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WORKING PAPER

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Fourth NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/4)
Miami, United States, 21 – 24 August 2018

Agenda Item 4: Follow-up, Performance Evaluation and Monitoring of the CAR Regional Performance Based Air Navigation Implementation Plan
4.1 Progress Reports of the Task Forces of the ANI WG

PBN REGIONAL IMPLEMENTATION STRATEGY

(Presented by Secretariat)

EXECUTIVE SUMMARY	
This Working Paper presents an update of the current Performance-Based Navigation (PBN) implementation progress of the NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP), a root cause analysis of the regional implementation challenges, and suggested actions to address them.	
Action:	The suggested actions are presented in Section 5.
<i>Strategic Objectives:</i>	<ul style="list-style-type: none">• Safety• Air Navigation Capacity and Efficiency• Environmental Protection
<i>References:</i>	<ul style="list-style-type: none">• Doc 9613 — <i>Performance-based Navigation (PBN) Manual</i>• Doc 9750 — <i>Global Air Navigation Plan</i>• NAM/CAR Regional Performance Based Air Navigation Implementation Plan (RPBANIP)• NAM/CAR Air Navigation Implementation Working Group (ANI/WG) PBN Task Force Terms of Reference• ANI/WG PBN Task Force Work Programme

1. Introduction

1.1 The continuing growth of air operations increases the demand for one of our most valuable and limited resource: airspace. This emphasizes the need make the most efficient use of available airspace, improving the operational efficiency derived from the application of Performance Based Navigation (PBN). PBN functions will increase the safe use of challenging environments, allowing improved access to more airports, increasing Air Traffic Management (ATM) capacity, while reducing flying time, fuel consumption and, in consequence, the environmental impact of CO₂ emissions.

1.2 Accordingly, ICAO Global Air Navigation Plan (GANP) places PBN as the highest implementation priority for air navigation. ICAO's PBN Programme is focused to further improve and develop the PBN concept, providing guidance and assistance to States and International Organizations with successful implementation of PBN routes and procedures.

2. Progress on Regional PBN Implementation

2.1 In the regional context, the RPBANIP establishes the NAM/CAR regional priorities described as Regional Performance Objectives (RPOs) to be accomplished during the period 2013 to 2018, aligned with the global air navigation priorities. The RPOs provide the high-level tasks for implementing the regional priorities, establishing the expected operational benefits and the metrics for progress measurements, benefits and achievements. The RPBANIP implementation in the NAM/CAR regions should be considered as an integral part of the global and regional ICAO planning process. In this regard, the necessary implementation measures, including applicability dates, can be agreed and collectively applied by all involved stakeholders.

2.2 The RPBANIP has one RPO to cover the implementation of performance based navigation. This RPO has fourteen tasks in order to allow effective regional implementation of PBN. Six out of the fourteen tasks (43%) are currently being addressed by the ANI/WG PBN Task Force (TF). Only two tasks have been completed. Furthermore, the two tasks completed have been addressed by bodies external to the ANI/WG:

- task b (Implement PBN airspace concept for oceanic, continental and terminal areas in accordance with the ICAO PBN Manual) is being addressed by a sub-project of the ICAO Regional Technical Cooperation Project — “Multi-Regional Civil Aviation Assistance Programme (MCAAP)” (RLA/09/801), and
- task h (Optimize the ATS route structure through implementation of Air Navigation (RNAV) routes between major city pairs with navigation specification RNAV-5/2 for en-route operations) has been addressed by the ICAO/IATA/CANSO Performance-Based Navigation (PBN) Harmonization, Modernization and Implementation Meeting for the North American, Caribbean and South American (NAM/CAR/SAM) Regions.

No ANI/WG specific PBN implementation activity has taken place in the last 3 years.

3. Sub-Project to Develop and Implement a PBN Airspace Concept Document for the CAR Region

3.1 A Sub-Project to Develop and Implement a PBN Airspace Concept Document for the CAR Region, begun from 8 to 11 May 2018 in the ICAO NACC Regional Office, under the ICAO Regional Technical Cooperation Project — Multi-Regional Civil Aviation Assistance Programme (MCAAP) (RLA/09/801).

3.2 The objective of this sub-project is to develop a model structure for airspace and Terminal Areas (TMAs) that allows continuous flow in the upper and lower airspace of contiguous Flight Information Regions (FIRs) and TMAs, proposing a possible solution to the complex structure of the existing FIRs in the CAR Region. The model concept is developed to ensure understanding amongst all States and Organizations of the minimum requirements needed for an adequate and harmonized approach to PBN implementation within the CAR Region.

3.3 The work is funded by the MCAAP and conducted with the support of Subject-Matter Experts (SMEs) from Cuba, Dominican Republic, Trinidad and Tobago, and COCESNA. The Dominican Republic Civil Aviation Institute (IDAC) provided an additional expert to support this project. In reviewing the Terms of Reference of the Sub-Project, the SMEs in collaboration with the ICAO NACC Regional Officer, Air Traffic Management and Search and Rescue (RO/ATM/SAR), determined that based on the diversity of the individual CAR State's/Organization's airspace and also based on the limited information available to the project team, it would be more productive to develop a model concept based on the following three phases:

1. Phase 1 – Concept Development
2. Phase 2 – Data collection and analysis
3. Phase 3 – Assessment and development of individual plans

3.4 Phase 1 of the sub-project (Concept Development) has been completed. As the result of Phase 1, it was recognized that the target dates specified in the RPBANIP have elapsed, and recommended that a review of target dates be considered during the ANI/WG/4 meeting.

4. Analysis

4.1 After a thorough analysis of the current situation of the region in the PBN area, we can point out that the main identified challenge is linked to the lack of a clear definition of the responsibilities and accountabilities of the ANI/WG PBN Task Force, and all stakeholders involved with the implementation process. A proposed update of the ANI/WG PBN Task Force is presented in the **Appendix**.

4.2 Regarding the ANI/WG PBN Task Force, it was identified the lack of alignment between its work programme and the tasks described in the PBN Implementation RPO. As explained before, only 43% of the Tasks of the PBN RPO were assumed by the Task Force Work Programme. This lack of alignment causes that, from the conception of the planning process, the goals of the RPABANIP are programmed to fail. In consequence, it is recommended that the ANI/WG PBN Task Force review its work programme to respond, as a minimum, to the Tasks described in the PBN Implementation RPO. If the Tasks of the RPO are considered that do not accurately support PBN implementation in the Region,

the appropriate process should be followed to propose the modification of the RPBANIP and the PBN implementation RPO.

4.3 Another aspect to consider is the lack of regional PBN meetings to support compliance with PBN regional implementation. The follow-up to the implementation plans, the regional initiatives and the support required by the States and International Organizations, should be channelled through a harmonized set of activities, including periodic teleconferences to establish pre-agreements, and culminate with face-to-face meetings where the agreements are finalized. Our recommendation is that the ANI/WG PBN Task Force approves annually a program of activities, including, PBN Regional Implementation meetings, according to the Regional requirements.

5. Suggested actions.

5.1 The meeting is invited to:

- a) approve the proposed update to the ANI/WG PBN Task Force Terms of Reference presented in the Appendix;
- b) recommend to the ANI/WG PBN Task Force to analyse the validity of the RPBANIP PBN RPO and its associated tasks, and develop a work programme in line with the expected outcomes;
- c) align the PBN Task Force Work Programme to the RPBANIP PBN RPO; and
- d) schedule a PBN NAM/CAR Regional implementation meeting.

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APPENDIX

TASK FORCE ON IMPLEMENTATION OF PERFORMANCE-BASED NAVIGATION (PBN) AIRSPACE CONCEPT

1. *Background*

During the first ANI/WG meeting, a PBN Implementation Task Force was formed in order to streamline related air navigation implementation activities. This Task Force shall carry out specific studies to support Performance-Based Navigation (PBN) implementation in the NAM/CAR Regions in accordance with the NAM/CAR RPBANIP, as well as update and report progress to the ANI/WG based on the action plan for these tasks.

2. *Responsibilities*

2.1 The Task Force is responsible for:

- a) Develop and implement a Work Program to support the PBN implementation in NAM/CAR Regions according with the NAM/CAR RPBANIP and RPOs.
- b) Continued refinement and ongoing review of the NAM/CAR PBN Implementation Plan and monitoring and reporting on its application in the Regions.
- c) Propose to the ANI/WG updates to the NAM/CAR RPBANIP and RPOs as required.
- d) Assisting States with the development of their PBN implementation plans, based on the PBN airspace concept, periodically monitor their progress and report to the ANI/WG.
- e) Carrying out specific studies, developing guidance material and organizing workshops and seminars to assist States with Area Navigation/Required Navigation Performance (RNAV/RNP) implementation in the en-route, terminal, and approach flight phases, taking into account the PBN concept according to the ICAO Strategic Objectives and Global Plan Initiatives (GPIs).
- f) Identifying deficiencies and constraints with PBN implementation, and propose solutions that would facilitate resolution of such problems.
- g) Appoint the Task Force Rapporteur from its members.

2.2 Responsibilities of the members

- a) Attend to the Task Force meetings and Teleconferences.
- b) Collaborate with the development and implementation of the Task Force work program.
- c) Comply with the agreed tasks and activities as assigned.

2.3 Responsibilities of the Rapporteur

- a) Lead the development and implementation of the Task Force work programme and activities.
- b) Follow up on the compliance with the RPOs.
- c) Report to the ANI/WG the compliance with the Task Force Work Programme and RPOs related tasks.

2.4 Responsibilities of the Secretariat

- a) The ICAO NACC ATM/SAR Regional Officer will serve as the Secretary of the Task Force.
- b) He/she is responsible to support the Task Force activities, providing guidance to the connection for the Task Force work program and the RPBANIP;
- c) In coordination with the Rapporteur, develop and present to the members the annual programme of activities;
- d) In coordination with the Rapporteur, convene the Task Force activities, teleconferences and meetings; and
- e) Maintain up to date the Task Force documentation, work programme and membership in the ANI/WG website information.

2.5 Responsibilities of the States

- a) Support the participation of its members, according to the role and responsibilities assigned.
- b) Request accountability for the development and implementation of PBN work program in the NAM/CAR Region.

3. Membership.

3.1 The PBN Task Force shall be comprised of up to 9 members, nominated by ICAO States, Territories and International Organizations members of the ANI/WG.

3.2 States, Territories and International Organizations nominating members of the PBN TF shall provide the adequate support to its nominated members in order to comply with the requirements from the Task Force.

4. Working Methods

The Task Force will:

- a) Present its work programme containing activities in terms of objectives, responsibilities, deliverables and timelines.
- b) The Task Force Rapporteur and the Secretariat will coordinate an annual programme of activities to comply with the requirements of the approved work programme.
- c) Avoid duplicating work within the ANI/WG and maintain close coordination among the existing entities to optimize use of available resources and experience.
- d) Designate, as necessary, Ad hoc Groups to work on specific topics and activities and organize clearly defined tasks and activities.
- e) Coordinate tasks to maximize efficiency and reduce costs via electronic means including emails, telephone and teleconference calls, and convene meetings as necessary.
- f) Report on and coordinate the progress of assigned tasks to the ANI/WG.

4. **Work Programme** - [Develop a separate document for the Work Programme, since the programme is a living document that will change according to the situation]
5. **Membership** - [Suggest a Task Force Composition of 6 to 8 members and no more than 9]

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