International Civil Aviation Organization
North American, Central American and Caribbean Office

WORKING PAPER

NACC/WG/RAP/03 — WP/25
15/03/25

Third Meeting of Rapporteurs of the North American, Central American and Caribbean Working Group (NACC/WG/RAP/03)
(ICAO NACC Regional Office, from 24 to 27 March 2025)

Agenda Item 3: **Update NAM/CAR regional needs and NACC/WG objectives, its structure and the review and reporting mechanisms (Dashboard)**

Evolution of the Air Navigation Aids Project development under MCAAP

(Presented by Navigation System Coordinator)

EXECUTIVE SUMMARY	
Under this Working paper, the project initiative sponsored by the MCAAP is presented to support decision-making activities when implementing or replacing an air Navigation Aid system.	
Action:	Suggest action under item 3
Strategic Objectives:	• Safety • Air Navigation Capacity and Efficiency • Economic Development of Air Transport • Environmental Protection
References:	• Thirty-Eighth MEVA Technical Management Group Meeting (MEVA/TMG/38), Mexico City, Mexico 11 to 14 July 2023. • COCESNA-Official Letter DE-CEO-0455/2023.

1. Introduction

1.1 The Sub-Group, part of the NACC/WG/COMM/TF has the responsibility to align the activities of the implementation of Navigation Aids in the region and support CAR States in the implementation of new system according with their national and regional needs.

1.2 At the same time, under the project will line up with the ICAO objectives:

- Develop and update strategies and plans for CAR navigation harmonization outlined in the Global Air Navigation Plan;

- Monitor the development and implementation of aeronautical navigation systems and facilities in order to facilitate CAR Region coordination of implementation;
- Support the implementation of Standards and Recommended Practices (SARPs), Procedures for Air Navigation Services (PANS) and guidance material relating to:

    - evolution of GNSS core constellation, including the introduction of new constellations (Galileo, Beidou) and the modernization of existing ones (GPS, GLONASS);
    - evolution of GNSS augmentation systems (SBAS, GBAS, ABAS, including advanced receiver autonomous integrity monitoring);
    - GNSS vulnerability issues, in particular regarding RF interference issues and space weather effects, including consideration of alternative position, navigation and timing infrastructure;
    - rationalization of the conventional navigation infrastructure;
    - testing of radio navigation aids;
    - maintenance of/resolution of issues with existing ICAO provisions for navigation systems.

1.3 Some CAR Region States have communicated that there has been an increase in the operations of their international airports and the need to increase operational capacity. Additionally, they have indicated that some of the useful life of their navigation facilities is about to expire and that they require to make the corresponding short-term analysis to determine the best navigation infrastructure to meet their needs.

1.4 Provide assistance to CAR States in the development of the requirements, determine the needs and operational benefit to implement of the different navigation system (VOR, VOR/DME, GBAS, SBAS, etc). At the same time the information provide by result of the project will support CAR Region in the planning and implementation of NAV-AIDS. Helping to in capacity, efficiency and safety; development of the recommendations requested by the States to support decision-making .

2. Project Outcomes

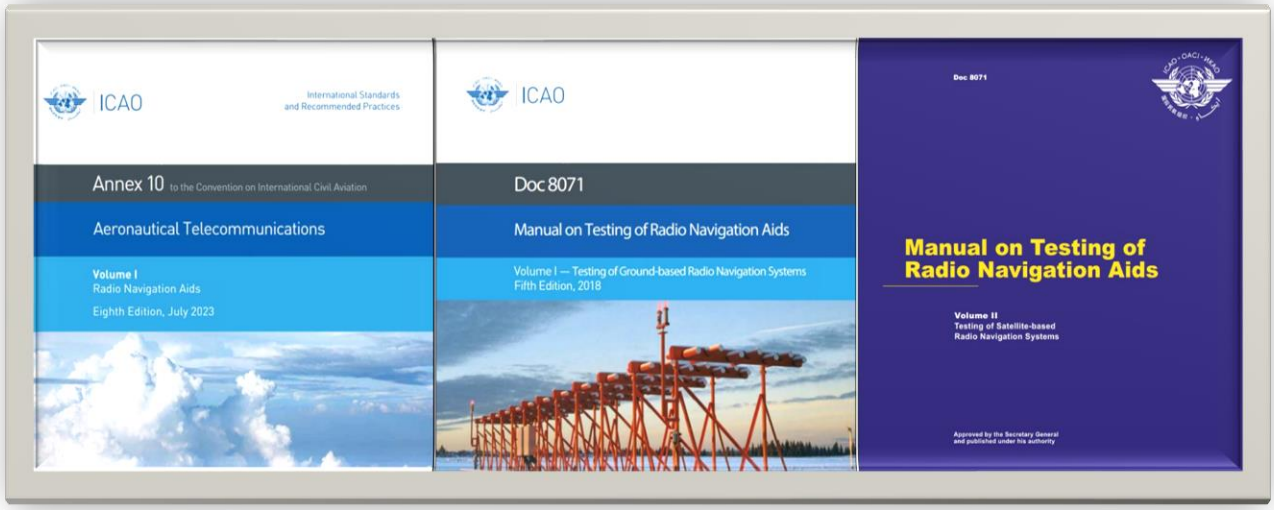
2.1 The project is looking to complete the following outcomes:

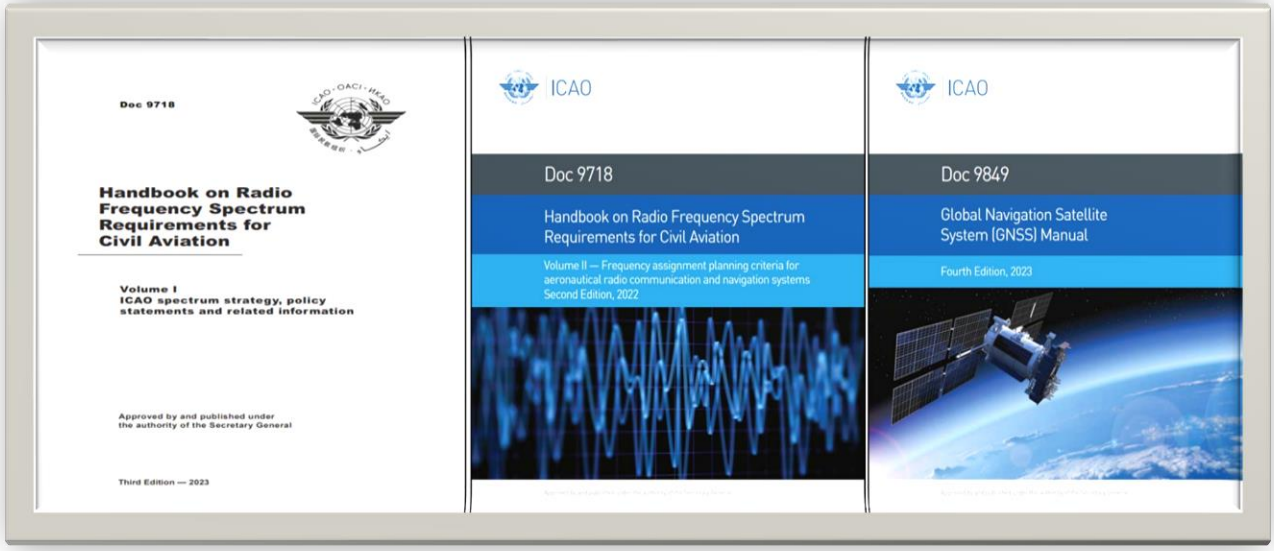
1. Development the Operational Concept of the Navigation system (CONOPS of NAV-AIDS). This document will support the planning and implementation of the navigation system in all CAR States, and it will support the operational implementation.
2. Provide a profile of the training needed for technical staff and project manager for CAR region. People that will support decision-making.
3. Provide support to Navigation-Aids workshop on September 2025.

2.2 One important activity under this project is to identify the aeronautical frequency requirement and to work in a close way with the NACC/WG/FREQ/TF with the aim that States protect the aeronautical frequencies needed to support the Navigation-Aids implementation.

2.3 Another objective of the initiative is provided to the CAR Technical staff an overview of the ICAO Navigation documentation, important for navigation AIDS:

1. Annex 10, Volume I
2. Doc. 8071, Manual on Testing of Radio Navigation Aids
3. Manual on Testing of Radio Navigation Aids
4. Doc. 9718, Handbook on Radio Frequency Spectrum requirement for civil aviation
5. Doc. 9849 Global Navigation Satellite System (GNSS) Manual





2.4 According with the Global Air Navigation Plan, ASBU Elements (ASBU Elements - ICAO GANP Portal), this initiative cover to provide recommendation about the NAV Module that integrate the implementation of:

1. NAVS-B0/1: Ground Based Augmentation Systems (GBAS)
2. NAVS-B0/2: Satellite Based Augmentation Systems (SBAS)
3. NAVS-B0/3: Aircraft Based Augmentation Systems (ABAS)
4. NAVS-B0/4: Navigation Minimal Operating Networks (Nav. MON)
5. NAVS-B1/1: Extended GBAS
6. NAVS-B2/1: Dual Frequency Multi Constellation (DF MC) GBAS
7. NAVS-B2/2: Dual Frequency Multi Constellation (DF MC) SBAS
8. NAVS-B2/3: Dual Frequency Multi Constellation (DF MC) ABAS

2.5 All of them under Technology Thread support the Operational implementation in the different planning layers (Departure, on-route and arrival).

2.6 As the project is in its initial stage, it is important to have the operational requirements and short-, medium-, and long-term planning in place to consider them throughout the project's work process and achieve the results that the region expects.

3. Suggested actions

3.1 The Meeting is invited to

a) Take note of the information provided in this working paper.
b) Integrate activities on common with NACC/WG/FREQ/TF, NACC/WG/AGA/TF and NACC/WG/AO/TF; and
c) Suggest any other action deemed necessary.

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