



**GREPECAS Programmes and Projects Committee (PPRC) Fourth Virtual Meeting
 (ePPRC/04)
 Online, 21 – 22 April 2022**

Agenda Item 2: Follow-up on the CAR/SAM Planning and Implementation Regional Group (GREPECAS) Programmes and Projects

2.1 Air Navigation Services (ANS) Implementation Status in the CAR/SAM Regions through the GREPECAS Programmes and Projects (Aerodromes and Ground Aids (AGA), Air Traffic Management (ATM), Aeronautical Information Management (AIM), Communications, Navigation and Surveillance (CNS), Meteorology (MET) and Search and Rescue (SAR))

CAR/SAM CNS PROGRAMMES AND PROJECTS
 (Presented by the Secretariat)

EXECUTIVE SUMMARY	
This working paper summarizes the status of the activities of the Projects C and D of the GREPECAS in the NAM/CAR/SAM regions during 2021.	
Action:	Suggested actions are presented in Section 3.
<i>Strategic Objectives:</i>	<ul style="list-style-type: none"> • Air Navigation Capacity and Efficiency • Economic Development of Air Transport
<i>References:</i>	<ul style="list-style-type: none"> • GREPECAS Programmes and Projects Committee (PPRC) Third Virtual Meeting (ePPRC/03), on line, 22 – 23 July 2021 • GREPECAS/19 Meeting, on line, 08 – 12 November 2021 • ICAO Frequency Spectrum Management Panel (FSMP) and 2023 World Radiocommunication Conference (WRC-23) Workshop, on line, 21 – 22 February 2022 • Workshop/Meeting COM AMHS/3, on line, 21 – 24 February 2022 • Workshop/Meeting ADS-B/ANP/1, on line, 02 – 04 March 2022 • Workshop/Meeting GT INTEROP/3, on line, 14 – 17 March 2022

1. Introduction

1.1 Within the framework of Projects C – Automation and Situational Awareness and D – GREPECAS Ground-Ground and Ground-Air Communications Infrastructure, the main initiatives/activities developed in the CAR/SAM Regions, related with the implementations of Air Navigation Services (ANS) of Communications, Navigation and Surveillance (CNS).

2. Analysis

2.1 NAM/CAR activities

2.1.1 The NAM/CAR regions carry out all their activities through the Task Forces part of the North American, Central American and Caribbean Working Group (NACC/WG). During the NACC/WG/06 meeting, the regional decision was taken in order that the NACC/WG Group be the only air navigation group that includes all areas and is also the regional implementation arm.

2.1.2 For Projects C and D, it has the following action arms, Task Forces that are members of the NACC/WG:

- a) Surveillance Systems Implementation (SURV) Task Force
Rapporteur: Alejandro Rodriguez (United States)
<https://www.icao.int/NACC/Pages/regional-group-ADSB.aspx>
- b) Air Traffic Services Inter-Facility Data Communication (AIDC) Implementation Task Force
Rapporteur: Fernando Casso (Dominican Republic)
<https://www.icao.int/NACC/Pages/regional-group-AIDC.aspx>
- c) Aviation System Block Upgrade (ASBU) Task Force
Rapporteur: Midori Tanino (United States)
<https://www.icao.int/NACC/Pages/regional-group-asbu.aspx>
- d) MEVA Technical Management Group: MEVA/TMG
Rapporteur: Layla Rodriguez (Cuba)
<https://www.icao.int/NACC/Pages/nacc-regionalgroups-meva.aspx>

Furthermore, the Task Forces of the East Caribbean States also contribute:

- e) Management of the Eastern Caribbean Civil Aviation Technical Group E/CAR/CATG
Rapporteur: Shenneth Phillips (Antigua and Barbuda)
<https://www.icao.int/NACC/Pages/nacc-regionalgroups-ecarcatg.aspx>
- f) Eastern Caribbean Network Technical Group E/CAR/NTG
Rapporteur: Veronica Ramdath
<https://www.icao.int/NACC/Pages/nacc-regionalgroups-ecarntg.aspx>

2.1.3 Each of the Task Force provide the implementation and follow-up mechanisms for the region's implementation activities in conjunction with the ICAO NACC Regional Office. In this sense, during 2021 the different task groups carried out the following activities:

1. Work meetings through an online platform, following up on the work plan of each Task Force.
2. During 2021, it was decided that each Task Force would prioritize e-ANP Volume III development activities.
3. Incorporation into its work plan of the evaluation of the Basic Building Blocks (BBB) and the ASBU elements in a "ready to implement" status.
4. The Task Forces responsible for communications networks are working on the development of the terms of reference for the new phase of the "Caribbean Air Navigation Services Network (CANSNET).

2.1.4 Finally, in the regional work plans, the issues of cybersecurity for air navigation and unmanned aircraft operations will be integrated as important elements into our work plan for 2022 to 2025. We believe that emerging technology issues should be part of our agenda and that States should be prepared in every way to address them.

2.1.5 Related topics to each work area can be found in the afore-mentioned links.

2.2 SAM Activities

2.2.1 Within the framework of the Implementation Group of the SAM Region (SAM/IG), which has the support of the Regional Technical Cooperation Project RLA/06/901 for the development of the activities of the GESEA and GT INTEROP technical groups, the activities related to Projects C – Automation and Situational Awareness and D – Ground-Ground and Air-Ground Communications Infrastructure of GREPECAS are presented in this working paper, drafted by the INTEROP TF Subgroups.

2.2.2 The Interoperability Task Force (INTEROP TF) was formed to support and promote initiatives to modernize air navigation services and ensure interoperability between automated systems used by AIM, ATM, ATFM, CNS and MET users in order to:

- a) facilitate the exchange of information between systems put in place by States; reducing the times and problems of interconnection between the systems;
- b) promote a coordinated and homogeneous transition towards the new services and elements identified in the GANP; and
- c) encourage the multidisciplinary participation of air navigation services professionals in support of the SAM Region Implementation Group (SAM/IG) for the planning and execution of the work for systems interconnection implemented in the South American Region.

2.2.3 Currently, the following Subgroups of the INTEROP TF are activated:

- ATM/AIDC Subgroup – Rapporteur: Jorge Merino (Peru);
- ATM/FPL Subgroup – Rapporteur: Juan Pablo Portilla (Peru);
- CNS/AMHS Subgroup – Rapporteur: Andrés Barbosa (Uruguay);
- CNS/ANP Subgroup – Rapporteur: Edmundo Cortés Mancilla (Chile);
- CNS/SUR Subgroup – Rapporteur: currently without rapporteur; and
- MET/IWXXM Subgroup – Rapporteur: Wallace Gutemberg (Brazil).

2.2.4 Events held since the GREPECAS/19 Meeting:

Third Workshop/Meeting of the SAM Region COM AMHS Centers Supervisors/Operators

2.2.4.1 From 21 to 24 February 2022, the COM AMHS/3 Workshop/Meeting was held, which dealt with the following topics related to the AMHS implementation: contingency plans, routing tables, updating of information in the AMC (AMHS Management Center) and support to the CNS/ANP Subgroup with the task of updating the tables of the Part III (CNS) of the ANP CAR/SAM Volume II.

Third Workshop/Meeting of the Interop TF Subgroups

2.2.4.2 From 14 to 17 March 2022, the Third Workshop/Meeting of the INTEROP TF Subgroups (INTEROP TF/3) was held with the aim of consolidating the work carried out and the deliverables of each Subgroup, for presentation at the SAM/IG/27 (Virtual, from 31 May to 3 June 2022).

2.2.4.3 The ATM/AIDC Subgroup deliberated on the connections established so far and the issues of interoperability between the systems, especially between the automated systems developed by Atech and Indra. The States that have already established AIDC connections are: Brazil (9 out of 25), Chile (2 out of 11), Colombia (4 out of 14), Ecuador (3 out of 3), Panama (1 out of 6) and Peru (3 out of 6). AIDC implementation progress in the SAM Region is at 20%.

2.2.4.4 The ATM/FPL Subgroup revised the ATM/FPL Roadmap document (Version 2.2) to add the DOF (Day of Flight) element to the ACK message.

2.2.4.5 During the Workshop/Meeting INTEROP TF/3, the ATM/FPL Subgroup recognized the need to establish a common methodology to quantify errors in flight plans and associated messages, in order to obtain indicators to measure the level of mitigation achieved, with the application of the measures indicated in the ATM/FPL Roadmap; as well as, a standardized format to include the information in the Aeronautical Information Publication (AIP) of the States adopting the measures recommended in the ATM/FPL Roadmap.

2.2.4.6 Likewise, the Rapporteur of the Subgroup indicated that the Airlines, through the representatives of IATA, have requested more direct flights for fuel savings due to high prices, caused by the recent crises of the pandemic and the conflict in Eastern Europe.

2.2.4.7 The CNS/AMHS Subgroup has reviewed the status of AMHS implementation in the SAM Region. Of the 28 intraregional interconnections, only 2 have not yet been established:

- Brasilia COM Center – Montevideo COM Center (SBBR – SUMU); and
- Ezeiza COM Center – Montevideo COM Center (SAEZ – SUMU).

2.2.4.8 With regard to interregional interconnections, the following need to be implemented:

- Caracas COM Center – Curaçao COM Center (SVCA – TNCC);
- Caracas COM Center – Madrid COM Center (SVCA – LEEE);
- Ezeiza COM Center – Joannesburg COM Center (SAEZ – FAOR); and
- Georgetown COM Center – Piarco COM Center (SYCJ – TTPP).

2.2.4.9 The progress of AMHS implementation in the SAM Region is at 88%.

2.2.4.10 The CNS/ANP Subgroup was activated at the SAM/IG/26 Meeting (Virtual, 20-23 September 2021) and has the tasks of executing the review of the CNS tables of Part III of Volume II of the CAR/SAM Air Navigation Plan, referring to the SAM States and providing support in the elaboration of Volume III of the ANP CAR/SAM on CNS topics.

2.2.4.11 During the Workshop/Meeting GT INTEROP/3, the CNS/ANP Subgroup worked on the following tables: CNS II-1 (with support from the CNS/AMHS Subgroup), CNS II-CARSAM-5 (with support from the CNS/SUR Subgroup) and a new table for the planning of the AIDC implementation that will be numbered as CNS II-5 (with support from the ATM/AIDC Subgroup).

2.2.4.12 The CNS/SUR Subgroup has evaluated the implementation of ADS-B by the SAM States. The following SAM States have implemented ADS-B stations: Brazil, Chile, Colombia, Guyana, Panama, Paraguay, Peru and Uruguay. Currently, only Brazil is using ADS-B OUT as the primary means of surveillance information, in the TMA Macaé, to support the operation of helicopters in the Campos oil basin.

2.2.4.13 On the implementation of Space-based ADS-B through a Regional Technical Cooperation Project, using REDDIG II (MPLS) as a platform for the distribution of surveillance information, the participants of the CNS/SUR Subgroup noted that a additional node of REDDIG II (MPLS) was implemented by Aireon in Virginia, contracting directly from the telecommunications provider of the network, allowing the connection to any REDDIG II node of the States that future contract the Space-based ADS-B service.

2.2.4.14 The MET/IWXXM Subgroup considered the progress of the implementation of the new IWXXM format for the exchange of meteorological information. Since 2021, the OPMET Regional Data Bank (RDBO) of Brasilia was adapted for version 3.0 of the IWXXM format and the following States have already carried out tests with the OPMET system of Brasilia: Argentina, Cuba, Guyana and Venezuela. In addition, complete and successful tests have already been carried out between the RODB of Brasilia with the RODB of Brussels and Vienna.

2.2.4.15 A representative of the company that developed the Brasilia system made a presentation with the aim of encouraging the States of the CAR/SAM Region to develop integration with the web service of the OPMET Regional Data Bank of Brasilia.

2.2.4.16 There is a possibility, which is being discussed with DECEA (Brazil), for the development of an application example to teach how to use the web service of the RODB of Brasilia. The application example would allow the use of temporary users for testing, explain the necessary configurations, create scenarios for using the web service for the search and insertion of meteorological messages and all documentation, scripts and source code would be available to interested parties.

2.3 Joint NAM/CAR/SAM activities

2.3.1 The following activities were carried out jointly with the NAM/CAR/SAM States, with the support of the NACC and SAM Regional Offices.

Workshop of the ICAO Expert Group on Frequency Spectrum Management (FSMP) and the 2023 World Radiocommunication Conference (WRC-23)

2.3.2 From 21 to 22 February 2022, a workshop was held by the members of the Frequency Spectrum Management Panel (FSMP) and the NAM/CAR/SAM States, with the aim of providing background and information to the States, in preparation for their delegations that will participate in WRC-23, on issues relevant to the aeronautical context.

2.3.3 In addition, during the workshop, other relevant topics were discussed such as the impact of the 5G rollout on aircraft operations (potential interference in the radio altimeter) and the new SSR and NAV modules of the Frequency Finder.

2.3.4 The workshop presentations and documents can be accessed through the link below:

<https://www.icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2022-CMR-WRC23>

First NAM/CAR/SAM Meeting/Workshop on Planning the Implementation of Automatic Dependent Surveillance - Broadcasting (ADS-B ANP/1)

2.3.5 From 02 to 04 March 2022, the First NAM/CAR/SAM Meeting/Workshop on Planning the Implementation of Automatic Dependent Surveillance – Broadcasting (ADS-B/ANP/1) was held, with the aim of assisting States in the implementation of ADS-B OUT in accordance with the planning methodology applied in the new Volume III of the ANP CAR/SAM, based on the ASBU (Aviation System Block Upgrade) Threads and Modules/Elements recommended in the sixth edition of the Global Air Navigation Plan (GANP).

2.3.6 During the event, the document Concept of Operations (CONOPS) NAM/CAR/SAM of Automatic Dependent Surveillance – Broadcasting (ADS-B) version March 2022 was reviewed, as well as the document Instructions for the use of the Template of Volume III of the Regional Air Navigation Plan – ANP CAR/SAM, approved at the GREPECAS/19 Meeting, was also presented to the participants. Likewise, the participants discussed other topics on the planning of aeronautical surveillance and presented the progress of the implementation in the States.

2.3.7 The link below allows access to the material presented and discussed during the event:

<https://www.icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2022-RLA06901-ADSBYADSBANP1>

3. Suggested actions

3.1 The States are invited to:

- a) note the information provided in this working paper;
- b) consider the adoption of a regional approach for the implementation of new systems;
and
- c) analyze any other issue related with this and that the Meeting considers necessary.