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

WORKING PAPER

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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
3.3 ANI/WG Progress on AIM, ATM and CNS

PROGRESS REPORT ON ASBU AD HOC GROUP WORK PROGRAMME

(Presented by ASBU Ad hoc Group Rapporteur)

EXECUTIVE SUMMARY

This working paper presents the progress achieved by the Aviation System Block Upgrade (ASBU) Ad hoc Group, since its creation in the ANI/WG/2 Meeting. Following the work of the Ad Hoc Group and its deliverables, the note includes the results for these deliverables and recommendation for improving the Ad Hoc Group function and coordination.

Action:	Suggested actions are presented in Section 3.
Strategic Objectives:	• Safety • Air Navigation Capacity and Efficiency • Environmental Protection
References:	• ICAO Doc 9750, Global Air Navigation Plan, 5th Edition • ICAO NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP), April 2014

1. Introduction

1.1 The Air Navigation Implementation Working Group (ANI/WG/2) Meeting in June, 2015, established the ASBU Ad hoc group to discuss metrics and performance reporting for the NAM/CAR regions. Below includes information on their work programme and progress to date.

1.2 In order to discuss the targets, it was important to define/identify the States/Territories included in the regional approach to ASBU implementation. Is recommended that all States represented by the NAM/CAR Region be included and provide their State status on the implementation of ASBU Block 0. As for the Territories, it is assumed that the status of ASBU implementation is the same as that of France, the Netherlands, or United Kingdom, unless the Territories identify themselves as implementing ASBU autonomously. The Ad hoc group will work with the NACC members to clarify how Territories are providing ASBU B0 status.

2. Progress and Results

2.1 The Group reviewed *Appendix Q of the ANI/WG/2 meeting final report*, where the Table of ASBU Block 0 elements and targets are presented. The updated table is provided in **Appendix A.**

2.2 The first task for the new Ad hoc group was to consider the revised Air Navigation Reporting Form (ANRF) for the region. The ANRF is designed for States to report on their implementation status of the ASBU Modules/Elements. The Ad hoc group tailored the ANRFs to the region and seven States and Territory submitted the ASBU B0 ANRFs as of 20 April 2017 and are available on the ICAO NAM/CAR Regional Office webpage at: http://www.icao.int/NACC/Pages/regional-group-asbu.aspx. The ICAO NAM/CAR Regional Office developed an ASBU Ad Hoc Group page where the States/Territories ANRFs could be accessible to members. **Appendix B** shows a screenshot of the website.

2.3 Given the assumption stated in 1.2, it is recommended that the NACC Office follow progress on ASBU implementation and State/Territory ANP for 21 States and one Territory (Curacao). **Appendix C** shows the status of ASBU B0 Element Implementation, as well as the State/Territory ANP.

2.4 Seven States and Territory submitted the ASBU B0 ANRFs as of 20 April 2017. **Appendix D** shows the analysis and implementation workflow of ASBU Elements and the Block 0 Implementation Status Summary Table for the ICAO NAM/CAR Region and **Appendix E** shows the Block 0 Implementation Status Summary Tables for the seven States and Territory.

2.5 It is important to note that Global Air Navigation Plan (GANP), ASBU, AN targets, NACC and State/Territory electronic ANP, the ICAO NAM/CAR RPBANIP, April 2014, and ANRF are interrelated. At the ANI/WG/3 meeting dated May 2016, the Ad hoc group was asked to review and report on Air Navigation (AN) targets established in the RPBANIP and in the *Port-of-Spain Declaration*. The Ad hoc worked via conference calls and email resulting in:

- Review and follow up on AN targets to inform the NACC/DCA/6 Meeting
- Developing comments and recommendations to improve the AN target website/ANRF/etc.; and
- Support and developing materials to present to the ASBU implementation Workshop in August 2016

2.6 The 5th edition of the ICAO GANP (Doc 9750) was approved by the ICAO Assembly in October 2016. This edition changed some of the Block 0 Elements definitions. The NAM updated the "NAM ASBU Handbook" based on the 5th edition of GANP/ASBU. It is recommended that the NACC Office would adjust its Block 0 Element definitions accordingly. This change should reflect through all the relevant documents such as "NACC ASBU Handbook (4th edition or 2013 version), ANRF, and RPBANIP.

2.7 The RPBANIP is the ICAO Regional Implementation Plan for the NACC and is well aligned with the GANP. We recommend that this document be updated and incorporate changes resulting from the 5th edition of GANP.

2.8 The ASBU Workshop was sponsored by the ICAO HQ on 22-26 August 2016 at the ICAO NACC office Mexico City, Mexico. The workshop focused on informing States on the Performance Based Decision Making Methodology. The workshop also provided information on how States could utilize a step-by-step process to evaluate the ASBU Elements analysis and implementation status as well as how to fill in the ANRFs. Some participants successfully mastered the process and produced the positive outcome. However, it is recommended that the ICAO NACC Office provide more assistance and support to States/Territories to gain more familiarity with the GANP and as they plan to implement B0 elements.

3. Action Suggested

3.1 The Meeting is invited to:

a) Approve the ANI/WG ASBU Ad hoc Group as an ASBU Task Force;

b) Acknowledge and approve the progress of the Ad hoc group detailed in this paper;

c) Accept the "NAM ASBU Handbook (5th edition or 2016 version) as the NACC ASBU Handbook;

d) Review and file/update State/Territory ANRF; and

e) Support ASBU TF.

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APPENDIX A

To discuss Metrics and Targets, their domain must be defined and the NACC Offices/ASBU TF needs to obtain and agree on several definitions (see Notes 1 to 5) which refer to the Metrics and Targets in the table below; NACC Metrics and Targets for ASBU Block 0 Elements.

Note 1 : The number of aerodromes (73) is an assessed number.

Note 2: The target number of assessed aerodromes (60) is a place holder. This target number needs to be discussed and determined.

Note 3: The number of States and Territories (22) is an assessed number.

Note 4: The target number of assessed States and Territories (18) is a place holder. This target number needs to be discussed and determined.

Note 5: The target date of December 2017 is a place holder. This target date needs to be disused and determined.

Table A: The NACC Metrics and Targets for ASBU Block 0 Elements

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
Performance Improvement Area 1: Airport Operations				
ACDM	**1.** Interconnection between aircraft operator & ANSP systems to share surface operations information	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-ACDM-E1 Target 1:** X=60 by December 2017	
	2. Interconnection between aircraft operator & airport operator systems to share surface operations information	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-ACDM-E2 Target 1:** X=60 by December 2017	
	3. Interconnection between airport operator & ANSP systems to share surface operations information	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-ACDM-E3 Target 1:** X=60 by December 2017	
	4. Interconnection between airport operator, aircraft operator & ANSP systems to share surface operations information	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-ACDM-E4 Target 1:** X=60 by December 2017	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	5. Collaborative departure queue management	**a.** Number of Table AOP I-1 aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed Table AOP I-1 aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-ACDM-E5 Target 1:** X=60 by December 2017	
APTA	**1.** PBN approach procedures with vertical guidance to LNAV/VNAV minima	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-APTA-E1 Target 1:** X=60 by December 2017	
	2. PBN approach procedures with vertical guidance to LPV minima	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-APTA-E2 Target 1:** X=60 by December 2017	
	3. PBN approach procedures without vertical guidance to LNAV minima	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-APTA-E3 Target 1:** X=60 by December 2017	
	4. GBAS Landing System (GLS) procedures to CAT I minima	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-APTA-E4 Target 1:** X=60 by December 2017	
RSEQ	**1.** AMAN via controlled time of arrival to a reference fix	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-RSEQ-E1 Target 1:** X=60 by December 2017	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	2. Departure management	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-RSEQ-E2. Target 1:** X=60 by December 2017	
	3. Departure flow management	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-RSEQ-E3 Target 1:** X=60 by December 2017	
	4. Point merge	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-RSEQ-E4 Target 1:** X=60 by December 2017	
SURF	**1.** A-SMGCS with at least one cooperative surface surveillance system	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-SURF-E1 Target 1:** X=60 by December 2017	
	2. Including ADS-B APT as an element of A-SMGCS	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-SURF-E2 Target 1:** X=60 by December 2017	
	3. A-SMGCS alerting with flight identification information	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-SURF-E3 Target 1:** X=60 by December 2017	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	4. EVS for taxi operations	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-SURF-E4 Target 1:** X=60 by December 2017	
	5. Airport vehicles equipped with transponders	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-SURF-E5 Target 1:** X=60 by December 2017	
WAKE	**1.** New PANS-ATM wake turbulence categories and separation minima	*ICAO has not developed new minima*	**N/A**	
	2. Dependent diagonal paired approach procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-WAKE-E2 Target 1:** X=60 by December 2017	
	3. Wake independent departure and arrival procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-WAKE-E3 Target 1:** X=60 by December 2017	
	4. Wake turbulence mitigation for departures procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-WAKE-E4 Target 1:** X=60 by December 2017	
	5. 6 wake turbulence categories and separation minima	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-WAKE-E5 Target 1:** X=60 by December 2017	

Performance Improvement Area 2: Globally Interoperable Systems and Data

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
AMET	**1.** WAFS	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-AMET-E1 Target 1** X=18 by December 2017	
	2. IAVW	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-AMET-E2 Target 1** X=18 by December 2017	
	3. TCAC forecasts	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-AMET-E3 Target 1** X=18 by December 2017	
	4. Aerodrome warnings	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-AMET-E4 Target 1:** X=60 by December 2017	
	5. Wind shear warnings and alerts	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-AMET-E5 Target 1:** X=60 by December 2017	
	6. SIGMET	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-AMET-E6 Target 1** X=18 by December 2017	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	7. Other OPMET information (METAR, SPECI and/or TAF)	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-AMET-E7 Target 1:** X=60 by December 2017	
	8. QMS for MET	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-AMET-E8 Target 1** X=18 by December 2017	
DATM	**1.** Aeronautical Information Exchange Model (AIXM)	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-DATM-E1 Target 1** X=18 by December 2017	
	2. eAIP	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-DATM-E2 Target 1** X=18 by December 2017	
	3. Digital NOTAM	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-DATM-E3 Target 1** X=18 by December 2017	
	4. eTOD	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-DATM-E4 Target 1:** X=60 by December 2017	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	5. WGS-84	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-DATM-E5 Target 1** X=18 by December 2017	
	6. QMS for AIM	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-DATM-E6 Target 1** X=18 by December 2017	
FICE	**1.** AIDC to provide initial flight data to adjacent ATSUs	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-FICE-E1 Target 1** X=18 by December 2017	
	2. AIDC to update previously coordinated flight data	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-FICE-E2 Target 1** X=18 by December 2017	
	3. AIDC for control transfer	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-FICE-E3 Target 1** X=18 by December 2017	
	4. AIDC to transfer CPDLC logon information to the Next Data Authority	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-FICE-E4 Target 1** X=18 by December 2017	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
Performance Improvement Area 3: Optimum Capacity and Flexible Flights				
ACAS	**1.** ACAS II (TCAS version 7.1)	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-ACAS-E1 Target 1** X=18 by December 2017	
	2. Auto Pilot/Flight Director (AP/FD) TCAS	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-ACAS-E3 Target 1** X=18 by December 2017	
	3. TCAS Alert Prevention (TCAP)	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-ACAS-E3 Target 1** X=18 by December 2017	
ASEP	**1.** ATSA-AIRB	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-ASEP-E1 Target 1** X=18 by December 2017	
	2. ATSA-VSA	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-ASEP-E2 Target 1** X=18 8 by December 2017	
ASUR	**1.** ADS-B	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-ASUR-E1 Target 1** X=18 by December 2017	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	2. Multilateration (MLAT)	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-ASUR-E2 Target 1** X=18 by December 2017	
FRTO	**1.** CDM incorporated into airspace planning	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-FRTO-E1 Target 1** X=18 by December 2017	.
	2. Flexible Use of Airspace (FUA)	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-FRTO-E2 Target 1** X=18 by December 2017	
	3. Flexible route systems	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-FRTO-E3 Target 1** X=18 by December 2017	
	4. CPDLC used to request and receive re-route clearances	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-FRTO-E4 Target 1** X=18 by December 2017	
NOPS	**1.** Sharing prediction of traffic load for next day	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-NOPS-E1 Target 1** X=18 by December 2017	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	2. Proposing alternative routings to avoid or minimize ATFM delays	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-NOPS-E2 Target 1** X=18 by December 2017	
OFTL	**1.** ITP using ADS-B	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-OFTL-E1 Target 1** X=18 by December 2017	
SNET	**1.** Short Term Conflict Alert (STCA)	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-SNET-E1 Target 1** X=18 by December 2017	
	2. Area Proximity Warning (APW)	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-SNET-E2 Target 1** X=18 by December 2017	
	3. Minimum Safe Altitude Warning (MSAW)	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-SNET-E3 Target 1** X=18 by December 2017	
	4. Medium Term Conflict Alert (MTCA)	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-SNET-E4 Target 1** X=18 by December 2017	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
Performance Improvement Area 4: Efficient Flight Paths				
CCO	**1.** Procedure changes to facilitate CCO	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-CCO-E1 Target 1:** X=60 by December 2017	
	2. Route changes to facilitate CCO	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-CCO-E2 Target 1:** X=60 by December 2017	
	3. PBN SIDs	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-CCO-E3 Target 1:** X=60 by December 2017	
CDO	**1.** Procedure changes to facilitate CDO	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-CDO-E1 Target 1:** X=60 by December 2017	
	2. Route changes to facilitate CDO	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-CDO-E2 Target 1:** X=60 by December 2017	
	3. PBN STARs	**a.** Number of aerodromes for which the need for this Element has been assessed = X. *Metric: X out of 73 have been assessed* **b.** Number of assessed aerodromes which need this Element = Y *Metric*: *Y out of X need this element* **c.** Number of needed implementations that have been completed = Z *Metric. Z out of Y have been completed*	**B0-CDO-3E Target 1:** X=60 by December 2017	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
TBO	**1.** ADS-C over oceanic and remote areas	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-TBO-E1 Target 1** X=18 by December 2017	
	2. CPDLC over continental area	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-TBO-E2 Target 1** X=18 by December 2017	
	3. CPDLC over oceanic and remote area	**a.** Number of States that have completed the need analysis for this Element = X *Metric*: *X out of 22 States have assessed* **b.** Number of assessed States that need this Element =Y *Metric: Y out of X States need this element* **c.** Number of States where Element is needed that have completed implementation = Z *Metric*: *Z out of Y States have implemented*	**B0-TBO-E3 Target 1** X=18 by December 2017	

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APPENDIX B
ASBU AD HOC GROUP WEBSITE

The ICAO NACC web page links to the ASBU Task Force site. From the home page, you can get to the ASBU TF site via ANI/WG site. The URL is:
http://www.icao.int/NACC/Pages/regional-group-asbu.aspx

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ASBU

ASBU ADHOC Group

Based on the ANI/WG Terms of Reference for expediting the work progress and to focus on the regional priorities, the ANI/WG/3 Meeting considered necessary and therefore agreed on the creation of an Ad hoc Group to support review, follow-up and reporting the achievement of the Air Navigation (AN) targets established in the RPBANIP and Port-of-Spain Declaration.

The ANI/WG ASBU Ad Hoc Group informed the NACC/DCA/6 Meeting on its assessment of the progress, showing underreporting of States and the need to change the current metrics, based on the minimum standardization of the modules to be implemented in the region. Similarly, the need for all States to notify ASBU elements to be implemented was suggested, as well as the designation of the Point of Contact to be responsible for the follow up of these implementations, in order to optimize project monitoring.

This web site is presented as a tool to stimulate and encourage States to present their progress and facilitate the arduous task entrusted to the Ad Hoc Group.

Con base en los Términos de Referencia para acelerar el avance del trabajo y para enfocarse en las prioridades regionales, la Reunión ANI/WG/3 consideró necesario y por lo tanto acordó la creación de un Grupo Ad hoc para apoyar la evaluación, seguimiento e informar el logro de las metas de Navegación Aérea (AN) establecidas en el RPBANIP y la Declaración de Puerto España.

El Grupo Ad hoc ASBU del ANI/WG informó a la Reunión NACC/DCA/6 sobre la evaluación del avance, mostrando la falta de informes de los Estados y la necesidad de cambiar las métricas actuales, con base en la estandarización mínima de los módulos a ser implementados en la región. Similarmente, se sugirió la necesidad de todos los Estados de notificar los elementos ASBU a ser implementados, así como la designación de Puntos de Contacto a ser responsables del seguimiento de estas implementaciones, para optimizar el monitoreo del proyecto.

Esta página se presenta como una herramienta para estimular y alentar a los Estados a presentar su avance y facilitar las arduas tareas delegadas al Grupo Ad hoc.

Rapporteur: **Betty Castaing**, (Dominican Republic).

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APPENDIX C

To discuss Metrics and Targets, their domain must be defined. The NACC Offices and ASBU TF needs to obtain and agree on several definitions which refer to the Metrics and Targets shown in APPENDIX A. Table B consists of 21 States and 15 Territories. Among them, 21 States and one Territory will be included to address Metrics and Targets of ASBU B0 Implementation Status. This table lists: (1) NACC States and Territories; (2) the number of international aerodromes to be included in the status report ("APT" column); (3) the Block 0 ANRF submission status ("B0" column); and (4) the preparation of State Air Navigation Plan ("ANP" column).

Table C: The NACC States and Territories with Aerodrome Counts and B0 Status

State/Territory	Status			State/Territory	Status		
	APT	B0	ANP		B0	B1	ANP
Antigua & Barbuda	1	Yes	No	Haiti	1	No	No
Anguilla (GBR)	N/A	N/A	N/A	Honduras	1	No	No
Aruba (NLD)	N/A	N/A	N/A	Jamaica	1	No	No
Bahamas	1	No	No	Martinique (FRA)	N/A	N/A	N/A
Barbados	1	No	No	Mexico	3	No	No
Belize	1	No	No	Monserrat (GBR)	N/A	N/A	N/A
Bermuda (GBR)	N/A	N/A	N/A	Nicaragua	1	No	No
Bonaire (NLD)	N/A	N/A	N/A	Republica Dominicana	2	Yes	No
British Virgin Islands (GBR)	N/A	N/A	N/A	Saba (NLD)	N/A	N/A	N/A
Canada	20	Yes	Yes	Saint Barthelemy (FRA)	N/A	N/A	N/A
Cayman Islands (GBR)	N/A	N/A	N/A	Saint Kitts & Nevis	1	No	No
Costa Rica	1	Yes	No	Saint Lucia	1	Yes	Yes
Cuba	1	Yes	No	Saint Vincent & the Grenadines	1	No	No
Curacao (NLD)	1	Yes	No	Sint Eustatius (NLD)	N/A	N/A	N/A
El Salvador	1	No	No	Sint Maarten (NLD)	N/A	N/A	N/A
Guadeloupe (FRA)	N/A	N/A	N/A	Trinidad and Tobago	1	Yes	No
Grenada	1	No	No	Turks and Caicos Islands (BGR)	N/A	N/A	N/A
Guatemala	1	No	No	United States	30	Yes	Yes

Note 1: The States and Territories which will be included in the ASBU B0 Implementation Status Report should be discussed and agreed upon.

Note 2: Contents highlighted in “pink” indicate information which needs to be verified or submitted.

Note 3: Contents highlighted in “green” indicate information is verified and/or submitted.

Note 4: It is recommended that all States and Territories (if applicable) have a State ANP that is aligned with NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP) and GANP.

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APPENDIX D

The analysis and implementation workflow of ASBU Elements is depicted in the Figure D below.

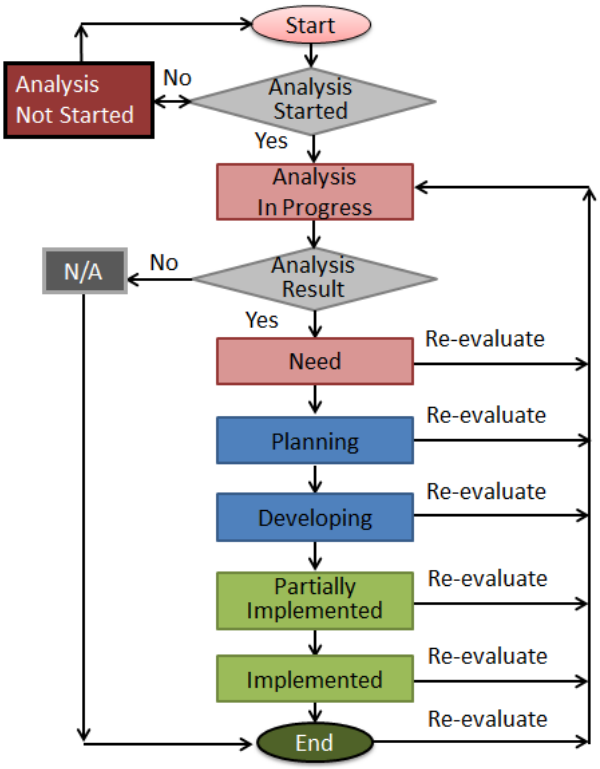

Figure D: Analysis and Implementation Workflow

The significance of each step in the workflow is as follows: Note that the status definitions are written from the Regional view (i.e., NACC) consisting multiple States. From the State view (i.e., United State of America), the exact same definitions are applicable, however only the State determines its own status.

- Analysis Not Started – The requirement to implement this ASBU Element has not yet been assessed by any State in the Region
- Analysis In Progress – A Need Analysis as to whether or not this ASBU Element is required is in progress by at least one State in the Region
- N/A – The Region has decided not to implement this ASBU Element
- Need - One or more States in the Region have determined the ASBU Element is required, but none have begun planning for the implementation
- Planning – Implementation of this ASBU Element is planned, but not started
- Developing – Implementation of this ASBU Element is in the development phase, but not yet operational
- Partially Implemented – Implementation of this ASBU Element is partially completed and/or operational in at least one area of the Region
- Implemented - Implementation of this ASBU Element has been completed and/or is fully operational in all areas of the Region where the need was identified

Table D is a summary of the ICAO NACC Block 0 Implementation Status. As of April 21, a total of nine (9) States and Territories submitted their ANRFs among 22 NACC States and Territories. APPENDIX E shows the results of these reports.

Assumptions 1: For States who have not submitted their ANRFs yet, all implementation status were recorded as Need Analysis "Not Started".

Assumptions 2: Numbers of aerodromes needs to be verified.

Table D: ICAO NACC Block 0 Implementation Status Summary Table (as of Apr 21, 2017)

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
Performance Improvement Area 1: Airport Operations									
ACDM	1. Interconnection between aircraft operator & ANSP systems to share surface operations information	17		1		2	20	2	31
	2. Interconnection between aircraft operator & airport operator systems to share surface operations information	17		1		2	20	32	1
	3. Interconnection between airport operator & ANSP systems to share surface operations information	17		1		2	20	2	31
	4. Interconnection between airport operator, aircraft operator & ANSP systems to share surface operations information	17		1		2	20	2	31
	5. Collaborative departure queue management	19			2	22			30
APTA	1. PBN approach procedures with vertical guidance to LNAV/VNAV minima	15			1		3	20	34
	2. PBN approach procedures with vertical guidance to LPV minima	15			1		3	20	34
	3. PBN approach procedures without vertical guidance to LNAV minima	16				1		22	34
	4. GBAS Landing System (GLS) procedures to CAT I minima	15	21		3	1	2		31
RSEQ	1. AMAN via controlled time of arrival to a reference fix	18			5		20		30
	2. Departure management	18			5	20		30	
	3. Departure flow management	18	20		5		30		
	4. Point merge	18			55				
SURF	1. A-SMGCS with at least one cooperative surface surveillance system	18			4			21	30
	2. ADS-B APT	18			4			21	30
	3. A-SMGCS alerting with flight identification information	18			5			20	30
	4. EVS for taxi operations	38			35				
	5. Airport vehicles equipped with transponders	18			5				50
WAKE	1. New PANS-ATM wake turbulence categories and separation minima	37			36				
	2. Dependent diagonal paired approach procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	38			5				30
	3. Wake independent departure and arrival operations (WIDAO) for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	38			5			30	
	4. Wake turbulence mitigation for departures (WTMD) procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart based on observed crosswinds	38			5				30
	5. 6 wake turbulence categories and separation minima	38	1		4				30
Performance Improvement Area 2: Globally Interoperable Systems and Data									
AMET	1. WAFS	14							8
	2. IAVW	14			1				7
	3. TCAC forecasts	14							8
	4. Aerodrome warnings	17					2	21	33

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
	5. Wind shear warnings and alerts	18					2	21	32
	6. SIGMET	14			2				6
	7. Other OPMET information (METAR, SPECI and/or TAF)	17							56
	8. QMS for MET	14						1	7
DATM	1. Standardized Aeronautical Information Exchange Model (AIXM)	14				2	2		4
	2. eAIP	13					2	1	6
	3. Digital NOTAM	14	1			2	3		2
	4. eTOD	16	1			1	3	20	32
	5. WGS-84	13				1			8
	6. QMS for AIM	13					2		7
FICE	1. AIDC to provide initial flight data to adjacent ATSUs	14	1	1	1	1	2	1	1
	2. AIDC to update previously coordinated flight data	14	1	1	1	2	2		1
	3. AIDC for control transfer	14	1	1	1	2	2		1
	4. AIDC to transfer CPDLC logon information to the Next Data Authority	14			4	2	1	1	
Performance Improvement Area 3: Optimum Capacity and Flexible Flights									
ACAS	1. ACAS II (TCAS version 7.1)	15			2		2	2	1
	2. APFD function	14			6		1	1	
	3. TCAP function	14			7			1	
ASEP	1. ATSA-AIRB	16			5				1
	2. ATSA-VSA	17			4				1
ASUR	1. ADS-B	13			1	4	1		3
	2. Multilateration (MLAT)	14			3	2		2	1
FRTO	1. CDM incorporated into airspace planning	14			1	1	1	1	4
	2. Flexible Use of Airspace (FUA)	14			2	1	2		3
	3. Flexible routing	14	1		2		1	1	3
	4: CPDLC used to request and receive re-route clearances	14			2	1	2		3
NOPS	1. Sharing prediction of traffic load for next day	13	1				5	1	2
	2. Proposing alternative routings to avoid or minimize ATFM delays	13	1				5	1	2
OPFL	1. ITP using ADS-B	16			5				1
SNET	1. Short Term Conflict Alert implementation (STCA)	14			1				7
	2. Area Proximity Warning (APW)	14			1				7
	3. Minimum Safe Altitude Warning (MSAW)	14			1				7
	4. Medium Term Conflict Alert (MTCA)	14			1				7
Performance Improvement Area 4: Efficient Flight Paths									
CCO	1. Procedure changes to facilitate CCO	15			1		3	21	33
	2. Airspace changes to facilitate CCO	15	20		2		3	1	32
	3. PBN SIDs	15					3	22	33
CDO	1. Procedure changes to facilitate CDO	15			1		3	21	33
	2. Airspace changes to facilitate CDO	15	20		1		3	1	33
	3. PBN STARs	15	1				2	22	33
TBO	1. ADS-C over oceanic and remote areas	16			1				5
	2. CPDLC over continental areas	15			2	1	1		3
	3. CPDLC over oceanic and remote areas	15			2		1		4

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APPENDIX E

As of April 21, 2017, a total of nine (9) NACC States and Territories submitted their ANRFs. Tables for their Block 0 Implementation Status is provided below:

Table E1: Antigua and Barbuda ASBU Block 0 Implementation Status Summaries
Table E2: Canada ASBU Block 0 Implementation Status Summaries
Table E3: Costa Rica ASBU Block 0 Implementation Status Summaries
Table E4: Cuba ASBU Block 0 Implementation Status Summaries
Table E5: Curacao ASBU Block 0 Implementation Status Summaries
Table E6: Republica Dominicana ASBU Block 0 Implementation Status Summaries
Table E7: Saint Lucia ASBU Block 0 Implementation Status Summaries
Table E8: Trinidad and Tobago ASBU Block 0 Implementation Status Summaries
Table E9: United States of America ASBU Block 0 Implementation Status Summaries

Note 1: In the case of missing information, the status of Element implementation was recorded as Need Analysis "Not Started".
Note 2: Some ASBU Elements changed in the 5th edition of GANP and the tables are formatted for the most recent edition. However, some data was sent in the 4th edition format. Information on Elements such as ACDM-E1, -E2, -E3, -E4; APTA-E1, E2 and SURF-E4, needs to be verified by each State and Territory.

Table E1: Antigua and Barbuda ASBU Block 0 Implementation Status Summaries (as of October 2016)

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
Performance Improvement Area 1: Airport Operations									
ACDM	1. Interconnection between aircraft operator & ANSP systems to share surface operations information								√
	2. Interconnection between aircraft operator & airport operator systems to share surface operations information								√
	3. Interconnection between airport operator & ANSP systems to share surface operations information								√
	4. Interconnection between airport operator, aircraft operator & ANSP systems to share surface operations information								√
	5. Collaborative departure queue management				√				
APTA	1. PBN approach procedures with vertical guidance to LNAV/VNAV minima				√				
	2. PBN approach procedures with vertical guidance to LPV minima				√				
	3. PBN approach procedures without vertical guidance to LNAV minima							√	
	4. GBAS Landing System (GLS) procedures to CAT I minima				√				
RSEQ	1. AMAN via controlled time of arrival to a reference fix	√							
	2. Departure management	√							
	3. Departure flow management	√							
	4. Point merge	√							
SURF	1. A-SMGCS with at least one cooperative surface surveillance system	√							
	2. ADS-B APT	√							

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
	3. A-SMGCS alerting with flight identification information	√							
	4. EVS for taxi operations				√				
	5. Airport vehicles equipped with transponders	√							
WAKE	1. New PANS-ATM wake turbulence categories and separation minima				√				
	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 operations (WIDAO) for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	√							
	4. Wake turbulence mitigation for departures (WTMD) procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart based on observed crosswinds	√							
	5. 6 wake turbulence categories and separation minima	√							
Performance Improvement Area 2: Globally Interoperable Systems and Data									
AMET	1. WAFS								√
	2. IAVW								√
	3. TCAC forecasts								√
	4. Aerodrome warnings						√		
	5. Wind shear warnings and alerts						√		
	6. SIGMET				√				
	7. Other OPMET information (METAR, SPECI and/or TAF)								√
	8. QMS for MET								√
DATM	1. Standardized Aeronautical Information Exchange Model (AIXM)					√			
	2. eAIP								√
	3. Digital NOTAM						√		
	4. eTOD					√			
	5. WGS-84								√
	6. QMS for AIM								√
FICE	1. AIDC to provide initial flight data to adjacent ATSUs	√							
	2. AIDC to update previously coordinated flight data	√							
	3. AIDC for control transfer	√							
	4. AIDC to transfer CPDLC logon information to the Next Data Authority	√							
Performance Improvement Area 3: Optimum Capacity and Flexible Flights									
ACAS	1. ACAS II (TCAS version 7.1)						√		
	2. APFD function				√				
	3. TCAP function				√				
ASEP	1. ATSA-AIRB	√							
	2. ATSA-VSA	√							
ASUR	1. ADS-B					√			
	2. Multilateration (MLAT)				√				
FRTO	1. CDM incorporated into airspace planning					√			
	2. Flexible Use of Airspace (FUA)				√				
	3. Flexible routing				√				
	4: CPDLC used to request and receive re-route clearances				√				
NOPS	1. Sharing prediction of traffic load for next day						√		
	2. Proposing alternative routings to avoid or minimize ATFM delays						√		

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
OPFL	1. ITP using ADS-B	√							
SNET	1. Short Term Conflict Alert implementation (STCA)				√				
	2. Area Proximity Warning (APW)				√				
	3. Minimum Safe Altitude Warning (MSAW)				√				
	4. Medium Term Conflict Alert (MTCA)				√				
Performance Improvement Area 4: Efficient Flight Paths									
CCO	1. Procedure changes to facilitate CCO						√		
	2. Airspace changes to facilitate CCO						√		
	3. PBN SIDs						√		
CDO	1. Procedure changes to facilitate CDO						√		
	2. Airspace changes to facilitate CDO						√		
	3. PBN STARs						√		
TBO	1. ADS-C over oceanic and remote areas	√							
	2. CPDLC over continental areas	√							
	3. CPDLC over oceanic and remote areas	√							
	Total (68)	**22**	**0**	**0**	**17**	**4**	**12**	**1**	**12**

Table E2: Canada ASBU Block 0 Implementation Status Summaries (as of January 2017)

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
Performance Improvement Area 1: Airport Operations									
ACDM	1. Interconnection between aircraft operator & ANSP systems to share surface operations information						√		
	2. Interconnection between aircraft operator & airport operator systems to share surface operations information						√		
	3. Interconnection between airport operator & ANSP systems to share surface operations information						√		
	4. Interconnection between airport operator, aircraft operator & ANSP systems to share surface operations information						√		
	5. Collaborative departure queue management					√			
APTA	1. PBN approach procedures with vertical guidance to LNAV/VNAV minima							√	
	2. PBN approach procedures with vertical guidance to LPV minima							√	
	3. PBN approach procedures without vertical guidance to LNAV minima							√	
	4. GBAS Landing System (GLS) procedures to CAT I minima		√						
RSEQ	1. AMAN via controlled time of arrival to a reference fix						√		
	2. Departure management					√			
	3. Departure flow management		√						
	4. Point merge				√				
SURF	1. A-SMGCS with at least one cooperative surface surveillance system							√	
	2. ADS-B APT							√	

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
	3. A-SMGCS alerting with flight identification information							√	
	4. EVS for taxi operations	√							
	5. Airport vehicles equipped with transponders								√
WAKE	1. New PANS-ATM wake turbulence categories and separation minima	√							
	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 operations (WIDAO) for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	√							
	4. Wake turbulence mitigation for departures (WTMD) procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart based on observed crosswinds	√							
	5. 6 wake turbulence categories and separation minima	√							
Performance Improvement Area 2: Globally Interoperable Systems and Data									
AMET	1. WAFS								√
	2. IAVW								√
	3. TCAC forecasts								√
	4. Aerodrome warnings							√	
	5. Wind shear warnings and alerts							√	
	6. SIGMET								√
	7. Other OPMET information (METAR, SPECI and/or TAF)								√
	8. QMS for MET								√
DATM	1. Standardized Aeronautical Information Exchange Model (AIXM)					√			
	2. eAIP						√		
	3. Digital NOTAM		√						
	4. eTOD							√	
	5. WGS-84					√			
	6. QMS for AIM								√
FICE	1. AIDC to provide initial flight data to adjacent ATSUs			√					
	2. AIDC to update previously coordinated flight data			√					
	3. AIDC for control transfer			√					
	4. AIDC to transfer CPDLC logon information to the Next Data Authority							√	
Performance Improvement Area 3: Optimum Capacity and Flexible Flights									
ACAS	1. ACAS II (TCAS version 7.1)								√
	2. APFD function				√				
	3. TCAP function				√				
ASEP	1. ATSA-AIRB				√				
	2. ATSA-VSA	√							
ASUR	1. ADS-B								√
	2. Multilateration (MLAT)							√	
FRTO	1. CDM incorporated into airspace planning								√
	2. Flexible Use of Airspace (FUA)								√
	3. Flexible routing								√
	4: CPDLC used to request and receive re-route clearances						√		
NOPS	1. Sharing prediction of traffic load for next day								√
	2. Proposing alternative routings to avoid or minimize ATFM delays								√

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
OPFL	1. ITP using ADS-B				√				
SNET	1. Short Term Conflict Alert implementation (STCA)								√
	2. Area Proximity Warning (APW)								√
	3. Minimum Safe Altitude Warning (MSAW)								√
	4. Medium Term Conflict Alert (MTCA)								√
Performance Improvement Area 4: Efficient Flight Paths									
CCO	1. Procedure changes to facilitate CCO							√	
	2. Airspace changes to facilitate CCO		√						
	3. PBN SIDs							√	
CDO	1. Procedure changes to facilitate CDO							√	
	2. Airspace changes to facilitate CDO		√						
	3. PBN STARs							√	
TBO	1. ADS-C over oceanic and remote areas								√
	2. CPDLC over continental areas								√
	3. CPDLC over oceanic and remote areas								√
	Total (68)	**7**	**5**	**3**	**5**	**4**	**7**	**15**	**22**

Table E3: Costa Rica ASBU Block 0 Implementation Status Summaries (as of March 2017)

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
Performance Improvement Area 1: Airport Operations									
ACDM	1. Interconnection between aircraft operator & ANSP systems to share surface operations information							√	
	2. Interconnection between aircraft operator & airport operator systems to share surface operations information							√	
	3. Interconnection between airport operator & ANSP systems to share surface operations information							√	
	4. Interconnection between airport operator, aircraft operator & ANSP systems to share surface operations information							√	
	5. Collaborative departure queue management	√							
APTA	1. PBN approach procedures with vertical guidance to LNAV/VNAV minima								√
	2. PBN approach procedures with vertical guidance to LPV minima								√
	3. PBN approach procedures without vertical guidance to LNAV minima								√
	4. GBAS Landing System (GLS) procedures to CAT I minima								√
RSEQ	1. AMAN via controlled time of arrival to a reference fix				√				
	2. Departure management				√				
	3. Departure flow management				√				
	4. Point merge				√				
SURF	1. A-SMGCS with at least one cooperative surface surveillance system				√				
	2. ADS-B APT				√				

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
	3. A-SMGCS alerting with flight identification information				√				
	4. EVS for taxi operations				√				
	5. Airport vehicles equipped with transponders				√				
WAKE	1. New PANS-ATM wake turbulence categories and separation minima				√				
	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 operations (WIDAO) for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart				√				
	4. Wake turbulence mitigation for departures (WTMD) procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart based on observed crosswinds				√				
	5. 6 wake turbulence categories and separation minima				√				
Performance Improvement Area 2: Globally Interoperable Systems and Data									
AMET	1. WAFS								√
	2. IAVW								√
	3. TCAC forecasts								√
	4. Aerodrome warnings								√
	5. Wind shear warnings and alerts	√							
	6. SIGMET								√
	7. Other OPMET information (METAR, SPECI and/or TAF)								√
	8. QMS for MET								√
DATM	1. Standardized Aeronautical Information Exchange Model (AIXM)								√
	2. eAIP								√
	3. Digital NOTAM								√
	4. eTOD								√
	5. WGS-84								√
	6. QMS for AIM								√
FICE	1. AIDC to provide initial flight data to adjacent ATSUs		√						
	2. AIDC to update previously coordinated flight data		√						
	3. AIDC for control transfer		√						
	4. AIDC to transfer CPDLC logon information to the Next Data Authority				√				
Performance Improvement Area 3: Optimum Capacity and Flexible Flights									
ACAS	1. ACAS II (TCAS version 7.1)				√				
	2. APFD function				√				
	3. TCAP function				√				
ASEP	1. ATSA-AIRB				√				
	2. ATSA-VSA				√				
ASUR	1. ADS-B				√				
	2. Multilateration (MLAT)				√				
FRTO	1. CDM incorporated into airspace planning	√							
	2. Flexible Use of Airspace (FUA)	√							
	3. Flexible routing	√							
	4: CPDLC used to request and receive re-route clearances	√							
NOPS	1. Sharing prediction of traffic load for next day		√						
	2. Proposing alternative routings to avoid or minimize ATFM delays		√						

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
OPFL	1. ITP using ADS-B				√				
SNET	1. Short Term Conflict Alert implementation (STCA)								√
	2. Area Proximity Warning (APW)								√
	3. Minimum Safe Altitude Warning (MSAW)								√
	4. Medium Term Conflict Alert (MTCA)								√
Performance Improvement Area 4: Efficient Flight Paths									
CCO	1. Procedure changes to facilitate CCO								√
	2. Airspace changes to facilitate CCO				√				
	3. PBN SIDs								√
CDO	1. Procedure changes to facilitate CDO								√
	2. Airspace changes to facilitate CDO								√
	3. PBN STARs		√						
TBO	1. ADS-C over oceanic and remote areas								√
	2. CPDLC over continental areas								√
	3. CPDLC over oceanic and remote areas								√
	Total (68)	**6**	**6**	**0**	**24**	**0**	**0**	**4**	**28**

Table E4: Cuba ASBU Block 0 Implementation Status Summaries (as of Nov 2016)

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
Performance Improvement Area 1: Airport Operations									
ACDM	1. Interconnection between aircraft operator & ANSP systems to share surface operations information					√			
	2. Interconnection between aircraft operator & airport operator systems to share surface operations information					√			
	3. Interconnection between airport operator & ANSP systems to share surface operations information					√			
	4. Interconnection between airport operator, aircraft operator & ANSP systems to share surface operations information					√			
	5. Collaborative departure queue management					√			
APTA	1. PBN approach procedures with vertical guidance to LNAV/VNAV minima								√
	2. PBN approach procedures with vertical guidance to LPV minima								√
	3. PBN approach procedures without vertical guidance to LNAV minima					√			
	4. GBAS Landing System (GLS) procedures to CAT I minima					√			
RSEQ	1. AMAN via controlled time of arrival to a reference fix				√				
	2. Departure management				√				
	3. Departure flow management				√				
	4. Point merge				√				
SURF	1. A-SMGCS with at least one cooperative surface surveillance system							√	
	2. ADS-B APT							√	
	3. A-SMGCS alerting with flight identification information					√			
	4. EVS for taxi operations	√							
	5. Airport vehicles equipped with transponders					√			
WAKE	1. New PANS-ATM wake turbulence categories and separation minima				√				
	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 operations (WIDAO) for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart				√				
	4. Wake turbulence mitigation for departures (WTMD) procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart based on observed crosswinds				√				
	5. 6 wake turbulence categories and separation minima				√				
Performance Improvement Area 2: Globally Interoperable Systems and Data									
AMET	1. WAFS								√
	2. IAVW								√
	3. TCAC forecasts								√
	4. Aerodrome warnings								√
	5. Wind shear warnings and alerts								√
	6. SIGMET								√
	7. Other OPMET information (METAR, SPECI and/or TAF)								√
	8. QMS for MET								√
DATM	1. Standardized Aeronautical Information Exchange Model (AIXM)								√
	2. eAIP							√	
	3. Digital NOTAM					√			

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
	4. eTOD						√		
	5. WGS-84								√
	6. QMS for AIM								√
FICE	1. AIDC to provide initial flight data to adjacent ATSUs							√	
	2. AIDC to update previously coordinated flight data					√			
	3. AIDC for control transfer					√			
	4. AIDC to transfer CPDLC logon information to the Next Data Authority				√				
Performance Improvement Area 3: Optimum Capacity and Flexible Flights									
ACAS	1. ACAS II (TCAS version 7.1)							√	
	2. APFD function							√	
	3. TCAP function							√	
ASEP	1. ATSA-AIRB				√				
	2. ATSA-VSA				√				
ASUR	1. ADS-B								√
	2. Multilateration (MLAT)							√	
FRTO	1. CDM incorporated into airspace planning								√
	2. Flexible Use of Airspace (FUA)								√
	3. Flexible routing						√		
	4: CPDLC used to request and receive re-route clearances								√
NOPS	1. Sharing prediction of traffic load for next day						√		
	2. Proposing alternative routings to avoid or minimize ATFM delays						√		
OPFL	1. ITP using ADS-B				√				
SNET	1. Short Term Conflict Alert implementation (STCA)								√
	2. Area Proximity Warning (APW)								√
	3. Minimum Safe Altitude Warning (MSAW)								√
	4. Medium Term Conflict Alert (MTCA)								√
Performance Improvement Area 4: Efficient Flight Paths									
CCO	1. Procedure changes to facilitate CCO							√	
	2. Airspace changes to facilitate CCO							√	
	3. PBN SIDs							√	
CDO	1. Procedure changes to facilitate CDO							√	
	2. Airspace changes to facilitate CDO							√	
	3. PBN STARs							√	
TBO	1. ADS-C over oceanic and remote areas								√
	2. CPDLC over continental areas				√				
	3. CPDLC over oceanic and remote areas				√				
	Total (68)	**1**	**0**	**0**	**15**	**12**	**4**	**14**	**22**

Table E5: Curacao ASBU Block 0 Implementation Status Summaries (as of January 2017)

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
Performance Improvement Area 1: Airport Operations									
ACDM	1. Interconnection between aircraft operator & ANSP systems to share surface operations information			√					
	2. Interconnection between aircraft operator & airport operator systems to share surface operations information			√					
	3. Interconnection between airport operator & ANSP systems to share surface operations information			√					
	4. Interconnection between airport operator, aircraft operator & ANSP systems to share surface operations information			√					
	5. Collaborative departure queue management	√							
APTA	1. PBN approach procedures with vertical guidance to LNAV/VNAV minima								√
	2. PBN approach procedures with vertical guidance to LPV minima								√
	3. PBN approach procedures without vertical guidance to LNAV minima	√							
	4. GBAS Landing System (GLS) procedures to CAT I minima				√				
RSEQ	1. AMAN via controlled time of arrival to a reference fix				√				
	2. Departure management				√				
	3. Departure flow management				√				
	4. Point merge				√				
SURF	1. A-SMGCS with at least one cooperative surface surveillance system				√				
	2. ADS-B APT				√				
	3. A-SMGCS alerting with flight identification information				√				
	4. EVS for taxi operations				√				
	5. Airport vehicles equipped with transponders				√				
WAKE	1. New PANS-ATM wake turbulence categories and separation minima				√				
	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 operations (WIDAO) for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart				√				
	4. Wake turbulence mitigation for departures (WTMD) procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart based on observed crosswinds				√				
	5. 6 wake turbulence categories and separation minima		√						
Performance Improvement Area 2: Globally Interoperable Systems and Data									
AMET	1. WAFS								√
	2. IAVW								√
	3. TCAC forecasts								√
	4. Aerodrome warnings								√
	5. Wind shear warnings and alerts								√
	6. SIGMET								√
	7. Other OPMET information (METAR, SPECI and/or TAF)								√
	8. QMS for MET								√
DATM	1. Standardized Aeronautical Information Exchange Model (AIXM)								√
	2. eAIP								√
	3. Digital NOTAM					√			

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
	4. eTOD		√						
	5. WGS-84								√
	6. QMS for AIM						√		
FICE	1. AIDC to provide initial flight data to adjacent ATSUs					√			
	2. AIDC to update previously coordinated flight data					√			
	3. AIDC for control transfer					√			
	4. AIDC to transfer CPDLC logon information to the Next Data Authority					√			
Performance Improvement Area 3: Optimum Capacity and Flexible Flights									
ACAS	1. ACAS II (TCAS version 7.1)						√		
	2. APFD function						√		
	3. TCAP function				√				
ASEP	1. ATSA-AIRB				√				
	2. ATSA-VSA				√				
ASUR	1. ADS-B					√			
	2. Multilateration (MLAT)					√			
FRTO	1. CDM incorporated into airspace planning						√		
	2. Flexible Use of Airspace (FUA)						√		
	3. Flexible routing		√						
	4: CPDLC used to request and receive re-route clearances					√			
NOPS	1. Sharing prediction of traffic load for next day						√		
	2. Proposing alternative routings to avoid or minimize ATFM delays						√		
OPFL	1. ITP using ADS-B				√				
SNET	1. Short Term Conflict Alert implementation (STCA)								√
	2. Area Proximity Warning (APW)								√
	3. Minimum Safe Altitude Warning (MSAW)								√
	4. Medium Term Conflict Alert (MTCA)								√
Performance Improvement Area 4: Efficient Flight Paths									
CCO	1. Procedure changes to facilitate CCO						√		
	2. Airspace changes to facilitate CCO						√		
	3. PBN SIDs							√	
CDO	1. Procedure changes to facilitate CDO						√		
	2. Airspace changes to facilitate CDO						√		
	3. PBN STARs							√	
TBO	1. ADS-C over oceanic and remote areas	√							
	2. CPDLC over continental areas						√		
	3. CPDLC over oceanic and remote areas						√		
	Total (68)	**3**	**3**	**4**	**18**	**8**	**13**	**2**	**17**

Table E6: Republica Dominicana ASBU Block 0 Implementation Status Summaries (as of Nov 1, 2016)

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
Performance Improvement Area 1: Airport Operations									
ACDM	1. Interconnection between aircraft operator & ANSP systems to share surface operations information	√							
	2. Interconnection between aircraft operator & airport operator systems to share surface operations information	√							
	3. Interconnection between airport operator & ANSP systems to share surface operations information	√							
	4. Interconnection between airport operator, aircraft operator & ANSP systems to share surface operations information	√							
	5. Collaborative departure queue management	√							
APTA	1. PBN approach procedures with vertical guidance to LNAV/VNAV minima						√		
	2. PBN approach procedures with vertical guidance to LPV minima						√		
	3. PBN approach procedures without vertical guidance to LNAV minima								√
	4. GBAS Landing System (GLS) procedures to CAT I minima						√		
RSEQ	1. AMAN via controlled time of arrival to a reference fix	√							
	2. Departure management	√							
	3. Departure flow management	√							
	4. Point merge	√							
SURF	1. A-SMGCS with at least one cooperative surface surveillance system	√							
	2. ADS-B APT	√							
	3. A-SMGCS alerting with flight identification information	√							
	4. EVS for taxi operations	√							
	5. Airport vehicles equipped with transponders	√							
WAKE	1. New PANS-ATM wake turbulence categories and separation minima	√							
	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 operations (WIDAO) for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	√							
	4. Wake turbulence mitigation for departures (WTMD) procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart based on observed crosswinds	√							
	5. 6 wake turbulence categories and separation minima	√							
Performance Improvement Area 2: Globally Interoperable Systems and Data									
AMET	1. WAFS	√							
	2. IAVW	√							
	3. TCAC forecasts	√							
	4. Aerodrome warnings	√							
	5. Wind shear warnings and alerts	√							
	6. SIGMET	√							
	7. Other OPMET information (METAR, SPECI and/or TAF)	√							
	8. QMS for MET	√							
DATM	1. Standardized Aeronautical Information Exchange Model (AIXM)						√		
	2. eAIP						√		
	3. Digital NOTAM						√		

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
	4. eTOD						√		
	5. WGS-84								√
	6. QMS for AIM								√
FICE	1. AIDC to provide initial flight data to adjacent ATSUs						√		
	2. AIDC to update previously coordinated flight data						√		
	3. AIDC for control transfer						√		
	4. AIDC to transfer CPDLC logon information to the Next Data Authority				√				
Performance Improvement Area 3: Optimum Capacity and Flexible Flights									
ACAS	1. ACAS II (TCAS version 7.1)	√							
	2. APFD function	√							
	3. TCAP function	√							
ASEP	1. ATSA-AIRB	√							
	2. ATSA-VSA	√							
ASUR	1. ADS-B						√		
	2. Multilateration (MLAT)	√							
FRTO	1. CDM incorporated into airspace planning								√
	2. Flexible Use of Airspace (FUA)						√		
	3. Flexible routing								√
	4: CPDLC used to request and receive re-route clearances						√		
NOPS	1. Sharing prediction of traffic load for next day						√		
	2. Proposing alternative routings to avoid or minimize ATFM delays						√		
OPFL	1. ITP using ADS-B	√							
SNET	1. Short Term Conflict Alert implementation (STCA)								√
	2. Area Proximity Warning (APW)								√
	3. Minimum Safe Altitude Warning (MSAW)								√
	4. Medium Term Conflict Alert (MTCA)								√
Performance Improvement Area 4: Efficient Flight Paths									
CCO	1. Procedure changes to facilitate CCO								√
	2. Airspace changes to facilitate CCO								√
	3. PBN SIDs								√
CDO	1. Procedure changes to facilitate CDO								√
	2. Airspace changes to facilitate CDO								√
	3. PBN STARs								√
TBO	1. ADS-C over oceanic and remote areas	√							
	2. CPDLC over continental areas	√							
	3. CPDLC over oceanic and remote areas	√							
	Total (68)	**37**	**0**	**0**	**1**	**0**	**15**	**0**	**15**

Table E7: Saint Lucia ASBU Block 0 Implementation Status Summaries (as of Dec 5, 2016)

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
Performance Improvement Area 1: Airport Operations									
ACDM	1. Interconnection between aircraft operator & ANSP systems to share surface operations information					√			
	2. Interconnection between aircraft operator & airport operator systems to share surface operations information					√			
	3. Interconnection between airport operator & ANSP systems to share surface operations information					√			
	4. Interconnection between airport operator, aircraft operator & ANSP systems to share surface operations information					√			
	5. Collaborative departure queue management					√			
APTA	1. PBN approach procedures with vertical guidance to LNAV/VNAV minima								√
	2. PBN approach procedures with vertical guidance to LPV minima								√
	3. PBN approach procedures without vertical guidance to LNAV minima								√
	4. GBAS Landing System (GLS) procedures to CAT I minima		√						
RSEQ	1. AMAN via controlled time of arrival to a reference fix				√				
	2. Departure management				√				
	3. Departure flow management				√				
	4. Point merge				√				
SURF	1. A-SMGCS with at least one cooperative surface surveillance system				√				
	2. ADS-B APT				√				
	3. A-SMGCS alerting with flight identification information				√				
	4. EVS for taxi operations				√				
	5. Airport vehicles equipped with transponders				√				
WAKE	1. New PANS-ATM wake turbulence categories and separation minima				√				
	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 operations (WIDAO) for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart				√				
	4. Wake turbulence mitigation for departures (WTMD) procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart based on observed crosswinds				√				
	5. 6 wake turbulence categories and separation minima				√				
Performance Improvement Area 2: Globally Interoperable Systems and Data									
AMET	1. WAFS								√
	2. IAVW				√				
	3. TCAC forecasts								√
	4. Aerodrome warnings							√	
	5. Wind shear warnings and alerts							√	
	6. SIGMET				√				
	7. Other OPMET information (METAR, SPECI and/or TAF)								√
	8. QMS for MET							√	
DATM	1. Standardized Aeronautical Information Exchange Model (AIXM)	√							
	2. eAIP								√
	3. Digital NOTAM	√							

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
	4. eTOD	√							
	5. WGS-84								√
	6. QMS for AIM						√		
FICE	1. AIDC to provide initial flight data to adjacent ATSUs				√				
	2. AIDC to update previously coordinated flight data				√				
	3. AIDC for control transfer				√				
	4. AIDC to transfer CPDLC logon information to the Next Data Authority				√				
Performance Improvement Area 3: Optimum Capacity and Flexible Flights									
ACAS	1. ACAS II (TCAS version 7.1)	√							
	2. APFD function				√				
	3. TCAP function				√				
ASEP	1. ATSA-AIRB				√				
	2. ATSA-VSA				√				
ASUR	1. ADS-B					√			
	2. Multilateration (MLAT)				√				
FRTO	1. CDM incorporated into airspace planning				√				
	2. Flexible Use of Airspace (FUA)				√				
	3. Flexible routing				√				
	4: CPDLC used to request and receive re-route clearances				√				
NOPS	1. Sharing prediction of traffic load for next day						√		
	2. Proposing alternative routings to avoid or minimize ATFM delays						√		
OPFL	1. ITP using ADS-B				√				
SNET	1. Short Term Conflict Alert implementation (STCA)	√							
	2. Area Proximity Warning (APW)	√							
	3. Minimum Safe Altitude Warning (MSAW)	√							
	4. Medium Term Conflict Alert (MTCA)	√							
Performance Improvement Area 4: Efficient Flight Paths									
CCO	1. Procedure changes to facilitate CCO				√				
	2. Airspace changes to facilitate CCO				√				
	3. PBN SIDs						√		
CDO	1. Procedure changes to facilitate CDO				√				
	2. Airspace changes to facilitate CDO				√				
	3. PBN STARs								√
TBO	1. ADS-C over oceanic and remote areas				√				
	2. CPDLC over continental areas				√				
	3. CPDLC over oceanic and remote areas				√				
	Total (68)	**8**	**1**	**0**	**37**	**6**	**4**	**3**	**9**

Table E8: Trinidad and Tobago ASBU Block 0 Implementation Status Summaries (as of November 2016)

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
Performance Improvement Area 1: Airport Operations									
ACDM	1. Interconnection between aircraft operator & ANSP systems to share surface operations information							√	
	2. Interconnection between aircraft operator & airport operator systems to share surface operations information							√	
	3. Interconnection between airport operator & ANSP systems to share surface operations information							√	
	4. Interconnection between airport operator, aircraft operator & ANSP systems to share surface operations information							√	
	5. Collaborative departure queue management				√				
APTA	1. PBN approach procedures with vertical guidance to LNAV/VNAV minima						√		
	2. PBN approach procedures with vertical guidance to LPV minima						√		
	3. PBN approach procedures without vertical guidance to LNAV minima								√
	4. GBAS Landing System (GLS) procedures to CAT I minima				√				
RSEQ	1. AMAN via controlled time of arrival to a reference fix				√				
	2. Departure management				√				
	3. Departure flow management				√				
	4. Point merge				√				
SURF	1. A-SMGCS with at least one cooperative surface surveillance system				√				
	2. ADS-B APT				√				
	3. A-SMGCS alerting with flight identification information				√				
	4. EVS for taxi operations				√				
	5. Airport vehicles equipped with transponders				√				
WAKE	1. New PANS-ATM wake turbulence categories and separation minima				√				
	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 operations (WIDAO) for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart				√				
	4. Wake turbulence mitigation for departures (WTMD) procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart based on observed crosswinds				√				
	5. 6 wake turbulence categories and separation minima				√				
Performance Improvement Area 2: Globally Interoperable Systems and Data									
AMET	1. WAFS								√
	2. IAVW								√
	3. TCAC forecasts								√
	4. Aerodrome warnings						√		
	5. Wind shear warnings and alerts						√		
	6. SIGMET								√
	7. Other OPMET information (METAR, SPECI and/or TAF)								√
	8. QMS for MET								√
DATM	1. Standardized Aeronautical Information Exchange Model (AIXM)						√		
	2. eAIP								√
	3. Digital NOTAM						√		

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
	4. eTOD								√
	5. WGS-84								√
	6. QMS for AIM								√
FICE	1. AIDC to provide initial flight data to adjacent ATSUs						√		
	2. AIDC to update previously coordinated flight data						√		
	3. AIDC for control transfer						√		
	4. AIDC to transfer CPDLC logon information to the Next Data Authority						√		
Performance Improvement Area 3: Optimum Capacity and Flexible Flights									
ACAS	1. ACAS II (TCAS version 7.1)							√	
	2. APFD function				√				
	3. TCAP function				√				
ASEP	1. ATSA-AIRB	√							
	2. ATSA-VSA	√							
ASUR	1. ADS-B					√			
	2. Multilateration (MLAT)					√			
FRTO	1. CDM incorporated into airspace planning							√	
	2. Flexible Use of Airspace (FUA)					√			
	3. Flexible routing							√	
	4: CPDLC used to request and receive re-route clearances								√
NOPS	1. Sharing prediction of traffic load for next day							√	
	2. Proposing alternative routings to avoid or minimize ATFM delays							√	
OPFL	1. ITP using ADS-B	√							
SNET	1. Short Term Conflict Alert implementation (STCA)								√
	2. Area Proximity Warning (APW)								√
	3. Minimum Safe Altitude Warning (MSAW)								√
	4. Medium Term Conflict Alert (MTCA)								√
Performance Improvement Area 4: Efficient Flight Paths									
CCO	1. Procedure changes to facilitate CCO						√		
	2. Airspace changes to facilitate CCO						√		
	3. PBN SIDs						√		
CDO	1. Procedure changes to facilitate CDO						√		
	2. Airspace changes to facilitate CDO						√		
	3. PBN STARs						√		
TBO	1. ADS-C over oceanic and remote areas								√
	2. CPDLC over continental areas								√
	3. CPDLC over oceanic and remote areas								√
	Total (68)	**3**	**0**	**0**	**18**	**3**	**16**	**9**	**19**

Table E9: United States of America ASBU Block 0 Implementation Status Summaries (as of August 2016)

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
Performance Improvement Area 1: Airport Operations									
ACDM	1. Interconnection between aircraft operator & ANSP systems to share surface operations information								30
	2. Interconnection between aircraft operator & airport operator systems to share surface operations information							30	
	3. Interconnection between airport operator & ANSP systems to share surface operations information								30
	4. Interconnection between airport operator, aircraft operator & ANSP systems to share surface operations information								30
	5. Collaborative departure queue management								30
APTA	1. PBN approach procedures with vertical guidance to LNAV/VNAV minima								30
	2. PBN approach procedures with vertical guidance to LPV minima								30
	3. PBN approach procedures without vertical guidance to LNAV minima								30
	4. GBAS Landing System (GLS) procedures to CAT I minima								30
RSEQ	1. AMAN via controlled time of arrival to a reference fix								30
	2. Departure management							30	
	3. Departure flow management						30		
	4. Point merge				30				
SURF	1. A-SMGCS with at least one cooperative surface surveillance system								30
	2. ADS-B APT								30
	3. A-SMGCS alerting with flight identification information								30
	4. EVS for taxi operations				30				
	5. Airport vehicles equipped with transponders								30
WAKE	1. New PANS-ATM wake turbulence categories and separation minima				30				
	2. Dependent diagonal paired approach procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart								30
	3. Wake independent departure and arrival operations (WIDAO) for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart							30	
	4. Wake turbulence mitigation for departures (WTMD) procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart based on observed crosswinds								30
	5. 6 wake turbulence categories and separation minima								30
Performance Improvement Area 2: Globally Interoperable Systems and Data									
AMET	1. WAFS								√
	2. IAVW								√
	3. TCAC forecasts								√
	4. Aerodrome warnings								30
	5. Wind shear warnings and alerts								30
	6. SIGMET								√
	7. Other OPMET information (METAR, SPECI and/or TAF)								30
	8. QMS for MET								√
DATM	1. Standardized Aeronautical Information Exchange Model (AIXM)								√
	2. eAIP								√
	3. Digital NOTAM								√

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
	4. eTOD								30
	5. WGS-84								√
	6. QMS for AIM								√
FICE	1. AIDC to provide initial flight data to adjacent ATSUs								√
	2. AIDC to update previously coordinated flight data								√
	3. AIDC for control transfer								√
	4. AIDC to transfer CPDLC logon information to the Next Data Authority					√			
Performance Improvement Area 3: Optimum Capacity and Flexible Flights									
ACAS	1. ACAS II (TCAS version 7.1)				√				
	2. APFD function				√				
	3. TCAP function				√				
ASEP	1. ATSA-AIRB								√
	2. ATSA-VSA								√
ASUR	1. ADS-B								√
	2. Multilateration (MLAT)								√
FRTO	1. CDM incorporated into airspace planning								√
	2. Flexible Use of Airspace (FUA)								√
	3. Flexible routing								√
	4: CPDLC used to request and receive re-route clearances								√
NOPS	1. Sharing prediction of traffic load for next day								√
	2. Proposing alternative routings to avoid or minimize ATFM delays								√
OPFL	1. ITP using ADS-B								√
SNET	1. Short Term Conflict Alert implementation (STCA)								√
	2. Area Proximity Warning (APW)								√
	3. Minimum Safe Altitude Warning (MSAW)								√
	4. Medium Term Conflict Alert (MTCA)								√
Performance Improvement Area 4: Efficient Flight Paths									
CCO	1. Procedure changes to facilitate CCO								30
	2. Airspace changes to facilitate CCO								30
	3. PBN SIDs								30
CDO	1. Procedure changes to facilitate CDO								30
	2. Airspace changes to facilitate CDO								30
	3. PBN STARs								30
TBO	1. ADS-C over oceanic and remote areas								√
	2. CPDLC over continental areas					√			
	3. CPDLC over oceanic and remote areas								√