 2.
Strategic Objectives:	• Safety • Air Navigation Capacity and Efficiency • Economic Development of Air Transport • Environmental Protection

1.1 The draft report of agenda items 1 to 6 is presented in the **Appendix.**

2. Suggested Action

2.1 The Meeting is invited to approve the initial draft report of Agenda Items 1 to 6 as well as the conclusions/decisions in it. Further updates will be included based on the in-person session of GREPECAS/22, which in the end will result in a complete draft report of the GREPECAS/22 meeting.

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APPENDIX

RESULTS FROM THE VIRTUAL PHASE OF THE MEETING (AGENDA ITEMS 1 TO 6 REFER)

Agenda Item 1 Adoption of the Draft Agenda and Schedule

1.1 Under WP/01 Rev., the Secretariat submitted for consideration the Draft Agenda, working method and schedule of the GREPECAS/22 meeting for consideration and approval of the Meeting.

1.2 During the virtual (asynchronous) phase of the meeting, the States and International Organizations approved the agenda and schedule. However, Costa Rica and El Salvador suggested a change in the order of the AIM topic, moving it from 5.4 to 5.2, so that the CNS, MET, and AGA topics remain grouped in that order. The Secretariat appreciated the suggestion and informed that it would implement this comment in the next GREPECAS meetings.

1.3 IATA suggested conducting an assessment after the meeting to determine whether the new method employed by GREPECAS, combining virtual and in-person phases, was working effectively. The Secretariat appreciated the suggestion and informed that it would carry out a virtual questionnaire to evaluate the new working methodologies of GREPECAS.

1.4 The Draft Agenda and Schedule of the GREPECAS/22 meeting were approved as shown in the historical of this report.

Agenda Item 2 Updates on GREPECAS-RASG-PA Joint Activities

2.1 Under WP/02, the Secretariat presented the collaborative efforts between the CAR/SAM Planning and Implementation Regional Group (GREPECAS) and the Regional Aviation Safety Group–Pan America (RASG-PA) to enhance capacity, efficiency and safety in Air Navigation Services (ANS), aligning with ICAO's Global Air Navigation Plan (GANP) and Global Aviation Safety Plan (GASP).

2.2 In 2023, this list of joint activities between GREPECAS and RASG-PA was updated (Decision 21/01 and Conclusion RASG-PA13/C4/2023), which includes the following activities:

a) Collaboration between the Scrutiny Working Group (GTE) and the RASG-PA Mid-Air Collision (MAC) Working Group;
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 Controlled Flight Into Terrain (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.

2.3 During the virtual (asynchronous) phase meeting, the States, International Organizations and the industry supported this working paper WP/02. Moreover, Costa Rica supported the Language proficiency (LPR) initiative for AIM and suggested taking into consideration that the AIM officer currently uses more reading and writing skills rather than speaking. Panama informed that implementing virtual English reinforcement programs would facilitate staff (AIM, MET, PANOPS, and Telecommunications) participation in these programmes, as well as the continuous monitoring and evaluation of staff's progress.

2.4 Regarding the Project for implementing Performance-Based Navigation (PBN) procedures on a Visual Runway, Mexico reported that it would welcome the opportunity to share experiences to better understand the steps and regulations involved in this implementation. Mexico is currently evaluating the technical guidelines needed to advance to the project's testing phase. Additionally, it would be helpful to have guidance material specifically for implementing PBN procedures on a visual runway

2.5 United States has recognized the effective collaboration between GREPECAS/GTE and PA-RAST in analysing Traffic Collision Avoidance System Resolution Advisory (TCAS-RA) data. Currently, PA-RAST presents TCAS-RA data to GTE, which aids in identifying potential aircraft separation issues. To enhance safety risk reduction, United States recommended that GTE also present Large Height Deviation (LHDs) data at the PA-RAST. By integrating both data sets and broadening stakeholder engagement, GREPECAS GTE and PA-RAST can collaboratively work towards significantly lowering safety risks and achieving the Target Level of Safety (TLS) in the CAR/SAM Regions. The Secretariat noted the comment from United States and will enhance the data analysis process of the GTE to provide more specific data to the PA-RAST.

2.6 The rapporteur and the Secretariat of the GREPECAS GTE presented WP/41, which provided information on the analysis of data on LHDs during 2023. The WP highlighted two situations that significantly impact the CAR/SAM RVSM airspace risk: aircraft without communication and aircraft without information on RVSM approval.

2.7 WP/41 indicated that in the analysis of 2023 LHD events, a contributing risk factor identified was aircraft crossing the receiving Flight Information Region (FIR)'s reporting point without establishing the necessary communication. Delays in communication between the aircraft and the receiving FIR's ATS services may generate LHD events, with risk assessments varying significantly depending on whether the FIR has surveillance coverage.

2.8 Regarding aircraft without RVSM approval information, WP/41 noted that this situation has a significant impact on the Collision Risk Model (CRM) for vertical collision risk, being one of the primary factors contributing to some CAR/SAM FIRs exceeding the Target Level of Safety (TLS). During 2023, the FIRs of Curaçao, Guayaquil, La Paz, Panama and Port-au-Prince, identified a significant number of aircraft operations without the necessary RVSM approval information. WP/41 notes that, as part of the process, whenever CARSAMMA identifies an aircraft not listed in the RVSM approval database, the agency contacts the State of registry. However, it is common for some CAR/SAM States not to respond to CARSAMMA's communications.

2.9 WP/41 requested that CAR/SAM States note the identified factors affecting operational safety in CAR/SAM FIR RVSM airspace, particularly aircraft without communication and information on RVSM capabilities. It also urged States to improve communication with CARSAMMA by facilitating the exchange of data on RVSM capabilities of aircraft registered in CAR/SAM States.

2.10 During the (asynchronous) virtual phase meeting, a significant number of States expressed agreement with the information presented and support for the recommendations in WP/41. Also, some participants emphasized the importance of not including flight numbers, airlines, and other sensitive information when presenting similar information to that in WP/41, a suggestion the Secretariat has noted.

2.11 In order to precisely understand the root cause of these events, the following Decision was adopted:

<table>
<tr><td colspan="2">DECISION GREPECAS/22/1</td><td colspan="2">AD-HOC GROUP TO ASSESS THE COORDINATION OF PA-RAST/MAC – GTE SAFETY ISSUES</td></tr>
<tr><td colspan="3">What:
An Ad-hoc Group is established under the responsibility of PA-RAST/MAC, in coordination with the GREPECAS GTE and the ICAO Secretariat, to assess the root cause of the identified issues which results will be presented by the ESC/40 meeting.</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="4">Why:
To identify the causes of LHDs in RVSM airspace in the CAR/SAM Regions.</td></tr>
<tr><td>When:</td><td>Results to be presented by ESC/40</td><td colspan="2">Status: X☐ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td>Who:</td><td>☐ States ☐ ICAO ☒ Other:</td><td colspan="2">PA-RAST</td></tr>
</table>

2.12 Finally, Argentina requested an update of the SAM Region AGA Dashboard. Concerning GTE meetings, Argentina suggested incorporating virtual sessions to facilitate expert participation. Besides, Aruba, Brazil, United States and others requested improvements to the texts of WP/02. The Secretariat noted the comment.

2.13 Based on this discussion and after two years, GREPECAS and RASG-PA recognized that:

a) certain activities align more specifically with the mandates of either group, such as AIS competency (GREPECAS) and turbulence prevention (RASG-PA);
b) implementation of PBN procedures on a Visual Runway in SAM Region is on stand, and the same implementation in the CAR Region on PBN was suggested to be revisited with Mexico; and
c) all the rest of the joint activities is still in process, such as Collaboration between the GTE and the RASG-PA MAC Working Group); CAR and SAM Runway Safety Team (RST) Implementation Project; Air Traffic Services (ATS) Language Proficiency Project;

Agenda Item 3 Follow-up on the Valid GREPECAS Conclusions and Decisions

3.1 Under WP/03, the Secretariat presented an executive summary of follow-up actions, which included the Conclusions and Decisions from previous GREPECAS meetings and from jointly by RASG-PA and GREPECAS meetings.

3.2 During the (asynchronous) virtual phase meeting, the States and International Organizations agreed of the status of the Conclusions and Decisions, with some adjustments suggested from Argentina, Trinidad and Tobago and IATA.

3.3 Regarding Conclusion GREPECAS/21/21 - Development of an action plan for the ADS-B implementation, IATA reported that a new version of the document was submitted to the NACC and SAM Regional Offices. IATA does not agree with considering this conclusion as completed for the CAR Region, as the review of the Concept of Operations (CONOPS) has not been finalized. IATA and the airlines were not involved in the decision-making process regarding the Automatic dependent surveillance – broadcast (ADS-B) mandate in CAR Region upper airspace. IATA requested a review of this conclusion with the full participation of airspace users. Before implementing a mandate, it is essential to evaluate any necessary changes to navigation systems and the separation minima applicable in an ADS-B environment.

3.4 Considering the observations, the Meeting from its (asynchronous) virtual phase agreed on the following status of Conclusions and Decisions:

Conclusion / Decision	Estado
DECISION GREPECAS/21/01 LIST OF GREPECAS AND RASG-PA JOINT ACTIVITIES	Completed
DECISION GREPECAS/21/02 PARTICIPATION OF THE GTE IN THE PA-RAST MEETINGS	Completed
DECISION GREPECAS/21/03 TCAS-RA AND LHD REDUCTION	Valid
CONCLUSION GREPECAS/21/04 ACTIONS FOR THE PROGRESS OF VOLUME III OF CAR/SAM REGIONAL AIR NAVIGATION PLAN	Valid
DECISION GREPECAS/21/05 APPROVAL OF VERSION 0.1 OF CAR/SAM RANP VOLUME III	Completed
CONCLUSION GREPECAS/21/06 UPDATE OF THE INFORMATION OF PART III (CNS) OF VOLUME II OF THE AIR NAVIGATION PLAN CAR/SAM	Valid
DECISION GREPECAS/21/07 APPROVAL OF THE CAR/SAM AIRSPACE OPTIMIZATION PROGRAMME AND THE NEOSPACE-1 PROJECT	Valid
CONCLUSION GREPECAS/21/08 OPERATIONAL DEVELOPMENT OF THE ATFM SERVICE IN CAR/SAM REGIONS	Valid

Conclusion / Decision	Estado
CONCLUSION GREPECAS/21/09 ACTIONS TO STRENGTHEN CONTINGENCY PLANNING IN THE CAR/SAM REGIONS	Valid
CONCLUSION GREPECAS/21/10 STRENGTHENING OF FREQUENCY MANAGEMENT FOR THE USE OF AIR NAVIGATION SERVICES	Valid
CONCLUSION GREPECAS/21/11 DEVELOPMENT OF TERMS OF REFERENCE FOR A TOOL FOR THE ASSESSMENT OF SURVEILLANCE DATA FROM THE CAR AND SAM STATES	Valid
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	Valid for the CAR Region Completed for the SAM Region
CONCLUSIÓN GREPECAS/21/13 ACTIONS TO ADVANCE THE IMPLEMENTATION OF THE D-ATIS AND THE DCL	Completed for the CAR Region Valid for the SAM Region
CONCLUSION GREPECAS/21/14 PROVISION OF COMMENTS AND ENDORSEMENT OF THE GUIDE OF AIRPORT ADVISORY COMMITTEES	Completed
DECISIONGREPECAS/21/15 MODIFICATIONS TO THE CAR/SAM F3 PROJECT	Completed
CONCLUSION GREPECAS/21/16 ADOPTION OF ICAO RECOMMENDATIONS RELATED TO AERODROMES	Completed
CONCLUSION GREPECAS/21/17 STATE IMPLEMENTATION OF NEW ICAO ANNEX 3 STANDARDS AND RECOMMENDED PRACTICES (SARPs) AND RELEVANT MET REQUIREMENTS	Valid
CONCLUSION GREPECAS/21/18 COMPLETION OF PHASE 2 OF THE AIS ROADMAP TO AIM AND AIS AND INCLUSION OF SNOWTAM IN GREPECAS DASHBOARDS	Valid
DECISION GREPECAS/21/19 REVISION OF DOCUMENT 7383 - AERONAUTICAL INFORMATION SERVICE PROVIDED BY THE STATES	Valid
CONCLUSIÓN GREPECAS/21/20 TELECONFERENCES IN PREPARATION FOR THE FOURTEENTH AIR NAVIGATION CONFERENCE AND COORDINATION MECHANISM FOR POTENTIAL ANCONF WORKING PAPERS	Completed
CONCLUSION GREPECAS/21/21 DEVELOPMENT OF AN ACTION PLAN FOR THE ADS-B IMPLEMENTATION	Valid
DECISION GREPECAS/21/22 ACTION TO FOLLOW UP AND IMPROVE THE ACTIVITIES OF THE GREPECAS WORK PROGRAMME	Completed
CONCLUSION GREPECAS/21/23 SUPPORT THE WORK OF THE GREPECAS GTE	Valid
DECISION GREPECAS/21/24 UPDATES TO PROJECT GREPECAS A2 GNSS AUGMENTATION	Valid

Conclusion / Decision	Estado
DECISION GREPECAS/21/25 AMENDMENTS TO GREPECAS MANAGEMENT FOR ENHANCING ITS EFFICIENCY AND EFFECTIVENESS	Completed

3.5 With respect to the GREPECAS conclusions and decisions currently holding valid status, the Secretariat, through WP/03 Appendix A, requested an extension of deadlines for GREPECAS/23. Participants in the GREPECAS virtual meeting expressed their agreement with this request.

3.6 Finally, ECCAA reported that it is currently collaborating with its Participating States within the Piarco FIR on implementing ADS-B for surveillance, completing Phase 1 of the AIS roadmap to AIM, and updating contingency plans to incorporate provisions for managing natural disasters and health emergencies.

Agenda Item 4 Air Navigation - Global and Regional Developments

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

4.1 Under WP/04, activities developed by the CAR/SAM States/Territories/Organizations for the Fourteenth ICAO Air Navigation Conference (AN-Conf/14) held in Montreal, Canada, from 26 August to 6 September 2023, were analysed. The GREPECAS 21/20 Conclusion – "Preparatory Conferences for the Fourteenth Air Navigation Conference and Coordination Mechanism for Possible ANCONF Working Papers", encouraged the participation of Administrations through the submission of working papers and/or information papers. This process was assisted by the Secretariat through teleconferences and coordination with the specialists designated to prepare the documentation. The complete information on AN-Conf/14 is presented at the following link:

https://www.icao.int/Meetings/anconf14/Pages/default.aspx

4.2 It was informed that 24 States/Territories/International Organizations individually submitted their papers and, in other cases, supported papers submitted by other Administrations through coordination and consensus. Various mechanisms were used for this purpose, for instance, the Latin American Civil Aviation Commission (LACAC), and support has been obtained at the regional and interregional levels for the technical documents.

4.3 The importance of safety was stressed for the viability of every air navigation implementation and, therefore, the achievement of sustainability. This relationship is reflected in global GASP and GANP plans, and from there comes the identification of the role of the BBBs forming a framework separate from the ASBU framework and the performance framework of the GANP.

4.4 Item 2 of the agenda of the Conference was highlighted, which addressed the potential safety risks due to the coexistence of aircraft powered by aviation kerosene, including sustainable aviation fuels (SAF), electricity and hydrogen, and aircraft with modified parameters. Such coexistence will have an impact on airfield and ATM operations, among other technical disciplines, which may lead to operational and infrastructure changes.

4.5 During the discussion period in the virtual Phase of GREPECAS/22, ICAO published the preliminary results of the Conference, in the Yellow Cover Report. See the following link:
https://www.icao.int/Meetings/anconf14/Pages/Yellow-Cover-Report.aspx

4.6 Regarding Agenda Item 3 of the agenda of the Conference: Air navigation system Performance improvements, IATA highlighted the "Recommendation 3.1/1 - Project 30/10 - Optimized implementation of longitudinal separation minima ", as well as "Recommendation 3.1/4 - Free route airspace", both of which should be taken as a reference and guidance to promote GREPECAS implementation projects, among them, the NEOSPACE-1, aimed at optimizing CAR/SAM airspace. This matter was discussed furthermore under Agenda Item 5 of this Report under WP/19.

CAR/SAM Regional Air Navigation Plan

4.7 Under WP/05, the status of the CAR/SAM Regional Air Navigation Plan (RANP) was analysed, especially the development of Volume III. The commitment derived from the GREPECAS Conclusion 21/04 - "Actions for the advancement of Volume III of the CAR SAM Regional Plan for air navigation" and the GREPECAS Decision 21/05 "Approval of version 0.1 of Volume III of the RANP" was highlighted.

4.8 The States and International Organizations agreed that the regional plan focus on safe, efficient air navigation with adequate capacity, so as to promote the growth of the industry, leading to strengthening air connectivity between States and regions for the socioeconomic development of the State. Assistance activities continue through meetings and workshops to strengthen the capacity of administrations on the management of performance indicators. Some States faced difficulties in organizing data collection, ensuring data integrity, and continuing with the calculations of GANP indicators. This difficulty is generated in the coordination processes between stakeholders, airports, airport apron services, ANSP providers, air transport section of aviation authorities, etc.

4.9 United States expressed concern about the current approach on the development of performance indicators in Vol. III, emphasizing the extensive number of Tables contained in the document. The excessive use of resources by States to develop KPIs should be avoided, and progressive work or applying priorities to the development of indicators is suggested. In these activities, the contribution of the working groups that plan and execute air navigation improvements must be strengthened. The Secretariat took note in order to promote activities and collaborative work that ensures a cost-efficient process in the management of the KPIs of the States.

4.10 IATA stressed the need for more integrated engagement of international organizations and airlines in the development of RANP CAR/SAM Vol. III. It was suggested that the arrangements for the harmonized implementation of ASBU elements of the GANP should be extended so that the GREPECAS work programme would reflect the Global Air Navigation Plan modules; APTA – Improve Arrival and departure Operations, FRTO – Improved operations through enhanced en-route trajectories, and NOPS – Network Operations (ATFM).

4.11 The States/Territories/International Organizations ratified their participation in the initiatives promoted by the Regional Offices (Workshops, Seminars, Follow-up Meetings, etc.) to generate or strengthen competencies in the management of KPI indicators. It was noted that Administrations are addressing these tasks as part of the development of their National Air Navigation Plans. The collaborative work in progress was highlighted, and the importance of identifying the data providers necessary to calculate indicators, as well as mapping the resources and management capacities in each Administration, was underlined.

4.12 Brazil through WP/34 reported that has been working on the implementation of performance-based management, focusing on the creation and use of indicators in decision-making to make air navigation increasingly safe, efficient and sustainable. Through these initiatives, combined with collaboration with international organizations and other States, DECEA demonstrates a continuous commitment to improving Brazilian airspace management. As a result, since 2021, DECEA and EUROCONTROL publish a benchmarking report on the joint operational performance of the Brazilian and European Air Navigation Systems, providing members of the international ATM community with an initial

analysis associated with indicators related to the operational performance of air navigation systems. The 2024 report and previous ones can be accessed at the following links:

http://performance.decea.mil.br
https://ansperformance.eu/global/brazil/bra-eur/

4.13 IATA highlighted that in Brazil the industry uses the published information on indicators to maintain its contribution to the ATM system, through CDM groups that are promoted by DECEA. IATA urged GREPECAS to follow this model, which can be adapted according to the scenarios of each State.

4.14 The ATM Indicators Course has been taught in Brazil for dozens of specialists, with the aim of teaching the fundamentals, classification and characteristics of ATM performance indicators. In 2023, the first international class was trained, composed by of delegates from the SAM Region. In the last week of October 2024, Brazil supported the implementation of the Workshop on Key Performance Indicators (KPIs) of the Global Air Navigation Plan, held at the NACC Office in Mexico.

4.15 Brazil announced the organization of the 2025 international course on indicators, on a date to be defined. The Secretariat was tasked to follow up this matter and coordinating the invitation to interested CAR/SAM States.

4.16 The Meeting took note of the IP/18 submitted by Ecuador on studies of KPI 06 – Airspace Capacity.

4.17 In view of the above, the following conclusion was adopted for the continuity and advancement of the development of Volume III of the RANP CAR/SAM:

<table>
<tr><td colspan="2">CONCLUSION GREPECAS/22/2</td><td colspan="2">PROGRESS ON THE DEVELOPMENT OF VOLUME III OF THE RANP CAR/SAM</td></tr>
<tr><td colspan="3">What:
That the CAR/SAM States, in conjunction with air navigation service providers and airports, with the participation of Airlines and international Organizations, assisted by the Secretariat, populate the Tables of Volume III of the RANP CAR/SAM with the data of performance indicators - KPIs, prioritizing and harmonizing the management of these indicators according to the progress of the Working Groups for the regional implementation of air navigation by GREPECAS/23.</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Technical/Operational</td></tr>
<tr><td colspan="4">Why:
To ensure a cost-efficient process in the management of KPIs, as well as to strengthen regional planning focused on safe, efficient and adequately capable air navigation, in order to promote the growth of the Industry, based on the performance-based planning methodology by the States.</td></tr>
<tr><td>When:</td><td>Present revised version of RANP VOL II, at GREPECAS 23</td><td>Status:</td><td>x☐ Valid / ☐ Not valid / ☐ Completed</td></tr>
<tr><td>Who:</td><td>☒ States ☒ ICAO ☒ Others:</td><td colspan="2">ANSP providers, Airports, Airlines, International Organizations, Air Navigation Working Groups.</td></tr>
</table>

Advanced Air Mobility (AAM) Implementation

4.18 Through WP/27, Brazil analysed the development of Advanced Air Mobility (AAM). The concept of urban air mobility addresses the implementation of eVTOLs. Considering the innovative technology and new services related to eVTOL aircraft, it is challenging to prepare the entire aviation ecosystem to integrate this new entrant, including new airfield infrastructure, operational changes, licensing, customized flight rules, changes in airspace design and airspace management (UTM).

4.19 It was highlighted that AAM operations will be viable thanks to a range of innovative technologies, including automated traffic management, digital ecosystems and sustainable solutions, as well as new aircraft designs, media and infrastructure types. AAM services will include the transportation of passengers, cargo, goods and mail, as well as other air services that benefit society, and will be carried out in urban, regional and interregional areas, and in international areas.

4.20 Brazil's Department of Airspace Control - DECEA is working on a project to implement UAM using eVTOL aircraft. This project involves collaboration with manufacturers, airlines, industry, academia, and other stakeholders. Brazil has joined the ICAO AAM Study Group, which was formed within the framework of the 41st Assembly.

4.21 It was considered that, to date, the exchange of information on these MEA initiatives is limited to a few civil aviation administrations, due to the small number of markets with the participation of manufacturers (only the United States and Brazil, within the scope of GREPECAS). Therefore, it was estimated that, although limited, information sharing is already happening through ICAO's AAM Study Group, and through international certification initiatives. The Meeting stressed the importance of integrating other CAR/SAM States into this exchange of information, in a progressive manner.

4.22 The Meeting noted that, from 9 to 12 September 2024, ICAO held the First Advanced Air Mobility Symposium in Montreal, Canada. Information and presentations of the event are available at the following links:

https://www.icao.int/Meetings/AAM2024/Pages/default.aspx

https://www.icao.tv/videos/aam-2024-day-1-the-world-of-aam-services-and-economics

Definition and delimitation of outer space

4.23 IP/15 presented United States' position on the definition and delimitation of outer space, offering an update as acknowledged by the 14th Air Navigation Conference in the report from the third agenda item. Space transportation operations and higher airspace operations are distinct. This distinction is not due to the altitude that they operate at, rather it is because of the vehicle type and mission intent that separate these two types of operations because as the Conference also noted that "space vehicles do not meet the definition of "aircraft.

4.24 United States continues to hold the view that there is no need to seek a legal definition or delimitation for outer space. Currently, there is no international consensus on where such a boundary would be and no agreed-upon operational or safety benefits to defining such a boundary with respect to airspace integration. Given the lack of international consensus, an attempt to define or delimit outer space would be an unnecessary theoretical exercise that could unintentionally complicate existing activities and that may not be able to adapt to future technological developments. Some States have suggested the Kármán line, 100 kilometres, as the legal delimitation between airspace and outer space. However, there is no basis in aerodynamics or physical significance of a line at the Kármán line or any other altitude.

Agenda Item 5 CAR/SAM Air Navigation Services (ANS) Implementation

5.1 Air Traffic Management (ATM), Airspace optimization, Air Traffic Flow Management (AFTM) and Search and Rescue (SAR)

5.1.1 The Secretariat presented WP/07 to comment on the evolution of the activities in the CAR/SAM Regions, referring to the implementation of performance-based air navigation (PBN) into the NEOSPACE Project, the GNSS Projects updates (Projects A2) as well as the projects of the GREPECAS ATFM Programme.

Air Traffic Management (ATM)

5.1.2 In the greater part of SAM States, the flight procedures design staff have been reduced, due to retirement or reassignment in operational functions. Then, training courses for designers at basic and advanced PBN level are being promoted, as well as refresher courses (recurring) through the RLA/06/901 project and the SAM/IG working groups. Flight Procedure Design Services (IFPDS) are focused on reinforcing quality assurance in their deliverables, which involves the proper qualification of the staff and the periodic examination of designs at maximum intervals of 5 years, among other requirements. From this discussion, the following Conclusion was adopted:

<table>
<tr><td>CONCLUSION GREPECAS/22/3</td><td colspan="2">SUPPORT FOR INSTRUMENT FLIGHT PROCEDURES DESIGN IN THE CAR/SAM REGIONS</td></tr>
<tr><td colspan="2">What:
That, to ensure safety of instrument flight operations,

a) Air Navigation Service Providers assign the required resources (personnel, training, procedures, etc.) for their IFPDS, to strengthen the quality assurance of flight procedure designs, particularly the five-year periodic review of designs; and

b) the ICAO NACC and SAM Regional Office continue supporting the provision of flight procedures design basic, advanced and recurring training and report it to GREPECAS/23.</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="3">Why:
To reinforce quality assurance for instrument flight procedures design</td></tr>
<tr><td>When: Report to GREPECAS/23</td><td colspan="2">Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td>Who: ☒ States ☒ ICAO ☐ Other:</td><td colspan="2"></td></tr>
</table>

5.1.3 As an objective of the Project A2 - Air Navigation Systems in Support to PBN, the improved version of the Receiver Autonomous Integrity Monitoring (RAIM) Availability Prediction Service (SATDIS) software was implemented in the Member States of Project RLA/06/901. In April 2024, for the renewal of the annual contract with the provider, consultations have been carried out with the States, resulting in different responses about the renewal of the service. The Project is still coordinating to define the situation. Besides, endorsing the studies presented by Brazil, COCESNA and Thales Alenia Space regarding a system SBAS (Satellite-based Augmentation System) for the CAR/SAM Regions, the GREPECAS/21 approved the Decision 21/24, tasking the Secretariat to update project A2 with the available information on GNSS augmentation, and to include the CAR Region in this project.

5.1.4 Regarding Project A2, the Secretariat requested an extension of the deadline for another year to be able to meet the Decision GREPECAS/21/24 correlated to "Updates to Project GREPECAS A2 GNSS Augmentation" to CAR Region. Cuba considered that the one-year deadline extension proposed by the NACC Regional Office for this Project is not sufficient to comply with Decision GREPECAS/21/24 for GNSS issues, given all that it implies for ANSPs and States that depend on satellite service providers. Additionally, Cuba pointed out the difficulties for the implementation of GBAS in the CAR Region, referring the lack of guidance material as one of them, and other more specific for the State.

Air Traffic Flow Management (AFTM)

5.1.5 In 2024, the CAR Region achieved notable progress in improving Air Traffic Flow Management (ATFM) by working closely with the SAM Region and individual States. The Region is developing a more practical and actionable plan for ATFM improvements, laying the groundwork for more effective ATFM services in 2025 and beyond. SAM/IG and its contributing bodies have been working since June 2021 on the development of an ATFM Operations Plan (OPSAM) with the aim of adjusting ATC capacity and Airport capacity to the gradual increase in demand and contributing to the post-COVID19 recovery, and the sustainability of the air transport system at the regional level. The OPSAM includes a dashboard with a unique database format to allow the exchange and analysis of information on the demand for operations and trends in imbalances. The IATA Summer 24 season data dashboard presents the flight schedule for 10 SAM States, each month. As the post-operations information provided is analysed, the management of GANP KPIs referring to punctuality, maximum capacity (performance), etc., is being initiated. See the SAM dashboard at the following link:
https://app.powerbi.com/view?r=eyJrIjoiOTc4YTZhMTQtZmE0YS00ZDUzLWI3NzgtNjIxYWZlYjU2OGI2IiwidCI6IjI2MjI4ZGNhLTcwZDMtNDkxNy04MjMzLTA4M2FjMzY1NWE5MSJ9

5.1.6 One aspect that affects the efficiency of the ATFM service and cross-border coordination is the limitation of FMP/FMU operating hours. Only Argentina, Colombia, and Brazil comply with H24 hours.

5.1.7 WP/28, presented by Brazil, summarizes past and ongoing actions to enable the implementation of the FF-ICE concept in Brazil, an important facilitator for TBO implementation, with a strategic vision of the future ATM system. FF-ICE is a crucial enabler for implementing GATMOC and TBO and was developed to address the limitations and restrictions of FPL2012 and the growing need for flight and flow information exchange in a TBO environment.

5.1.8 WP/28 details that Brazil has been carrying out several actions and plans to enable the implementation of the FF-ICE concept. It emphasizes the importance of harmonizing FF-ICE implementation among CAR/SAM Region States and that creating a Regional Plan could help achieve this goal. In 2019, the Airspace Control Department (DECEA) conducted the first Tabletop Exercise (TTEx) regarding FF-ICE Release 1. Additionally, DECEA presented the FF-ICE components, considerations in the implementation process, service descriptions, and information exchange models.

5.1.9 DECEA is currently developing Brazil's FF-ICE concept Guidelines and Implementation Plan. This document intends to include the planned implementation of mandatory services in FF-ICE/Release 1 and, initially, some of the compulsory services revised for FF-ICE/Release 2. Furthermore, an analysis has been initiated on the systems currently used to process flight plans and manage air traffic to identify requirements for implementing the FF-ICE concept, which will be defined in the ongoing implementation plan. Finally, DECEA intends to conduct a TTEx for FF-ICE Version 2 shortly and present the results to the ATMRPP.

5.1.10 To fully benefit from FF-ICE services and move closer to the GATMOC vision, Brazil plans to implement some of the services from FF-ICE Releases 1 and 2 as soon as possible, in accordance with ICAO provisions for the discontinuation of FPL2012. WP/28 mentions that based on the results of the TTEx conducted by CAR/SAM Region States and the content of future national implementation plans, it will be possible to assess the need and feasibility of establishing a Regional Plan to implement the FF-ICE concept.

5.1.11 As part of the suggested actions, WP/28 encourages States, according to their individual needs and priorities, to participate in Brazil's various actions related to the FF-ICE concept and consider the feasibility of establishing a regional FF-ICE implementation schedule.

5.1.12 Bolivia, Costa Rica, Chile, Cuba, Dominican Republic, El Salvador, Guatemala, Mexico United States and Uruguay expressed their gratitude for WP/28 and the information provided by Brazil, emphasizing the importance of establishing regional collaboration for the implementation of FF-ICE. However, Bolivia, Guatemala, and IATA highlighted the need to adhere to ICAO’s plan for the implementation of FF-ICE by 2035.

Search and Rescue (SAR)

5.1.13 The Secretariat presented WP/08 to report on the progress of activities to support the implementation of search and rescue in the CAR/SAM regions and requested support by States for the organization of SAR Exercises.

5.1.14 The GREPECAS/20 Meeting (Salvador, Brazil, 15 to 18 de November de 2022) recognized the need to provide greater support to the implementation of the search and rescue service, evaluating current challenges and identifying opportunities for improvement. Through Decision GREPECAS/20/02 APPROVAL OF THE PROJECTS ON THE IMPLEMENTATION OF THE SEARCH AND RESCUE SERVICE (SAR) FOR THE CAR AND SAM REGIONS, the project on the implementation of the search and rescue service (SAR) for the CAR (SAR-CAR) and SAM (SAR-SAM) Regions was approved. 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.

5.1.15 The CAR Region continued to work in the project for the implementation of SAR through the NACC/WG Search and Rescue Task Force (SAR/TF). The Task Force maintained the provision of SAR services in the Piarco Search and Rescue Region (SRR) as the main priority for the CAR Region. The SAR provision in this SRR was quite complex, as it involved integration between several States and Territories, with several Rescue Coordination Subcentres (RSC) under the Piarco Rescue Coordination Centre (RCC) which are not functioning according to the requirements of Annex 12 – Search and Rescue.

5.1.16 The ICAO Universal Safety Oversight Audit Programme (USOAP) results showed the status of SAR provision in the CAR Region, with an effective implementation of 54%. The results of the latest audits conducted in the Region were indicative of the static or declining trend in the provision of SAR services. The main challenges identified were the following:

a) lack of organization of SAR services according to the requirements of Annex 12

b) lack of trained and experienced SAR personnel

c) lack of SAR operational procedures for RCCs and RSCs

d) lack of SAR agreements

e) lack of SAR Exercises.

5.1.17 A CAR/SAM interregional SAR Exercise (SAREX) hosted by France was conducted from 13 to 16 May 2024. The purpose of this SAREX was to assess SAR operational procedures, Letters of Agreement (LoAs) and SAR response, rehearsing several contingency scenarios involving the Search and Rescue Regions (SRRs) of Cayenne, Paramaribo and Piarco, and the associated RCCs and RSCs of the aforementioned SRRs.

5.1.18 The USOAP results showed the status of SAR provision in the SAM Region, with an effective implementation of 70.67%. It is noted that 6 of 13 States are below 70%. The main challenges identified were the following:

a) Shortage of SAR services availability on a H24 basis

b) Weakness on training programs for SAR staff, as well, English language proficiency

c) Outdated SAR agreements

d) Shortage of SAR Exercises.

5.1.19 From this discussion, the following Conclusion was adopted:

<table>
<tr><td colspan="3">CONCLUSION
GREPECAS/22/4 SUPPORT FOR SEARCH AND RESCUE EXERCISES</td></tr>
<tr><td colspan="2">What:

That to assess the status of Search and Rescue Services in the CAR/SAM Regions while discovering additional opportunities for improvements,

a) CAR/SAM States schedule Search and Rescue exercises to assess their coordination and response capabilities, including autonomous distress tracking; and

b) the ICAO NACC and SAM Regional Offices provide support and coordination for the conduction of Regional and Interregional SAREX and report it to GREPECAS/23</td><td>Expected impact:

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

To promote Regional and Interregional Collaboration to enhance SAR Services.</td></tr>
<tr><td>When: Report by GREPECAS/23</td><td colspan="2">Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td>Who: ☒ States X☐ ICAO ☐ Other:</td><td colspan="2"></td></tr>
</table>

5.1.20 A virtual workshop on Global Aeronautical Distress and Safety System (GADSS) & autonomous distress tracking (ADT), hosted by Boeing, was delivered on July 17, 2024. The Time-Limited exemptions (TLE) matters, for Boeing aircraft, were exposed. A second regional GADSS webinar, focused on ICAO standards and GANP threads and implementation is planned.

5.1.21 Suriname presented IP/09 to introduce their process of notification of COSPAS/SARSAT distress alerts database, based on ECCAIRS platform, implemented in Suriname in order to ensure and promote safety surveillance. Taking advantage that the ECCAIRS platform taxonomy offers the possibility to store COSPAS-SARSAT distress alerts in a standard format, Suriname have designed with the assistance of ICAO SAM, a specific view, for storing the above-mentioned alerts notification.

ATM Contingency Planning

5.1.22 The Secretariat presented WP/16 offering an update of the activities related to ATM contingency planning and response in the CAR/SAM Regions and requesting support for the harmonization of the CAR/SAM framework with the other ICAO regions.

5.1.23 GREPECAS/21 approved Conclusion GREPECAS/21/09 – ACTIONS TO STRENGTHEN CONTINGENCY PLANNING IN THE CAR/SAM REGIONS. This Conclusion asked the Secretariat to 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 (internal arrangements) and level 2 (bilateral arrangements among adjacent ATS units) contingency plans by GREPECAS/22.

5.1.24 ICAO is currently working on harmonizing the ATM contingency response framework used across ICAO regions. For this harmonization work, the draft Asia-Pacific Region ATM Contingency Framework has been taken as a reference. A global Special Implementation Project (SIP) was approved to improve preparedness for and management of ATM contingency events. With the support of the SIP an ATM coordination meeting was organized, including representation of all ICAO Regional Offices and Headquarters (HQ), to coincide with the ICAO APAC/MID ATM Contingency Planning Workshop and APAC ATM Contingency Tabletop Exercise ICAO Asia and Pacific Regional Office, held in Bangkok, Thailand, 25 - 28 June 2024. The consensus among ICAO Regional Offices and HQ was that the revised APAC ATM Contingency Framework should be used as a reference to promote a global harmonization of the ATM contingency arrangements among States to ensure the continuity of international air traffic. The revised APAC ATM Contingency Framework and the recommendations from the ICAO APAC/MID ATM Contingency Planning Workshop will be presented to the APAC Planning and Implementation Regional Group (PIRG) for approval. The outcomes/results of this workshop are available in the following link:

https://www.icao.int/APAC/Meetings/Pages/2024-ATM-Contingency-WS-TTX.aspx.

5.1.25 In order to support the actions for the harmonization of the CAR/SAM contingency planning framework, the following Conclusion was adopted:

<table>
<tr><td colspan="3">CONCLUSION GREPECAS/22/5 HARMONIZATION OF THE CAR/SAM ATM CONTINGENCY PLANNING FRAMEWORK</td></tr>
<tr><td colspan="2">What:
That, to promote global harmonization of the CAR/SAM ATM contingency planning framework, the Secretariat,

a) follow up on the approval of the revised APAC Region ATM Contingency Framework and using this a reference develop a proposal to update the CAR/SAM ATM Contingency Planning Framework; and

b) request the CAR/SAM States to take action to harmonize their contingency plans with neighbouring States’ adjacent ATS units and report it to GREPECAS/23.</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="3">Why:
To implement global harmonization of the CAR/SAM ATM contingency planning framework in the CAR/SAM Regions</td></tr>
<tr><td>When: Report to GREPECAS/23</td><td colspan="2">Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td>Who: ☐ States ☒ ICAO ☐ Other:</td><td colspan="2">NACC and SAM Regional Offices</td></tr>
</table>

Airspace Optimization

5.1.26 WP/19 presented the most relevant results in the implementation of the Airspace Optimization Programme for the CAR and SAM Regions, as well as the coordination made between both regions under NEOSPACE-1 Project. A proposal for a common CAR/SAM Guide for implementation was presented. An 'overarching document' titled "Harmonized Horizons: Airspace Optimization in the CAR-SAM Regions" was presented to establish the common collaborative goals and objectives, and the key initiatives agreed by CAR and SAM Regions. The Secretariat offered an update of the activities related to the Airspace Optimization Programme for the CAR and SAM Regions and requesting support for the harmonization of the CAR/SAM framework with the other ICAO regions.

5.1.27 WP/19 received support from Bolivia, Costa Rica, Cuba, Guatemala, United States, and Venezuela. Costa Rica noted its ongoing efforts in emissions regulations with the RAC-16 CORSIA and supported harmonization and draft decisions. Cuba expressed gratitude for the paper and emphasized the need for policies and support for alternative fuels and endorsed the draft decision. Guatemala suggested considering Central American States for implementing the NEOSPACE-1 project routes if viable. Bolivia is assessing ATFM needs and implementing a radar system, with limited ability to apply Strategic Direct Routes (SDRs) and Free Route Airspace (FRA). United States backed the draft decision, acknowledging ICAO and international efforts in regional airspace optimization. Venezuela reported progress on FRTO modules and continued SDR implementation.

5.1.28 From this discussion, the Meeting adopted the following Conclusion:

<table>
<tr><td colspan="3">CONCLUSION GREPECAS/22/6</td><td colspan="2">HARMONIZED HORIZONS: AIRSPACE OPTIMIZATION IN THE CAR-SAM REGIONS</td></tr>
<tr><td colspan="3">What:
That, as the proposal for a CAR/SAM Guide, titled "Harmonized Horizons: Airspace Optimization in CAR-SAM Regions" aims to unify Free Route Airspace (FRTO) initiatives under the NEOSPACE-1 project, upon approval of the Harmonized Horizons and Airspace Concept documents for the Airspace Optimization Task Force, aimed at enhancing ATM harmonization in the CAR/SAM Regions, the Secretariat develop a comprehensive roadmap to support the regions' operational goals by GREPECAS/23.</td><td colspan="2">Expected impact:
☒ Political / Global
☒ Inter-regional
☒ Economic
☒ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="5">Why:
As the proposal for a CAR/SAM Guide, titled "Harmonized Horizons: Airspace Optimization in CAR-SAM Regions" aims to unify Free Route Airspace (FRTO) initiatives under the NEOSPACE-1 project</td></tr>
<tr><td colspan="2">When: GREPECAS 23</td><td colspan="3">Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td colspan="2">Who: ☐ States ☒ ICAO ☐ Other:</td><td colspan="3">NACC Regional Office</td></tr>
</table>

5.1.29 WP/29 presented improvements in the evaluation process of the new Airspace Concepts, both in the validation phase of the operational scenarios, to confirm if the project could proceed to the implementation phase, and in the post-implementation phase, to verify if the project objectives were achieved. In this sense, it has the aim to share these improvements and propose the implementation of them in the CAR/SAM States. The Secretariat offered an update of the activities related to developing new Airspace Concepts to optimize air circulation and increase airspace capacity represent important aspects of a country's economy, as it directly affects the aviation industry and air transport in general. The airspace organization and structure must constantly evolve to adapt to the new operational scenarios imposed by increased air traffic, increased air transport, or new systems, concepts, techniques and procedures employed in airspace planning.

5.1.30 WP/29 received strong support from Bolivia, Costa Rica, Cuba, Guatemala, and Venezuela. Costa Rica endorsed a collaborative approach with its ANS Supervision Unit to meet airspace needs, while Cuba expressed appreciation for Brazil's practices and advised its ANSP to connect with DECEA. Guatemala will seek Airspace Structuring Study Group (GESEA) guidance to implement new scenarios, and Bolivia recognized the Sirius Program's potential to optimize air traffic management through route planning and real-data simulation. Venezuela noted its intention to review these contributions.

5.1.31 From this discussion, the Meeting adopted the following Conclusion:

<table>
<tr><td colspan="2">CONCLUSION GREPECAS/22/7 EVALUATION PROCESS OF THE NEW AIRSPACE CONCEPTS</td></tr>
<tr><td>What:

That, to enhance the evaluation of new Airspace Concepts, using Brazil as a reference, the Secretariat/ ICAO SAM Regional Office, in collaboration with the CAR and SAM States,

a) refine and implement a standardized methodology to guide stakeholders in evaluating and validating new operational scenarios, ensuring alignment with airspace users' needs; and

b) coordinate with GESEA/SG1 (Airspace Planning Group) to analyse and optimize this methodology, drawing insights from various State practices while adapting to the unique needs of each State, recognizing that the goal is not to mimic Brazil but to incorporate and adjust ideas that best serve each state's requirements, and report it to GREPECAS/23.</td><td>Expected impact:

☐ Political / Global
☒ Inter-regional
☒ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="2">Why:

The Secretariat/ ICAO SAM Regional Office, in collaboration with the CAR and SAM States, will lead efforts to create a streamlined, user-focused evaluation process for new operational scenarios. This</td></tr>
</table>

approach will establish a standardized methodology, developed with GESEA/SG1, that adopts best practices to meet each State's unique needs without directly replicating any single model.		
When:	Report to GREPECAS/23	**Status:** ☒ Valid / ☐ Superseded / ☐ Completed
Who:	☒ States ☒ ICAO ☐ Other:	

5.1.32 Under WP/31, the results of the ATFM Workshop held in April 2024, at the Air Navigation Management Centre - CGNA of Brazil, in Rio de Janeiro, were presented. A theoretical part was developed through a virtual classroom for the review of the concepts of ICAO Doc. 9971. Then, a face-to-face part of 2 weeks. The Training Workshop covered the ATFM Phases (strategic, pre-tactical, tactical, post-operational analysis), and a theoretical-practical approach was proposed that included contact with the real processes of the ATFM, the CDM and interaction with users.

5.1.33 The interregional vision of the ATFM must be strengthened and, to this end, the importance of developing more integration activities and exchange of experiences was stressed. Administrations should make every effort to strengthen ATFM units and allocate adequate resources to them. The Meeting commended the information presented and agreed to request the Secretariat to coordinate and promote similar training activities in ATFM, considering that this training is not offered in the training centres of the CAR/SAM Regions.

5.1.34 The Digital Airspace System Analysis (DASA) is an innovative tool developed by the Department of Airspace Control (DECEA) in Brazil to improve the analysis and management of digital airspace. This tool represented a milestone in the modernization of air control systems, providing a complete and accurate view of the various uses of airspace at both strategic and tactical levels. With advanced data analysis and modelling resources, DASA provided valuable insights to optimize operational efficiency and facilitate coordination among the different actors in the aviation community in a dynamic and complex scenario such as modern air traffic. In summary, DASA represented a significant step towards the digitalization of airspace management, contributing to safer, more efficient, and sustainable aviation.

5.1.35 WP/33 offered an update of the activities related to innovate tool developed by DECEA Brazil to improve the analysis and management of digital airspace. The Brazilian Airspace Control System (SISCEAB), led by the DECEA, aimed to provide the necessary means to manage airspace and air navigation service in a safe and efficient manner, as established in national regulations, and international agreements and treaties to which Brazil is a party. The main objectives of DASA are to increase the capacity for planning the use of airspace, to improve the analysis of requests for the use of airspace, to improve flow identifying possible conflicts between areas and routes analysed, automate the analyses requested and disseminate information among those responsible for different processes. To enhance its analytical capabilities, DASA has been developed with consideration of the latest uses of airspace, such as UTM (Unmanned Traffic Management) and ETM (Upper Class E Traffic Management). The tool has been officially designated as the exclusive channel for requests for User Preferred Routes (UPR) in Brazil, which are more direct and efficient. The application process now occurs through this system, which has become the only accepted as of April 1, 2024. Its use is integrated to avoid conflicts with Preferred Routes (PREF), which are mandatory, and seek to facilitate flight planning by reconciling UPR routes with Direct Routes (or DCT routes) already widely used in Brazilian upper airspace.

5.1.36 The Free Route Airspace (FRA) concept is an integral part of the ICAO Global Air Navigation Plan (Doc 9750) and is included in the implementation of the Aviation System Block Upgrade (ASBU) Blocks, specifically in the segment of Improved Operations through Enhanced En-Route Trajectories (FRTO B0/B1). This concept showed the need to change the strategy of optimizing airspace in South America, allowing more efficient trajectories, saving fuel and contributing to environmental sustainability.

5.1.37 WP/33 received support from Cuba and Venezuela. Cuba supported the conclusions and emphasized the need for the Brazilian experiences to be generalized and used to harmonize technological tools in the CAR and SAM Regions, even if we move forward step by step.

5.1.38 In this regard, the Meeting adopted the following Conclusion:

<table>
<tr><td colspan="3">CONCLUSION GREPECAS/22/8</td><td colspan="2">DIGITAL AIRSPACE SYSTEM ANALYSIS (DASA) WORKSHOP IN BRAZIL</td></tr>
<tr><td colspan="3">What:
That, to improve the analysis and management of digital airspace, Brazil host a DASA Workshop for the CAR/SAM Regions, aiming to implement User Preferred Routes (UPR) throughout South American airspace, while encouraging States to leverage the DASA tool for UPR analysis and inform GREPECAS/23 accordingly.</td><td colspan="2">Expected impact:
☒ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="5">Why:
This initiative, part of the DESEA efforts, focuses on reducing flight time and fuel consumption, supporting sustainable development by lowering CO2 emissions. It promotes an integrated approach to SAM airspace management, drawing on the experiences and unique needs of each country to enhance overall operational efficiency and environmental impact.</td></tr>
<tr><td colspan="2">When: Report to GREPECAS/23</td><td colspan="3">Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td colspan="2">Who: ☐ States ☐ ICAO ☒ Other:</td><td colspan="3">Brazil</td></tr>
</table>

5.1.39 COCESNA presented WP/35, on behalf of the States of Belize, Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua, to provide information on a diagnosis of Central American airspace to identify deficiencies and opportunities in its management.

5.1.40 COCESNA's diagnosis included the collection of statistical data using advanced tools to perform a detailed analysis. Feedback from the main airlines is expected and visits will be made to several countries in the region for a direct assessment of the operating environment. Finally, a detailed report will be prepared with recommendations aimed at improving the safety, efficiency and capacity of the regional airspace.

5.1.41 COCESNA requested the support of ICAO, IATA and other interested parties in carrying out the diagnosis of airspace in Central America, in order to guarantee a comprehensive and effective assessment of the conditions and needs of the airspace in the region. This support will be conducted through the NACC/WG.

Higher Space Operations (HAO) and Space Operations

5.1.42 Brazil presented WP/43 offering an update of the activities related to highlighting the importance of sharing experiences on HAO and space operations impacting international civil aviation. It was emphasized the need to develop harmonized CAR/SAM procedures for HAO and space operations affecting international civil aviation. The paper discussed the importance of sharing experiences related to HAO and space operations interfering with international civil aviation and of developing harmonized procedures for the CAR/SAM Regions concerning HAO and space operations interfering with international civil aviation.

5.1.43 There is a need to clarify the difference between Higher Space Operations (HAO) and space operations and better identify their impact on ATM. Furthermore, it is necessary to support ICAO in the construction of the HAO concept that will help States in various issues, such as Air Navigation Services (ANS) and personnel licensing. This paper also comments on the recent published Brazilian law to regulate space activities. It points out that it is necessary to define processes that reduce the impacts of these activities on the security and efficiency of the ATM, considering the predicted scalability of HAO. Furthermore, it highlighted the importance of countries in the CAR/SAM Regions sharing experiences and establishing harmonized processes so that operations can scale safely and efficiently in the airspaces of these countries.

5.1.44 Resolution A40-26 of the ICAO Assembly held in 2019, *Commercial Space Transport*, reaffirmed the ICAO's role in developing guidance material to support establishing policies for monitoring commercial space operations where they overlap with international civil aviation activities. This makes it possible to deal with emergency issues without impacting international civil aviation operations. Resolution A41-9, *New Entrants*, recognizes the importance of adopting measures that ensure a harmonized and standardized global approach to HAOs.

5.1.45 The Resolutions mentioned above emerged due to the evolution of the aviation industry, which needs to adapt to integrate new types of operations into ATM systems. This integration is complex since the operation of new entrants is quite peculiar and different from that of other more well-known aircraft. Furthermore, their performances are different, which creates an additional challenge to accommodate traffic in more congested airspaces until they reach their operational environments.

5.1.46 In addition to the increase in HAO due to new entrants like balloons, supersonic/hypersonic aircraft, and suborbital aircraft, space operations have also increased, involving rocket launches and re-entry of space vehicles. Another new entrant in HAO are prototype capsules from Halo Airspace to test and validate space travel for observing the stratosphere. Therefore, a growing number of aircraft operates above Flight Level (FL) 600 for months and even years, and year by year, new entrants emerge and show an interest in scaling up their activities.

5.1.47 Despite all that above, a clear definition of HAO is still missing. In December 2023, several governments worldwide requested ICAO to develop a holistic vision for the HAO to address several issues required to make these operations viable.

5.1.48 WP/43 received support from Cuba, Costa Rica, Uruguay and Venezuela. Costa Rica is interested in participating in some activity for the development of harmonized procedures for the CAR/SAM Regions with respect to HAO.

5.1.49 Venezuela mentioned that HAO and space operations are the goals that the SAM Region must set itself, since the interest of current companies and users goes beyond daily use. In this case, the vision of HAO and clearly differentiating them from space activities is essential for States. Regional guidelines and harmonized standards could positively contribute to the efficient management of air navigation services.

5.1.50 In this regard, the Meeting adopted the following Conclusion:

<table>
<tr><td colspan="3">CONCLUSION GREPECAS/22/9</td><td colspan="2">CLARIFICATION OF THE DIFFERENCE BETWEEN HIGHER SPACE OPERATIONS (HAO) AND SPACE OPERATIONS</td></tr>
<tr><td colspan="3">What:
That, to support ICAO in the construction of the HAO concept that will help States in various issues to better identify their impact on ATM, ICAO establish a unified framework for HAO and space operations management in the CAR/SAM Regions, including sharing experiences and developing harmonized procedures, working with required SME groups to define the difference between HAOs and Space Operations, to be reported to GREPECAS/23.</td><td colspan="2">Expected impact:
☒ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="5">Why:
Differentiating HAO from space activities and fostering regional collaboration is essential for efficient air navigation service management. A unified approach will help CAR/SAM States effectively address ATM challenges posed by HAO and space operations, ensuring better coordination and operational consistency across the region.</td></tr>
<tr><td colspan="2">When: Report to GREPECAS/23</td><td colspan="3">Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td colspan="2">Who: ☐ States ☒ ICAO ☐ Other:</td><td colspan="3">RO/ATM/2, NACC</td></tr>
</table>

O*ther ATM-Related Matters*

5.1.51 IP/13 presented United States' position regarding re-entry risk posed by space debris to aircraft and coordination of notification and procedures for such events. The growing number of large satellite constellations in low earth orbit poses an increased risk to airspace due to the risks posed by the re-entry of any debris from deorbiting satellites and the upper stages of space vehicles that are needed to launch such satellites into orbit. A study commissioned by the United States, Federal Aviation Administration in 2021 evaluated the impact that the growing number of large constellations currently being launched may have on re-entry risks in the future. The study found that approximately 85% of the

debris that would survive re-entry would come from one major constellation and evaluated what the risk of downing an aircraft from that debris would be approximately 10 years from now and found that the chance of an aircraft downing event in 2035 would be .0007.

5.1.52 Due to the current uncertainty of predictions related to the random re-entry of Space Debris and the difficultly such uncertain predictions cause relating to the worthwhile and practical coordination of related NOTAMS, the United States does not at this time, believe it would be worthwhile for ICAO to evaluate the development of notification protocols or procedures for the management of airspace related to such events.

5.1.53 The Secretariat has informed the Meeting, through IP/20, of the processes that will be implemented for the Coordination for the issuance of notifications for the launch and re-entry of spacecraft. Similarly, the Secretariat reminded the Meeting that this issue had been discussed at GREPECAS/20. In this regard, it also recalled that GREPECAS/20 issued Conclusion 20/15 - ANC NOTAM FOR AEROSPACE OPERATIONS, which contained four items. From which the Meeting recalled that item c of the above-mentioned conclusion requested a List of Contacts of the organizations to coordinate the above-mentioned items. Likewise, paragraph "d" urged the inclusion of the distribution of information on aerospace activity via e-mail as a backup to the distribution systems via AMHS.

5.1.54 The Meeting considered that, due to the increase in space activity and air traffic in recent years, close coordination between space launch managers, those responsible for the airspace management of the FIR, as well as airspace users is necessary to minimize the risks of potential incidents due to space operations.

5.1.55 The Secretariat reported that it would establish bilateral and multilateral meetings between States and organizations to agree on coordination procedures for cases of space activities. The Secretariat also reported that it will follow up on the actions requested in paragraphs c and d of the GREPECAS 20/15 Conclusion through the ATM and AIM programs.

5.2 Communications, Navigation and Surveillance (CNS)

5.2.1 Under WP/09, the Secretariat presented a summary of the activities carried out by Communications, Navigation and Surveillance (CNS) of the SAM Region in follow-up to the activities of GREPECAS Projects C and D, for the implementation activities in air navigation. At the same time, updates to the conclusions and decisions of the GREPECAS/21 Meeting related to the CNS area and its projects were addressed:

a) Conclusion GREPECAS/21/06 dealt with the "Update of Part III (CNS) of Volume II of the CAR/SAM ANP", the SAM States have developed a mechanism for updating these tables and the work is already advanced.

b) The conclusion, which aims at the "Development of a Terms of Reference document for a tool for the evaluation of surveillance data from the CAR and SAM States", has not yet been started.

c) Conclusion GREPECAS/21/12 dealt with the "Use of the Frequency Finder 2023 Application as a management tool for VHF NV and VHF COM frequencies used in the aeronautical context", urging CAR and SAM States to nominate Focal Points and use the Frequency Finder 2023 runtime application to update VHF COM and VHF NAV frequency information.

d) Regarding Conclusion GREPECAS/21/13 – "Actions to advance the implementation of D-ATIS and DCL", the SAM States already have a 2013 document called "Guidelines for the implementation of air-ground data link applications in the SAM Region"

e) Conclusion GREPECAS/21/21 dealt with the "Development of an action plan for the implementation of ADS-B", urging States/Territories to review the existing Operational Concept for the implementation of ADS-B in the CAR and SAM Regions, including its operational objectives and to support the development of model ADS-B regulations.

f) The different subgroups also carried out tasks in the areas of AIDC implementation and AMHS circuits implementation, and several workshops of interest to the CNS area and the work carried out were held.

Radio Spectrum Management

5.2.2 Under WP/23 presented by Brazil, the importance of radio spectrum management for aviation was addressed and details the key issues to be discussed at the next World Radiocommunication Conference (WRC-27), organized by the International Telecommunication Union (ITU). The most relevant points were highlighted below.

Objectives and Main Issues

Protection of the spectrum used by aviation:

a. Aviation safety depends on access to interference-free frequencies for CNS systems.
b. Possible threats to the aeronautical spectrum are identified due to the expansion of mobile and satellite networks.

Collaboration with the ITU and ICAO

ICAO is committed to defending aviation's interests in the ITU to ensure the compatibility of aeronautical systems with new technologies. The importance of actively participating in technical studies and international regulatory processes to protect critical frequency bands was underlined.

Critical Spectrum Issues for WRC-27:

4.2-4.4 GHz band: Used by radio altimeters and onboard wireless systems.
15.4-15.7 GHz band: Reserved for weather radars and airport surveillance equipment.
New spectrum allocations for international mobile telecommunications (IMT) and satellite networks pose potential conflicts.

Growing Demand for Spectrum

With increasing air traffic and the introduction of new technologies, it will be necessary to optimize spectrum use and seek new allocations for aviation.

Conclusion

The report highlighted the need to defend aviation access to the radio spectrum at WRC-27 to ensure the safety and efficiency of global air traffic. It also called on States and organizations to support ICAO's position in international negotiations and to consider the implications if essential frequency bands are not protected.

ADS-B and MLAT and Other ATS Surveillance Implementation

5.2.3 Under WP/24, Brazil detailed the implementation of Automatic Dependent Surveillance-Broadcast (ADS-B) in Brazil and plans to complement air surveillance through a Multilateration (MLAT) system at the Porto Alegre terminal. Key Points

1. ADS-B Implementation in Brazil

a) ADS-B improves the accuracy and coverage of air surveillance, especially in areas without efficient radar coverage.
b) First phase: Implementation in the Campos Basin, with future expansion to the Santos and Espírito Santo basins (complete by 2026).
c) Continental ADS-B Project: It will extend coverage to all continental Brazilian airspace above FL 245 level, with a mandatory mandate expected by 2030.
d) Brazil is also considering the use of satellite solutions to improve surveillance in oceanic airspace (target: 2027).

2. Multilateration in Porto Alegre (MLAT)

a) Due to flooding in 2024 that affected the radars at Salgado Filho International Airport (SBPA), the installation of new radars in Canoas (SBCO) and Caxias do Sul (SBCX) was adopted.b)
b) The MLAT system will complement ATS surveillance at low flight levels and provide redundancy for the installed radars.
c) Surveillance will extend from FL035 to FL195, allowing the identification and monitoring of aircraft position, trajectory, and speed in real time.

3. Lessons Learned

a. The need to better position ADS-B antennas to avoid interference and optimize coverage was identified.

b. In future projects, priority will be given to verifying the telecommunications and security infrastructure of the installation sites.

5.2.4 The WP/24 underlined Brazil's commitment to modernizing the air traffic management system through advanced technology, ensuring a high standard of safety. IATA supported the WP and would like to recognize the good coordination made between DECEA and Airlines to establish an adequate mandate for ADS-B implementation, without generating extra costs to airspace users. IATA commented that it should be a model to be followed by CAR/SAM States.

5.2.5 Regarding Space Based ADS-B, IATA would like to recommend that this initiative be done in close coordination with South Atlantic ANSPs, mainly those responsible by EUR/SAM Corridor Operations.

5.2.6 Related the MLAT implementation in Porto Alegre, IATA would like to recognize that it is a good way to provide a prompt response to the unprecedented flood that destroyed Air Navigation and Airport equipment in the Region. IATA suggested that DECEA provide information regarding this implementation in the next GREPECAS and SAM/IG meetings, including cost-benefit analysis, taking into consideration that MLAT might be a solution for airspaces with significative GNSS interference and high level of complexity/volume of traffic. The States noted the information provided and thanked Brazil for sharing this experience.

5.2.7 Under IP/16, the Secretariat presented a summary of the CAR region's activities to implement the ADS-B system and its role in the development of regional operational objectives. Key points:

1. **Implementation Progress:** Barbados, Mexico, Trinidad and Tobago, and the Central American States together with COCESNA have almost completed the necessary enablers for ADS-B, except for the national regulation to fully operate it.
2. **ADS-B Enablers:** Implementation requires ground infrastructure, avionics capacity, personnel training, and national regulations.
3. **Regional Collaboration:** Mexico has issued an ADS-B regulation, and Central America and COCESNA plan its mandatory implementation by January 2025. Coordination with IATA and airlines facilitates the transition.
4. **Expected Benefits:** ADS-B will improve safety in areas without radar coverage in the Caribbean, support the reduction of airspace separations, and offer operational benefits to airlines.

5.2.8 It was recommended to continue evaluating the implementation and extend the learning from this phase to other States in the CAR region to ensure efficient and safe deployment of the ADS-B system.

5.2.9 Under NI/11, Argentina presented the progress in the modernization program of air traffic surveillance systems in Argentina, promoted by the air navigation services provider, Empresa Argentina de Navegación Aérea (EANA). This programme, developed in collaboration with the national industry, includes the updating of secondary radar systems, with advanced capabilities such as Mode S and ADS-B, and the expansion of coverage through the installation of new systems and autonomous stations. The main objectives of the project are: Improve safety and efficiency of air navigation and promote the economic development of air transport. The following components of the program are highlighted:

1. Renewal of 22 SSR systems in the country and addition of five ADS-B stations.
2. Installation of multi-sensor systems to improve monitoring in terminal areas.
3. Training of technical personnel in the operation and maintenance of these systems.
4. The approval of the new RSMA S/A sensor developed by INVAP has been a collaborative process between the ANSP, the Aeronautical Authority and technical teams, complying with ICAO standards.

5.2.10 Under WP/36, COCESNA reported on strengthening communications and exchanging aeronautical surveillance data between the Central American Corporation of Air Navigation Services (COCESNA) and the Mexican Airspace Navigation Services (SENEAM). This exchange began with a cooperation agreement in 2008 and was expanded in 2023 to include more surveillance sensors and improve voice and data communications. Main points:

- Improve surveillance and automation in the control centres of both countries, covering coverage gaps in airspace controlled by Belize and Guatemala.
- ATS communication channels. The use of communication channels between air traffic control units in Mexico and Central America was formalized, improving efficiency and safety.
- Implementation of the AMHS service: An aeronautical messaging service (AMHS) was implemented that facilitates coordination and system redundancy, improving message distribution and response capacity to failures.

5.2.11 COCESNA highlighted the importance of this type of initiative to maximize resource use, increase operational capacity and efficiency, and improve air safety and suggested continuing to explore cooperation between air navigation service providers in the region. The States thanked COCESNA for the information provided and highlighted the initiative as an experience that should be replicated among States in the region.

5.2.12 IATA supported and welcomed COCESNA and SENEAM´s initiative on sharing ATS Surveillance. This is an initiative that has been pursued for a long time in GREPECAS and NACC/SAM Implementation Groups with few results. This initiative should be considered as a model for CAR/SAM States, taking into consideration that they result in safer and more efficient operations, as well as in a possible ANPS` savings on implementing extra sensors to cover an area already covered by a neighbouring ATC Facility.

Telecommunication Networks

5.2.13 Under WP/26, Brazil reported on the Brazilian Air Traffic Network (ATN-BR) network, based on IP technology and designed to support air traffic services such as VHF radio communications and radar. The network proved to be fundamental in the resilience of the CNS/ATM system during the floods. The network was used to maintain control of the airspace, even with severe damage to the airport and communications infrastructure in the region. Key points:

- During the floods, satellite links and backup systems were used to ensure the continuity of air traffic control services in affected areas, such as Porto Alegre.

- Satellite stations and mobile radars were installed in nearby cities to replace affected infrastructure and manage humanitarian air traffic.
- The document concluded that the ATN-BR network is flexible and efficient, allowing for the rapid reconfiguration of critical services during natural disasters.

5.2.14 Brazil invited the CAR/SAM States to consider the implementation of a similar software-based network for the CAR/SAM region to meet the planning and safety requirements established by ICAO (WP/26). The States noted Brazil's activities regarding air traffic services and supported the proposal to establish a Defined Network that can be implemented throughout the CAR/SAM Regions.

5.2.15 Under WP/46, the Secretariat summarized the progress in the Communications, Navigation and Surveillance (CNS) projects in the Caribbean (CAR) to improve air navigation and radio spectrum management: Information was provided on the status of implementation of the Caribbean Air Navigation Services Network (CANSNET), which will enter into operation in 2026, the execution of the project to develop the States' air navigation plans, and the status of AIDC implementation (46%). It was also reported that work is underway to create an ad hoc group to evaluate the "Frequency Finder" application and develop more advanced software for the management of the aeronautical frequency spectrum and other initiatives such as cybersecurity for air navigation. The States noted the suggested actions and will notify where appropriate to receive the necessary support to be able to actively participate in the different activities of the working groups that must be addressed in the topics of air navigation focused on CNS.

5.2.16 Haiti agreed with the suggested actions of WP/46 and emphasized on the vital role of the MCAAP Project mechanism to support States in this process. The issue of frequency management for the aviation service remains a growing concern to deal with, nationally. Therefore, Haiti would welcome any regional approach that could help improving this aspect. Haiti intends also to use more actively the MCAAP Project as the State is currently undertaking a substantial project leading to some transformations in the CNS/ATM field.

CPDLC

5.2.17 Under WP/32, Brazil presented a report on the implementation of the Controller Pilot Data Link Communications (CPDLC) system in Brazil's upper airspace. This system allowed for improved communications between pilots and controllers through pre-formatted and standardized messages, partially replacing voice communications.

1. Main objective:

a) CPDLC improves the efficiency of aeronautical communications, reduces congestion in voice channels, and decreases the workload of controllers and pilots.
b) Implementation in Brazil began in 2009 in oceanic airspace and was expanded to continental airspace above FL250 (25,000 feet) in 2021.

2. Benefits and challenges:

a) Improves safety, coverage and availability of communications, in addition to reducing misunderstandings and frequency congestion.

b) The system faces challenges related to training, updating of operating manuals, and integration with air traffic automation systems (SAGITARIO).

3. Phased implementation:

a) The implementation has been carried out in phases to ensure users' gradual adaptation to the system. Tests have been carried out to ensure the correct functioning of the CPDLC.

4. Next steps:

a) It is planned that the CPDLC will be fully operational throughout the Brazilian upper airspace by December 2024, including new regions such as FIR-Curitiba.

b) The aim is to promote the modernization of the air fleet and the use of the system among airlines to maximize operational benefits.

5.2.18 Brazil urged ICAO and States to establish standardized indicators to measure the effectiveness of the CPDLC and to work together with airlines to ensure the updating of aircraft and maximize the adoption of the system in the Caribbean and South American regions.

5.2.19 Venezuela observed with great interest the entire process developed by Brazil, as well as the good practices and experiences obtained throughout its implementation. It is also important that the SAM region initiate efforts to establish standardized indicators to measure the effectiveness of the CPDLC implementations in terms of operational benefits.

5.2.20 IATA supported and welcomed DECEA´s initiatives on providing D-ATIS/DCL in 26 airports and Continental/Oceanic CPDLC. This is a model that should be followed by CAR/SAM States, as requested, for example, in the CONCLUSION GREPECAS/21/13 - ACTIONS TO ADVANCE THE IMPLEMENTATION OF THE D-ATIS AND THE DCL. IATA suggest making full use of the continental CPDLC by using the loadable routes functionality to clear an even more direct routing in Brazilian Airspace.

GNSS

5.2.21 Under WP/40, Argentina addressed the issue of interference in the Global Navigation Satellite System (GNSS), detailing both preventive and corrective measures. In addition, a case study on GNSS interference at Jorge Newbery Airport in Buenos Aires was included. It was noted that the use of GNSS-based navigation continues to increase due to its advantages over conventional systems, such as greater precision and efficiency, however, interference in these signals, whether intentional or not, represents a significant challenge to operational safety.

5.2.22 ICAO and other international organizations have issued resolutions to protect frequencies used by aeronautical systems. These resolutions urge States to mitigate GNSS interference, coordinate with national telecommunications authorities, and maintain and update conventional radio aids as a contingency in the event of GNSS interruptions. Argentina referred to the Jorge Newbery Aeropark Case Study, in which, in 2018, interference was detected in the GNSS signals of aircraft parked at the Jorge Newbery Aeropark, which affected its operation.

5.2.23 Through coordinated work between aeronautical and telecommunications authorities, sources of interference were identified, such as mobile phone stations, tracking devices in vehicles and LED lights at the airport. Corrective measures included technical adjustments to equipment and the removal of problematic devices. It was indicated that guidance material compiling preventive and corrective measures for cases of GNSS interference must be created at a regional level, strict control over airports' sources of electromagnetic radiation must be maintained, periodic preventive assessments must be carried out, and the use of DME navigation as an alternative in cases of GNSS failures must be evaluated.

5.2.24 The importance of a comprehensive strategy to manage and mitigate GNSS interference was mentioned, and a collaborative approach between States and aeronautical organizations was proposed. States noted the information provided, regarding the growing threat of GNSS interference to aviation safety and the need for coordinated actions at regional and international levels to prevent and mitigate this risk.

5.2.25 IATA supported this working paper including implementation of ground navaids to be used of backup of GNSS, based on recommendation of the ICAO 14th Air Navigation Conference and suggested the inclusion of the study and implementation of ground navaids as GNSS back-up in the GREPECAS working programme. COCESNA thanked them for sharing their experiences on this problem. The analysis and conclusions are useful for the study and solution of radio spectrum interferences of a wide nature. They also indicated that GNSS interferences, which, according to the site https://gpsjam.org/, are low-level for the Central American region (figure at the end), but that the Working Paper helped to understand the global panorama to prevent the occurrence of the same.

5.2.26 IATA also indicated that "Available Information and References", it is convenient to refer to the recent update of the Radio Regulations by the ITU: Press release (itu.int), which will be useful to support the suggested Management before the Spectrum Regulatory entities so that they support the elimination of the sources that originate the interference to the GNSS, as in the case cited for Aeroparque Jorge Newberry, of course protected by the applicable Telecommunications Laws of each country that are consistent with the ITU regulations.

5.2.27 France supported this WP and shared the concerns expressed regarding GNSS jamming and spoofing, which have become a global safety concern, and run against the efforts of the aviation community to improve efficiency through the use of GNSS-based navigation and surveillance. France stands ready to work collaboratively with the aviation community in order to reduce and mitigate GNSS Radio Frequency Interference.

5.2.28 Under WP/42, France addressed safety recommendations for Performance-Based Navigation (PBN) landings with Barometric Vertical Guidance (Baro-VNAV), following a serious incident in May 2022 at Paris-Charles de Gaulle Airport. In May 2022, an Airbus A320 had a serious incident during a PBN Baro-VNAV approach at Paris Airport due to an incorrect altimeter setting (QNH). This led to a near-collision with the ground.

5.2.29 France has vast experience in PBN operations with Satellite-Based Augmentation System (SBAS) and Baro-VNAV but has identified risks related to the incorrect use of QNH. France identified a common error as the incorrect introduction of the barometric adjustment, which can deviate the flight profile by up to 280 feet, putting the safety of the operation at risk, in addition to the threats inherent to Baro-VNAV not being taken into account when introducing RNP APCH procedures, which could have contributed to the risk of uncontrolled ground impact (CFIT).

5.2.30 The report highlighted that in United States, fewer similar incidents are observed due to factors such as the use of inches of mercury (instead of hectopascals) for altimeter adjustment and a higher transition level for changing the altimeter reference, which reduces the likelihood of errors. The WP recommended a global re-evaluation of the risk of CFIT associated with Baro-VNAV and the updating of ICAO standards and recommended practices to improve the safety of these operations.

5.2.31 States are encouraged to consider SBAS capabilities, which provide a level of safety comparable to ILS, and to improve training and operational procedures to mitigate the risks of incorrect QNH adjustment. Venezuela highlighted the importance of the report of the incident that occurred in France. In this regard, the need to continue documenting the risks of incorrect QNH adjustment will contribute to progressively monitoring operational obstacles that have not been detected. In addition, ANSPs are urged to promote continuous operational safety, especially in ATCOs.

5.2.32 Dominican Republic supported the WP and mentioned that is immersed in a project to restructure Dominican airspace, which includes the design of BARO-VNAV approaches. With French experience as support, it is crucial to prepare CTA personnel in the importance of providing the correct QNH and being attentive to pilot communications during these approaches.

5.2.33 IATA supported the implementation of the mitigation measures to assure the operations safety. The Implementation of SBAS will be affected by ionosphere scintillation in most of the CAR/SAM Regions.

5.2.34 IATA´s suggested a pragmatic approach to propose/study the use of SBAS mitigation of the pilot BaroVNAV errors, taking into consideration the issues previously mentioned, and three general requirements should be considered:

1. SBAS mandates are operationally unjustified.
2. Operational restrictions due to lack of SBAS equipage are unjustified; and
3. SBAS costs should not be imposed directly or indirectly on airlines that do not use the technology.

5.2.35 The Secretariat indicated that SBAS support PBN in all phases of flight with an increased accuracy, integrity and availability compared to ABAS. Increases accuracy and integrity for the vertical guidance. In addition, the Secretariat indicated that it supported all PBN navigation specifications, with a deployment emphasis over RNP APCH down to LPV or LP minima at 250 ft (APV I performance) or 200 ft /550 m (Category I performance).

5.2.36 SBAS needs different enables to be implement prior the operational as SBAS: receivers integrated with the aircraft navigation system, SBAS ground Station, GNSS core constellation. In that sense the Secretariat recommended that every State before to do this kind of implementation development an operational and technical analysis, cost benefits according with their operational objectives in conjunction with the different stakeholders, as result of this analysis States and Airlines will develop an action plan for success SBAS implementation.

5.2.37 The implementation of any ASBU element needs to satisfy an operational requirement and it is important that all the parts involved must be integrated, since it requires infrastructure on the ground and on board the aircraft, without this set operating, the implementation could not achieve the expected results.

5.2.38 Under WP/44 Brazil addressed the risks of interference in the Global Navigation Satellite System (GNSS), such as jamming and spoofing, and their impact on civil aviation safety. In addition, Brazil's efforts to mitigate these risks by implementing additional ground infrastructure, such as the DME aids network and a national plan for the maintenance of conventional navigation aids, were highlighted. Brazil indicated that it has experienced interference at Guarulhos Airport, which affected RNAV procedures and resulted in flight cancellations and delays. The Department of Airspace Control (DECEA) has initiated a project to expand the DME aids network, providing complementary ground infrastructure to support navigation operations, reducing the exclusive reliance on GNSS.

5.2.39 A national plan is also being developed to implement and maintain conventional aids, such as DVOR, ensuring a minimum contingency structure in case of GNSS failures. The need to create regional procedures to report GNSS interference was highlighted, in order to coordinate actions and ensure operational safety, and the creation of an ad hoc forum or group to evaluate GNSS interference and its solutions in the CAR/SAM region was proposed.

5.2.40 It was suggested to share experiences of GNSS interference, discuss ways to mitigate the risks derived from interference in GNSS and consider the creation of a regional forum to evaluate the problem in detail.

5.2.41 Costa Rica thanked Brazil for sharing the contingency plan for satellite navigation due to interferences that occur in GNSS and that affect GPS positioning information and supports the proposed actions. In turn, it is recommended that it be part of a comprehensive contingency plan for GNSS-based services. For example: incorporating the contingency into the main source ADS-B surveillance, considering that at the moment that interference occurs in GPS, ADS-B positioning information is affected.

5.2.42 United States supported Brazil’s commitment of resources with the objective of expanding its DME systems as a complement to GNSS for air navigation. IATA supported and recommended that all initiatives regarding GNSS interference considers the AN CONF/14 Recommendation 2.2/2 – Addressing global navigation satellite system interference and contingency planning.

5.2.43 Regarding the DME/DME back-up, IATA supports such initiative and recommends a regional harmonization and that a cost-benefit analysis be performed, taking into consideration, among other aspects, the actual occurrences of GNSS interference and the complexity/volume of traffic in the airspace.

5.2.44 Under NI/12, Argentina presented considerations on the deployment of 5G technology in Argentina, focusing on its impact on air navigation and possible interference with aircraft radio altimeters due to the proximity of frequencies. 5G implementation, regulated since 2022, requires coordination measures to avoid interference in adjacent bands, especially near airports during critical flight phases. Key aspects:

- National regulation requires 5G operators to take synchronization measures to avoid harmful interference in nearby frequencies.
- The aeronautical authority will participate in the coordination of these actions and in studies to protect the aeronautical spectrum.

5.2.45 Under IP/14, United States addressed mitigation of jamming and spoofing of Global Navigation Satellite System (GNSS) signals in aviation, issues that affect the safety and efficiency of air transportation. These interferences can cause signal loss or false data in critical navigation systems, complicating air operations. Key points:

- Jamming blocks GNSS signals, preventing proper navigation.
- Spoofing introduces false signals, fooling GNSS receivers.

5.2.46 Mitigation measures were recommended, such as cooperation between aviation authorities, manufacturers, and operators, along with detection and reporting mechanisms. Boeing is working on avionics solutions to address these threats and improve post-event recovery.

5.3 Aeronautical Meteorology (MET) and Environmental Protection (ENV)

Implementation of the MET Requirements for the CAR and SAM Regions

5.3.1 Under IP/08, the Secretariat presented the most relevant results in the implementation of the MET requirements for the CAR and SAM Regions, achieved since the GREPECAS/21 Meeting. Similarly, reported on cooperation with States and other organizations such as the World Meteorological Organization, for the implementation of the Standards and Recommended Practices (SARPs) contained in ICAO Annex 3.

5.3.2 Despite efforts in training and dissemination of new and pending provisions, the adoption by Member States continues to progress slowly. The complexity of the requirements, lack of resources in meteorological authorities, and training of aeronautical meteorological personnel are the most significant challenges. The discussion considered it essential to strengthen efforts to accelerate the implementation of:

a) Quality management system in MET processes;
b) Exchange of OPMET message information in IWXXM format;
c) Provision of harmonized SIGMET messages

5.3.3 The discussion also emphasized the need to continue disseminating the following topics in accordance with the documents in Appendices of IP/08.

a) The changes introduced in the World Area Forecast System (WAFS), that will take effect from November 2024, and
b) The Information on Quantitative Volcanic Ash (QVA) that will come into operation from November 2025.

Adverse Meteorological Phenomena Impacting Aviation Safety

5.3.4 Under WP/10, the Secretariat expressed growing concern over the increasing frequency and intensity of adverse meteorological phenomena impacting aviation safety. Events such as severe thunderstorms, turbulence, heavy rain, and even droughts (affecting the availability of electrical power) have become more common, as has their association with aviation incidents and disruptions to airport operations. Scientific evidence suggests a correlation between these phenomena and climate change, indicating that global warming may be intensifying and making these extreme events more frequent.

5.3.5 The Secretariat has proposed a set of proactive actions to address the risks associated with climate change and climate variability in aviation. These actions include the systematic collection of meteorological data, analysis to improve forecasting systems, and the promotion of international cooperation to develop mitigation and adaptation strategies. Various States in the region have concurred with this concern, highlighting the observed changes in climate, synoptic and mesoscale patterns and the need to analyse how these phenomena affect the provision of air navigation services, airport operations, and airspace management.

5.3.6 The exchanges on the platform resulted in interesting perspectives as inputs for GREPECAS activities:

a) Collecting data on the impact of severe weather phenomena to identify new risks and develop mitigation procedures.

b) Promoting dissemination and training activities to better understand the impact of climate change on aviation.

c) Participating in Aircraft-Based Observations (ABO) programs such as AMDAR, ADS-C, and ADS-B to improve the accuracy of numerical prediction models and weather forecasts.

d) Intensifying work with groups such as RASGPA and GTE to identify and address risks, such as Large Height Deviations (LHD) and air traffic conflicts.

e) Encouraging collaboration with adjacent ACCs to establish specific traffic flows and reduce workload.

f) Promoting the development of flow control procedures for high-demand situations.

5.3.7 After evaluating the information and based on the exchanges, the following conclusion was approved:

<table>
<tr><td colspan="3">CONCLUSION GREPECAS/22/10</td><td colspan="2">DISSEMINATION OF THE IMPACTS OF SEVERE WEATHER PHENOMENA ON THE SAFETY OF AIR OPERATIONS</td></tr>
<tr><td colspan="3">What:
That,

a) States, International Organizations, and service providers collect information on the impact of severe meteorological phenomena on the safety of air operations and airport operability;

b) the Secretariat work in coordination with International Organizations, States, and service providers to organize dissemination activities on severe phenomena, their possible connection to Climate Change, and their impact on aviation;

c) the Secretariat work in coordination with International Organizations, States, and service providers to analyse severe phenomena that have impacted air operations and airport operability to assess the emergence of new risks associated with these phenomena by GREPECAS/23; and

d) the Secretariat work in coordination with International Organizations, States, and service providers to establish mitigation procedures for these new risks, if determined.</td><td colspan="2">Expected impact:
☒ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="5">Why:
States parties are required to ensure the operational safety of air operations by providing services and information that ensure a real situational awareness of the environment in which the air operation will take place.</td></tr>
<tr><td colspan="2">When: GREPECAS/23</td><td colspan="3">Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td colspan="2">Who: ☒ States ☒ ICAO ☒ Other:</td><td colspan="3">International Organizations and Service Providers</td></tr>
</table>

Implementation of Essential Meteorological (MET) Services

5.3.8 Under WP/18 and in alignment with GREPECAS Conclusions 19/02 and 19/09 and discussions from GREPECAS 20, the Secretariat proposed a standardized framework to monitor and verify the implementation of essential meteorological (MET) services for international air navigation in the CAR/SAM Regions. This framework is crucial to promote safety and efficiency.

5.3.9 The proposed framework incorporates various elements, including the BBB structure, GANP and eANP guidance, national regulatory context, and national methods. It also emphasizes the importance of a regional dashboard to track implementation progress and support informed decision-making.

5.3.10 The Secretariat highlighted the need for effective collaboration between Civil Aviation Authorities, Meteorological Authorities, and service providers as crucial for the successful implementation of the verification process and to facilitate data collection, analysis, and reporting, ensuring the timely and accurate delivery of essential meteorological services in accordance with ICAO Annex 3 provisions.

5.3.11 After evaluating the information and based on the exchanges, the following conclusion was approved:

CONCLUSION GREPECAS/22/11	**CYCLIC VERIFICATION OF BBB MET**
What: That, c) the NACC and SAM Regional Offices develop the dashboard associated with the BBB MET in coordination with the States, Territories and International Organizations in line with the CAR/SAM eANP work plan and report it to GREPECAS/23; c) the States, Territories and International Organizations support the work of the Regional Offices to continue the development of the BBB MET verification process; c) the States, Territories and Organizations strengthen the surveillance and oversight processes, as well as quality control, to generate synergy with the verification process presented, combine national efforts and feed the dashboard.	**Expected impact:** ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☐ Operational/Technical
Why: In accordance with the provisions of GREPECAS, it is necessary for States to establish and monitor the implementation status of the Meteorological Service for International Air Navigation through the verification of the BBB and represent the results in a dashboard.	

When:	GREPECAS/23	**Status:**	☒ Valid / ☐ Superseded / ☐ Completed
Who:	☒ States ☒ ICAO ☐ Other:	Secretariat, States	

Western South Atlantic Tropical Cyclone Advisory Centre (TCAC)

5.3.12 Brazil, through WP/30, informed the meeting of the interest, as States, to establish a Tropical Cyclone Advisory Centre (TCAC) in the coverage area of the western South Atlantic to be defined in the requirement, to support international air navigation as part of the CAR/SAM Regional Air Navigation Plan (Doc 9750).

5.3.13 Brazil informed the meeting of the background on the likely determination of the requirement to establish a TCAC for the Western South Atlantic. Brazil reminded GREPECAS about the various meetings, at the ICAO level and at the level of the World Meteorological Organization (WMO), in which the possibility of establishing the requirement of a CAGR for the Western South Atlantic has been evaluated.

5.3.14 Brazil reminded the meeting that WMO initiated a study of the need to establish a TCAC for the Western South Atlantic due to the occurrence of Hurricane Katarina in 2004. However, Brazil highlighted in its note that no other hurricanes have developed subsequently, but deep extratropical cyclones have developed, prior to a hurricane.

5.3.15 The Meeting agreed that international collaboration in cyclone monitoring and reporting is very important as it is crucial to mitigate the impacts of these severe events and minimize their effects on operations and safety.

5.3.16 Brazil informed the Meeting that, in the State, there are several agencies that collaborate in meteorological monitoring. In addition, there are institutions dedicated to the scientific research of meteorological events, as well as to the development of software and technologies for the monitoring of meteorological systems and their prediction.

5.3.17 Brazil reported that the implementation of the TCAC will be a shared task among all these agencies and institutions, but it is clarified that the Integrated Centre for Aeronautical Meteorology (CIMAER) would be responsible for the TCAC, in this proposal.

5.3.18 The Meeting supported Brazil's proposal, and once the requirement to establish a TCAC for the Western South Atlantic is assigned to the State of Brazil, in the CAR/SAM Regional Air Navigation Plan.

5.3.19 The Secretariat informed States that a virtual meeting between ICAO and WMO has been coordinated for 14 November this year to define the technical and regulatory aspects for the establishment of the TCAC requirement for the Western South Atlantic.

Environmental Protection (ENV)

5.3.20 The Secretariat, through WP/11, informed the Meeting of ICAO's environmental protection initiatives. the Meeting noted that the main tool for monitoring States' actions to support ICAO's environmental protection initiatives are the State Action Plans for the Reduction of CO2 Emissions from International Civil Aviation (SAP). The Secretariat reported on the status of SAPs at the global level.

5.3.21 The Meeting noted that, within the basket of measures suggested by ICAO, for the reduction of CO_2 emissions are operational improvements. The Secretariat urged the Meeting to actively participate in the development and implementation of SAPs. The Meeting realized that the key step in developing a plan of action is to ensure the commitment of all stakeholders involved in civil aviation matters in the State. Air operators, airport authorities and air navigation service providers (ANSPs), among others, are essential parts of this Plan.

5.3.22 The Secretariat stressed that quantifying the information contained in an action plan allows ICAO to compile global progress towards meeting global aspirational goals and for States to demonstrate their contribution.

5.3.23 The Meeting noted that, for ANSPs, there is a need to consider the adoption of the Aviation System Block Improvement Methodology (ASBU) that facilitates the implementation of improvements in air traffic management. This methodology allows States to improve their air navigation capabilities in accordance with their specific operational requirements, as well as enabling aviation to achieve global harmonization, greater capacity and improved environmental efficiency.

5.3.24 The Meeting considered that GREPECAS should establish a link between the objectives of capacity and efficiency and that of environmental protection, through CO2 emission savings data derived from the operational improvements implemented. States indicated that it is important to have indicators on the contribution of operational improvements to CO_2 emission savings and positive impact on the environment.

5.3.25 The Meeting also stressed that coordination with other working groups, such as the CAEP, is necessary so as not to duplicate efforts in the task of preparing indicators, for environment issues. It has also been highlighted that, in addition to Doc 9988 – "Guidance on the development of action plans by States for CO_2 emission reduction activities", the CANSO GreenATM Accreditation Programme guide is another reference that can be used by states and air navigation service providers to plan activities that lead to a reduction in their aviation-related CO_2 emissions.

5.3.26 From this discussion, the meeting adopted the following conclusion:

<table>
<tr><td colspan="3">CONCLUSION GREPECAS/22/12</td><td colspan="2">ENVIRONMENTAL STRATEGY IN THE NAM/CAR/SAM REGIONS</td></tr>
<tr><td colspan="3">What:
That,

a) States support their counterparts in charge of the States' Action Plans on CO_2 emissions reduction in their corresponding States, to complete the development or update of this plan to emphasize the benefits derived from the operational improvements implemented by integrating quantified data,

b) GREPECAS establish a link between the capacity and efficiency objectives and environmental protection objectives, through data on CO_2 emission savings derived from operational improvements implemented through the Aviation System Block Upgrade (ASBUs) by GREPECAS/23.</td><td colspan="2">Expected impact:
☐ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="5">Why:
Following ICAO Assembly resolutions, States agreed to support the aviation industry's transition to cleaner energy sources and achieve the net-zero 2050 global aspirational goal.</td></tr>
<tr><td>When:</td><td>GREPECAS/23</td><td colspan="3">Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td>Who:</td><td>☒ States ☒ ICAO ☐ Other:</td><td colspan="3">Secretariat, States</td></tr>
</table>

5.4 Aeronautical Information Management (AIM)

AIM Transition/Implementation

5.4.1 The Secretariat presented WP/12 with updates on activities, projects, and priority topics related to implementing Aeronautical Information Management (AIM) for Central America, the Caribbean, and South America. WP 12 details how the Secretariat continues supporting the implementation of Aeronautical Information Management (AIM), including the implementation of Digital Data Sets (DDS), the e-AIP, Standard Information Exchange Model, the update of WGS84 Data, and Terrain and Obstacle. WP/12 also reported follow-up by State of the electronic Air Navigation Plan (eANP) Table and the requests for AIM transition assistance made by the NACC/WG AIM/TF, the Seventeenth SAM Regional Multilateral Workshop/Meeting for the Transition from AIS to AIM (SAM/AIM/17), held from 27 to 31 May 2024 as well as the ICAO NACC WG AIM TF 7thface-to-face meeting held from 30 July to 2 August,2024.

5.4.2 WP/12 discussed the establishment of AIM Subgroups within the ICAO NACC/WG/AIM/TF considering the new 7th edition of the Global Air Navigation Plan (GANP), the eANP, the ASBU and the BBBs related to AIM and its KPI's. These Subgroups are designed to be more efficient in completing assigned tasks and discussions per their set Action Plan to mitigate, assist States, and realize the set targets within the set and/or agreed-upon trajectory.

5.4.3 Regarding the CAR Region, WP/12 emphasized the ongoing collaboration among member states to support the AIM transition, AIM proper training curriculum, English Language deficiencies regarding AIM personnel, etc. It highlights the importance of the AIM Task Force's role in assisting States with the Digital Data Sets (DDS) Workshop and the updated Roadmap for the AIS to AIM Transition. Several key workshops have been held, including those focusing on the electronic Air Navigation Plan (eANP), GRF Implementation, NOTAM Campaign, FPL duplication, and addressing specific needs for AIM transition assistance.

5.4.4 The report outlined significant progress in areas such as developing the e-AIP and improving data quality through a robust Quality Management System in AIS/AIM. The efforts to standardize processes and share information across borders are essential for effective data management. Additionally, ongoing training for AIS personnel is crucial to ensure that all team members are well-equipped to handle the challenges of the Transition. The right competencies needed to execute the required tasks is illustrated that it need to be defined and maintained uniform.

5.4.5 Overall, the CAR Region is making strides in AIM implementation, with a clear focus on collaboration and shared resources among States and other NACC/WG Task Forces needing the input from the AIM TF (such as the Airspace Optimization – ATM TF, MET TF, etc.), to facilitate a smooth transition.

5.4.6 Regarding the SAM Region, WP/12 highlights the support received from Brazil in regional tasks for the AIM transition, focusing on the Digital Data Sets Workshop and Phase 2 of the AIS to AIM Transition Roadmap and the workshop held in Panama City. Progress regarding DDS (Digital Data Sets) has been detailed, including the Exchange Model, implementation of Data Catalogues, SNOWTAM, the establishment of a Quality Management System in AIS/AIM, Phase 2 of the AIS to AIM Transition, and preparation for SWIM, including the e-AIP, and AIS Personnel Training. It also identifies the challenges facing the region and calls on States to provide support and importance to AIM as an essential process of the ATM concept.

5.4.7 Venezuela noted the information presented in WP12, emphasizing the importance of English proficiency in AIM, as did the Dominican Republic and Haiti. ECCAA stated that the member States of this organization continue to face significant challenges in the implementation of Phase I. Bolivia reported that it has identified some challenges, such as the need to update aeronautical information, implement new technologies, train personnel, and strengthen regional collaboration, and that it will take the necessary actions to overcome the identified challenges. Argentina, Brazil and Peru, and noted the information, and IATA urged reinforcement of the actions related to AIM as indicated in WP12.

NOTAM Publication

5.4.8 IATA presented WP/22, emphasizing the need to comply with ICAO SARPs and international best practices related to Aeronautical Information Management as an essential requirement for the Safety and Efficiency of Air Navigation in the CAR/SAM Regions. The WP22 highlights three current issues in the CAR/SAM Regions that must be considered essential for AIM service provision:

- the lack of publication of trigger NOTAMs for AIP Supplements
- the absence of an English version of the AIP
- the availability of digital aeronautical information products

5.4.9 Regarding the lack of publication of trigger NOTAMs for AIP Supplements, WP/22 stresses that these NOTAMs contain essential information to feed automated systems supporting air operations, making their publication essential for aviation safety and regularity.

5.4.10 Concerning the absence of the English version of the AIP, WP/22 points out that the lack of essential operational information for airlines and pilots in the English version complicates the ability of flight planning service providers to incorporate relevant information into automated systems and products, such as Airport Briefings, which contain essential information for pilots. It is common for Briefings not to be available due to the lack of the English version of the AIP and correlated aeronautical information.

5.4.11 WP/22 notes that the availability of digital aeronautical information products is an essential step toward a global, integrated, and responsive air traffic management (ATM) system. The availability of digital aeronautical information products free of charge is foundational for safe and efficient air navigation in the CAR/SAM Regions.

5.4.12 As part of the suggested actions in WP/22, IATA urges States to comply with ICAO SARPs, PANS, and Guidance Material related to trigger NOTAMs and the English version of Aeronautical Information products. It also suggests making digital Aeronautical Information products available online without requiring a subscription or payment.

5.4.13 Bolivia, Costa Rica, Cuba, El Salvador, Guatemala, Mexico Suriname, Trinidad and Tobago, United States, Uruguay, and Venezuela, expressed their support for WP22 presented by IATA and its recommendations, emphasizing the importance of publishing trigger NOTAMs, the availability of aeronautical information in English, and in a digital, easily accessible format; they also stressed the need to enhance the performance of AIM personnel in handling the English language.

5.4.14 Chile reported maintaining its practices and commitment regarding issuing trigger NOTAMs. Concerning the English version of the AIP, the amendment to be published on November 28, 2024, will have 70% of the text available in both languages and by 2025 (the first amendment date), it expects to complete the translation of 100% of its content. The Dominican Republic expressed its support for WP22, indicating that while digital media do not alter the timelines set by the AIRAC system, it should certainly be reviewed and updated in line with new technologies.

Other AIM Matters

5.4.15 Costa Rica and Dominican Republic highlighted the need to improve English proficiency among AIM personnel. The Secretariat reminded States that it is essential for AIM personnel to be competent in the use of the English language, but this should be within a framework aligned with the specific needs and functions of AIM rather than applying the “Linguistic Competence” requirements of ICAO Annex 1, which are intended for other operational needs.

5.4.16 Brazil presented WP/25, highlighting its efforts in aviation cybersecurity related to information sharing through the MISP (Malware Information Sharing Platform), in line with the proposals of the ICAO Cybersecurity Panel (CYSECP). Brazil emphasized that to ensure flight operation safety and continuity, air navigation and surveillance systems must be protected in their global information exchanges.

5.4.17 WP/25 describes the MISP (Malware Information Sharing Platform) as a crucial cybersecurity tool for sharing threat information, facilitating collaboration among organizations, enabling information centralization and sharing, being highly customizable and extensible, connecting users with global cybersecurity communities, and incorporating advanced access control and privacy features, ensuring organizations can share information selectively and securely. In summary, MISP is crucial for managing cyber threats and providing an effective platform for cybersecurity information exchange.

5.4.18 In WP/25, Brazil reports that DECEA began implementing MISP in 2021 and has been using and enhancing this tool since then. The threat indicators and alerts received through MISP are processed and serve as a basis for compiling blocklists or creating firewall rules. Currently, MISP assists in receiving and/or notifying any confirmed or suspected adverse event related to the security of computer systems or networks, contributing to information security in SISCEAB.

5.4.19 In conclusion, WP/25 reaffirms that DECEA's use of MISP significantly improves aviation cybersecurity in Brazil with a proactive approach aligned with international standards, such as ICAO's Cybersecurity Action Plan (CyAP). WP/25 states that Brazil intends to encourage the use of MISP among CAR/SAM region members (Caribbean and South America), with DECEA committed to supporting MISP implementation by offering assistance to Member States wishing to adopt this platform, ensuring a more cohesive and secure approach to cybersecurity in the region.

5.4.20 WP/25 encourages Member States to adopt MISP as a platform for sharing cybersecurity information and to elevate this issue to the Cybersecurity Panel (CYSECP), creating a Working Group to address the standardization of cybersecurity information sharing and the potential use of the MISP platform by Member States.

5.4.21 Bolivia, Cuba, Costa Rica, ECCAA, El Salvador, Guatemala, Mexico Trinidad and Tobago, and United States took note of the information presented by Brazil in WP/25, expressing gratitude for it and supporting Brazil's suggested actions in the document. IATA suggested that the recommendation to adopt specific technologies (MISP) should be analysed in detail due to the frequent changes in these technologies, and it expressed disagreement with the suggested actions in items b) and c) of the WP/25.

5.4.22 Brazil presented IP/10 on the progress in implementing SWIM, highlighting that since 2019, DECEA has published the "SWIM IN THE NATIONAL ATM" guide, which applies to all organizations and members of the Aeronautical Community interested in providing or using information through a national SWIM structure. Additionally, in 2023, a prototype version of the SWIM Registry was published.

5.4.23 As the next steps in the implementation of SWIM, IP10 highlights that by the end of 2024, DECEA intends to develop the CONOPS for the SWIM office, which will be responsible for governance and overseeing the Registry and certain SWIM services. Additionally, a new version of the Registry will be made available and populated with more services to test processes and gather feedback for the prototype, as well as to increase efforts related to cooperation in registry interoperability initiatives. Costa Rica and Uruguay took note of the information presented and thanked Brazil for the update.

5.5. Aerodromes and Ground Aids (AGA)

Updates on AGA Projects

5.5.1 Under WP/13, the Secretariat presented updates on Aerodrome Programme F projects in the CAR and SAM Regions. It includes information on the certification and operational safety of aerodromes (Project F1), aerodrome planning (Project F2), and the implementation of Airport Collaborative Decision Making (A-CDM) under Project F3.

5.5.2 Regarding Certification and Aerodrome Safety (F1):

- **CAR Region**: There is a decrease in certified aerodromes, with 97 certified international aerodromes (65%). A 4-year project is being structured with a view to supporting States in the certification of international aerodromes in the region.
- **SAM Region**: Out of 104 international aerodromes, 60 (57.69%) are certified, reflecting progress since the Bogota Declaration in 2013. Two new certifications have been registered, one in Venezuela and another in Argentina.

5.5.3 Concerning Aerodrome Planning (F2), the Secretariat informed the approved of the "Guidance Material — Airport Consultative Committees"[1] by GREPECAS/21 and encourages the States assess its incorporation into national procedures.

5.5.4 Lastly, regarding the A-CDM Implementation (F3), the Secretariat proposed a shift in focus from A-CDM to Surface Movement Guidance Control Systems (SMGCS), addressing operational efficiency at airports. The Secretariat proposed to update the F3 project to focus on SMGCS prior to the full A-CDM implementation.

[1] AGA - Aerodromes and Ground Aids (icao.int)

5.5.5 Bolivia, Costa Rica, Chile, Cuba, ECCAA, El Salvador, Guatemala, Panamá and Uruguay, supported and reiterated their commitments to certify international aerodromes, as well as to establish RSTs (Runway Safety Teams). In addition, Cuba expressed concern about the challenges States face in the aerodrome certification process, as well as the transition with emerging technologies and new airspace users, and therefore airport facilities.

5.5.6 Argentina requested an update of the AGA Dashboard, to which the Secretariat responded by informing that ICAO are currently updating and developing new dashboards for AGA in the CAR and SAM regions through iSTARS[2].

5.5.7 IATA proposed omitting certain indicators from the project proposal to avoid potential misunderstandings. In response, the Secretariat revised the proposal to align with this recommendation.

5.5.8 The Meeting adopted the following Conclusion:

<table>
<tr><td colspan="3">CONCLUSION
GREPECAS/22/13 MODIFICATIONS APPROVAL TO CAR/SAM F3 PROJECT</td></tr>
<tr><td colspan="2">What:
That, to implement Surface Movement Guidance Control System (SMGCS) as part of the F3 Project:

a) the States approve the revised version (modifications) of the CAR/SAM F3 Project at Appendix A of this report.

b) Member States and International Organizations review the proposed modifications to Project F3 and indicate their comments to the Secretariat by than 31 January 2025, and

c) F3 Project Members prepare a detailed action plan, in conjunction with the Secretariat, to carry out such activities, with the identification of priority international aerodromes.</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☒ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="3">Why:
To date, the F3 project has focused efforts on promoting the A-CDM concept and prepared an implementation guide accepted by the GREPECAS States. However, the Secretariat proposes new approach of the F3 project, based on the implementation of Surface Movement Guidance Control System (SMGCS) reflected in the revised version of the F3 Project.</td></tr>
<tr><td>When: 1 December 2024</td><td colspan="2">Status: ☒ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td>Who: ☒ States ☒ ICAO ☐ Other:</td><td colspan="2"></td></tr>
</table>

[2] iSTARS 4.0

Prevention of Wildlife Hazards

5.5.9 Under NI/05, the CAR/SAM Regional Committee for the Prevention of Wildlife Hazards (CARSAMPAF) reported on its activities and projects developed. It highlights the risks posed by wildlife to aviation safety and the importance of managing these risks effectively. CARSAMPAF, established in 2003, works across Central America, the Caribbean, and South America to coordinate efforts aimed at reducing aviation incidents involving wildlife. The committee conducts seminars, provides technical support to States, and helps in the creation of national wildlife hazard prevention committees. It also publishes the CARSAMPAF journal, offering insights into wildlife management in aviation. Key initiatives include updating a regional wildlife hazard survey and launching an Early Bird Migration Alert Program. The committee continues to promote knowledge exchange and operational safety through annual conferences and collaborative efforts with international organizations such as the World Birdstrike Association.

Airport Pavement

5.5.10 Under IP/19, the Latin American and Caribbean Association of Airport Pavements (ALACPA) presented an update on its activities. Since its establishment in 2002, ALACPA has consistently organized seminars and technical forums in collaboration with ICAO's regional offices and other international organizations. These events focus on various aspects of airport pavements, including design, construction, maintenance, and safety.

5.5.11 The association has held annual technical seminars since 2003, with the most recent in-person event taking place in Buenos Aires in 2023. ALACPA has also collaborated with ACI-LAC to update the Aerodrome Pavement Maintenance Guide, ensuring alignment with ICAO standards. In addition, ALACPA remains committed to supporting GREPECAS through its technical expertise and works closely with the FAA and other industry stakeholders to promote operational safety and efficiency. Looking ahead, ALACPA informed that plan to continue organizing in-person seminars, online courses, and technical meetings.

Agenda Item 6 Initial Review of the Current GREPECAS Work Programme and Projects

R*evised GREPECAS Work Programme and Projects*

6.1 Under WP/14 Rev., the Secretariat presented a review of the current GREPECAS Work Programme and Projects. The Secretariat proposes a restructuring of specific activities into three key programmes:

A) Programme for Strengthening the CAR/SAM Regional Plan (RANP) and National Plans (NANP)

Project A1 – Update of Vol. I and II of the CAR/SAM RANP and SUPPS 7030 – Development of Vol. III of the CAR/SAM RANP, including State capabilities for performance-based planning.
Project A2 – National Air Navigation Plans (NANP).

B) Air Navigation Implementation Programme aligned with the GANP, ASBU Framework, and Performance Framework

Project B1 – Improvement of Efficiency and Capacity: Implementation of FRTO and APTA (currently NEOSPACE-1).
Project B2 – Demand/Capacity Balance: Implementation of ATFM, including reinforcement of CDM.
Project B3 – Improvement of CNS (facilities and services), considering the GANP roadmap.
Project B4 – Improvement of MET: Implementation of AMET.
Project B5 – Improvement of AIM: Implementation of DAIM and evolution to SWIM.
Project B6- Enhanced Navigation infrastructure: GNSS implementation

C) Air Navigation Safety Improvement Programme

Project C1 – Improvement of airspace and ATS services safety (contributions from the GTE, LHD reduction, monitoring, PBCS with emphasis on oceanic areas, etc.).
Project C2 – Aerodrome certification.
Project C3 – Cybersecurity guidance

6.2 In addition, the Secretariat proposed a List for the GREPECAS Work Programmes and Projects (Appendix B to WP14 Rev.), as well as a corresponding Template for the GREPECAS Projects (Appendix C to WP/14 Rev.) that are part of each of the programmes described above.

6.3 During the virtual (asynchronous) phase of the meeting, States and International Organizations supported the proposals in the working paper, with some suggestions for improvements, which the Secretariat carried out by reviewing the working paper.

6.4 Therefore, the virtual meeting approved these actions and adjustments to enhance GREPECAS' effectiveness in the implementation of air navigation services and adopted the following decision:

<table>
<tr><td>DECISION
GREPECAS/22/14</td><td colspan="2">REVIEW OF THE CURRENT GREPECAS WORK PROGRAMME AND PROJECTS</td></tr>
<tr><td colspan="2">What:
That,

a) the Meeting adopts the List of Work Programmes and Projects submitted under WP/14 and the Project Description Template (Appendices B and C to WP/14 Rev.);

b) the Secretariat to complete the templates for each project, and that they are submitted for the analysis and approval of GREPECAS/23; and

c) the Secretariat to formulate a management mechanism and responsibilities for better monitoring and follow-up of these GREPECAS Programmes and Projects and presents them for the analysis and approval of GREPECAS/23.</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☒ Economic
☒ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="3">Why:
A review of Programmes and Projects is formulated to a) update the list of GREPECAS Programmes and Projects available on the GREPECAS webpage h, including its objectives and goals to comply with current priorities and needs; b) align the indicators and targets on the GREPECAS Dashboards with the GREPECAS Programmes and Projects; and c) enhance integration of projects of the SAM and CAR Regions .</td></tr>
<tr><td colspan="2">When:
a) Immediate
b) GREPECAS/23
c) GREPECAS/23</td><td>Status: ☐ Valid / ☐ Superseded / ☐ Completed</td></tr>
<tr><td colspan="2">Who: ☒ States ☒ ICAO ☐ Other:</td><td></td></tr>
</table>

6.5 Cuba highlighted the importance of what is outlined in point c of the Decision, due to its importance for effective control of implementation.

Review of GREPECAS Procedure Handbook

6.6 Under WP/15, the Secretariat presented an updated version of the GREPECAS Procedural Handbook for approval by GREPECAS Member States. This update, stemming from Decision GREPECAS/21/25, aimed to formalize enhancements in GREPECAS management, including adjustments to the plenary methodology combining asynchronous and in-person phase of meeting. The asynchronous (virtual) phase proved beneficial, allowing broader expert participation and deeper documentation analysis, though the duration was noted as potentially needing review. The in-person phase of meeting is also effective, fostering dynamic discussions and productive exchanges on implementation actions.

6.7 During the (asynchronous) virtual phase meeting, the States and International Organizations agreed on an updated version of the GREPECAS Procedures Handbook.

6.8 Considering that GREPECAS/22 is the first to use entirely virtual/in-person phases, IATA recommended carrying out an assessment of its results after the meeting. The Secretariat informed that, considering the IATA suggestion, it will provide a questionnaire at the in-person meeting to evaluate the results of this new meeting model.

6.9 Argentina highlighted that the initiative of asynchronous sessions is very valuable. Regarding the follow-up on GANDD differences, the modifications included in the Manual are considered appropriate, and there is a question as to whether the current database system will continue or if an update is planned.

6.10 Finally, Brazil submitted suggestions for improvements to the Manual's text, which were accepted by the Secretariat.

6.11 The updated GREPECAS Procedural Handbook was approved during the GREPECAS/22 Virtual Phase (according to **Appendix B** to this report), and it will be submitted for final approval at the in-person phase meeting of GREPECAS.

GREPECAS Scrutiny Working Group (GTE)

6.12 The Secretariat presented WP/17 to provide a detailed overview of the activities carried out by the GREPECAS Scrutiny Working Group (GTE) during 2023 and the first semester of 2024.

6.13 The result of the CAR/SAM Regions' Collision Risk Model (CRM) assessment for 2023 was 2.371×10^{-9}, indicating the risk remained within the acceptable safety level of 5 x 10−9 fatal accidents per flight or loss of the standard vertical separation of 1,000 ft. However, it was identified that the Port-au-Prince (MTEG), La Paz (SLLF), Guayaquil (SEFG), Curacao (TNCF), Panama (MPZL), and Santo Domingo (MDCS) Flight Information Regions (FIRs) presented a risk level above the Target Level of Safety (TLS). Regarding large height deviations (LHDs) in 2023, 624 valid events were included in the CRM study. As in previous years, LHDs with Code "E" (error/failure/no coordination between ATC units) were the most frequent, with 561 events, followed by Code "L" (non-RVSM approved aircraft), with 94 events.

6.14 As part of the agreements from GTE/24 Meeting, CARSAMMA, with the Secretariat, will organize a seminar for the CAR/SAM States to train Contact Points on the actions necessary for reporting approvals of Performance-Based Communications and Surveillance (PBCS). The GTE/24 Meeting approved the update of the Manual of Accredited Contact Points to CARSAMMA. The GTE/24 acknowledged the good work of coordination and harmonization of procedures being carried out by CARSAMMA and the North American Approvals Registry and Monitoring Organization (NAARMO), which has led to an improvement in data exchange and in the performance analysis of the CAR Region's RVSM airspace.

6.15 The effectiveness of monitoring RVSM airspace depends on the quality and quantity of the data received by CARSAMMA. States must collaborate proactively to ensure that the data provided is accurate and complete, enabling proper risk assessment and timely corrective actions. The analysis conducted shows that certain events, particularly those related to lack of or erroneous coordination between FIRs and the operation in the RVSM airspace by non-approved aircraft, pose a significant safety risk. States and service providers must implement immediate actions to mitigate this risk and prevent future events.

6.16 Cooperation among States and active participation in data updating and validation are essential to maintaining a high level of safety in RVSM airspace. Implementing seminars and training, as proposed during the GTE 24 meeting, will facilitate a deeper understanding of the processes and contribute to the continuous improvement of the system. The lack of response to CARSAMMA's communications from some States is a concern that must be addressed urgently. Updating the RVSM aircraft capability database and implementing GTE recommendations are necessary to ensure that all aircraft operating in RVSM airspace are authorized and that the vertical collision risk remains acceptable.

6.17 From this discussion, the following Conclusion was adopted:

<table>
<tr><td colspan="2">CONCLUSION
GREPECAS/22/15 ENHANCE CAR/SAM RVSM AIRSPACE SAFETY</td></tr>
<tr><td>What:

That, to promote actions that allow maintaining operational safety in RVSM airspace,

b) States of FIRs that reported in 2023 a TLS above the acceptable level to work with their respective ICAO Regional Office to develop an action plan to mitigate the main occurrences identified in this period; and

b) the ICAO NACC and SAM Regional Offices reiterate to States the importance of keeping the regional monitoring agencies' database on RVSM approvals up to date and report it to GREPECAS/23-</td><td>Expected impact:

☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Operational/Technical</td></tr>
<tr><td colspan="2">Why:

To ensure target level of safety is achieved in CAR/SAM Regions RVSM airspace</td></tr>
</table>

When:	Report by GREPECAS/23	**Status:**	☒ Valid / ☐ Superseded / ☐ Completed
Who:	☒ States ☒ ICAO ☐ Other:		

6.18 The GTE Rapporteur, in coordination with the Secretariat, presented WP/20 on the update of the Accredited Focal Points Manual for CARSAMMA. The note describes the update process, which included the formation of an ADHOC group that thoroughly reviewed the manual. The changes incorporated into the manual will enhance clarity and consistency, standardize terminology, correct identified errors, update functions and responsibilities, among other improvements made to the text.

6.19 The States and stakeholders took note of the proposed changes to the manual, with supportive comments received from Argentina, Bolivia, Chile, Costa Rica, Cuba, El Salvador, Mexico, the Dominican Republic, Trinidad and Tobago, Suriname, Venezuela, and IATA.

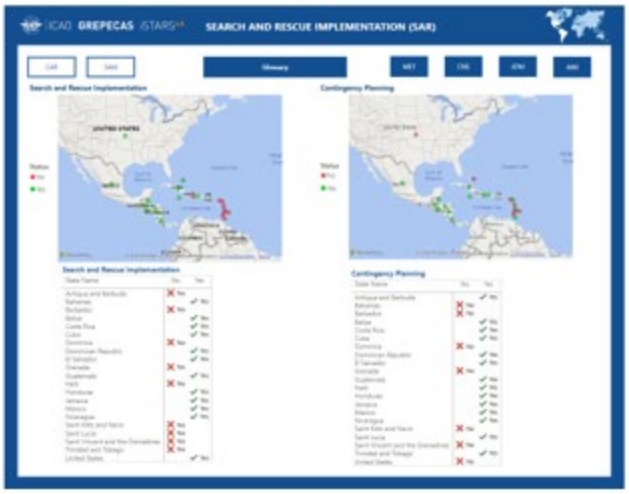
6.20 Brazil expressed the need for additional discussion on some of the proposed changes to the handbook. Therefore, the Secretariat coordinated during the in-person session, additional review resulting in the version of Appendix B, and therefore the Meeting approved the following decision:

DECISION GREPECAS/22/16	**UPDATE OF THE GUIDANCE MANUAL FOR CONTACT POINTS ACCREDITED TO CARSAMMA**
What: The Meeting accepts the update to the Manual for Accredited Focal Points to CARSAMMA, aimed at improving the RVSM airspace monitoring process in the Caribbean and South American (CAR/SAM) regions, increasing efficiency and accuracy in data collection for RVSM airspace safety analysis, as presented in Appendix B to this report.	**Expected impact:** ☐ Political / Global ☒ Inter-regional ☐ Economic ☐ Environmental ☒ Operational/Technical
Why: Efficiency in collecting, analysing, and validating significant altitude deviations in the RVSM airspace of the CAR/SAM regions is essential to maintaining operational safety within the expected level. The update of the functions and responsibilities of the Focal Points, CARSAMMA, and the Rapporteur is essential to improve the efficiency of the RVSM airspace monitoring process	
When: GREPECAS 22	**Status:** ☒ Valid / ☐ Superseded / ☐ Completed
Who: ☒ States ☒ ICAO ☐ Other:	ANSP, airports and airlines

GREPECAS Dashboards

6.21 Under IP/07, the Secretariat reported on the progress of the GREPECAS Dashboards, which are designed to report, monitor, and track the implementation of various Air Navigation Services (ANS) programmes across the CAR and SAM Regions. Hosted on ICAO's iSTARS 4.0 platform, these dashboards enable States to evaluate their current implementation levels and set targets in critical areas such as:

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


ICAO GREPECAS iSTARS
SEARCH AND RESCUE IMPLEMENTATION (SAR)
Search and Rescue Implementation
Contingency Planning

GREPECAS PROJECTS

F3	PROJECT DESCRIPTION (PD)	PROGRAMME	
ICAO Coordinator: ROs AGA	**Project Title**	**Start date**	**End date**
Project Leader (State): *Joel Cordero - PERÚ*	Paving the future A-CDM through the implementation of Platform Management and SMGCS	Nov 2024	Nov 2028
Objective	Support the implementation of appropriate Apron Management and Surface Movement Guidance and Control Systems (SMGCS) services at selected aerodromes in the CAR/SAM regions, as a critical basis for improving the apron operations safety, increasing airport capacity, and prepare the terrain for future implementations of advanced collaboration concepts, such as the A-CDM and other operational efficiency improvements.		
Scope	Selected aerodromes in the CAR/SAM Regions		
Justification	The A-CDM Project was approved by the Fifth Meeting of the Programmes and Projects Review Committee (PPRC/5) (2019) so the planning and actions of the project were just beginning with seminars in both regions. However, due to COVID-19, many of the congested airports (those where the full implementation of A-CDM would be applicable) have been affected in their traffic volume. The restructuring of this project, approved in GREPECAS/21, is based on a comprehensive assessment of the regional context and the real needs of the aerodromes in the CAR/SAM regions: 1. A survey presented during GREPECAS/21 revealed the need to re-evaluate the approach to implementing A-CDM in the region. 2. Investigations by the ICAO NACC and SAM Regional Offices concluded that the implementation of A-CDM, according to its original European definition, is not directly applicable to the CAR/SAM region, as it was designed to mitigate the effects of airspace management policies and take-off delays not implemented in our region. 3. A significant lack of apron management and systems to improve situational awareness on the ground at airfields in the region was identified, a prerequisite for more advanced collaborative approaches in airports. 4. Although capacity is an issue at some airports in the region, the implementation of A-CDM is not the direct solution to this challenge. 5. It is recognized that the basis for an improvement in airport capacity is the implementation of appropriate platform management services and advanced SMGCS systems. 6. This restructuring aligns with the correct implementation of the provisions contained in sections 9.5 and 9.8 of Annex 14, Volume I, Chapters 1, 7 and 9, Part II of PANS-Aerodromes (Doc 9981), and the guidance provided by Doc 9137, Part 8 (Platform Management), Doc 9476 (SMGCS) and Doc 9430 (A-SMGCS). Therefore, this restructuring seeks to address the specific needs of the CAR/SAM region, focusing on the implementation of Apron Management and SMGCS and/or A-SMGCS as a fundamental basis for future improvements in airport safety, efficiency, and capacity.		

F3	PROJECT DESCRIPTION (PD)	PROGRAMME	
ICAO Coordinator: ROs AGA	**Project Title**	**Start date**	**End date**
Project Leader (State): *Joel Cordero - PERÚ*	Paving the future A-CDM through the implementation of Platform Management and SMGCS	Nov 2024	Nov 2028
Indicators	• Percentage of international aerodromes that have implemented Apron Management services, among the ones that the necessity was determined. • Percentage of aerodromes that have implemented or improved their SMGCS. • Reduction in apron safety incidents. • Improved break-in times and reduced surface delays. • Increase in the operational capacity of the apron and maneuvering areas. • GANP KPI01, KPI02, KPI 09, KPI10, KPI 11, KPI13, KPI14, KPI21		
Required Resources	• High-level engagement of participating States, airport operators and air navigation service providers. • Appointment of experts in airport management and SMGCS systems. • Resources for evaluation, implementation and updating of systems and procedures. • Training programmes for airport and air traffic control personnel. • Training programs for airport and air traffic control personnel.		

Activity/Action	Deliverables	Deadline	Implementation Status (SAM)	Implementation Status (CAR)	Remarks
Initial assessment of the current apron management situation and SMGCS at selected aerodromes.	Evaluation report in the CAR and SAM Region	2025	**0%**	**0%**	
Determination of aerodromes where implementation of Apron Management is necessary and priority of implementation	1. Methodology for determining necessity for Apron Management 2. List of aerodromes where Apron Management is necessary, in order of priority	2025			

Activity/Action	Deliverables	Deadline	Implementation Status (SAM)	Implementation Status (CAR)	Remarks
Development of regional guides for the implementation of Platform Management services and improvement of SMGCS.	SMGCS Regional Guides	2026	**0%**	**0%**	
Pilot implementation of Apron Management services at selected airfields	1.List of priority aerodromes. 2. Report on the pilot case	2027	**0%**	**0%**	
Implementation or improvement of SMGCS in selected aerodromes.	1.Technical assistance missions. 2. Reports on results.	2028	**0%**	**0%**	
Development and realization of knowledge dissemination events	Workshop Webinar	2026	**0%**	**0%**	

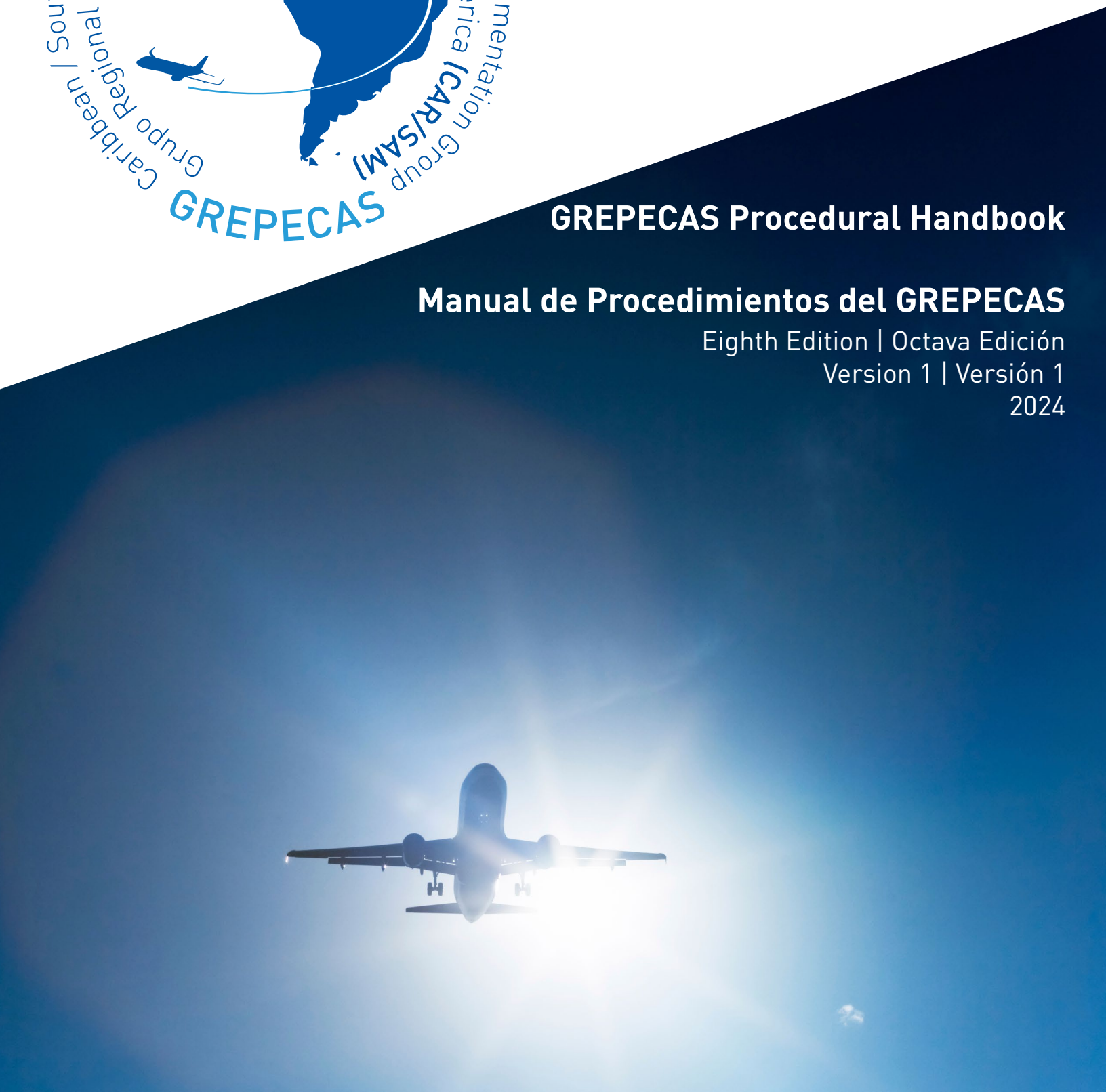
APPENDIX B

ICAO | OACI

GREPECAS Procedural Handbook

Manual de Procedimientos del GREPECAS

Eighth Edition | Octava Edición
Version 1 | Versión 1
2024



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The issue of amendments is communicated regularly by the GREPECAS Secretary through regular correspondence with the States and the GREPECAS web portal https://www.icao.int/GREPECAS/Pages/ES/default_ES.aspx, which is available for consultation by the GREPECAS Members.

The following Tables allow having a record of such amendments and corrections.

RECORD OF AMENDMENTS AND CORRIGENDA

AMENDMENTS / ENMIENDAS			
No.	**Date applicable** **Fecha de emisión**	**Date entered** **Fecha de anotación**	**Entered by** **Anotada por**

REGISTRO DE ENMIENDAS Y CORRECCIONES

CORRIGENDA / CORRECCIONES			
No.	**Date applicable** **Fecha de emisión**	**Date entered** **Fecha de anotación**	**Entered by** **Anotada por**

INTRODUCTION

The CAR/SAM Planning and Implementation Regional Group (GREPECAS) is responsible for the development and maintenance of air navigation plans and provides for the planning and implementation of air navigation systems within specific areas, in accordance with the planning frameworks agreed at the global and regional levels.

GREPECAS was established by the ICAO Council in 1990 as recommended by the Second CAR/SAM Regional Air Navigation Meeting in 1989 (action by Council on Recommendation 14/6 of the CAR/SAM/2 RAN Meeting, Santiago de Chile).

The Procedural Handbook contains information on the role, organization and operation of GREPECAS as well as its different programmes, processes and projects in support of implementation of the facilities and procedures of the air navigation system in the CAR/SAM Regions. The Handbook will serve States and International Organizations when planning and managing necessary resources for their participation in the Group.

This Procedural Handbook provides general guidelines and is approved by GREPECAS in accordance with ICAO Council guidelines for Planning and Implementation Regional Groups (PIRG).

The Secretary of this body may develop specific procedures and forms permitting the effective management of the GREPECAS mechanism. These procedures should not contradict this Handbook in any way.

The Handbook shall be updated periodically to accommodate relevant changes and developments, and according to the requirements of the Global Air Navigation Plan (GANP). The update is a constant objective due to the dynamics of the content of each of the elements that make up the Procedural Handbook, both the normative aspects of ICAO and the technical and technological aspects in the Air Navigation Services (ANS).

Therefore, the record of updates and modifications will be carried out through the use of track changes applied to the Procedural Handbook text, and will be notified and presented for approval at GREPECAS meetings.

INTRODUCCIÓN

El Grupo Regional de Planificación y Ejecución CAR/SAM (GREPECAS) es responsable del desarrollo y mantenimiento de los planes de navegación aérea y proporciona la planificación e implementación de los sistemas de navegación aérea dentro de áreas específicas, de acuerdo con los marcos de planificación acordados a nivel global y regional.

El GREPECAS fue creado por el Consejo de la OACI en 1990, por recomendación de la Segunda Reunión Regional de Navegación Aérea de las Regiones CAR/SAM, realizada en 1989 (acción por parte del Consejo en relación con la Recomendación 14/6 de la Reunión RAN CAR/SAM/2, Santiago de Chile).

El Manual de Procedimientos contiene información sobre el rol, la organización y el funcionamiento del GREPECAS, así como de sus distintos programas, procesos y proyectos en apoyo a la implementación de las instalaciones, servicios y procedimientos del sistema de navegación aérea en las regiones CAR/SAM. El Manual servirá a los Estados y las Organizaciones Internacionales para planificar y gestionar los recursos necesarios para su participación en el Grupo.

El Manual de Procedimientos brinda lineamientos generales y es aprobado por el GREPECAS de acuerdo a los lineamientos del Consejo de la OACI para los Grupos Regionales de Planificación y Ejecución (PIRG).

El/La Secretario/a de este órgano puede desarrollar procedimientos y formularios específicos que permitan una gestión efectiva del mecanismo del GREPECAS. Dichos procedimientos no deberían estar en conflicto en forma alguna con este Manual.

El Manual debe ser actualizado periódicamente, de acuerdo con los cambios y acontecimientos pertinentes y en función de los requerimientos del Plan Mundial de Navegación Aérea (GANP). La actualización es un objetivo constante debido a la dinámica del contenido de cada uno de los elementos que conforman el Manual de Procedimientos, tanto de los aspectos normativos de la OACI como de los aspectos técnicos y tecnológicos en los Servicios de Navegación Aérea (ANS).

Por lo tanto, el registro de las actualizaciones y modificaciones se llevará a cabo mediante el uso de control de cambios aplicados al texto del Manual de Procedimientos, notificándose y presentándose para aprobación en las reuniones del GREPECAS.

The Procedural Handbook will be distributed to GREPECAS Members, the ICAO Secretariat and other States, Territories and International Organizations participating in meetings, contributing or having an interest in the work of GREPECAS and/or its working groups and contributory bodies

El Manual de Procedimientos se distribuirá a los Miembros del GREPECAS, la Secretaría de la OACI y a otros Estados, Territorios y Organizaciones Internacionales que participen en reuniones, contribuyan o tengan interés en el trabajo del GREPECAS y/o sus Grupos de Trabajo y órganos auxiliares.

CAR/SAM PLANNING AND IMPLEMENTATION REGIONAL GROUP (GREPECAS)

1. Terms of Reference

1.1 This Section sets out the GREPECAS Terms of Reference and its position within ICAO. These guidelines shall govern the working arrangements of GREPECAS, including the relationship with States, International Organizations and Specialized Regional Organizations of ICAO, the Rules of Procedure for the conduct of its meetings and those of its working groups and contributory bodies.

1.2 In accordance with C-WP/13135, Council Decisions C-DEC 183/9 dated 18 March 2008, and C-DEC 190/4 dated 28 May 2010 and ICAO Council — 217th Session, Summary Minutes of the Sixth Meeting, 31 May 2019, the objectives of GREPECAS are as follows:

a) serve as a regional cooperative forum that promotes regional priorities, develops and maintains CAR/SAM Regional Air Navigation Plan (Doc 8733), as well as the work programme aimed at the adoption of the GANP (Doc 9750) which, at its Global Technical level, defines the Aviation System Block Upgrade (ASBU) drivers and modules, as well as its Performance Framework. These activities are aligned with the relevant ICAO provisions

b) facilitate the development and implementation by States of the air navigation systems and services identified in the Doc 8733 - CAR/SAM Regional Air Navigation Plan and Doc 7030 - Regional Supplementary Procedures;

c) monitor and report on the status of implementation by States of the required air navigation facilities, services and procedures in the CAR/SAM Regions, and identify associated difficulties and deficiencies to be brought to the attention of the Council;

d) facilitate the development and implementation of corrective action plans by States to address identified deficiencies, where necessary;

GRUPO REGIONAL DE PLANIFICACIÓN Y EJECUCIÓN CAR/SAM (GREPECAS)

1. Términos de Referencia (ToR)

1.1 Esta Sección establece los Términos de Referencia del GREPECAS y su posición en la OACI. Estas directrices regirán los arreglos de trabajo del GREPECAS, incluida la relación con los Estados, las Organizaciones Internacionales y los Organismos Regionales especializados de la OACI, las Reglas de Procedimiento para la realización de sus reuniones y las de sus Grupos de Trabajo y órganos auxiliares.

1.2 De conformidad con las Decisiones del Consejo de la OACI, C-DEC 183/9 de fecha 18 de marzo de 2008, C-DEC 190/4 de fecha 28 de mayo de 2010, y el 217º período de sesiones, acta resumida de la sexta reunión del Consejo de la OACI, 31 de mayo de 2019, los objetivos del GREPECAS son los siguientes:

a) servir como un foro cooperativo regional que impulsa las prioridades regionales, desarrolla y mantiene el Plan Regional de Navegación Aérea para las Regiones CAR/SAM (Doc 8733), así como el programa de trabajo dirigido a la adopción del GANP (Doc 9750) el cual, en su nivel técnico mundial, define los conductores y módulos de las Mejoras por bloques del sistema de aviación (ASBU), así como su Marco de Performance. Estas actividades se alinean con las disposiciones pertinentes de la OACI;

b) facilitar el desarrollo y la implementación por parte de los Estados de los sistemas y servicios de navegación aérea identificados en el Doc 8733 - Plan Regional de Navegación Aérea CAR/SAM y el Doc 7030 - Procedimientos Suplementarios Regionales;

c) monitorear e informar sobre el estado de implementación por parte de los Estados de las instalaciones, los servicios y los procedimientos de navegación aérea requeridos en las Regiones CAR/SAM, e identificar las dificultades y deficiencias asociadas que deben señalarse a la atención del Consejo;

d) facilitar el desarrollo y la implementación de planes de acción correctiva por parte de los Estados para resolver las deficiencias identificadas, cuando sea necesario;

e) identify and report on regional and emerging air navigation challenges experienced that affect the implementation of ICAO global provisions by States and the measures adopted or recommended to effectively address them;

f) facilitate the development and implementation of regional and national air navigation plans by CAR/SAM States;

g) facilitate, in accordance to the Global Aviation Safety Plan (GASP), the conduct of any necessary system performance monitoring, identify specific air navigation deficiencies, especially in the context of safety, and propose corrective measures, facilitating the development and implementation of action plans by States to resolve identified deficiencies, where necessary;

h) assist Member States with guidance for the implementation of emerging and complex aviation systems; and

1.3 The ICAO Council, during the review of Resolutions and Decisions at the 40th session of the ICAO Assembly, decided to align the calendar of meetings of the Planning and Implementation Regional Groups (PIRG) and Regional Aviation Safety Groups (RASGs) with the requirement for annual reports to the Council. The Council in its C-DEC 219/7, during the review of the Resolutions and Decisions of the Assembly (C-WP / 14983, Rev.2), implemented the decision of the Assembly and on 7 August 2020, the President of the ICAO Council approved the modification of the Terms of Reference of the PIRG and RASG to include annual meetings.

1.4 In order to meet the Terms of Reference the Group shall:

a) review and propose, when necessary, the target dates for implementation of facilities, services and procedures to ensure the coordinated development of the Air Navigation System in the CAR/SAM Regions;

e) identificar e informar sobre los desafíos regionales y emergentes de navegación aérea experimentados que afectan la implementación de las disposiciones globales de la OACI por parte de los Estados y las medidas adoptadas o recomendadas para abordarlos de manera efectiva;

f) facilitar el desarrollo y la implementación de planes regionales y nacionales de navegación aérea por parte de los Estados CAR/SAM;

g) facilitar, de acuerdo con el Plan Global para la Seguridad Operacional de la Aviación (GASP), la realización de cualquier monitoreo del desempeño de los sistemas necesarios, identificar deficiencias específicas en el campo de navegación aérea, especialmente en el contexto de la seguridad operacional, y proponer medidas correctivas, facilitando el desarrollo y la implementación de planes de acción por parte de los Estados para resolver las deficiencias identificadas, cuando sea necesario;

h) asistir a los Estados Miembros con orientación para implementar sistemas de aviación emergentes y complejos; y

1.3 El Consejo de la OACI, durante la revisión de las Resoluciones y Decisiones en el 40° período de sesiones de la Asamblea de la OACI, decidió alinear el calendario de reuniones de los Grupos regionales de planificación y ejecución (PIRG) y los Grupos regionales de seguridad operacional de la aviación (RASG) con el requisito de informes anuales al Consejo. El Consejo en su C-DEC 219/7, durante la revisión de las Resoluciones y Decisiones de la Asamblea (C-WP / 14983, Rev.2), implementó la decisión de la Asamblea y el 7 de agosto de 2020, el Presidente del Consejo de la OACI aprobó la modificación de los Términos de Referencia de los PIRG y RASG para incluir reuniones anuales.

1.4 A fin de dar cumplimiento a los Términos de Referencia, el Grupo deberá:

a) revisar y, de ser el caso, proponer las fechas para la implantación de las instalaciones, servicios y procedimientos que garanticen el desarrollo coordinado del sistema de navegación aérea en las Regiones CAR/SAM;

b) assist the ICAO Regional Offices with providing services in the CAR/SAM Regions with their assigned task of fostering implementation of the CAR/SAM Regional Air Navigation Plan;

c) ensure, in accordance with Doc 10004 - Global Aviation Safety Plan (GASP), the monitoring of the performance of the systems, as necessary;

d) prepare amendment proposals for updating the CAR/SAM Air Navigation Plan (ANP), as necessary, to meet any changes in requirements;

e) monitor the implementation of air navigation facilities and services and, if necessary, facilitate inter-regional harmonization, taking into account cost-benefit analyses, the preparation of economic studies, environmental benefits and financial issues;

f) analyze issues related to human resources planning and provide recommendations to support that the development of human resources capacities in the regions are compatible with the CAR/SAM regions ANP

g) invite financial institutions, as necessary and when deemed appropriate during the planning process, in order to participate in this work as sources of consultation and advice;

h) ensure close cooperation with relevant International Organizations and States in order to optimize the use of available expertise and resources;

i) carry out the above activities in the most efficient manner, with a minimum of formality and documentation; and

j) coordinate with the Regional Aviation Safety Group – Pan America (RASG-PA) to avoid duplication of efforts and work, as well as to develop joint activities if necessary.

b) ayudar a las Oficinas Regionales de la OACI que brindan servicios en las Regiones CAR/SAM en su tarea de fomentar la implantación del Plan Regional de Navegación Aérea de las Regiones CAR/SAM;

c) asegurar, de conformidad con el Doc 10004 - Plan Global para la Seguridad Operacional de la Aviación (GASP), el monitoreo de la performance de los sistemas, según sea necesario;

d) elaborar propuestas de enmienda para la actualización del Plan de Navegación Aérea (ANP) de las Regiones CAR/SAM, según sea necesario, para satisfacer cualquier cambio en los requerimientos;

e) monitorear la implantación de instalaciones y servicios de navegación aérea y, en caso de ser necesario, facilitar la armonización interregional, tomando en cuenta los análisis de costo-beneficio, la elaboración de los estudios económicos, los beneficios ambientales y las cuestiones financieras;

f) analizar los temas relacionados con la planificación de los recursos humanos y proporcionar recomendaciones para apoyar que el desarrollo de las capacidades de los recursos humanos en las regiones sean compatibles con el Plan de Navegación Aérea de las Regiones CAR/SAM;

g) invitar a instituciones financieras, según sea necesario y en el momento que se considere apropiado durante el proceso de planificación, para que participen en este trabajo como fuentes de consulta y asesoramiento;

h) asegurar una estrecha cooperación con las Organizaciones Internacionales pertinentes y los Estados a fin de optimizar el uso de los conocimientos técnicos y recursos disponibles;

i) llevar a cabo las actividades arriba indicadas de la manera más eficiente posible, con un mínimo de formalidad y documentación; y

j) coordinar con el Grupo Regional de Seguridad Operacional de la Aviación – Panamericano (RASG-PA) para evitar duplicación de esfuerzos y trabajos, así como desarrollar actividades conjuntas de ser necesario.

2. Position in ICAO

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

2.2 To verify the effectiveness and implementation rate of operational improvements, ICAO provides data and tools to support performance monitoring and implementation and facilitates the exchange of relevant information and best practices in the CAR/SAM Regions.

3. GREPECAS Membership and Organization

3.1 GREPECAS includes all ICAO Contracting States and Territories, which provide air navigation services in the CAR/SAM Regions. In addition, a group of ICAO contracting States and Territories may choose to have a common representation.

3.2 States should ensure that their designated representatives as members of GREPECAS have the knowledge and experience in the provision of international air navigation systems and are maintained for a sufficiently long period to maintain continuity in the activities of the GREPECAS. The designated representative may be assisted by technical advisors during the meetings of the Group.

3.3 States geographically located in the CAR/SAM Regions, States having dependent territories in those regions and States having aircrafts with their registry operating in those regions should be kept fully informed of the activities of GREPECAS. To achieve this objective, States should receive regularly:

- the proposed agenda of the Group's meetings; and
- the reports of the Group's meetings, as appropriate.

2. Posición dentro de la OACI

2.1 El GREPECAS es el organismo de orientación y coordinación para todas las actividades llevadas a cabo por la OACI en relación con el sistema de navegación aérea para las Regiones CAR/SAM, pero no asume las facultades otorgadas a otros organismos de la OACI, excepto cuando tales organismos le deleguen específicamente sus facultades. Las actividades del GREPECAS deberán estar sujetas a revisión por parte del Consejo de la OACI.

2.2 Para verificar la efectividad y la tasa de implementación de mejoras operativas, la OACI proporciona datos y herramientas para apoyar el monitoreo del desempeño y la implementación y facilita el intercambio de información relevante y mejores prácticas en las Regiones CAR/SAM.

3. Membresía y organización del GREPECAS

3.1 El GREPECAS incluye todos los Estados contratantes y Territorios de la OACI, que brindan servicios de navegación aérea en las Regiones CAR/SAM. Adicionalmente, un grupo de Estados contratantes y Territorios de la OACI puede optar por tener una representación común.

3.2 Los Estados deben asegurarse de que sus representantes designados/as como miembros del GREPECAS tengan el conocimiento y la experiencia en prestación de sistemas internacionales de navegación aérea y se mantengan durante un período suficientemente largo para mantener la continuidad en las actividades del GREPECAS. El/la representante designado/a puede ser asistido/a por asesores/as técnicos/as durante las reuniones del Grupo.

3.3 Los Estados ubicados geográficamente en las Regiones de CAR/SAM, los Estados que tienen Territorios dependientes en dichas regiones y los Estados que tienen aeronaves en su registro que operan en dichas regiones, deberán mantenerse plenamente informados de las actividades del GREPECAS. Para lograr este objetivo, los Estados deberían recibir, regularmente:

- el orden del día propuesto de las reuniones del Grupo; y
- los informes de las reuniones del Grupo.

3.4 GREPECAS will normally invite international organizations recognized by the ICAO Council as representing important civil aviation interests to participate in the work of GREPECAS on a "Consultative" basis. Among international organizations, ACI-LAC, CANSO, IBAC, IATA, IFALPA, and IFATCA should be invited on a regular basis. Other international organizations and/or entities and organizations of the CAR/SAM Regions may participate when specifically invited by the Group.

3.5 GREPECAS may invite as "Observers" representatives from other entities and international institutions of the CAR/SAM Regions, as well as representatives from recognized organizations in the industry with interests in civil aviation.

3.6 The following link indicates the International Organizations recognized by ICAO that may be invited to participate in the relevant GREPECAS meetings. ICAO does not officially qualify them as "Observers":

https://www.icao.int/about-icao/Pages/Invited-Organizations.aspx

3.7 The Group shall appoint a Chairperson and a Vice-Chairperson. Candidates for these positions are nominated indistinctly by a CAR or SAM State. The Chairperson, in close coordination with the Regional Directors of the ICAO NACC and SAM Regional Offices, should make the necessary arrangements for the work of the Group to be efficient.

3.8 In order to ensure the necessary continuity in the work of GREPECAS, the Chairperson and the Vice-Chairperson of GREPECAS should assume their functions at the end of the meeting at which they are elected, for a period of three years. They may also be re-elected only once, for a period of three years, if the group deems it appropriate to do so. The Chair shall:

a) attend, to the extent possible, all meetings of GREPECAS under his/her chairpersonship;

b) participate with the Secretariat in the development of GREPECAS meeting reports; and

c) present the GREPECAS meeting reports under his/her chairpersonship.

3.4 El GREPECAS invitará normalmente a las organizaciones internacionales reconocidas por el Consejo de OACI como representantes de intereses importantes de la aviación civil a participar en la labor del GREPECAS con carácter "Consultivo". Entre las organizaciones internacionales, se debería invitar periódicamente a ACI-LAC, CANSO, IBAC, IATA, IFALPA e IFATCA. Otras organizaciones internacionales y/o entidades y organizaciones de las Regiones CAR/SAM podrán participar cuando el Grupo las invite específicamente.

3.5 El GREPECAS podrá invitar a participar como "Observadoras" a representantes de otras entidades e instituciones internacionales de las Regiones CAR/SAM, así como a representantes de organismos reconocidos de la industria con intereses en la aviación civil.

3.6 En el siguiente enlace se indican las Organizaciones Internacionales reconocidas por la OACI que pueden ser invitadas a participar en las reuniones pertinentes del GREPECAS. La OACI no las califica oficialmente como "Observadoras":

https://www.icao.int/about-icao/Pages/Invited-Organizations.aspx

3.7 El GREPECAS deberá designar a un/a Presidente y a un/a Vice-Presidente. Las/los candidatas/os a estos puestos son personas nominadas, indistintamente, por un Estado CAR o un Estado SAM. El/la Presidente, en estrecha coordinación con los/as Directores/as Regionales de las Oficinas Regionales NACC y SAM de la OACI, deberá hacer los arreglos necesarios para que el trabajo del grupo se haga eficientemente.

3.8 A fin de garantizar la necesaria continuidad en el trabajo del GREPECAS, el/la Presidente y el/la Vice-Presidente del GREPECAS deberán asumir sus funciones al final de la reunión en la cual son elegidos/as, cumpliendo un período de tres años. También pueden ser re-elegidos/as por un período de tres años una única vez, si el grupo lo considera apropiado. El/la Presidente deberá:

a) asistir, en la medida de lo posible, a todas las reuniones del GREPECAS bajo su presidencia;

b) participar, con la Secretaría, en la elaboración de los informes de las reuniones del GREPECAS; y

c) presentar los informes de las reuniones del GREPECAS bajo su presidencia.

3.9 In case that special circumstances prevent the Chairperson or Vice-Chairperson from completing his/her term, the same State that nominated him/her shall designate a person to replace him/her to complete the remaining term. This appointment will be formally consulted with GREPECAS Members to validate and confirm the new Chairperson or Vice-Chairperson.

3.10 **Appendix A** to this document presents the Organization of GREPECAS.

3.11 The North America, Central America, and Caribbean Working Group (NACC/WG) and the SAM Implementation Group (SAM(IG) and other regional implementation groups will support the implementation process of GREPECAS Conclusions and Decisions and planning and implementation work in the corresponding regions, as well as providing relevant information and data for both regions at GREPECAS meetings.

4. Contributory Bodies and Collaborative Arrangements with Regional Associations or Committees

4.1 Creation and dissolution of Contributory Bodies

4.1.1 To assist in its planning and implementation work, GREPECAS may create contributory bodies (subgroups, working groups, steering groups, coordination groups, task forces, etc.), in charge of preparatory work on specific and defined problems requiring expert advice for their resolution To facilitate the Contributory Bodies' coordination and reports elaboration, a group in charge can be appointed to coordinate with other contributory bodies working in the same technical area of expertise for GREPECAS. Representation in GREPECAS contributory bodies shall be made up by specialists in the subjects concerned and familiar with the area under consideration. The establishment of the contributory bodies shall be governed by the following considerations:

a) a contributory body will be formed when the need to make a substantial contribution to the resolution of the problem or problems in question is clearly established;

b) it shall be granted clear and concise terms of reference describing not only the tasks but also a target date for completion;

c) its composition shall be such that, while being kept as small as possible, all States and international organizations which can make valid contributions are given the opportunity to participate in it;

3.9 En caso de que circunstancias especiales impidan que la/el Presidente o Vicepresidente complete su mandato, el mismo Estado que lo nominó designará una persona en su reemplazo para completar el periodo restante. Esta designación será consultada formalmente a los Miembros del GREPECAS para validar y ratificar al nuevo Presidente o Vicepresidente.

3.10 El **Apéndice A** de este documento muestra la Organización del GREPECAS.

3.11 El Grupo de Trabajo de Norteamérica, Centroamérica y Caribe (NACC/WG) y el Grupo de Implementación SAM (SAM/IG) y demás grupos regionales de implementación apoyarán el proceso de implementación de las Conclusiones y Decisiones y trabajo de planificación e implementación del GREPECAS en las respectivas regiones, además de proporcionar información y datos relevantes para ambas regiones en las reuniones del GREPECAS.

4. Órganos auxiliares y Arreglos colaborativos con Asociaciones o Comités Regionales.

4.1 Creación y disolución de órganos auxiliares

4.1.1 Para ayudar en su trabajo de planificación e implementación, el GREPECAS puede crear órganos auxiliares (subgrupos, grupos de trabajo, grupos directivos, grupos de coordinación, grupos de tarea, etc.), encargados del trabajo preparatorio sobre problemas específicos y definidos que requieren la asesoría de expertos para su resolución. Para facilitar la coordinación y la elaboración de informes de los órganos auxiliares, se puede designar un grupo encargado que coordine con otros órganos auxiliares que trabajan en la misma área de experiencia técnica para el GREPECAS. La representación en los órganos auxiliares del GREPECAS debe estar conformada por especialistas en los temas en cuestión y familiarizados con el área bajo consideración. El establecimiento de los órganos auxiliares se regirá por las siguientes consideraciones:

a) se formará un órgano auxiliar cuando se establezca claramente la necesidad de apoyar con una contribución sustancial a la resolución del problema o problemas en cuestión;

b) se le proporcionará términos de referencia claros y concisos que describan no solo las tareas a realizar sino también una fecha prevista para su finalización;

c) su composición será tal que, aunque se mantenga lo más pequeño posible, todos los Estados y organizaciones internacionales que puedan hacer contribuciones válidas tengan la oportunidad de participar en ella;

d) its work progress and co-ordination requirements shall be subject to review by GREPECAS to avoid duplication of effort in fields already covered by other activities;

e) contributory bodies must nominate "rapporteurs" to avoid conflicts of status with the GREPECAS chairperson, they must not nominate "chairpersons" to preserve the necessary hierarchical organization;

f) contributory bodies must nominate "rapporteurs" to avoid conflicts of status with the GREPECAS chairperson, and they must not nominate "chairpersons" to preserve the necessary hierarchical organization; and

g) a contributory body will be dissolved when it has completed the assigned tasks or when it has clearly demonstrated the work carried out.

4.1.2 The structure of the contributory bodies created by the GREPECAS, including its terms of reference, shall be kept under regular revision by GREPECAS to optimize its organization.

4.1.3 When appropriate, the contributory bodies should adopt a project-management-based approach to regional air navigation planning and implementation, in accordance to agreed regional priorities, latest GANP edition.

4.1.4 Each contributory body shall nominate a rapporteur to serve as contact with the GREPECAS Secretariat. These contributory bodies may carry out, in coordination with the GREPECAS, specific activities such as the organization of seminars and workshops. The GREPECAS Secretariat may request the support of the ICAO Regional Offices for the management of the contributory bodies.

4.1.5 The rapporteur of the contributory body shall be familiar with ICAO Policy on interactions with third parties and the activities of the group shall be aligned with the GREPECAS procedures. And their actions will be agreed with the ICAO Regional Officer in charge and the contributory body will not take any action without the consensus of the ICAO Regional Officer in charge.

4.1.6. Each contributory body shall report its activities annually to GREPECAS Provide an update on current activities and guide the continuous work to ensure alignment with the GREPECAS work programme.

d) su progreso en el trabajo y los requisitos de coordinación estarán sujetos a revisión por parte del GREPECAS para evitar la duplicación de esfuerzos en campos que ya están cubiertos por otras actividades;

e) los órganos auxiliares deberán nominar "relatores/as" para evitar conflictos de estatus con el presidente/a del GREPECAS no debe nominar "presidentes/as" para preservar la organización jerárquica necesaria;

f) los órganos auxiliares deberán nominar "relatores/as" para evitar conflictos de estatus con el presidente/a del GREPECAS y no debe nominar "presidentes/as" para preservar la organización jerárquica necesaria; y

g) un órgano auxiliar se disolverá cuando haya completado las tareas asignadas o haya dejado en claro el trabajo realizado.

4.1.2 La estructura de los órganos auxiliares creados por el GREPECAS, incluyendo sus términos de referencia, se mantendrán bajo revisión periódica por el GREPECAS para optimizar su organización.

4.1.3 Según corresponda, los órganos auxiliares deberían adoptar un enfoque basado en la gestión de proyectos para la planificación e implementación de la navegación aérea regional, que esté alineado con las prioridades regionales acordadas, la última edición del GANP.

4.1.4 Cada órgano auxiliar nominará un/a relator/a para que sirva de contacto con la Secretaria del GREPECAS. Estos órganos auxiliares podrán ejecutar, en coordinación con el GREPECAS, actividades específicas tales como la organización de seminarios y talleres. La Secretaría del GREPECAS podrá pedir el apoyo de las Oficinas Regionales para la gestión de los órganos auxiliares.

4.1.5 El/la relator/a del órgano auxiliar deberá estar familiarizado/a con la Política de la OACI sobre las interacciones con partes externas y las actividades del grupo se alinearán con los procedimientos del GREPECAS, y sus acciones se acordarán con el Especialista Regional de la OACI a cargo y el órgano auxiliar no tomará ninguna medida sin el consenso del Especialista Regional de la OACI a cargo.

4.1.6 Cada órgano auxiliar deberá reportar sus actividades anualmente al GREPECAS, Proporcionar una actualización sobre las actividades actuales y orientar el trabajo continuo para asegurar la alineación con el programa de trabajo del GREPECAS.

4.1.7 The GREPECAS Contributory Body is the Scrutiny Working Group (GTE) and its Terms of Reference (ToRs) are shown in **Appendix B**.

4.2 Collaborative arrangements with Associations or Regional Committees.

4.2.1 In order to support the GREPECAS activities, collaborative arrangements may be held with regional associations or committees in support of the objectives of the Regional Air Navigation Plan and other GREPECAS objectives. The procedure for these arrangements is described in **Appendix C** of this manual.

5. Working methodology

5.1 The GREPECAS meetings will be held annually in a mixed manner, with a Virtual Phase (or Asynchronous phase) and a Face-to-Face Phase according to the following:

- The Virtual Phase (or Asynchronous Phase): will be conducted through a collaboration and communication platform (to be defined by the Secretariat), during which all Working Papers (WPs) and Information Papers (IPs) are made available to participants in order they can analyse and comment on these documents, allowing consensus to be generated on the necessary proposals or measures, as well as proposals for decisions and conclusions, with a view to guide the GREPECAS tasks. This Phase facilitates the preparation of a preliminary Report, weeks before the face-to-face Phase.

- The Face-to-Face Phase: will focus on decision-making and conclusions based on the Preliminary Report and will favour the exchange and dialogue among meeting participants to ensure the GREPECAS objectives, including several working tables on matters of interest related to safety and air navigation.

5.2 The GREPECAS work programme shall be developed through:

- permanent activities corresponding to the primary functions of a PIRG: management and maintenance of the Air Navigation Plan (ANP), deficiencies, etc. as well as ensuring that the implementation of Air Navigation Systems in the CAR/SAM regions is consistent and compatible with developments in adjacent regions, and is in line with the ATM Operational Concept (Doc 9854), ~~SUPPs,~~ GANP, and the CAR/SAM Regional Air Navigation Plan.

- Specific activities to be carried out through programmes and projects

4.1.7 El órgano auxiliar del GREPECAS es el Grupo de Trabajo de Escrutinio (GTE)y sus Términos de referencia (ToR) se muestran en el **Apéndice B**.

4.2 Arreglos colaborativos con Asociaciones o Comités Regionales.

4.2.1 Para apoyar las actividades del GREPECAS, se podrán celebrar arreglos colaborativos con asociaciones o comités regionales en apoyo a los objetivos del Plan Regional de navegación aérea y demás objetivos del GREPECAS. El procedimiento para estos arreglos se describe en el **Apéndice C** de este manual.

5. Metodología de trabajo

5.1 Las reuniones de GREPECAS se desarrollarán, anualmente, de manera mixta, con una Fase Virtual (o fase Asincrónica) y una Fase Presencial según lo siguiente:

- La Fase Virtual (o Fase Asincrónica): se conducirá a través de una plataforma de colaboración y comunicación (a ser definida por la Secretaría), durante la cual todas las Notas de Estudio (NE) y las Notas de Información (NI) se ponen a disposición de los participantes para que puedan analizar y emitir comentarios sobre estos documentos, permitiendo generar consenso sobre las propuestas o medidas necesarias, así como propuestas de decisiones y conclusiones, con miras a orientar las tareas del GREPECAS. Esta Fase facilita la preparación de un Informe preliminar, semanas antes de la Fase presencial.

- La Fase Presencial: se enfocará en la toma de decisiones y conclusiones en base al Informe Preliminar, y se favorecerá el intercambio y diálogo entre los participantes de la reunión para asegurar los objetivos del GREPECAS, incluyendo varias mesas de trabajo de asuntos de interés relacionados con la seguridad operacional y la navegación aérea.

5.2 El programa de trabajo del GREPECAS será desarrollado a través de:

- actividades permanentes que corresponden a las funciones primarias de un PIRG: gestión y mantenimiento del Plan de Navegación Aérea (ANP), deficiencias, etc. así como asegurar que la implantación de los Sistemas de Navegación Aérea en las regiones CAR/SAM sea coherente y compatible con los desarrollos en las regiones adyacentes, y esté en consonancia con el Concepto Operacional ATM (Doc 9854), ~~SUPPs,~~ GANP y el Plan Regional de Navegación Aérea de las Regiones CAR/SAM.

- actividades específicas que se realizaran a través de programas y proyectos

5.3 The permanent activities of GREPECAS will be carried out by the Secretariat in coordination with the Chairmanship and the members of GREPECAS, through electronic communications and specific work sessions, maximizing the electronic means for their fulfilment, for which techniques will be used to manage the activities for their timely compliance.

5.4 One of these permanent tasks is the management of the CAR/SAM Regional Air Navigation Plan. GREPECAS is key to the successful adoption of the GANP, as it provides the medium-term planning and implementation horizon for States and other stakeholders. The global technical level of the GANP contains the development of the ASBU methodology and incorporates a Performance Framework that allows measuring the performance of the implementation of the modules and elements, ensuring that the identified needs are met and allowing the management of performance indicators aimed at obtaining scalable upgrade goals. GREPECAS is responsible for the regional level of the GANP. Based on regional performance and operational needs, differences, constraints and opportunities, GREPECAS is responsible for studying and defining regional planning and implementation priorities, aligned with the GANP, through Volumes I, II and III of the CAR/SAM ANP. It is also responsible for the identification of air navigation deficiencies, taking into account the air navigation plans.

5.5 Following the improvements management process, GREPECAS can contribute to the development of the GANP by proposing amendments to the Aviation System Block Upgrade (ASBU) framework based on the lessons learned from its implementation challenges and experience.

5.6 The specific activities of GREPECAS will be carried out through the project and programmes management methodology. Every project must be clearly identified with an operational benefit/improvement and justified under a Cost Benefit Analysis (CBA).

5.7 The programmes will be coordinated by the Regional Officers and the projects will be coordinated by experts from the States. The programmes cover the areas of air navigation, based on the GANP, the Global ATM Operational Concept and in accordance with ICAO programmes under the Strategic Objectives of Safety and Environmental Protection and Sustainable Development of Air Transport; i.e. AGA, AIM, ATM, CNS, MET and SAR. Projects in their conception are expected to be CAR/SAM except in particular cases where it is duly justified that they are only CAR or only SAM.

5.3 Las actividades permanentes del GREPECAS se realizarán por parte de la Secretaría en coordinación con la Presidencia y los miembros del GREPECAS, a través de comunicaciones electrónicas y sesiones específicas de trabajo maximizando los medios electrónicos para su cumplimiento, para lo cual se hará uso de técnicas de gestión de las actividades para su oportuno cumplimiento

5.4 Una de estas tareas permanentes es la gestión del Plan Regional de Navegación Aérea para las Regiones CAR/SAM. El GREPECAS es clave para la adopción exitosa del GANP, ya que proporciona el horizonte de planificación estratégica e implementación a mediano y largo plazo para los Estados y otras partes interesadas. El nivel técnico mundial del GANP contiene el desarrollo de la metodología ASBU e incorpora un Marco de Performance que permite medir el desempeño de la implantación de los módulos y elementos, asegurando que se atiende las necesidades identificadas y permitiendo gestionar indicadores de performance orientados a obtener metas de mejora escalables. El GREPECAS es responsable del nivel regional del GANP. Con base en el desempeño regional y las necesidades operacionales, diferencias, limitaciones y oportunidades, el GREPECAS es responsable de estudiar y definir las prioridades regionales de implementación, alineadas con el GANP, a través de los Volúmenes I, II y III del ANP CAR/SAM. También es responsable de la identificación de las deficiencias de navegación aérea, teniendo en cuenta los planes de navegación aérea.

5.5 Siguiendo el proceso de gestión de mejoras, GREPECAS puede contribuir a la mejora del desarrollo del GANP al proponer enmiendas al marco de mejora del sistema de aviación (ASBU), basadas en las lecciones aprendidas de sus desafíos y experiencia de implementación.

5.6 Las actividades específicas del GREPECAS se realizarán a través de la metodología de gestión de programas y proyectos. Todo proyecto debe estar claramente identificado con un beneficio/mejora operacional y justificada bajo un Análisis de Costo-Beneficio (CBA).

5.7 Los programas serán coordinados por los/as Especialistas Regionales y los proyectos serán coordinados por expertos/as de los Estados. Los programas abarcan las áreas de la navegación aérea, con base en el GANP, el Concepto Operacional Mundial ATM y de acuerdo con los programas de la OACI bajo los Objetivos Estratégicos Seguridad Operacional y Protección del medio ambiente y desarrollo sostenible del transporte aéreo; es decir, AGA, AIM, ATM, CNS, MET y SAR. Los Proyectos en su concepción se espera que sean CAR/SAM, salvo en los casos particulares en los cuales se justifiquen debidamente que sean solamente CAR o solamente SAM.

5.8 The respective CAR or SAM Regional Office shall designate programmes coordinators. To assist in the design, monitoring and achievement of the objectives of each project, the programmes coordinator of the Regional Office shall be supported by project coordinators designated by the States. Each Regional Office will use its own implementation methodology to meet the objectives of the programmes and projects in the regions. If necessary, CAR/SAM meetings may be convened to coordinate interregional aspects and existing forums will be used in order to avoid the proliferation of meetings and minimize costs.

5.8 GREPECAS projects have the following components, which must be included in a document for each project, containing the following points:

a) Objectives

b) Goals description

c) Activities

d) Responsibilities

e) Human Resources – experts and budget

f) Outcome –deliverables

g) Schedule – Programme, milestones, terms

h) Dependencies

i) Metrics and Indicators

j) Risk Analysis

5.9 To achieve the results of a given project resource allocation for its implementation is necessary. States/ International Organizations, upon designating their coordinators and experts, must ensure that the designees are provided with the time necessary and resources to conduct appropriate coordination and participate in the various activities of the project.

5.8 La respectiva Oficina Regional CAR o SAM designará coordinadores/as de programas. Para asistir el diseño, seguimiento y logro de los objetivos de cada proyecto, el/la coordinador/a de programa de la Oficina Regional contará con el apoyo de coordinadores/as de proyecto designados/as por los Estados. Cada Oficina Regional utilizará su propia metodología de implementación para cumplir con los objetivos de los programas y proyectos de las regiones. En caso de ser necesario, se podrán convocar reuniones CAR/SAM para coordinar aspectos interregionales y, se utilizarán los foros existentes con el propósito de evitar la proliferación de reuniones y minimizar costos.

5.8 Los proyectos del GREPECAS tienen los siguientes componentes, los cuales deberán estar incluidos en un documento por cada proyecto, que contenga los siguientes puntos:

a) Objetivos

b) Descripción de metas

c) Actividades

d) Responsabilidades

e) Recursos humanos (expertos/as) y presupuesto

f) Resultados - entregables

g) Cronograma - programación, hitos, plazos

h) Dependencias

i) Métricas e indicadores

j) Análisis de riesgos

5.9 Para lograr alcanzar los resultados de un proyecto, es necesario disponer de recursos para su implementación. Los Estados/Organizaciones Internacionales, al designar a sus coordinadores/as y expertos/as, deberán asegurarse que puedan disponer del tiempo necesario y demás recursos para una adecuada participación en las distintas actividades del proyecto.

6. Projects Meetings and Interregional Coordination

6.1 GREPECAS will need to ensure coordination with informal groups, such as the South Atlantic Group (SAT), the South Pacific Informal ATS Coordinating Group (ISPACG) and the e Informal Pacific Air Traffic Control (ATC) Coordinating Group (IPACG) and others to guarantee harmonized planning and smooth transition across regional interface areas.

6.2 With the aim of coordinating and exchanging information, it is possible that the various projects will require regional meetings. Priority will be given to teleconference meetings; however, in-person meetings may also be necessary. In this case, the Regional Offices will make use of existing fora in order to minimize costs, and preferably hold meetings at the Regional Offices.

7. Regional Coordination

7.1 The Chairperson and the GREPECAS Secretary, in coordination with the Co-Secretary, shall take all necessary steps to establish and maintain a close relationship with relevant international and sub-regional organizations in all pertinent fields of aviation activity to ensure optimization of capacity and efficient development of procedures.

8. GREPECAS Meetings

8.1 Languages

8.1.1 The languages of the meetings of the GREPECAS shall be English and Spanish. The meeting reports and supporting documentation for GREPECAS meetings will be prepared in both languages.

8.2 Secretariat support of GREPECAS meetings

8.2.1 The GREPECAS Secretariat will be provided by ICAO (NACC or SAM Regional Director). The ICAO Regional Director with more seniority will assume the GREPECAS Secretary.

8.2.2 The Regional Director who acts as Secretary of GREPECAS will not simultaneously perform functions of Secretary of Regional Aviation Safety Group-Pan America (RASG-PA), assuming these functions the Regional Director of the other Region.

6. Reuniones para los proyectos y coordinación Interregional

6.1 GREPECAS deberá asegurar la coordinación con grupos informales, como el Grupo del Atlántico Sur (SAT), el Grupo Informal de Coordinación de ATS del Pacífico Sur (ISPACG) y el Grupo Informal de Coordinación de ATC del Pacífico (IPACG), y otros, para asegurar una planificación armonizada y una transición fluida a través de las áreas de interfaz regional.

6.2 Con el objetivo de coordinar e intercambiar información, es posible que los distintos proyectos requieran reuniones regionales. Se dará prioridad a reuniones por medio de teleconferencias; sin embargo, la reunión presencial puede también ser necesaria. En este último caso, las Oficinas Regionales, en la medida de lo posible, harán uso de los foros ya existentes a fin de minimizar costos y de preferencia las reuniones serán realizadas en las Oficinas Regionales.

7. Coordinación regional

7.1 El/la Presidente y el/la Secretario/a del GREPECAS, en coordinación con el/la Co-Secretario/a, deberán tomar todas las medidas necesarias para establecer y mantener una estrecha relación con las organizaciones internacionales y sub-regionales pertinentes en todos los campos relacionados con la actividad aeronáutica, a fin de garantizar la optimización de la capacidad y el eficiente desarrollo de los procedimientos.

8 Reuniones del GREPECAS

8.1 Idiomas

8.1.1 Los idiomas de las reuniones del GREPECAS deberán ser el inglés y el español. Los informes de las reuniones y los documentos de apoyo para las reuniones del GREPECAS serán elaborados en ambos idiomas.

8.2 Apoyo de la Secretaría a las reuniones del GREPECAS

8.2.1 La Secretaría del GREPECAS será provista por la OACI (Director/a Regional NACC o SAM). El/la Director/a Regional de la OACI con más antigüedad asumirá la Secretaría del GREPECAS.

8.2.2 El/la Director/a Regional que actúa como Secretario/a del GREPECAS no puede asumir el rol de Secretario/a del Grupo Regional de Seguridad Operacional de la Aviación Pan-América (RASG-PA) al mismo tiempo. El/la Director/a Regional de la otra Región actuará como Secretario/a del RASG-PA.

8.2.3. GREPECAS meetings are open to all Members. Each State/Territory Member should be represented by a high-level Delegate appointed by the State/Territory, preferably from the Civil Aviation Authority (CAA) to support the formulation of related policies within the State. A delegate can be supported by an alternative delegate and/or advisers with the required technical knowledge on the issues under consideration.

8.2.4 The GREPECAS Secretary, supported by the GREPECAS Co-Secretary, shall provide necessary secretarial assistance to the Group and serve as its communication link with all interested parties. In order to achieve this, the following actions will be taken:

a) the meeting agenda shall be limited to those items that are sufficiently mature for a GREPECAS decision or conclusion;

b) documentation submitted by States, international organizations, and GREPECAS Programmes for action by GREPECAS shall always include a concrete and substantiated proposal for a conclusion or a decision for GREPECAS consideration for endorsement, amendment or rejection, if applicable;

c) working papers from the States should be sent electronically to the Secretariat at least ~~45~~60 days *before the start of the in-person phase of* the meeting to permit timely processing by the corresponding Regional Office accredited to that State. All documentation should be prepared in two languages, English and Spanish, to be submitted ~~21 days~~ before *the start of the asynchronous phase of* the meeting, at the latest, for proper publishing and distribution. Working papers received in only one language or after the start of the asynchronous (virtual) phase may not be accepted by the Secretariat, however, they may be adapted by the originator to be presented as information papers. Information papers will be prepared in the language(s) defined by the originator (Spanish and/or English) and should be sent at least 30 days *the start of the in-person phase of* the Meeting All Meeting documentation will be available on the web at least ~~15~~10 days prior to the *asynchronous (virtual) phase of the* meeting;

8.2.3 Las reuniones del GREPECAS están abiertas a todos los Miembros. Cada Miembro del Estado/Territorio debería estar representado por un/a Delegado/a de alto nivel designado/a por el Estado/Territorio, preferiblemente de la Autoridad de Aviación Civil (AAC) para apoyar la formulación de políticas relacionadas dentro del Estado. Un/a delegado/a puede ser apoyado/a por un/a delegado/a alterno/a y/o asesores/as con el conocimiento técnico requerido de los temas bajo consideración.

8.2.4 El/la Secretario/a del GREPECAS, con el apoyo del/de la Co-Secretario/a del GREPECAS, brindará la asistencia secretarial necesaria al Grupo y servirá de enlace de comunicación con todas las partes interesadas. Con este fin, se tomarán las siguientes acciones:

a) el Orden del Día deberá limitarse a aquellos temas que estén suficientemente maduros para una decisión o conclusión por parte del GREPECAS;

b) la documentación presentada para fines de una acción por parte del GREPECAS, de los Estados, las Organizaciones Internacionales y los Programas del GREPECAS, debería siempre incluir una propuesta de Conclusión o Decisión concreta y fundamentada para la aprobación, enmienda o rechazo, según corresponda, del GREPECAS;

c) las notas de estudio de los Estados deberían ser enviadas electrónicamente a la Secretaría por lo menos ~~45~~60 días *antes del inicio de la fase presencial* de la reunión, a fin de permitir su procesamiento oportuno por parte de la Oficina Regional acreditada a ese Estado. Toda la documentación debería ser elaborada en dos idiomas, Español e Inglés, para ser presentada a la Secretaría ~~a más tardar 21 días~~ antes *del inicio de la fase asincrónica* de la reunión para su debida publicación y distribución. Las notas de estudio recibidas en un sólo idioma o aquellas que sean recibidas después del inicio de la fase asincrónica (virtual) podrían no ser aceptadas por la Secretaría; sin embargo, pueden ser adaptadas por el originador para ser presentadas como notas de información. Las notas de información serán elaboradas en el/los idiomas que defina el originador (español y/o inglés) y deberían ser enviadas por lo menos 30 días *antes del inicio de la fase presencial de* la Reunión. Toda la documentación de la reunión estará disponible en la página web por lo menos ~~15~~10 días antes *de la fase asincrónica (virtual)* de la reunión;

d) GREPECAS plenary sessions will approve conclusions and decisions, which shall include brief lead-in text for better understanding and a reference to which earlier Conclusion(s)/Decision(s) are being superseded, as well as noting when they can be deleted from the GREPECAS List of Valid Conclusions and Decisions;

e) the full report will be completed by the Secretary and approved by the Chairperson for transmission within four weeks (working days) after the end of the meeting;

f) upon completion of the meeting, the Secretariat will present a draft containing the meeting Conclusions and Decisions a one-page summary describing the outcome will be prepared and disseminated to all Air Navigation Bureau (ANB) sections as well as relevant sections of Air Transport Bureau (ATB) and Technical Co-operation Bureau (TCB), including a detailed action plan for the implementation of the conclusions and decisions adopted by the Group; and

g) GREPECAS relations with States and International Organizations, as well as relations with CAR or SAM bodies and organizations, will normally be conducted through the ICAO Regional Director of the Office of accreditation.

9. Meeting Documentation

9.1 Distribution of the supporting documentation of GREPECAS and its Programmes, as well as the reports of the meetings, will be posted on the GREPECAS website.

9.2 Documentation may be presented by States, International Organizations or the Secretariat, in the following formats:

a) Working Papers (WP) contain material with a draft decision, conclusion or invitation for the meeting to take a certain action. The content of the topics must be focused on air navigation subjects (AGA, AIM, ATM, CNS, MET and SAR), coordination aspects with RASG-PA, or GREPECAS administrative matters.

d) las reuniones plenarias de GREPECAS aprobarán las conclusiones y decisiones, las cuales incluirán un corto texto de introducción para su mejor comprensión, así como una referencia a la(s) conclusión(es)/ decisión(es) anteriores que está(n) siendo reemplazada (s), y notando cuándo ésta(s) puede(n) ser eliminada(s) de la lista de conclusiones y decisiones válidas del GREPECAS;

e) el informe completo será redactado por el/la Secretario/a y aprobado por el/la Presidente, para su envío dentro de las cuatro semanas (laborables) después de finalizada la reunión;

f) al finalizar la reunión, la Secretaría presentará un borrador con las Conclusiones y Decisiones de la reunión se elaborará un resumen de una página para describir el resultado, el cual será difundido a todas las secciones de la Dirección de Navegación Aérea (ANB), así como a las secciones pertinentes de la Dirección de Transporte Aéreo (ATB) y la Dirección de Cooperación Técnica (TCB), incluyendo un plan de acción detallado para la implantación de las conclusiones y decisiones adoptadas por el grupo; y

g) las relaciones del GREPECAS con los Estados y las Organizaciones Internacionales, así como con los organismos y organizaciones de las Regiones CAR o SAM, serán normalmente canalizadas a través del/ de la Director/a Regional de la Oficina de acreditación de la OACI.

9. Documentación de la reunión

9.1 La distribución de la documentación de apoyo del GREPECAS y sus Programas, así como los informes de las reuniones, aparecerán publicados en el sitio web del GREPECAS.

9.2 Los Estados, Organizaciones Internacionales o la Secretaría podrán presentar la documentación en los siguientes formatos:

a) las notas de estudio (NE) contienen material con un proyecto de decisión, conclusión o invitando a la reunión a tomar una determinada acción. El contenido de los asuntos debe estar enfocado a temas de navegación aérea (AGA, AIM, ATM, CNS, MET y SAR), los aspectos de coordinación con el RASG-PA o sobre asuntos administrativos del GREPECAS;

b) Information Papers (IP) are submitted to provide the meeting with information for which no action is required and will normally not be discussed at the meeting.

c) "Flimsies" are documentation prepared on an Ad hoc basis in the course of a meeting to assist the meeting with discussion on a specific matter or in the drafting of a text for a conclusion or decision.

d) Discussion papers (DP) are originated and distributed during the meeting.

10. Meeting Results

10.1 Conclusions deal with matters, which in accordance with the Group's terms of reference, directly merit the attention of States or require further action to be initiated by ICAO in accordance with established procedures.

10.2 Decisions deal with matters of concern only to the internal functioning of GREPECAS.

10.3 The formulation of conclusions/decisions should comply with the following format:

CONCLUSION/DECISION ACRONYM	**TITLE**
What:	**Expected Impact**
That, XX a) b)	[ ] Political/Global [ ] Inter-regional [ ] Economic [ ] Environmental [ ] Operational/Technical
Why:	
XX	

When:	XX	**Status:**	[ ] Valid [ ] Superseded [ ] Completed
Who:	[ ] States [ ] ICAO [ ] Other:		XX

Note: in order to qualify as such, a decision or conclusion shall be able to respond clearly to the "3W" criterion (What, Who and When).

b) las notas de información (NI) son presentadas con el fin de brindar a la reunión información sobre la cual no se requiere acción alguna, y normalmente, no serán discutidas durante la reunión;

c) los "flimsy" son documentos elaborados con carácter Ad hoc en el transcurso de una reunión, con el fin de ayudar con las discusiones sobre un tema específico o en la redacción de un texto para una conclusión o decisión; y

d) las notas de discusión (ND) son generadas y distribuidas durante la reunión.

10. Resultados de la reunión

10.1 Las Conclusiones se refieren a temas que, de conformidad con los términos de referencia del Grupo, merecen la atención directa de los Estados o requieren acción posterior a ser iniciada por la OACI de acuerdo con los procedimientos establecidos.

10.2 Las Decisiones se refieren a temas que conciernen únicamente al funcionamiento interno del GREPECAS.

10.3 La formulación de las conclusiones/decisiones deberán cumplir el formato siguiente:

CONCLUSIÓN/DECISIÓN ACRÓNIMO	**TÍTULO**
Qué:	**Expected Impact**
Que, XX a) b)	[ ] Político/Global [ ] Inter-regional [ ] Económico [ ] Ambiental [ ] Operacional/Técnico
Por qué:	
XX	

Cuándo:	XX	**Estado**	[ ] Válida [ ] Invalidada [ ] Finalizada
Quién	[ ] Estados [ ] OACI [ ] Otros:		XX

Nota: A fin de calificar como tal, una Decisión o Conclusión, deberá poder responder claramente al criterio de qué, quién y cuándo.

11. Schedule and Venue of GREPECAS Meetings

12.1 GREPECAS will meet every year; its duration will be determined by the scope of the agenda, however, a three-day standard will be endeavoured, if possible. Meetings shall normally be convened at locations within the CAR and SAM Regions, alternatively. A meeting convening letter shall be sent by the Regional Offices 90 days prior to the meeting, including the draft agenda together with explanatory notes. Although the meetings are planned to be in-person, if that is not possible, they will be held virtually.

11.2 The Air Navigation Commission (ANC) noted that, due to relevant analysis and challenges related to the effectiveness and efficiency, the GREPECAS plenary meeting is held consecutively or jointly with plenary meetings of the Regional Aviation Safety Group - Pan America (RASG- PA), in order to facilitate coordination and achieve efficient use of resources.

11.3 GREPECAS will forward to the ICAO Council through the ANC, the report in each plenary meeting period, including the results of the consecutive meeting held with RASG-PA.

12. Fast-track Procedure

12.1 To enable greater efficiency for the work of GREPECAS, draft Conclusions and Decisions can be approved through electronic mail. Unless the Secretariat considers otherwise, the usual procedure shall apply in that the absence of a response indicates acceptance of the draft Conclusion or Decision.

13. Reporting Deficiencies

13.1 In order to enable GREPECAS to make detailed assessments of deficiencies, States and appropriate International Organizations, including IATA and IFALPA, are expected to provide information they have to the corresponding ICAO Regional Office for the identification of differences and appropriate actions, including action at PIRG meetings. The information should include, at a minimum:

a) description of the deficiency

b) requirement

c) risk assessment

d) solution and/or mitigating measures

11. Programación y lugar de las reuniones del GREPECAS

11.1 El GREPECAS se reunirá anualmente; la duración de la reunión será determinada por el alcance del orden del día; sin embargo, se intentará mantener un estándar de tres días de duración en la medida de lo posible. El lugar de las reuniones normalmente se alternará entre las Regiones CAR/SAM. Las Oficinas Regionales enviarán una carta de convocatoria para la reunión 90 días antes de la misma, incluyendo el orden del día provisional, junto con las notas aclaratorias. A pesar de que las reuniones se estiman presenciales, en caso de no ser posible, se realizaran de forma virtual.

11.2 La Comisión de Aeronavegación (ANC) señaló que, debido a los análisis relevantes y desafíos relacionados con la eficacia y la eficiencia, las reuniones plenarias de GREPECAS se celebren de forma consecutiva o conjunta con las reuniones plenarias del Grupo de Seguridad operacional de la Aviación Regional - Panamérica (RASG-PA), con el fin de facilitar la coordinación y lograr un uso eficiente de los recursos.

11.3 El GREPECAS remitirá al Consejo de la OACI por medio de la ANC, el informe en cada periodo de reunión plenaria, incluyendo los resultados de la reunión consecutiva llevada a cabo con RASG-PA.

12. Procedimiento expreso

12.1 A fin de permitir mayor eficiencia al trabajo del GREPECAS, los proyectos de Conclusión y de Decisión podrán ser aprobados por correo electrónico. A menos que la Secretaría considere lo contrario, se aplicará el procedimiento usual en el sentido que la ausencia de respuesta indica aceptación del proyecto de Conclusión o Decisión.

13. Notificación de deficiencias

13.1 A fin de permitir al GREPECAS hacer una evaluación detallada de las deficiencias, se espera que los Estados y las Organizaciones Internacionales apropiados, incluyendo IATA e IFALPA, proporcionen la información que dispongan a la Oficina Regional correspondiente de la OACI para la identificación de deficiencias y de las acciones pertinentes, incluyendo las acciones a ser adoptadas en las reuniones de los PIRG. La información debería incluir, por lo menos:

a) descripción de la deficiencia

b) requerimiento

c) evaluación del riesgo

d) propuesta de solución y/o medidas de mitigación

e) timelines

f) responsible party

g) agreed action to be taken

h) action already taken

13.2 On 30 November 2001, the ICAO Council approved the Uniform Methodology for the Identification, Assessment and Reporting of Air Navigation Deficiencies, which is presented as **Appendix D** to this Procedural Handbook.

13.3 A detailed description of the methodology is found in the document on Uniform Methodology for the Identification, Assessment and Reporting of Air Navigation Deficiencies published on the Regional Offices websites under the GREPECAS section.

14. Coordination with RASG-PA

14.1 In the special case of GREPECAS' coordination with the Regional Aviation Safety Group - Pan-American (RASG-PA), GREPECAS will present with the RASG-PA mechanism, during consecutive and joint meetings, a working paper containing statistical information on the processes and/or projects that generate valuable information on air navigation systems safety, taking into consideration the following aspects:

a) GREPECAS and RASG-PA shall coordinate and provide mutual support with respect to the fulfilment of the objectives related to the regional priorities and the implementation plans supported by each group;

b) the coordination activities of GREPECAS and RASG-PA will be reported both to the respective plenary meetings and to the key contributory bodies of the groups, as necessary;

c) the work programmes of GREPECAS and RASG-PA will be specifically coordinated to avoid duplication of efforts and gap presence, as well as to ensure alignment and harmonization of the priorities, plans and activities of both groups. As a rule, and when required, the fast-track approval procedure will be used;

e) cronograma

f) parte responsable

g) acciones acordadas a ser adoptadas

h) acciones adoptadas

13.2 El 30 de noviembre de 2001, el Consejo de la OACI aprobó la Metodología Uniforme para la Identificación, Evaluación y Notificación de Deficiencias en la Navegación Aérea, la cual aparece en el **Apéndice D** de este Manual de Procedimientos.

13.3 La descripción detallada de la metodología se encuentra en el Documento de Metodología Uniforme para la Identificación, Evaluación y Notificación de Deficiencias en la Navegación Aérea que se encuentra publicado en los sitios web de las Oficinas Regionales bajo la sección GREPECAS.

14. Coordinación con el RASG-PA

14.1 En el caso especial de la coordinación del GREPECAS con el Grupo de Seguridad operacional de la Aviación Regional - Panamérica (RASG-PA), el GREPECAS presentará con el mecanismo del RASG-PA, durante las reuniones plenarias consecutivas o conjuntas, una nota de estudio conteniendo información estadística de los procesos y/o proyectos que generan información valiosa sobre la seguridad operacional de los sistemas de navegación aérea, tomando en consideración los siguientes aspectos:

a) GREPECAS y RASG-PA coordinarán y brindarán apoyo mutuo con respecto al cumplimiento de los objetivos relacionados con las prioridades regionales y los planes de implementación respaldados por cada grupo;

b) las actividades de coordinación del GREPECAS y del RASG-PA se informarán tanto a las reuniones plenarias respectivas, como a los órganos auxiliares clave de los grupos, si es necesario;

c) los programas de trabajo del GREPECAS y del RASG-PA se coordinarán específicamente para evitar la duplicación de esfuerzos y la presencia de brechas, así como para garantizar la alineación y la armonización de las prioridades, planes y actividades de ambos grupos. Como regla, y cuando se requiera, se utilizará el procedimiento expreso de aprobación;

d) coordination meetings between GREPECAS and RASG-PA should be held annually by both Chairs with complementary teleconference meetings if necessary. The coordinated working activities shall be reviewed and recorded at the GREPECAS and RASG-PA coordination meetings and jointly reported to the respective plenary meetings of each group;

e) It will be possible to designate a GREPECAS focal point to participate in RASG-PA meetings, in order to provide an adequate link or interface that is required to address the efficient follow-up of matters, as well as the harmonization of projects where there is mutual participation etc.

f) GREPECAS and RASG-PA will be mutually responsible for allocating work in each of the coordinated activities of the groups and for ensuring that it is effectively coordinated, share information and cross-reports with the other group, taking special care to identify and highlight any implications of the work on the other group activities; and

g) In order to protect shared information, both GREPECAS and RASG-PA must collaborate by observing data confidentiality agreements at all times, taking into account an effective process to share and protect sensitive data.

15. Terminology

15.1 The applicable terminology to GREPECAS is included in **Appendix E**.

d) las reuniones de coordinación entre el GREPECAS y RASG-PA deben ser realizadas anualmente por ambos/as Presidentes con reuniones complementarias de teleconferencias si es necesario. Las actividades de trabajo coordinadas se revisarán y registrarán en las reuniones de coordinación GREPECAS y RASG-PA y se informarán de manera conjunta a las respectivas reuniones plenarias de cada grupo;

e) será posible designar un punto focal de coordinación del GREPECAS que participe en las reuniones del RASG-PA, con el fin de brindar un enlace o interfaz adecuado que se requiera para abordar el seguimiento eficiente de los asuntos, así como la armonización de los proyectos donde exista participación mutua etc.

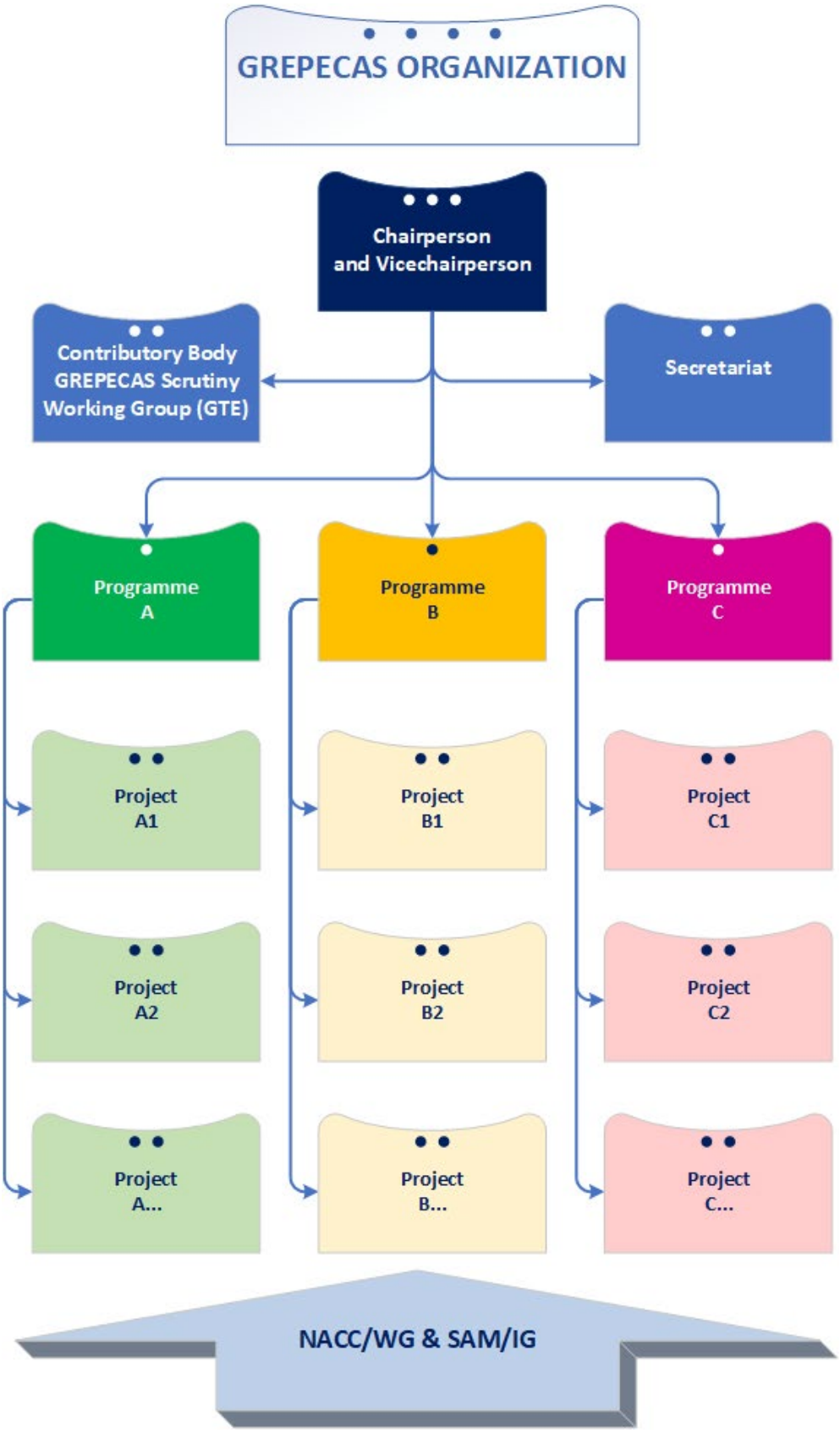
f) GREPECAS y RASG-PA serán mutuamente responsables de asignar el trabajo en cada una de las actividades coordinadas de los grupos y de garantizar que se coordine efectivamente, comparta información e informes cruzados con el otro grupo teniendo especial cuidado para identificar y resaltar cualquier implicación del trabajo en las actividades del otro grupo; y

g) Con el fin de proteger la información compartida, tanto el GREPECAS como el RASG-PA deben colaborar observando los acuerdos de confidencialidad de los datos en todo momento, teniendo en cuenta un proceso efectivo para compartir y proteger los datos confidenciales.

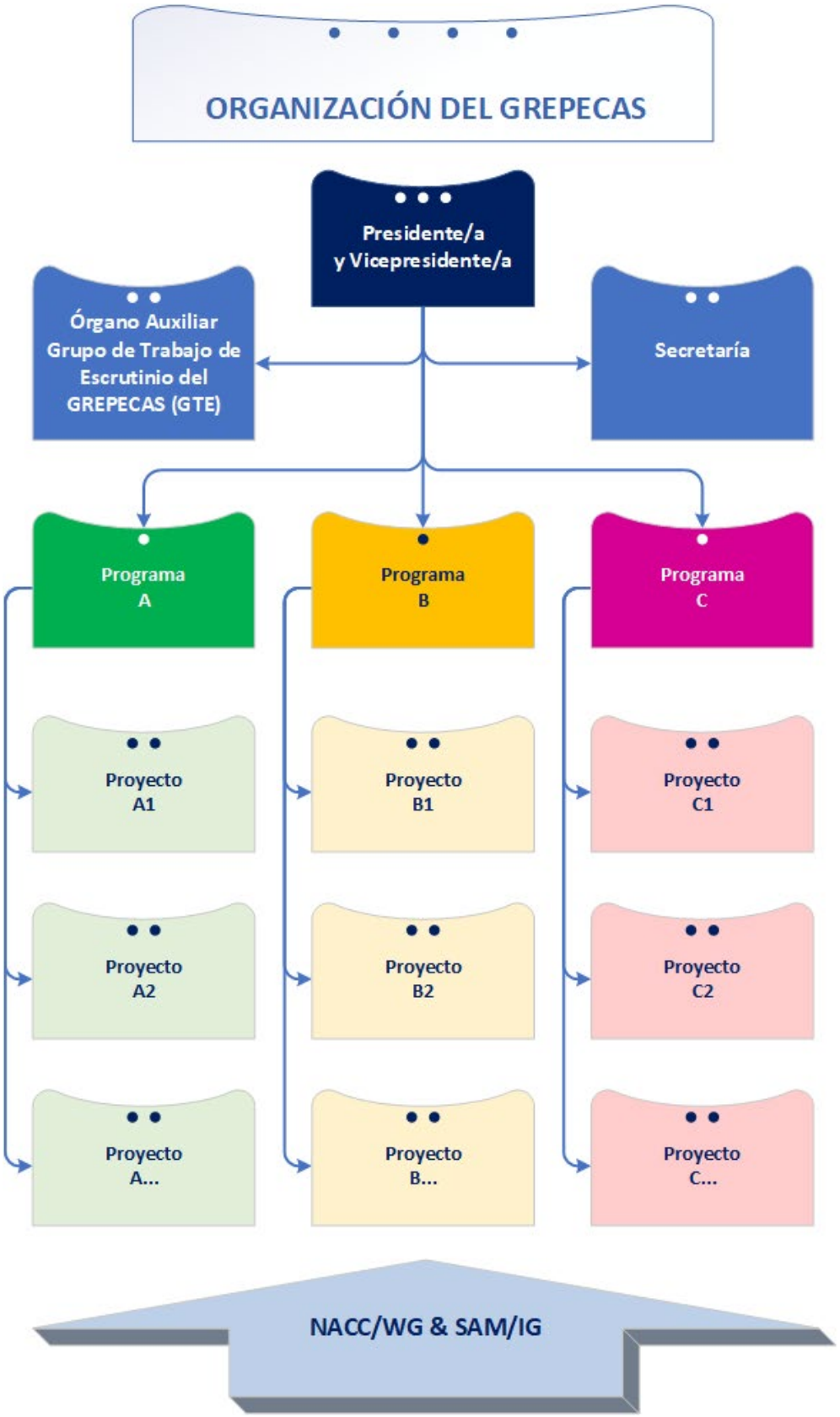
15. Terminología

15.1 La terminología aplicable al GREPECAS aparece en el **Apéndice E**.

APPENDIX A


GREPECAS ORGANIZATION
Chairperson and Vicechairperson
Contributory Body GREPECAS Scrutiny Working Group (GTE)
Secretariat
Programme A
Programme B
Programme C
Project A1
Project A2
Project A...
Project B1
Project B2
Project B...
Project C1
Project C2
Project C...
NACC/WG & SAM/IG

APÉNDICE A


ORGANIZACIÓN DEL GREPECAS
Presidente/a
y Vicepresidente/a
Órgano Auxiliar
Grupo de Trabajo de
Escrutinio del
GREPECAS (GTE)
Secretaría
Programa
A
Programa
B
Programa
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A1
Proyecto
B1
Proyecto
C1
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C...
NACC/WG & SAM/IG

APPENDIX B
SCRUTINY WORKING GROUP (GTE)
Terms of Reference (ToRs)

1. Introduction

The Terms of Reference (TOR) of the Regional RVSM CAR/SAM Scrutiny Working Group (known as GTE) were established with the purpose to review the problems affecting the TLS based on the LHD information provided by States and International Organizations

2. Terms of Reference of the GTE

a) Gather safety experts in safety management, air traffic control, aircraft flight operations, regulation and certification, data and risk models analysis;

b) Analyse and review the large height deviations of 300 feet or more, as defined in ICAO Doc 9574, Manual on a 300 m (1 000 ft.) Vertical Separation Minimum between FL 290 and FL 410 Inclusive;

c) Coordinate with CARSAMMA the collection and review of data on LHDs;

d) Determine and validate an estimate of the flight time out of the cleared flight level used to calculate the collision risk model (CRM) by CARSAMMA;

e) Identify the safety trends based on the reports of the LHDs and recommend mitigation actions associated with the LHDs in accordance with the ICAO SMS provisions. Send annual reports on the results of safety assessments to GREPECAS to improve safety in the CAR/SAM RVSM space; and

f) Perform other duties as indicated by GREPECAS.

3. Composition:

CAR and SAM States, CARSAMMA, COCESNA, IATA, IFALPA, IFATCA, and Rapporteur

APENDICE B
GRUPO DE TRABAJO DE ESCRUTINIO (GTE)
Términos de Referencia (ToR)

1. Introducción

Los Términos de Referencia (TOR) del Grupo de Trabajo de Escrutinio Regional RVSM (RVSM/SG) CAR/SAM, (conocido como GTE) se establecieron con el propósito de revisar los problemas que afectan el TLS basado en la información LHD proporcionada por los Estados y las Organizaciones Internacionales.

2. Términos de referencia del GTE

a) Reunir a expertos de aspectos de gestión de la seguridad operacional, en control de tránsito aéreo, operaciones de vuelo de aeronaves, regulación y certificación, análisis de datos y modelos de riesgo;

b) Analizar y evaluar las desviaciones de altitud importantes de 300 pies o más, tal como se define en el Documento 9574 de la OACI, Manual de implantación de una separación vertical mínima de 300 m (1 000 ft) entre FL 290 y FL 410 inclusive;

c) Coordinar con la CARSAMMA la recopilación y revisión de datos sobre desviaciones de altitud importantes (LHD);

d) Determinar y validar un estimado del tiempo de vuelo fuera del nivel de vuelo autorizado utilizado para calcular el modelo de riesgo de colisión (CRM) por la CARSAMMA;

e) Identificar tendencias de seguridad operacional basadas en los reportes de los análisis de las desviaciones de altitud importantes (LHD), recomendar acciones de mitigación de acuerdo a las provisiones SMS de la OACI y enviar informes anuales sobre los resultados de asesorías de seguridad operacional al GREPECAS a fin de mejorar la seguridad operacional en el espacio RVSM de las Regiones CAR/SAM; y

f) Realizar otras tareas indicadas por el GREPECAS.

3. Composición:

Estados CAR y SAM, CARSAMMA, COCESNA, IATA, IFALPA, IFATCA y Relator

— — — — — — — — — —

APPENDIX C
COLLABORATIVE ARRANGEMENTS WITH REGIONAL ASSOCIATIONS OR COMMITTEES

1. Introduction

1.1 The GREPECAS Secretariat may coordinate collaborative arrangements with regional associations or committees with common interests in the objectives established in the Regional Air Navigation Plan and to resolve matters in the mutual interest of GREPECAS Member States.

1.2 The interaction should be consistent with the mandate and institutional values of ICAO and GREPECAS and should improve the effectiveness of their work programme. The interaction will provide clear and reciprocal added value, in the form of relevant results against common values and principles, considered in relation to costs and impediments.

1.3 The interaction between the GREPECAS Secretariat and these regional associations or committees, as well as the use of the ICAO name, logo/emblem in its modified form for the promotion of joint events or any other promotion (including web pages, documentation, etc.) must have prior authorization from ICAO following the ICAO Policy on Interactions with Third Parties.

2. Interaction with the GREPECAS Secretariat

2.1 The events that ICAO in its capacity as GREPECAS Secretariat can promote with these regional associations and committees will allow Civil Aviation Authorities and government air navigation service providers to participate free of charge.

2.2 The designations and presentation of material by these regional associations or committees do not imply the expression of any opinion on behalf of ICAO on the legal status of any State, Territory, city or area of its jurisdiction, or on the delimitation of its boundaries or limits.

2.3 The activities that the Associations or Regional Committees carry out in conjunction with GREPECAS must be aligned with its procedures and actions which must be agreed with the designated Secretariat representative (ICAO Regional Officer).

APENDICE C
ARREGLOS COLABORATIVOS CON ASOCIACIONES O COMITÉS REGIONALES

1. Introducción

1.1 La Secretaría del GREPECAS podrá coordinar arreglos colaborativos con asociaciones o comités regionales con intereses comunes en los objetivos establecidos en el Plan Regional de Navegación Aérea y para resolver asuntos en el interés mutuo de los Estados Miembros de GREPECAS.

1.2 La interacción debería ser consistente con el mandato y los valores institucionales de la OACI y del GREPECAS y debería mejorar la efectividad de su programa de trabajo. La interacción aportará un valor añadido claro y recíproco, en forma de resultados pertinentes con respecto a los valores y principios comunes, considerados en relación con los costos e impedimentos.

1.3 La interacción entre la Secretaría del GREPECAS y estas asociaciones o comités regionales, así como el uso del nombre, logo/emblema de la OACI en su forma modificada para la promoción de eventos conjuntos o cualquier otra promoción (incluyendo páginas web, documentación, etc.) debe contar con autorización previa de la OACI siguiendo la Política OACI sobre interacciones con partes externas.

2. Interacción con la Secretaría del GREPECAS

2.1 Los eventos que la OACI en su calidad de Secretaría del GREPECAS pueda promover con estas asociaciones y comités regionales permitirán la participación sin costo a las Autoridades de Aviación Civil y proveedores de servicios de navegación aérea gubernamentales.

2.2 Las designaciones y la presentación de material por parte estas asociaciones o comités regionales no implican la expresión de ninguna opinión por parte de la OACI sobre el estado legal de cualquier Estado, Territorio, ciudad o área de su jurisdicción, o sobre la delimitación de sus fronteras o límites.

2.3 Las actividades que las Asociaciones o Comités Regionales realicen en conjunto con el GREPECAS deberán estar alineadas con sus procedimientos y sus acciones las cuales deberán ser acordadas con el/la representante designado/a de la Secretaría (Especialista Regional de la OACI).

2.4 The information of ICAO or its Member States to which these Associations or Committees can access in the framework of this collaborative work may only be shared with the explicit authorization of ICAO and will be subject to intellectual property rights, copyright and the confidentiality of the information.

2.5 Each Association or Regional Committee will nominate a representative who is duly familiar with the ICAO Policy on Interactions with Third Parties and with GREPECAS Programmes, to serve as a contact with the designated regional officer to agree on support for the GREPECAS programmes and projects with the organization of activities.

2.6 Prior to any joint activity, effective communication with the Secretariat must be ensured to define the details of the activities, the proposed place for the event, coordination with local authorities, follow-up actions on previous events, development of the agenda or programme of work and any other activity that is related to the tasks or the planned event.

2.7 The GREPECAS Secretariat will coordinate annually with the Association or Regional Committee, the preparation of a Working Paper on the activities carried out collaboratively for the GREPECAS, including the products, results, performance indicators, financial report and generated impact from this collaboration.

2.4 La información de la OACI o de sus Estados Miembros a la que estas Asociaciones o Comités puedan acceder en el marco de este trabajo colaborativo solo podrá compartirse con la autorización explícita de la OACI y estará sujetas a derechos de propiedad intelectual, derechos de autor y la confidencialidad de la información.

2.5 Cada Asociación o Comité Regional nominará un/a representante que esté debidamente familiarizado/a con la Política de la OACI sobre las Interacciones con Partes Externas y con los Programas del GREPECAS, para que sirva como contacto con el/la especialista regional designado/a para acordar el apoyo a los programas y proyectos del GREPECAS con la organización de actividades.

2.6 Previo a cualquier actividad conjunta, se deberá asegurar una comunicación efectiva con la Secretaría para definir los detalles de las actividades, el lugar propuesto para el evento, coordinaciones con autoridades locales, acciones de seguimiento de eventos previos, desarrollo del orden del día o programa de trabajo y cualquier otra actividad que esté relacionada con las tareas o el evento planificado.

2.7 La Secretaría del GREPECAS coordinará anualmente con la Asociación o Comité Regional, la preparación de una Nota de Estudio sobre las actividades realizadas de forma colaborativa para el GREPECAS, incluyendo los productos, resultados, indicadores de desempeño, informe financiero e impacto generado de esta colaboración.

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APPENDIX D
UNIFORM METHODOLOGY FOR THE IDENTIFICATION, ASSESSMENT AND REPORTING OF AIR NAVIGATION DEFICIENCIES

(Approved by the Council on 30 November 2001)

1. Introduction

1.1 Based on the information resulting from the assessment carried out by ICAO on the input received from various regions regarding deficiencies in the air navigation field, it became evident that improvements were necessary in the following areas:

a) a) collection of information;

b) b) safety assessment of reported problems;

c) c) identification of suitable corrective actions (technical / operational / financial / organizational), both short-term and long-term; and

d) d) method of reporting in the reports of ICAO planning and implementation regional groups (PIRGs).

1.2 This methodology is therefore prepared with the assistance of ICAO PIRGs and is approved by the ICAO Council for the efficient identification, assessment and clear reporting of air navigation deficiencies. It may be further updated by the Air Navigation Commission in the light of the experience gained in its utilization.

1.3 For the purpose of this methodology, the definition of deficiency is as follows:

A deficiency is a situation where a facility, service or procedure does not comply with a regional air navigation plan approved by the Council, or with related ICAO Standards and Recommended Practices, and which situation has a negative impact on the safety, regularity and/or efficiency of international civil aviation.

2. Collection of Information

2.1 Regional office sources

2.1.1 As a routine function, the Regional Offices should maintain a list of specific deficiencies, if any, in their regions. To ensure that this list is as clear and as complete as possible, it is understood that the regional offices take the following steps:

APÉNDICE D
METODOLOGÍA UNIFORME PARA LA IDENTIFICACIÓN, EVALUACIÓN Y NOTIFICACIÓN DE DEFICIENCIAS EN LA NAVEGACIÓN AÉREA

(Aprobada por el Consejo el 30 de noviembre de 2001)

1. Introducción

1.1 Como resultado de la evaluación realizada por la OACI de la información recibida de diversas regiones en materia de deficiencias en el campo de la navegación aérea, se hizo patente que era necesario incorporar mejoras en las siguientes esferas:

a) recopilación de información;

b) evaluación de la seguridad operacional en los problemas notificados;

c) identificación de medidas correctivas adecuadas (técnicas / operacionales financieras/de organización), a corto y a largo plazo; y

d) método uniforme de notificación en los informes de los grupos regionales de planificación y ejecución (PIRG) de la OACI.

1.2 Por consiguiente, se ha preparado esta metodología con la ayuda de los PIRG de la OACI y el Consejo de la OACI la aprueba para identificar y evaluar eficazmente, así como para notificar claramente las deficiencias en la navegación aérea. La Comisión de Aeronavegación podrá actualizarla ulteriormente teniendo en cuenta la experiencia adquirida en su utilización.

1.3 En la presente metodología la definición de deficiencia es la siguiente:

Una deficiencia es una situación en que una instalación, servicio o procedimiento no se ajusta a un plan regional de navegación aérea aprobado por el Consejo, o con las correspondientes normas y métodos recomendados de la OACI, y que repercute negativamente en la seguridad operacional, regularidad o eficiencia de la aviación civil internacional.

2. Recopilación de información

2.1 Fuentes de las oficinas regionales

2.1.1 Las Oficinas Regionales deberían mantener como función ordinaria, una lista de las deficiencias concretas que hubiera en sus regiones. Para asegurar que esta lista sea lo más completa y clara posible, quedó entendido que las oficinas regionales adoptarían las siguientes medidas:

a) a) compare the status of implementation of the air navigation facilities and services with the regional air navigation plan documents and identify facilities, services and procedures not implemented;

b) review mission reports with a view to detecting deficiencies that affect safety, regularity and efficiency of international civil aviation;

c) make a systematic analysis of the differences with ICAO Standards and Recommended Practices filed by States to determine the reason for their existence and their impact, if any, on safety, regularity and efficiency of international civil aviation;

d) review aircraft accident and incident reports with a view to detect possible systems or procedures deficiencies;

e) review inputs, provided to the regional office by the users of air navigation services on the basis of Assembly Resolution A33-14, Appendix M;

f) assess and prioritize the result of a) to e) according to paragraph 4;

g) report the outcome to the State(s) concerned for resolution; and

h) report the result of g) above to the related PIRG for further examination, advice and report to the ICAO Council, as appropriate through PIRG reports.

2.2 States' sources

2.2.1 To collect information from all sources, States should, in addition to complying with the Assembly Resolution A31-10, establish reporting systems in accordance with the requirements in Annex 13, Chapter 7. These reporting systems should be non-punitive in order to capture the maximum number of deficiencies.

a) a) comparar la situación de implantación de las instalaciones y servicios de navegación aérea con los documentos del plan regional de navegación aérea e identificar las instalaciones, servicios y procedimientos que no hayan sido implantados;

b) examinar informes de misiones con miras a detectar deficiencias que afecten a la seguridad operacional, regularidad y eficiencia de la aviación civil internacional;

c) realizar un análisis sistemático de las diferencias con las normas y métodos recomendados de la OACI presentadas por los Estados para determinar el motivo de que existan y sus repercusiones, de haberlas, en la seguridad operacional, regularidad y eficiencia de la aviación civil internacional;

d) examinar informes de accidentes e incidentes de aeronaves con miras a detectar deficiencias posibles en los sistemas o procedimientos;

e) examinar los datos proporcionados a las oficinas regionales por los usuarios de los servicios de navegación aérea en base a la Resolución A33-14 de la Asamblea, Apéndice M;

f) evaluar y asignar una prioridad a los resultados de a) a e) según el párrafo 4;

g) notificar los resultados al Estado o Estados de que se trate para que se adopten soluciones; e

h) informar de los resultados indicados en g) al PIRG pertinente para que los examine más a fondo, asesore y notifique sus conclusiones al Consejo de la OACI, según corresponda, mediante los informes del PIRG.

2.2 Fuentes de los Estados

2.2.1 Los Estados, para recopilar la información que proceda de toda clase de fuentes, deberán, además de aplicar la Resolución A31-10 de la Asamblea, establecer sistemas de notificación de conformidad con los requisitos del Anexo 13, Capitulo 7. Dichos sistemas de notificación no deberían tener carácter punitivo a fin de permitir que se determine el mayor número de deficiencias

2.3 Users' sources

2.3.1 Appropriate International organizations, including the International Air Transport Association (IATA) and the International Federation of Air Line Pilots' Associations (IFALPA), are valuable sources of information on deficiencies, especially those that are safety related. In their capacity as users of air navigation facilities they should identify facilities, services and procedures that are not implemented or are unserviceable for prolonged periods or are not fully operational. In this context it should be noted that Assembly Resolution A33-14, Appendix M and several decisions of the Council obligate users of air navigation facilities and services to report any serious problems encountered due to the lack of implementation of air navigation facilities or services required by regional plans. It is emphasized that this procedure, together with the terms of reference of the PIRGs should form a solid basis for the identification, reporting and assisting in the resolution of non-implementation matters.

3. Reporting of Information on Deficiencies

3.1 In order to enable the ICAO PIRGs to make detailed assessments of deficiencies, States and appropriate International organizations including IATA and IFALPA, are expected to provide the information they have to the ICAO regional office for action as appropriate, including action at PIRG meetings.

3.2 The information should at least include: description of the deficiency, risk assessment, possible solution, time-lines, responsible party, agreed action to be taken and action already taken.

3.3 The agenda of each PIRG meeting should include an item on air navigation deficiencies, including information reported by States, IATA and IFALPA in addition to those identified by the regional office according to paragraph 2.1 above. Review of the deficiencies should be a top priority for each meeting. The PIRGs, in reviewing lists of deficiencies, should make an assessment of the safety impact for subsequent review by the ICAO Air Navigation Commission.

2.3 Fuentes de los usuarios

2.3.1 Las Organizaciones Internacionales apropiadas, incluidas la Asociación del Transporte Aéreo Internacional (IATA) y la Federación Internacional de Asociaciones de Pilotos de Línea Aérea (IFALPA), son fuentes valiosas de información sobre deficiencias, especialmente aquellas que están relacionadas con la seguridad operacional. A título de usuarios de las instalaciones y servicios de navegación aérea, estas organizaciones deberían identificar las instalaciones, servicios y procedimientos que no hayan sido implantados o que estén fuera de servicio por períodos prolongados o que no estén plenamente en funcionamiento. En este contexto, debe señalarse que la Resolución A33-14 de la Asamblea, Apéndice M y varias decisiones del Consejo imponen a los usuarios de las instalaciones y servicios de navegación aérea la obligación de notificar problemas graves que encuentren debido a la falta de implantación de instalaciones o servicios de navegación aérea requeridos por los planes regionales. Ha de destacarse que este procedimiento, junto con las atribuciones de los PIRG debería constituir una base firme para la identificación, notificación y asesoramiento en la resolución de asuntos relativos a la falta de implantación.

3. Notificación de información sobre deficiencias

3.1 Para que los PIRG de la OACI puedan evaluar con detalle las deficiencias, se espera que los Estados y Organizaciones Internacionales apropiadas, incluidas IATA e IFALPA, proporcionen la información que tengan a la Oficina regional de la OACI para que se adopten las medidas apropiadas, incluidas las medidas adoptadas en las reuniones de los PIRG.

3.2 En la información debería incluirse por lo menos: la descripción de las deficiencias, la evaluación de riesgos, soluciones posibles, fechas, parte responsable, medidas que se haya convenido adoptar y medidas que se hayan adoptado.

3.3 En el orden del día de cada reunión de los PIRG debería incluirse una cuestión sobre deficiencias en la navegación aérea, incluida la información notificada por los Estados, IATA e IFALPA además de las identificadas por la oficina regional, de conformidad con el párrafo 2.1. El examen de las deficiencias debería ser un tema de alta prioridad en cada reunión. Los PIRG, al examinar las listas de deficiencias deberían evaluar el impacto en la seguridad operacional para que este asunto sea nuevamente examinado por la Comisión de Aeronavegación de la OACI.

3.4 In line with the above, and keeping in mind the need to eventually make use of this information in the planning and implementation process, it is necessary that once a deficiency has been identified and validated, the following fields of information should be provided in the reports on deficiencies in the air navigation systems. These fields are as follows and are set out in the reporting form attached hereto.

a) Identification of the requirements

As per ICAO procedures, Regional Air Navigation Plans detail inter alia air navigation requirements including facilities, services and procedures required to support international civil aviation operations in a given region. Therefore, deficiencies would relate to a requirement identified in the regional air navigation plan documents. As a first item in the deficiency list, the requirements along with the name of the meeting and the related recommendation number should be included. In addition, the name of the State or States involved and/or the name of the facilities such as name of airport, FIR, ACC, TWR, etc. should be included.

b) Identification of the deficiency

This item identifies the deficiency and would be composed of the following elements:

i. a brief description of the deficiency;

ii. date deficiency was first reported; and

iii. appropriate important references (meetings, reports, missions, etc).

c) Identification of the corrective actions

In the identification of the corrective actions, this item would be composed of:

3.4 En consonancia con lo que antecede, y teniendo en cuenta la necesidad de que tarde o temprano se utilice esta información en el proceso de planificación e implantación, es necesario que una vez identificada y evaluada una deficiencia, se proporcionen los siguientes campos de información en los informes sobre deficiencias de los sistemas de navegación aérea. Los campos de información por notificar son los siguientes y se incluyen en el formulario de notificación adjunto.

a) Identificación de los requisitos

De conformidad con los procedimientos de la OACI, en los planes regionales de navegación aérea se indican, entre otras cosas, los detalles de los requisitos de navegación aérea incluidas las instalaciones, servicios y procedimientos requeridos en apoyo de las operaciones de la aviación civil internacional en una determinada región. Por consiguiente, las deficiencias estarían en relación con un requisito identificado en los documentos del plan regional de navegación aérea. Como primer rubro en la lista de deficiencias, deberían incluirse los requisitos junto con el nombre de la reunión y el número correspondiente de la recomendación. Además, debería incluirse el nombre del Estado o Estados implicados y el nombre de las instalaciones, tales como el nombre del aeropuerto, FIR, ACC, TWR, etc.

b) Identificación de las deficiencias

En este rubro se identifica la deficiencia y estaría constituido por los siguientes elementos:

i. una breve descripción de la deficiencia;

ii. fecha de la primera notificación de la deficiencia; y

iii. referencias importantes apropiadas (reuniones, informes, misiones, etc.).

c) Identificación de medidas correctivas

Para la identificación de medidas correctivas, este rubro debería estar constituido por:

i. a brief description of the corrective actions to be undertaken;

ii. identification of the executing body;

iii. expected completion date of the corrective action[1]; and

iv. when appropriate or available, an indication of the cost involved.

4. Assessment and Prioritization

4.1 A general guideline would be to have three levels of priority organized on the basis of safety, regularity and efficiency assessment as follows:

"U" priority = Urgent requirements having a direct impact on safety and requiring immediate corrective actions.

Urgent requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is urgently required for air navigation safety.

"A" priority = Top priority requirements necessary for air navigation safety.

Top priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation safety.

"B" priority = Intermediate requirements necessary for air navigation regularity and efficiency.

Intermediate priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation regularity and efficiency.

1 It should be noted that a longer implementation period could be assigned in those cases in which the expansion or development of a facility/service is intended to provide services to sporadic operations which incurs excessive expenses.

i. una breve descripción de las medidas correctivas por tomar;

ii. identificación del órgano que aplicará las medidas correctivas;

iii. fecha prevista de terminación de la medida correctiva[1]; y

iv. una indicación del costo implicado, cuando corresponda, o se disponga de estos datos.

4. Evaluación y asignación de prioridades

4.1 Como orientación general podrían establecerse tres niveles de prioridad desglosados con base en la evaluación siguiente de la seguridad operacional, regularidad y eficiencia:

Prioridad "U" = requisitos urgentes que tienen un impacto directo en la seguridad operacional y que requieren medidas correctivas inmediatas.

El requisito urgente está constituido por cualquier especificación física, de configuración, de materiales, de performance, de personal o de procedimientos cuya aplicación se requiere urgentemente para la seguridad operacional de la navegación aérea.

Prioridad "A" = requisitos de alta prioridad necesarios para la seguridad operacional de la navegación aérea.

Requisito de alta prioridad que consiste en cualquier especificación física, de configuración, de materiales, de performance, de personal o de procedimientos cuya aplicación se considera necesaria para la seguridad operacional de la navegación aérea.

Prioridad "B" = requisitos intermedios, necesarios para la regularidad y eficiencia de la navegación aérea.

Requisito de prioridad intermedia que consiste en cualquier especificación física, de configuración, de materiales, de performance, de personal o de procedimientos cuya aplicación se considera necesaria para la regularidad y eficiencia de la navegación aérea.

1 Se debería notar que un período de implementación más largo podría ser asignado en aquellos casos en los cuales la ampliación o el desarrollo de una instalación/servicio se destine a prestar servicios a operaciones esporádicas lo cual incurra en gastos excesivos.

5. Model Reporting Table for Use in the Reports of PIRGS

5.1 Taking the foregoing into account, the model table at the Appendix is for use by PIRGs for the identification, assessment, prioritization, etc., of deficiencies. It might be preferred that a different table would be produced for each of the different topics i.e. AGA, ATM, SAR, CNS, AIM, MET. However, all tables should be uniform.

6. Action by the Regional Offices

6.1 Before each PIRG meeting, the regional office concerned will provide advance documentation concerning the latest status of deficiencies.

6.2 It is noted that the regional offices should document serious cases of deficiencies to the Air Navigation Commission (through ICAO Headquarters) as a matter of priority, rather than waiting to report the matter to the next PIRG meeting, and that the Air Navigation Commission will report to the Council.

5. Modelo de Tabla de Notificación que ha de ser utilizado en los informes de los PIRG

5.1 Teniendo en cuenta los aspectos mencionados, se presenta en el apéndice el modelo de tabla que han de utilizar los PIRG para la identificación, evaluación, asignación de prioridades, etc., respecto a las deficiencias. Pudiera ser preferible que se preparara una tabla distinta para cada uno de los distintos temas, es decir, AGA, ATM, SAR, CNS, AIM, MET. Sin embargo, el formato de todas las tablas debe ser uniforme.

6. Medidas por parte de las Oficinas Regionales

6.1 Antes de cada reunión del PIRG, la oficina regional interesada proporcionará documentación por adelantado relativa a la situación última de las deficiencias.

6.2 Se señala que las oficinas regionales deberían documentar los casos de deficiencias graves a la Comisión de Aeronavegación (por mediación de la Sede de la OACI), a título de asunto prioritario, en lugar de esperar a notificar el asunto a la reunión siguiente del PIRG, y que la Comisión de Aeronavegación informará al Consejo.

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE …. FIELD IN THE ….. REGION

Identification		Deficiencies			Corrective action			
Requirements	**States/facilities**	**Description**	**Date first reported**	**Remarks**	**Description**	**Executing body**	**Date of completion**	**Priority for action***
Requirement of Part.., paragraph (table)… of the air navigation plan	Terra X Terra Y	Speech circuits not implemented Villa X - Villa Y	12 Dec. 2..X	Coordination meeting between Terra X and Terra Y on 16 July 2..X to finalize arrangements to implementation circuit via satellite	Implementation of direct speech circuit via satellite	Terra X	20 Aug. 2..X	A

* Priority for action to remedy a deficiency is based on the following safety assessments:

"U" priority = Urgent requirements having a direct impact on safety and requiring immediate corrective actions.

Urgent requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is urgently required for air navigation safety.

"A" priority = Top priority requirements necessary for air navigation safety.

Top priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation safety.

"B" priority = Intermediate requirements necessary for air navigation regularity and efficiency.

Intermediate priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation regularity and efficiency.

FORMULARIO DE NOTIFICACIÓN DE DEFICIENCIAS DE LA NAVEGACIÓN AÉREA EN LA ESFERA DE...LA REGIÓN....

Identificación		Deficiencias			Medidas correctivas			
Requisitos	**Estado/ instalaciones**	**Descripción**	**Primera fecha notificada**	**Observaciones**	**Descripción**	**Órgano ejecutor**	**Fecha de terminación**	**Prioridad de la medida***
Requisito de la Parte ..., párrafo (tabla)... del plan de navegación aérea	Tierra X Tierra Y	Circuitos orales no implantados Ciudad X - Ciudad Y	12/02/2..X	Reunión de coordinación entre Tierra X y Tierra Y el 16/07/2..X para completar los arreglos de implantación del circuito por satélite	Implantación del circuito oral directo por satélite	Tierra X	Agosto de 20..X	A

*La prioridad para tomar medidas correctivas de una deficiencia se basa en las siguientes evaluaciones de la seguridad:

Prioridad "U" = requisitos urgentes que tienen un impacto directo en la seguridad y que requieren medidas correctivas inmediatas.

El requisito urgente está constituido por cualquier especificación física, de configuración, de materiales, de performance, de personal o de procedimientos cuya aplicación se requiere urgentemente para la seguridad de la navegación aérea.

Prioridad "A" = requisitos de alta prioridad necesarios para la seguridad de la navegación aérea.

Requisito de alta prioridad que consiste en cualquier especificación física, de configuración, de materiales, de performance, de personal o de procedimientos cuya aplicación se considera necesaria para la seguridad de la navegación aérea.

Prioridad "B" = requisitos intermedios, necesarios para la regularidad y eficiencia de la navegación aérea.

Requisito de prioridad intermedia que consiste en cualquier especificación física, de configuración, de materiales, de performance, de personal o de procedimientos cuya aplicación se considera necesaria para la regularidad y eficiencia de la navegación aérea.

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APPENDIX E
TERMINOLOGY

The following is a terminology guide (in English and Spanish) to be used when preparing documentation to be presented for the review of the GREPECAS meetings, working groups, task forces and contributory bodies:

Note for the Secretariat in the preparation of Documentation:

Appendices are sorted in alphabetical order:

A, B, C, D...

In the event of surpassing the alphabet the following criteria will be used also in alphabetical order:

AA, BB, CC, DD...

The Attachments to an Appendix will be sorted in numerical order:

1, 2, 3, 4 ...

APÉNDICE E
TERMINOLOGÍA

La siguiente terminología es una guía (en inglés y español) a ser utilizada en la elaboración de la documentación a ser presentada para su revisión en las reuniones del GREPECAS de sus grupos de trabajo, grupos de tarea y órganos auxiliares:

Nota para la Secretaría en la elaboración de la documentación:

Los apéndices se ordenarán en orden alfabético:

A, B, C, D...

En caso de exceder las letras del alfabeto, se aplicará el siguiente criterio, también en orden alfabético:

AA, BB, CC, DD...

Los adjuntos de un apéndice se ordenarán en orden numérico:

1, 2, 3, 4...

English Terminology	Terminología en español
Addendum	Addenda
Ad hoc	Ad hoc
Agenda Item #	Cuestión # del Orden del Día
Agenda	Orden del Día
Appendix	Apéndice
Attachment (of an Appendix)	Adjunto (de un Apéndice)
Contributory Body	Órgano Auxiliar
Corrigendum	Corrigendo
Discussion Paper (DP)	Nota de Discusión (ND)
Draft Agenda	Orden del Día Provisional
Draft Conclusion	Proyecto de Conclusión
Draft Decision	Proyecto de Decisión
Draft Report	Informe Provisional
Explanatory Notes	Notas aclaratorias
Final Report	Informe Final
Flimsy	Flimsy
Historical	Reseña
Information Paper (IP)	Nota de Información (NI)

English Terminology
International Organizations
Implementation
Order of Business (OB)
Revised
Supplement
Task Force
Working Paper (WP)
Working Group

Terminología en español
Organizaciones Internacionales
Implantación
Orden del Día (OD)
Revisado
Suplemento
Grupo de Tarea
Nota de Estudio (NE)
Grupo de Trabajo

Classification of the Status of GREPECAS Conclusions and Decisions
Valid
Completed
Superseded

Clasificación del Estado de las Conclusiones y Decisiones del GREPECAS
Válida
Finalizada
Invalidada

— END/FIN —


South American (CAR/SAM) Regional Planning and Implementation Group
Grupo Regional de Planificación y Ejecución Caribe / Sudamérica (CAR/SAM)
Caribbean
GREPECAS