

AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP (APIRG)



INFRASTRUCTURE & INFORMATION (IIM) SUB- GROUP

NAVIGATION PROJECT RADIO NAVIGATION AIDS & GNSS: IMPLEMENTATION OF CONVENTIONAL NAV'AIDS AND GNSS (CORE AND AUGMENTED) AIMED AT ENABLING THE IMPLEMENTATION OF PBN.

PROJECT TERMS OF REFERENCE (TOR)

Version 1.0

REVISION INDEX SHEET

Version	Revision	Date	Reason for Change	Pages Affected
1.0	0	June 2021	Creation	All

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ABBREVIATIONS

Term	Definition
AFI	Africa-Indian Ocean
APIRG	AFI Planning and Implementation Regional Group
APCC	APIRG Projects Coordination Committee
ARNS	Aeronautical Radionavigation Service
ASBU	Aviation System Block Upgrade
CNS	Communication Navigation Surveillance
DME	Distance Measuring Equipment
GANP	Global Air Navigation Plan
GNSS	Global Navigation Satellite System
ICAO	International Civil Aviation Organization
ILS	Instrument Landing System
IIM/SG	Infrastructure & Information Management Sub-Group
Nav	Navigation
Nav'Aid	Navigation Aid
PBN	Performance Based Navigation
SARP	Standards and Recommended Practices
VOR	VHF Omnidirectional Range Radio

1 MANDATE

The navigation project is the APIRG IIM/SG project intended to follow up and accompany states of the AFI region in the implementation of conventional navigation aids and Global Navigation Satellite Systems (GNSS) (core and augmented) aimed at enabling the implementation of Performance Based Navigation (PBN).

The project therefore upholds the APIRG mandate to carry out activities aimed at enabling the APIRG to discharge its functions and responsibilities specific to air navigation systems in the region.

These Terms of Reference outlines the requirements for the effective execution of these activities.

2 INTRODUCTION

In the framework of the technologies Roadmap for Navigation defined in the GANP and the AFI strategy, the objective of the Navigation project as indicated in the project description, is to assist States in the implementation of:

- a) Aeronautical Navigation systems (VOR, DME, ILS)
- b) Global Navigation Satellite Systems (GNSS- core and augmented);

In accordance with the operational requirements of ICAO **Annex 10 Volume I, Annex 11**; Air Traffic Service and the relevant supporting guidance documents (**Doc 8071**; Manual on Testing of Radio Navigation Aids, **Doc 9849**; Global navigation Satellite System (GNSS) manual.

3 TERMS OF REFERENCE

3.1 Purpose

The IIM Sub-Group Navigation Project was established and mandated by APIRG in 2017 to support the implementation of ICAO Standards and Recommended Practices (SARPs) and carry out specific activities to enable APIRG to discharge its functions and responsibilities in the specific area of aeronautical radio navigation and GNSS.

The purpose of the IIM Sub-Group Nav project is to assist States with the implementation conventional Nav'aids and GNSS (core and augmented) to ensure the provision of aeronautical Radio Navigation and Global Navigation Satellite Systems to aircraft in all Airspaces and all phases of flight in accordance with the requirements of the provision ARNS as defined by the AFI Regional Air Navigation Plan (AFI/RAN Abuja 1997)

The project from this perspective is thus an interactive process through which all concerns of relevant stakeholders can be taken into account in coordination with AFI member States while keeping them adequately informed.

The navigation project team members shall therefore consider, evaluate, and recommend all project deliverables. These recommendations shall be submitted to IIM Sub-Group Chairperson, Vice-Chairperson and ICAO Secretariat and concerned stakeholders shall be notified accordingly of the IIM SG navigation project activities.

3.2 Key Functions

3.2.1 To carry out its functions, the team shall carry out its activities in conformity to the mode of operation of the IIM Sub-Group, as guided by APIRG:

- a) Foster the implementation of Modules of the ICAO Aviation Systems Block Upgrades (ASBUs) specific to aeronautical radio navigation and GNSS (core and augmented), as assigned by APIRG;
- b) Accompany and support States in the implementation of aeronautical radio navigation systems and GNSS (core and augmented) in accordance with the ASBUs methodology and as guided by the Regional performance objectives;

- c) Define and monitor metrics for measuring regional implementation of conventional Nav'aids and taking action to enable coherent regional implementation and planning to ensure regional interoperability and harmonisation with other regions;
- d) Keep under review the adequacy of requirements in the areas of IIM taking into account changes in user requirements, the evolution in operational requirements and technological developments in accordance with the ASBUs methodology;
- e) Identify and collect, State by State, information on deficiencies in navigation systems, analyze these deficiencies and propose solutions.
- f) Identify and report on progress and obstacles to the implementation of the navigation systems to the IIM SG.

3.3 Tasks

- a) Coordinate and conduct project meetings through teleconferences and seminars/workshops to discuss issues related to air navigation systems in the region;
- b) Assess and report on the status of operation of conventional Nav'Aids and GNSS (core and augmented) in the region;
- c) Propose restoration strategies of failed/failing systems with due consideration of the growing tendency of gradual migration to GNSS;
- d) Assess GNSS vulnerabilities based on received information from States in the region and advise on mitigation strategies;
- e) Provide detailed guidance to states not complying with the AFI Navigation plan;
- f) Establish a list of States in the region with their corresponding conventional Nav'Aids and GNSS (core and augmented) systems implemented.
- g) Report to IIMSG on the navigation project progress and challenges
- h) Liaise appropriately with IIM/SG related projects.

3.4 Working method

All tasks will be carried out by navigation experts designated by AFI States and organisations participating in the project, led by the Project-Team Coordinator and under the supervision of the Project Facilitators (ROs/CNS, Dakar and Nairobi) through the IIM SG working methodology. Upon completion of the tasks, the results will be sent to the Project Facilitators as a final document for submission to, and if necessary, approval by the APIRG Projects Coordination Committee (**APCC**). For the purpose of collaborative decision-making, liaison meetings will be held with the areas involved.

3.5 Project team composition

The states and organisations participating in the project are as follows:

- **ICAO Facilitator:** ESAF and WACAF Regional Offices/CNS.
- **Project Coordinator:** Cameroon
- **Participating states/organizations:** Cameroon, Senegal, Kenya, Mauritania, South Africa, Uganda, Côte d'Ivoire, ASECNA, IATA, SATNAV Africa JPO

The IIM Sub-Group Nav Project Coordinator is nominated by IIMSG meeting. States opt to become members of the project team at the IIMSG meeting and send the contact details of their delegates to the PTC.

3.6 MEETING PROCEDURE

Coordination

The PTC for the IIMSG Nav project shall manage and schedule the frequency, date and venue of the project meeting. The choice of the next regular meeting date shall be made during an ongoing meeting considering the availability of team members for maximum participation of delegates.

Minutes

The nav project team shall designate a project secretariat who have the responsibility of preparing meeting minutes. These minutes shall be approved by the PTC upon completion and be made available for adoption at the next project meeting.

Quorum

Meeting decisions are binding when 50+1 percent of project team member states and organizations are represented. This is the target attendance for the effective tenure of project team meetings.

Proxies to meeting

In case of unavailability, permanent delegates of the IIM Sub-Group nav project shall designate a proxy by notifying the PTC with acknowledgement from proxy. The PTC will inform the project team members of the substitution at the beginning of the relevant meeting, and the proxies have all the rights of the permanent members they are representing. Other persons may be invited or may co-opt as observers by IIM Chair, Vice-Chair, Secretariat or the facilitator.

The success of the nav project is very dependent on the exchanges made during project team meetings. Meeting attendance is therefore very essential. In the event the quorum (50+1% of team member states and organizations) is not attained, the meeting shall be rescheduled. 03 failed attempts to hold a project team meeting due the quorum not attained shall warrant revisiting the project team membership, with perpetual absent member states requested to indicate withdrawal from or replacement of their delegates in the project team. A failed meeting due to quorum not attained shall be automatically rescheduled for the next fourteen days.

Project team secretariat

The secretariat shall distribute the meeting documentation, agenda, and previous minutes to all permanent members at most five (05) working days before the meeting.

The secretariat is responsible for minutes decisions or resolutions and to take the draft Minutes of the IIM Sub-Group nav project meeting to the coordinator within five (05) working days after the meeting, for review.

Decision making

The decisions shall be taken on consensus of all permanent members present at the meeting. The Project Coordinator is responsible to communicate the decisions made and account for the decision.

Any objections to either approve or reject a submission under consideration shall be raised so that, such objections, where material, can be recorded in the proceedings of the IIM Sub-Group Navigation project meeting. Matters can be deliberated on a project team discussion (whatsapp, email,..), but must be endorsed during a meeting to become official.

Report to the IIM/SG chair

The IIM Sub-Group Nav Project PTC shall submit a report of the team's activities to IIM SG Chair or Vice-Chair after each team meeting. Progress report may be given to the IIMSG Chair or Vice-Chair if requested between meetings. The report shall highlight:

- The status of the project;
- Project challenges encountered;
- Recommendations to address the project challenges.

Dispute Resolution

Any dispute/issue on which consensus cannot be reached will be settled through voting by the project team. Permanent members have the right to note their objection to a decision with a reason.

3.7 Performance Evaluation

The IIM Sub-Group Nav Project team shall perform and carry out a self-assessment annually to verify its effectiveness in carrying out its functions as set out in the ToR; and shall report its conclusions and recommend any changes it considers necessary to IIM SG Chair, Vice-Chair and Secretariat.

4 WORK PROGRAM

The work program of the team shall be as outlined in the project organization.

5 REVIEW

The Terms of Reference shall be reviewed by the IIM Sub-Group Navigation project every two years or as and when required.

These terms of reference were approved by and signed on behalf of the IIM Sub-Group Navigation Project by the:

COORDINATOR OF THE IIM SUB-GROUP NAV PROJECT

DATE