



INTERNATIONAL CIVIL AVIATION ORGANIZATION

Fifth Meeting of the APIRG Infrastructure and Information Management Sub-Group (IIM/SG5)

(Virtual, 26 - 29 July 2022)

Agenda Item 3.1: Status of implementation of applicable ASBU elements

WP2.1C6 Summary of CNS Project Teams achievements

IIM SG NAV Project "Implementation of Conventional Nav'Aids and GNSS (Core and Augmented) aimed at enabling the implementation of PBN Progress Report"

(Presented by Cameroon)

SUMMARY
<p>This working paper outlines the status of the project, indicate the challenges encountered by the team, possible recommendations and the documentation developed by the team.</p> <p>Action by the meeting in paragraph 5</p>
<p>REFERENCE(S):</p> <ul style="list-style-type: none"> ▪ Global Air Navigation Plan (GANP) ▪ ICAO Annex 10 Volumes I Aeronautical Telecommunication ▪ Annex 11 Air Traffic Service ▪ Doc 7474 AFI Air Navigation Plan ▪ Doc 8071 Manual on Testing of Radio Navigation Aid ▪ Doc 9849 Global Navigation Satellite System (GNSS) Manual ▪ Doc 9613 Performance-based Navigation (PBN) Manual ▪ APIRG IIM SG/1, SG/2 and SG/3 Report
<p>This working document relates to ICAO Strategic Objectives: A – Safety and B – Air Navigation Capacity and Efficiency.</p> <p>KPIS and concerned ASBU B0 Modules: All applicable to CNS and Spectrum.</p>

1. INTRODUCTION

1.1. The Navigation Project was established during the first APIRG Sub-Group on Infrastructure and Information Management (IIM / SG / 1) meeting held in Nairobi, Kenya from 27 to 30 June 2017, to assist States in the framework of the technologies Roadmap for Navigation defined in the GANP and the AFI strategy, in the implementation of Aeronautical Navigation Service by the effective implementation of:

- a) Aeronautical conventional Radio Navigation Systems (VOR, DME, ILS)
 - b) Global Navigation Satellite systems (GNSS-core and augmented).
- 1.2. The implementation is in accordance with the operational requirements of ICAO Annex 10 Volumes I Annex 11 Air Traffic Service and the relevant supporting guidance documents (Doc 8071 Manual on Testing of Radio Navigation Aid, Doc 9849 Global Navigation Satellite System (GNSS) Manual).
 - 1.3. The provision of aeronautical Radio Navigation and Global Navigation Satellite Systems to aircraft will cover all Airspaces and all phases of flights.
 - 1.4. The implementation scheme will be in accordance with the requirements of the provision of Aeronautical Radio Navigation Service (ARNS) as defined by the AFI Air Navigation Plan (AFI/RAN Abuja 1997) and the GANP
 - 1.5. All tasks are carried out by NAV experts nominated 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.
 - 1.6. Each state was invited by ICAO via a letter reference ES AN 13/0-584 dated 14 August 2017, to appoint and notify the participation of its qualified experts in any of the 14 regional IIM project teams identified.

2. DISCUSSIONS

- 2.1. The deliverables of the completed tasks have been sent to the Project Facilitators as a final document for submission to, and if necessary, approval by the APIRG Projects Coordination Committee (APCC).
- 2.2. A project progress report is submitted to the IIM SG Chairman, Vice chairman and Secretariat indicating the project status, challenges, and possible recommendations.
- 2.3. The IIM Sub-Group teams were allocated tasks and expected deliverables as indicated in Annex A.
 - 2.3.1. The team has managed to complete all project planning documentation.
 - 2.3.2. The team has reviewed and adopted the draft Terms of Reference of the project, as attached.
 - 2.3.3. The project questionnaire was reviewed. It was observed that the existing one did not fully cover all the project objectives. Proposals were made on ameliorating the questionnaire to allow for capturing the most data necessary for measuring the metrics as well as improve on the clarity of the questions. Not initially covered, questions were added to capture data on GNSS interference and mitigation. More so, the idea of the elaboration of a google forms version of the questionnaire is ongoing with the goal of mitigating the risks of no or delayed feedbacks from States.
 - 2.3.4. The team has developed a GNSS interference reporting Form
 - 2.3.5. The draft project organisation and plan were reviewed with the following points to note:
 - One of the project deliverables as per the project description, which states “Assessment/Reporting on the operation of Air ground communication systems and operation of Nav’Aids and GNSS systems” was adjusted to fit into the

scope of the project.

- It was noticed that the project being classified under communication as per the project description is possibly an error. It should rather be classified under navigation.
- The dates set for different milestones are to be adjusted, subject to the adoption and distribution of the revised project questionnaire and the time available to the project team.

2.3.6. The assessment of States' implementation of the AFI Navigation Strategy will commence upon analysis of data related to the implementation status of conventional NAVAIDs and GNSS received from States and other sources, in view of developing technical guidance material to support States in the implementation of the strategy; and

2.3.7. The development of the project budget has been rescheduled until after the IIM SG meeting of July. 2022.

2.4. The last IIMSG Nav Project progress meeting was on 22 July 2022 via Google Meet. The project meeting minutes and matters arising have been compiled as usual.

3 IMPLICATIONS

3.1. Project Team Experts Verification

3.1.1. The project teams are the foundation of the implementation of the APIRG plans and ensuring that Africa is not left behind. Its success is largely dependent on the project team member's active participation and commitment in the work of the project team.

3.1.2. Due to various Organizations or States structural changes; some of the identified experts are no longer available to assist with project activities. It is requested that *Senegal, IATA, ASECNA, Kenya, Mauritania, and Côte d'Ivoire* confirm their participation in the NAV project as team members.

3.1.3. An official update of the project team members with SATNAV Africa JPO is requested. The list of SATNAV Africa JPO participating so far in the project is attached.

3.2. Project questionnaire

3.2.1. The key challenge faced by the project is related to the project questionnaire and State responses. This was identified as a major risk to the project team attaining its goals and the risk has been amplified following the review of the questionnaire which requires redistribution.

3.2.2. As mitigation to the above risk:

- A reflection was done on the possibility of expediting the data collection process by exploiting other means so as not to wait too long on State replies. So far data has been sought from Frequency Finder but presents quite some inconsistencies. For this reason, the team is seeking the approval of the IIM SG to carry on with this idea and correct the data when States eventually complete the questionnaire;
- It was equally thought wise to develop an online version of the questionnaire which will allow for immediate reception of responses of States which choose to use this version. The development of this version is ongoing.

3.2.3. So far, only Uganda has submitted a completed Questionnaire. The revised questionnaire will be redistributed, and States are encouraged to complete it upon receipt.

3.2.4. The project deliverables dependencies are listed below with comments. The deliverables status is attached as Annexure A:

NO	DESCRIPTION (DELIVERABLE)	DEPENDENCY
1	Implementation status of Conventional Nav'Aids	Projects questionnaires sent to States / Organizations and their response.
2	Implementation status of GNSS (Core and Augmented)	Projects questionnaires sent to States / Organizations and their response.
3	Operation status of Conventional Nav'Aids	Projects questionnaires sent to States / Organizations and their response.
5	Operation status GNSS (Core and Augmented)	Projects questionnaires sent to States / Organizations and their response.
6	Assessment/Mitigation status of GNSS vulnerabilities	GNSS interference reporting form sent to States / Organizations and their response if any interference.
7	Detailed guidance provided to States not complying with the AFI Navigation Plan	<ul style="list-style-type: none"> - Projects questionnaires sent to States / Organizations and their response. - Team Participation and Inputs, in the development of the guidance
8	List of States with Conventional Nav'aids and GNSS systems, implemented	Projects questionnaires sent to States / Organizations and their response.
9	The assessment of States' implementation of the AFI Navigation Strategy in view of developing technical guidance material to support States in the implementation of the strategy.	Team Participation and Inputs, in the development of AFI Navigation Strategy
10	Develop project costing template	Team Participation and Inputs, in the development of project costing template

4 The Way forward

- 4.1. Send out revised questionnaire to States as well as the link to the online version once available;
- 4.2. Obtain feedback on questionnaire from the States;
- 4.3. Analyse the received data;
- 4.4. Assess the implementation status of the AFI Air navigation plan and develop technical guidance material to support States in the implementation of the plan;
- 4.5. Align with new GANP Edition; and
- 4.6. Finalize Nav Project Costing Report.

5 ACTIONS BY THE MEETING

5.1. The meeting is invited to:

- a) Take note of the progress made so far regarding the IMSG Navigation Project deliverables and challenges.
- b) Adopt the GNSS interference Reporting Form and encourage States to submit occurrences through its online version.
- c) Redistribute the revised version of the project questionnaire and encourage States to complete it. States are also encouraged to complete the online version of the project questionnaire once available.
- d) Adopt the participation of team members from SATNAV-Africa JPO in the Navigation project.
- e) Encourage State participation in the AFI region projects.
- f) The IIM SG gives approval for the Nav project to carry on with the idea of the preliminary data collection while awaiting the distribution of questionnaires and the feedbacks from States.

5.2 Draft Conclusion /Decision 5/xx: Effective and efficient participation/coordination of Administrations in the IIM Projects activities

That;

States that have not yet designated a representative in the Nav Project team are encouraged to do so, and others to ensure the effective participation of their designated experts for Nav Project.

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LIST OF PARTICIPATING MEMBERS FROM SATNAV AFRICA JPO

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