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WORKING PAPER

NACC/WG/5 — WP/22  
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**Fifth North American, Central American and Caribbean Working Group Meeting (NACC/WG/5)**  
Port of Spain, Trinidad and Tobago, 22-26 May 2017

**Agenda Item 3      Implementation on Air Navigation Matters**  
**3.5    NAM/CAR    Regional    Performance-Based    Air    Navigation**  
**Implementation Plan (RPBANIP) review – Aviation System Block Upgrade**  
**(ASBU) implementation progress**

**NEED TO ADOPT INDEPENDENT FORMATS TO REPORT THE PROGRESS OF THE IMPLEMENTATION OF REGIONAL AIR NAVIGATION TARGETS AND IMPROVEMENTS BY AVIATION SYSTEM BLOCKS (ASBU).**

(Presented by Cuba)

**EXECUTIVE SUMMARY**

Each year the States report on the progress of implementation of the Aviation System Block Upgrade (ASBU) to the North American, Central American and Caribbean Working Group (NACC/WG) and the NAM/CAR Air Navigation Implementation Working Group (ANI/WG), as appropriate.

These reports are indistinctly made taking into account the Air Navigation targets of the NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP) and the NAM ASBU Handbook Block Elements of the modules, as requested.

Adoption of independent formats is required to report progress on implementation of regional air navigation targets and Aviation System Block Upgrade (ASBU) to these working groups.

<b>Action:</b>	See the actions suggested in Section 3.
<i>Strategic Objectives:</i>	<ul style="list-style-type: none"><li>• Safety</li><li>• Air Navigation Capacity and Efficiency</li><li>• Environmental Protection</li></ul>
<i>References:</i>	<ul style="list-style-type: none"><li>• Fifth Meeting of the North America, Central America and Caribbean Directors of Civil Aviation (NACC/DCA/5), Port of Spain, Trinidad and Tobago, 28-30 April 2014</li><li>• Second Meeting of the Working Group on Air Navigation Implementation for the NAM/CAR Regions (ANI/WG/2), Puntarenas, Costa Rica, 1-4 June 2015</li><li>• Third Meeting of the Working Group on Air Navigation Implementation for the NAM/CAR Regions (ANI/WG/3), Mexico City, Mexico, 4-6 April 2016</li><li>• Sixth Meeting of the North America, Central America and Caribbean</li></ul>

	<p>Directors of Civil Aviation (NACC/DCA/6), Nassau, Bahamas, 10-12 May 2016</p> <ul style="list-style-type: none"> <li>• Workshop for the implementation of the regional and national air navigation performance benchmarking and aviation block upgrade (ASBU) for the NAM/CAR Regions, Mexico City, Mexico, 22-26 August 2016</li> <li>• E.OSG - NACC 65523 Status of implementation of the targets of the NAM / CAR Regional Air Navigation Implementation Plan (RPBANIP) and the Declaration of Port of Spain in December 2016, 23 March 2017</li> </ul>
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## 1. Introduction

1.1 NACC/WG/04, ANI/WG/01, ANI/WG/02 y ANI/WG/03 agreements were reached to monitor the implementation through Air Navigation Report Forms (ANRF) of the elements of Block 0 ASBU modules, its information is part of the regional contribution to the global monitoring of the Global Annual Air Navigation Report and the feedback for the Global Air Navigation Plan (GANP) and the regional dashboards.

1.2 Based on the Terms of Reference to accelerate the work progress and to focus on regional priorities, the ANI/WG/3 Meeting considered necessary and therefore agreed to create an Ad hoc Group to support the evaluation, monitoring and to inform on the achievement of the Air Navigation (AN) targets established in the RPBANIP and the Port of Spain Declaration. The ANI/WG ASBU Ad hoc Group reported to the NACC/DCA/6 Meeting the progress assessment, showing the lack of reports from States and the need to change current metrics, based on minimum standardization of the modules implemented in the Region.

1.3 Under the Conclusion NACC/DCA/6/3 - ASBU Implementation in the NAM/CAR Regions, the NACC/DCA/6 Meeting requested to create more effective and direct mechanisms for monitoring and to allow a harmonized progress in the regional implementation, which is aligned with the ICAO ASBU methodology, including: the need for all States to notify ASBU elements to be implemented, the designation of the Points of Contact responsible for monitoring these implementations, in order to optimize project monitoring, as well as the participation of the States in the ASBU Workshop of August 2016 in the ICAO NACC Regional Office.

## 2. Discussion

2.1 The current RPBANIP Chapter 3 "Air Navigation Report Formats (ANRF) of Block Aviation System Upgrade (ASBU) " is structured in such a way that the regional air navigation targets are inserted among the elements of the modules of Block 0 ASBU, based on the threads of the ASBU Methodology.

2.2 Motivated by the above, we can find throughout the different meetings of the Implementation Group that the denominations report of the implementation of the targets of Air Navigation of the Region and reports of the implementation of the elements of the modules of the Block 0 ASBU are indistinctly used. As a consequence, in order to inform the regional targets of Air Navigation we use the RPBANIP ASBU ANRF; and, according to the agreement made in the ASBU Workshop, August 2016, we also inform the ANRF of ASBU by the NAM ASBU Handbook Methodology, developed by the FAA and NAVCANADA. The content of these documents is different, although they are named in the same way and this structure, in our opinion, creates confusion when preparing the reports. We consider this situation should be corrected. See the **Appendix** to this Working Paper.

2.3 In order to solve this situation, Cuba proposed in the Teleconference Changes/Updates expected in the RPBANIP held in 20 April 2017 that the current Chapter 3 of the RPBANIP is converted into two chapters:

- a Chapter 3 where the implementation targets of air navigation are contained with its metrics; and
- a Chapter 4 where the reports of implementation of the elements of the modules of Block 0 ASBU are contained.

2.4 The proposed Chapter 3 would include everything related to the Air Navigation targets of the Port of Spain Declaration and the air navigation implementation targets of the RPBANIP, which was last updated by means of the letter Ref: NACC65523 dated 23 March 2017.

2.5 The basis for this Chapter would be the Air Navigation targets of the Port of Spain Declaration and the air navigation implementation targets of the RPBANIP, which was last updated by the abovementioned letter (Ref: NACC65523), we also suggest using ANI/WG/2/DP/9 from where Appendices Q to R of the Corrected Final Report of ANI/WG/2 for the treatment of metrics and everything related to the subject.

2.6 For the progress report of the Air Navigation targets we suggest the design of a new ANRF, showing the its implementation progress with its metrics, based on the regional performance objectives and not on the basis of the threats of the ASBU Methodology.

2.7 The proposed Chapter 4 would include everything related to the Air Navigation reporting forms, according to the elements of the ASBU Block modules.

2.8 The basis of this Chapter would be the elements of the ASBU Block modules, also suggested in ANI/WG/2/DP/9 from which Appendix R of the ANI/WG/2 Corrected Final Report came out and the staff was trained at the ASBU Seminar in August 2016, using the NAM ASBU Handbook developed by the FAA and NAVCANADA. This Manual should be referenced with the ICAO ASBU Document of July 2016, as the current one is referenced to the year 2013.

2.9 For the progress report on the elements of the ASBU Block 0 modules we suggest adopting the new ANRF approved in the ANI/WG/2 with its updates, as the only progress report format in the implementation of the same.

**3. Suggested actions**

3.1 The Meeting is invited to:

- a) to approve to instruct the NACC Regional Office, when updating the RPBANIP, to discuss in different chapters the Air Navigation targets of the NAM / CAR Regional Air Navigation Implementation Plan (RPBANIP) and the elements of the Block 0 ASBU, defining the way to inform the progress of their respective implementations;
- b) to approve to instruct the ASBU Ad Hoc Group to:
  - the design of the format on the implementation progress report of the regional targets of Air Navigation,
  - the update of the NAM ASBU Handbook in correspondence with the ASBU document of July 2016; and
- c) to propose to the Eighteenth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/18), to adopt:
  - the format on the implementation progress report of the regional targets of Air Navigation proposed by the NACC Regional Office, and
  - the format on the implementation progress report of the elements of the modules of Block 0 ASBU according to the NAM ASBU Handbook updated.

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## APPENDIX

Comparison between the items to be reported by the states to the NACC Regional Office according to the requested format.

Block 0 Modules	Elements of the ANRF according to document ASBU and NAM ASBU Handbook	Elements of the ANRF according to Chapter 3 of the RPBANIP (Numbering according to ATTACHMENT to NACC 65523)
ACDM	1. Airport CDM procedures	17. Airport – CDM
	2. Airport CDM tools	
	3. Collaborative departure queue management	
		18. Aerodrome Certification
		19. Heliport Operations
APTA	1. PBN Approach Procedures with vertical guidance (LPV, LNAV/VNAV minima, using SBAS and Baro VNAV)	8. APV con Baro VNAV
		9. APV con SBAS (WAAS)
		11. LNAV
	2. PBN Approach Procedures without vertical guidance (LP, LNAV minima; using SBAS)	
	3. GBAS Landing System (GLS) Approach procedures	10. APV con GBAS
RSEQ	1. AMAN via controlled time of arrival to a reference fix	3. AMAN And Time-Based Metering
	2. AMAN via controlled time of arrival at the aerodrome	
	3. Departure management	4. Departure Management (DMAN)
	4. Departure flow management	
	5. Point merge	
		5. Movement Area Capacity Optimization
SURF	1. A-SMGCS with at least one cooperative surface surveillance system	12. Surveillance System for Ground Surface Movement (PSR, SSR, ADS B or Multilateration)
	2. Including ADS-B APT as an element of A-SMGCS	13. On-board Surveillance Systems (transponder with ADS-B capacity)
	3. A-SMGCS alerting with flight identification information	
	4. Airport vehicles equipped with transponders	14. Vehicle Surveillance Systems
		15. Visual Aids for Navigation
		16. Aerodrome Bird/Wildlife Organization and Control Programme

Block 0 Modules	Elements of the ANRF according to document ASBU and NAM ASBU Handbook	Elements of the ANRF according to Chapter 3 of the RPBANIP (Numbering according to ATTACHMENT to NACC 65523)
WAKE	1. New PANS-ATM wake turbulence categories and separation minima	N/A
	2. Dependent diagonal paired approach procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	
	3. Wake independent departure and arrival procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	
	4. Wake turbulence mitigation for departures procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	
	5. State-defined additional wake turbulence categories and separation minima (6-category wake vortex separation)	
AMET	1. WAFS	26. WAFS
	2. IAVW	27. IAVW
	3. TCAC forecasts	28. Tropical Cyclone Watch
	4. Aerodrome warnings	29. Aerodrome Warnings
	5. Wind shear warnings and alerts	30. Wind Shear Warnings and Alerts
	6. SIGMET	31. SIGMET
	7. Other OPMET information (METAR, SPECI and/or TAF)	
DATM	1. Aeronautical Information Conceptual Model (AICM) Aeronautical Information Exchange Model (AIXM)	38. AIXM 5.1 Implementation
	2. eAIP	39. e-AIP Implementation
	3. Digital NOTAM	40. Digital NOTAM
	4. eTOD	37. e.TOD Implementation
	5. WGS-84	
FICE		32. MEVA III IP Network Implementation
		33. AMHS Implementation
	1. AIDC to provide initial flight data to adjacent ATSUs	34. AIDC Implementation
	2. AIDC to update previously coordinated flight data	
	3. AIDC for control transfer	
	4. AIDC to transfer CPDLC logon information to the Next	
	35. ATN Router Structure Implementation	

<b>Block 0 Modules</b>	<b>Elements of the ANRF according to document ASBU and NAM ASBU Handbook</b>	<b>Elements of the ANRF according to Chapter 3 of the RPBANIP</b> (Numbering according to ATTACHMENT to NACC 65523)
ACAS	1. ACAS II (TCAS version 7.1)	22. ACAS II (TCAS Versión 7.1)
	2. Auto Pilot/Flight Director (AP.FD) TCAS	
	3. TCAS Alert Prevention (TCAP)	
ASEP	1. ATSA-AIRB	N/A
	2. ATSA-VSA	
ASUR	1. ADS-B	20. Implementation of ADS-B
	2. Multilateration (MLAT)	21. Implementation of Multilateration
FRTO	1. CDM incorporated into airspace planning	1. Airspace Planning
	2. Flexible Use of Airspace (FUA)	2. Flexible Use Airspace
	3. Flexible route system	
	4. CPDLC used to request and receive re-route clearances	
NOPS	1. ATFM	41. Air Traffic Flow Management
OPFL	1. ITP using ADS-B	N/A
SNET	1. Short Term Conflict Alert implementation (STCA)	23. Short-term Conflict Alert Implementation (STCA)
	2. Area Proximity Warning (APW)/	
	3. Minimum Safe Altitude Warning (MSAW)	24. Area Proximity Warning (APW)/ Minimum Safe Altitude Warning (MSAW)
	4. Medium Term Conflict Alert (MTCA)	25. Medium-term Conflict Alert (MTCA)
CCO	1. Procedure changes to facilitate CCO	44. CCO Implementation
	2. Route changes to facilitate CCO	
	3. PBN SIDs	45. PBN SIDs Implementation
		46. Results from 36-40
CDO	1. Procedure changes to facilitate CDO	42. CDO implementation
	2. Route changes to facilitate CDO	
	3. PBN STARs	43. STAR PBN
TBO	1. ADS-C over oceanic and remote areas	6. ADS-C Over Oceanic and Remote Areas
	2. Continental CPDLC	7. CPDLC
		47. Result form PBN- IFSET