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WORKING PAPER

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Port of Spain, Trinidad and Tobago, 22-26 May 2017

Agenda Item 3: Implementation on Air Navigation Matters

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

PROPOSED AMENDMENT OF THE RPBANIP

(Prepared by Canada and United States)

EXECUTIVE SUMMARY

This working paper presents a proposal to modify the NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP), including the Air Navigation Reporting Forms (ANRFs), both of which are used for the implementation status monitoring and reporting of the air navigation system and Aviation System Block Upgrades (ASBU) for the NACC States.

Action:	The suggested actions are presented in Section 3
<i>Strategic Objectives:</i>	<ul style="list-style-type: none">• Safety• Air Navigation Capacity and Efficiency
<i>References:</i>	<ul style="list-style-type: none">• ICAO Doc 9750 - 2016-2030 Global Air Navigation Plan (GANP)• ICAO Working Document for the Aviation System Block Upgrades (ASBU), The Framework for Global Harmonization; issued July 2016• ICAO NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP) v3.1; dated April 2014• Second NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/2), Puntarenas, Costa Rica, 1 - 4 2015, WP/14 - Proposal to modify Air Navigation Reporting Form

1. Introduction

1.1 1.1 The most recent edition of the Global Air Navigation Plan (GANP) 2016-2030 was approved by the ICAO Assembly in October 2016. In that edition, some changes were made to the ASBU Block Modules, including the timelines, streamlining the wording and clarifying module elements to make it easier for states to develop their implementation plans.

1.2 The Air Navigation Reporting Form (ANRF) has also been updated by some regions in Volume III of their Digital Regional Air Navigation Plan (e-ANPs), which is intended to organize the information clearly, allowing States to easily depict what they plan to implement and when. With this update, room is available for regional objectives to be included (refer to **Appendix A**).

2. Existing RPBANIP

2.1 The current RPBANIP includes outdated information from previous versions of the Global Air Navigation Plan (GANP), including Global Plan Initiatives (GPIs) and Aviation System Block Upgrades (ASBU) Block numbering. The wording for some of the Performance Improvement Areas (PIAs), ASBU Module codes and descriptions, are also in need of being updated to correspond with what is in the 2016 GANP. It is recommended that the ASBU Ad hoc Work Group take on the task to revise the RPBANIP to align with the 2016 version of the GANP.

2.2 **Regional Performance Objectives (RPOs)** are nicely linked to the ASBU Modules in Table 1; however, they should also be more clearly defined as objectives of the NACC States, including how they link to the Air Traffic Management (ATM) components, and how States can use this in their plan for ASBU implementation. It would be very helpful to have a table or graph showing how all the acronyms interconnect: ATM, RPOs, ASBU, PIA, etc.

2.3 **Block 0 Module Categories and Priorities** are both good information to have to help States develop their implementation plans. However, there is duplication in the two tables B-1 and B-2. It is recommended these tables be merged with an additional column to include the extra set of information (refer to Appendix B as an example).

Table B-1

Performance Improvement Areas (PIA)	Performance Improvement Area Name	Module	Module Name	Category
PIA 1	Airport Operations	B0-15 RSEQ	Improved Traffic flow through Runway Sequencing (AMAN/DMAN)	O
		B0-65 APTA	Optimization of Approach Procedures including Vertical Guidance	D

Table B-2

PIA	Module Description	Module	Priority
PIA 1	Improve Traffic Flow through Runway Sequencing (AMAN/DMAN)	B0-15 RSEQ	2
	Optimization of Approach Procedures including Vertical Guidance	B0-65 APTA	1

2.4 **Figures and tables** all should be updated to correspond with the information provided in the 2016 GANP and to depict a clearer picture of how the RPBANIP coordinates with the GANP and regional eANPs.

2.5 **Global and Regional harmonization** should be the goal for implementation plans. By having a consistent message with similar objectives depicted in the same way, it eases the burden on states when it comes to reporting the status of their implementation. Having multiple different ways to report using multiple different objectives and goals, increases the workload significantly and decreases cooperation. One form with consistent objectives, from which states can choose, should be the overall goal to increase collaboration and obtain global harmonization.

3. Suggested Actions

3.1 The Meeting is invited to:

- a) note the proposal regarding the RBPANIP amendment; and
- b) note the proposal for the ASBU Ad Hoc Group to revise and harmonize the RPBANIP with the GANP 2016-2030.

APPENDIX A

ANRFs for NACC Region reporting

Yellow highlight = suggested text to link the Regional objectives to the ANRF

[STATE] ASBU Air Navigation Reporting Form (ANRF)				
PIA	1	Block - Module	B0 - ACDM	Date Month Day, 2017
Module Description: To implement collaborative applications that will allow the sharing of surface operations data among the different stakeholders on the airport. This will improve surface traffic management reducing delays on movement and manoeuvring areas and enhance safety, efficiency and situational awareness.				
Regional Performance Objective: Improve Cap/Efficiency Aerodrome Operations				
Element Implementation Status				
1	Element Description: Interconnection between aircraft operator systems and ANSP systems to share surface operations information		Date Planned/Implemented	Status
	Status Details			
2	Element Description: Interconnection between aircraft operator and airport operator systems to share surface operations information		Date Planned/Implemented	Status
	Status Details			
3	Element Description: Interconnection between airport operator and ANSP systems to share surface operations information		Date Planned/Implemented	Status
	Status Details			
4	Element Description: Interconnection between airport operator, aircraft operator and ANSP systems to share surface operations information		Date Planned/Implemented	Status
	Status Details			
5	Element Description: Collaborative departure queue management		Date Planned/Implemented	Status
	Status Details			
Achieved Benefits				
<i>Access and Equity</i>				
<i>Capacity</i>				
<i>Efficiency</i>				
<i>Environment</i>				
<i>Safety</i>				
Implementation Challenges				
<i>Ground system Implementation</i>				

<i>Avionics Implementation</i>
<i>Procedures Availability</i>
<i>Operational Approvals</i>
Notes

[STATE] ASBU Air Navigation Reporting Form (ANRF)			
PIA	1	Block - Module	B0 - APTA
Date	Month Day, 2017		
Module Description: The use of Performance-based Navigation (PBN) and ground-based augmentation system (GBAS) landing system (GLS) procedures will enhance the reliability and predictability of approaches to runways, thus increasing safety, accessibility and efficiency. This is possible through the application of basic global navigation satellite system (GNSS), Baro-vertical navigation (VNAV), satellite-based augmentation system (SBAS) and GLS. The flexibility inherent in PBN approach design can be exploited to increase runway capacity.			
Regional Performance Objective: PBN Implementation			
Element Implementation Status			
1	Element Description: PBN approach procedures with vertical guidance to LNAV/VNAV minima	Date Planned/Implemented	Status
	Status Details		
2	Element Description: PBN approach procedures with vertical guidance to LPV minima	Date Planned/Implemented	Status
	Status Details		
3	Element Description: PBN Approach Procedures without vertical guidance to LNAV minima	Date Planned/Implemented	Status
	Status Details		
4	Element Description: GBAS Landing System (GLS) Approach procedures	Date Planned/Implemented	Status
	Status Details		
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i>			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i>			

Implementation Challenges
<i>Ground system Implementation</i>
<i>Avionics Implementation</i>
<i>Procedures Availability</i>
<i>Operational Approvals</i>
Notes

[STATE] ASBU Air Navigation Reporting Form (ANRF)			
PIA	1	Block - Module	B0 - RSEQ
Date	Month Day, 2017		
Module Description: To manage arrivals and departures (including time-based metering) to and from a multi-runway aerodrome or locations with multiple dependent runways at closely proximate aerodromes, to efficiently utilize the inherent runway capacity.			
Regional Performance Objective: Demand and Capacity Balancing (DCB); as well as ATM Situational Awareness			
Element Implementation Status			
1	Element Description: AMAN via controlled time of arrival to a reference fix	Date Planned/Implemented	Status
	Status Details		
2	Element Description: Departure management	Date Planned/Implemented	Status
	Status Details		
3	Element Description: Departure flow management	Date Planned/Implemented	Status
	Status Details		
4	Element Description: Point merge	Date Planned/Implemented	Status
	Status Details		
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i>			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i>			

Implementation Challenges
<i>Ground system Implementation</i>
<i>Avionics Implementation</i>
<i>Procedures Availability</i>
<i>Operational Approvals</i>
Notes

[STATE] ASBU Air Navigation Reporting Form (ANRF)				
PIA	1	Block - Module	B0 - SURF	Date Month Day, 2017
Module Description: First levels of advanced-surface movement guidance and control systems (A-SMGCS) provides surveillance and alerting of movements of both aircraft and vehicles at the aerodrome, thus improving runway/aerodrome safety. Automatic dependent surveillance-broadcast (ADS-B) information is used when available (ADS-B APT). Enhanced vision systems (EVS) is used for low-visibility operations.				
Regional Performance Objective: ATM Situational Awareness; as well as Improve Cap/Efficiency Aerodrome Operations				
Element Implementation Status				
1	Element Description: A-SMGCS with at least one cooperative surface surveillance system		Date Planned/Implemented	Status
	Status Details			
2	Element Description: ADS-B APT		Date Planned/Implemented	Status
	Status Details			
3	Element Description: A-SMGCS alerting with flight identification information		Date Planned/Implemented	Status
	Status Details			
4	Element Description: EVS for taxi operations		Date Planned/Implemented	Status
	Status Details			
5	Element Description: Airport vehicles equipped with transponders		Date Planned/Implemented	Status
	Status Details			
Achieved Benefits				
<i>Access and Equity</i>				
<i>Capacity</i>				

<i>Efficiency</i>
<i>Environment</i>
<i>Safety</i>
Implementation Challenges
<i>Ground system Implementation</i>
<i>Avionics Implementation</i>
<i>Procedures Availability</i>
<i>Operational Approvals</i>
Notes

[STATE] ASBU Air Navigation Reporting Form (ANRF)			
PIA	1	Block - Module	B0 - WAKE
		Date	Month Day, 2017
Module Description: Improved throughput on departure and arrival runways through optimized wake turbulence separation minima, revised aircraft wake turbulence categories and procedures.			
Regional Performance Objective: none			
Element Implementation Status			
1	Element Description: New PANS-ATM wake turbulence categories and separation minima	Date Planned/Implemented	Status
	Status Details		
2	Element Description: Dependent diagonal paired approach procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	Date Planned/Implemented	Status
	Status Details		
3	Element Description: Wake independent departure and arrival operations (WIDAO) for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	Date Planned/Implemented	Status
	Status Details		
4	Element Description: 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	Date Planned/Implemented	Status

	Status Details		
5	Element Description: 6 wake turbulence categories and separation minima	Date Planned/Implemented	Status
	Status Details		
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i>			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i>			
Implementation Challenges			
<i>Ground system Implementation</i>			
<i>Avionics Implementation</i>			
<i>Procedures Availability</i>			
<i>Operational Approvals</i>			
Notes			

[STATE] ASBU Air Navigation Reporting Form (ANRF)			
PIA	2	Block - Module	B0 - AMET
Date	Month Day, 2017		
<p>Module Description: Global, regional and local meteorological information: a) forecasts provided by world area forecast centres (WAFCs), volcanic ash advisory centres (VAACs) and tropical cyclone advisory centres (TCAC); b) aerodrome warnings to give concise information of meteorological conditions that could adversely affect all aircraft at an aerodrome, including wind shear; and c) SIGMETs to provide information on occurrence or expected occurrence of specific en-route weather phenomena which may affect the safety of aircraft operations and other operational meteorological (OPMET) information, including METAR/SPECI and TAF, to provide routine and special observations and forecasts of meteorological conditions occurring or expected to occur at the aerodrome. This information supports flexible airspace management, improved situational awareness and collaborative decision-making, and dynamically-optimized flight trajectory planning. This Module includes elements which should be viewed as a subset of all available meteorological information that can be used to support enhanced operational efficiency and safety.</p>			
Regional Performance Objective: MET			
Element Implementation Status			
1	Element Description: WAFS	Date Planned/Implemented	Status
	Status Details		
2	Element Description: IAVW	Date Planned/Implemented	Status
	Status Details		
3	Element Description: TCAC forecasts	Date Planned/Implemented	Status
	Status Details		
4	Element Description: Aerodrome warnings	Date Planned/Implemented	Status
	Status Details		
5	Element Description: Wind shear warnings and alerts	Date Planned/Implemented	Status
	Status Details		
6	Element Description: SIGMET	Date Planned/Implemented	Status
	Status Details		
7	Element Description: Other OPMET information (METAR, SPECI and/or TAF)	Date Planned/Implemented	Status
	Status Details		

8	Element Description: QMS for MET	Date Planned/Implemented	Status
	Status Details		
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i>			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i>			
Implementation Challenges			
<i>Ground system Implementation</i>			
<i>Avionics Implementation</i>			
<i>Procedures Availability</i>			
<i>Operational Approvals</i>			
Notes			

[STATE] ASBU Air Navigation Reporting Form (ANRF)					
PIA	2	Block - Module	B0 - DATM	Date	Month Day, 2017
Module Description: The initial introduction of digital processing and management of information from origination to publication through, aeronautical information service (AIS)/aeronautical information management (AIM) implementation, use of aeronautical exchange model (AIXM), migration to electronic aeronautical information publication (AIP) and better quality and availability of data.					
Regional Performance Objective: AIM					
Element Implementation Status					
1	Element Description: Standardized Aeronautical Information Exchange Model (AIXM)	Date Planned/Implemented	Status		
	Status Details				
2	Element Description: eAIP	Date Planned/Implemented	Status		
	Status Details				
3	Element Description: Digital NOTAM	Date Planned/Implemented	Status		
	Status Details				

	Status Details		
4	Element Description: eTOD	Date Planned/Implemented	Status
	Status Details		
5	Element Description: WGS-84	Date Planned/Implemented	Status
	Status Details		
6	Element Description: QMS for AIM	Date Planned/Implemented	Status
	Status Details		
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i>			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i>			
Implementation Challenges			
<i>Ground system Implementation</i>			
<i>Avionics Implementation</i>			
<i>Procedures Availability</i>			
<i>Operational Approvals</i>			
Notes			

[STATE] ASBU Air Navigation Reporting Form (ANRF)					
PIA	2	Block - Module	B0 - FICE	Date	Month Day, 2017
Module Description: To improve coordination between air traffic service units (ATSUs) by using ATS interfacility data communication (AIDC) defined by ICAO’s <i>Manual of Air Traffic Services Data Link Applications</i> (Doc 9694). An additional benefit is the improved efficiency of the transfer of communication in a data link environment.					
Regional Performance Objective: COM					
Element Implementation Status					
1	Element Description: AIDC to provide initial flight data to adjacent ATSUs	Date Planned/Implemented	Status		

	Status Details		
2	Element Description: AIDC to update previously coordinated flight data	Date Planned/Implemented	Status
	Status Details		
3	Element Description: AIDC for control transfer	Date Planned/Implemented	Status
	Status Details		
4	Element Description: AIDC to transfer CPDLC logon information to the Next Data Authority	Date Planned/Implemented	Status
	Status Details		
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i>			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i>			
Implementation Challenges			
<i>Ground system Implementation</i>			
<i>Avionics Implementation</i>			
<i>Procedures Availability</i>			
<i>Operational Approvals</i>			
Notes			

[STATE] ASBU Air Navigation Reporting Form (ANRF)					
PIA	3	Block - Module	B0 - ACAS	Date	Month Day, 2017
Module Description: To provide short-term improvements to existing airborne collision avoidance systems (ACAS) to reduce nuisance alerts while maintaining existing levels of safety. This will reduce trajectory deviations and increase safety in cases where there is a breakdown of separation.					
Regional Performance Objective: COM					
Element Implementation Status					
1	Element Description: ACAS II (TCAS version 7.1)	Date Planned/Implemented	Status		

	Status Details		
2	Element Description: APFD function	Date Planned/Implemented	Status
	Status Details		
3	Element Description: TCAP function	Date Planned/Implemented	Status
	Status Details		
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i>			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i>			
Implementation Challenges			
<i>Ground system Implementation</i>			
<i>Avionics Implementation</i>			
<i>Procedures Availability</i>			
<i>Operational Approvals</i>			
Notes			

[STATE] ASBU Air Navigation Reporting Form (ANRF)					
PIA	3	Block - Module	B0 - ASEP	Date	Month Day, 2017
Module Description: Two air traffic situational awareness (ATSA) applications which will enhance safety and efficiency by providing pilots with the means to enhance traffic situational awareness and achieve quicker visual acquisition of targets: a) AIRB (basic airborne situational awareness during flight operations). b) VSA (visual separation on approach).					
Regional Performance Objective: none					
Element Implementation Status					
1	Element Description: ATSA-AIRB	Date Planned/Implemented	Status		
	Status Details				

2	Element Description: ATSA-VSA	Date Planned/Implemented	Status
	Status Details		
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i>			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i>			
Implementation Challenges			
<i>Ground system Implementation</i>			
<i>Avionics Implementation</i>			
<i>Procedures Availability</i>			
<i>Operational Approvals</i>			
Notes			

[STATE] ASBU Air Navigation Reporting Form (ANRF)					
PIA	3	Block - Module	B0 - ASUR	Date	Month Day, 2017
Module Description: To provide initial capability for lower cost ground surveillance supported by new technologies such as ADS-B OUT and wide area multilateration (MLAT) systems. This capability will be expressed in various ATM services, e.g. traffic information, search and rescue and separation provision.					
Regional Performance Objective: ATM Situational Awareness					
Element Implementation Status					
1	Element Description: ADS-B	Date Planned/Implemented	Status		
	Status Details				
2	Element Description: Multilateration (MLAT)	Date Planned/Implemented	Status		
	Status Details				
Achieved Benefits					
<i>Access and Equity</i>					
<i>Capacity</i>					

<i>Efficiency</i>
<i>Environment</i>
<i>Safety</i>
Implementation Challenges
<i>Ground system Implementation</i>
<i>Avionics Implementation</i>
<i>Procedures Availability</i>
<i>Operational Approvals</i>
Notes

[STATE] ASBU Air Navigation Reporting Form (ANRF)			
PIA	3	Block - Module	B0 - FRTO
Date	Month Day, 2017		
Module Description: To allow the use of airspace which would otherwise be segregated (i.e. special use airspace) along with flexible routing adjusted for specific traffic patterns. This will allow greater routing possibilities, reducing potential congestion on trunk routes and busy crossing points, resulting in reduced flight lengths and fuel burn.			
Regional Performance Objective: PBN Implementation; as well as Flexible Use of Airspace			
Element Implementation Status			
1	Element Description: CDM incorporated into airspace planning	Date Planned/Implemented	Status
	Status Details		
2	Element Description: Flexible Use of Airspace (FUA)	Date Planned/Implemented	Status
	Status Details		
3	Element Description: Flexible routing	Date Planned/Implemented	Status
	Status Details		
4	Element Description: CPDLC used to request and receive re-route clearances	Date Planned/Implemented	Status
	Status Details		
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i>			

<i>Efficiency</i>
<i>Environment</i>
<i>Safety</i>
Implementation Challenges
<i>Ground system Implementation</i>
<i>Avionics Implementation</i>
<i>Procedures Availability</i>
<i>Operational Approvals</i>
Notes

[STATE] ASBU Air Navigation Reporting Form (ANRF)			
PIA	3	Block - Module	B0 - NOPS
Date	Month Day, 2017		
Module Description: Air traffic flow management (ATFM) is used to manage the flow of traffic in a way that minimizes delays and maximizes the use of the entire airspace. Collaborative ATFM can regulate traffic flows involving departure slots, smooth flows and manage rates of entry into airspace along traffic axes, manage arrival time at waypoints or flight information region (FIR)/sector boundaries and reroute traffic to avoid saturated areas. ATFM may also be used to address system disruptions including crisis caused by human or natural phenomena.			
Regional Performance Objective: Demand and Capacity Building (DCB)			
Element Implementation Status			
1	Element Description: Sharing prediction of traffic load for next day	Date Planned/Implemented	Status
	Status Details		
2	Element Description: Proposing alternative routings to avoid or minimize ATFM delays	Date Planned/Implemented	Status
	Status Details		
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i>			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i>			
Implementation Challenges			

<i>Ground system Implementation</i>
<i>Avionics Implementation</i>
<i>Procedures Availability</i>
<i>Operational Approvals</i>
Notes

[STATE] ASBU Air Navigation Reporting Form (ANRF)			
PIA	3	Block - Module	B0 - OPFL
Date	Month Day, 2016		
Module Description: To enable aircraft to reach a more satisfactory flight level for flight efficiency or to avoid turbulence for safety. The main benefit of ITP is fuel/emissions savings and the uplift of greater payloads.			
Regional Performance Objective: none			
Element Implementation Status			
1	Element Description:	Date Planned/Implemented	Status
	ITP using ADS-B		
Status Details			
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i>			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i>			
Implementation Challenges			
<i>Ground system Implementation</i>			
<i>Avionics Implementation</i>			
<i>Procedures Availability</i>			
<i>Operational Approvals</i>			
Notes			

PIA	3	Block - Module	B0 - SNET	Date	Month Day, 2017
Module Description: To enable monitoring of flights while airborne to provide timely alerts to air traffic controllers of potential risks to flight safety. Alerts from short-term conflict alert (STCA), area proximity warnings (APW) and minimum safe altitude warnings (MSAW) are proposed. Ground-based safety nets make an essential contribution to safety and remain required as long as the operational concept remains human centred.					
Regional Performance Objective: ATM Situational Awareness					
Element Implementation Status					
1	Element Description: Short Term Conflict Alert (STCA)			Date Planned/Implemented	Status
	Status Details				
2	Element Description: Area Proximity Warning (APW)			Date Planned/Implemented	Status
	Status Details				
3	Element Description: Minimum Safe Altitude Warning (MSAW)			Date Planned/Implemented	Status
	Status Details				
4	Element Description: Medium Term Conflict Alert (MTCA)			Date Planned/Implemented	Status
	Status Details				
Achieved Benefits					
<i>Access and Equity</i>					
<i>Capacity</i>					
<i>Efficiency</i>					
<i>Environment</i>					
<i>Safety</i>					
Implementation Challenges					
<i>Ground system Implementation</i>					
<i>Avionics Implementation</i>					
<i>Procedures Availability</i>					
<i>Operational Approvals</i>					
Notes					

PIA	4	Block - Module	B0 - CCO	Date	Month Day, 2017
Module Description: To implement continuous climb operations in conjunction with performance-based navigation (PBN) to provide opportunities to optimize throughput, improve flexibility, enable fuel-efficient climb profiles, and increase capacity at congested terminal areas. The application of PBN enhances CDO.					
Regional Performance Objective: PBN Implementation					
Element Implementation Status					
1	Element Description: Procedure changes to facilitate CCO			Date Planned/Implemented	Status
	Status Details				
2	Element Description: Airspace changes to facilitate CCO			Date Planned/Implemented	Status
	Status Details				
3	Element Description: PBN SIDs			Date Planned/Implemented	Status
	Status Details				
Achieved Benefits					
<i>Access and Equity</i>					
<i>Capacity</i>					
<i>Efficiency</i>					
<i>Environment</i>					
<i>Safety</i>					
Implementation Challenges					
<i>Ground system Implementation</i>					
<i>Avionics Implementation</i>					
<i>Procedures Availability</i>					
<i>Operational Approvals</i>					
Notes					

[STATE] ASBU Air Navigation Reporting Form (ANRF)					
PIA	4	Block - Module	B0 - CDO	Date	Month Day, 2017
Module Description: To use performance-based airspace and arrival procedures allowing aircraft to fly its optimum profile using continuous descent operations (CDOs). This will optimize throughput, allow fuel efficient descent profiles, and increase capacity in terminal areas. The application of PBN enhances CDO.					
Regional Performance Objective: PBN Implementation					
Element Implementation Status					

1	Element Description: Procedure changes to facilitate CDO	Date Planned/Implemented	Status
	Status Details		
2	Element Description: Airspace changes to facilitate CDO	Date Planned/Implemented	Status
	Status Details		
3	Element Description: PBN STARs	Date Planned/Implemented	Status
	Status Details		
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i>			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i>			
Implementation Challenges			
<i>Ground system Implementation</i>			
<i>Avionics Implementation</i>			
<i>Procedures Availability</i>			
<i>Operational Approvals</i>			
Notes			

[STATE] ASBU Air Navigation Reporting Form (ANRF)				
PIA	4	Block - Module	B0 - TBO	Date Month Day, 2017
Module Description: To implement a set of data link applications supporting surveillance and communications in air traffic services, which will lead to flexible routing, reduced separation and improved safety.				
Regional Performance Objective: ATM Situational Awareness; as well as COM				
Element Implementation Status				
1	Element Description: ADS-C over oceanic and remote areas		Date Planned/Implemented	Status
	Status Details			
2	Element Description: CPDLC over continental areas		Date Planned/Implemented	Status
	Status Details			
3	Element Description: CPDLC over oceanic and remote areas		Date Planned/Implemented	Status
	Status Details			
Achieved Benefits				
<i>Access and Equity</i>				
<i>Capacity</i>				
<i>Efficiency</i>				
<i>Environment</i>				
<i>Safety</i>				
Implementation Challenges				
<i>Ground system Implementation</i>				
<i>Avionics Implementation</i>				
<i>Procedures Availability</i>				
<i>Operational Approvals</i>				
Notes				

[STATE] ASBU Air Navigation Reporting Form (ANRF)			
PIA	Block - Module	Date	Month Day, 2017
Module Description:			
Regional Performance Objective: Improve SAR			
Element Implementation Status			
1	Element Description:	Date Planned/Implemented	Status
	Status Details		
2	Element Description:	Date Planned/Implemented	Status
	Status Details		
3	Element Description:	Date Planned/Implemented	Status
	Status Details		
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i>			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i>			
Implementation Challenges			
<i>Ground system Implementation</i>			
<i>Avionics Implementation</i>			
<i>Procedures Availability</i>			
<i>Operational Approvals</i>			
Notes			

TABLE B-1 CATEGORIZATION AND PRIORITIZATION OF ASBU MODULES

These categories and priorities are fully explained in Appendix B of the RPBANIP:

E = Essential D = Desirable S = Specific O = Optional
 Priority 1 = immediate implementation Priority 2 = recommended implementation

Performance Improvement Area (PIA)	PIA Name	ASBU Module	Module Description	Category	Priority
PIA1	Airport Operations	B0-APTA	Optimization of approach procedures including vertical guidance	D	1
		B0-WAKE	Increased runway throughput through optimized wake turbulence separation	S	2
		B0-RSEQ	Improve traffic flow through sequencing (AMAN/DMAN)	O	2
		B0-SURF	Safety and efficiency of surface operations (A-SMGCS levels 1-2) and enhanced vision systems (EVS)	O	2
		B0-ACDM	Improved airport operations through Airport-CDM	D	1
PIA2	Globally interoperable systems and data	B0-FICE	Increased interoperability, efficiency and capacity through ground-ground integration	E	1
		B0-DATM	Service improvement through digital aeronautical information management	E	1
		B0-AMET	Meteorological information supporting enhanced operational efficiency and safety	D	1
PIA3	Optimum capacity and flexible flights	B0-FRTO	Improved operations through enhanced enroute trajectories	O	1
		B0-NOPS	Improved flow performance through planning based on a network-wide view	D	1
		B0-ASUR	Initial capability for ground surveillance	D	1

Performance Improvement Area (PIA)	PIA Name	ASBU Module	Module Description	Category	Priority
		B0-ASEP	Air traffic situational awareness (ATSA)	S	2
		B0-OPFL	Improved access to optimum flight levels through climb/descent procedures using ADS-B	S	2
		B0-ACAS	Airborne collision avoidance systems (ACAS) improvements	E	2
		B0-SNET	Increased effectiveness of ground-based safety nets	D	2
PIA4	Efficient flight paths	B0-CDO	Improved flexibility and efficiency in descent profiles using continuous descent operations (CDO)	D	2
		B0-TBO	Improved safety and efficiency through the initial application of data link and SATVOICE enroute	D	2
		B0-CCO	Improved flexibility and efficiency departure profiles – continuous climb operations (CCO)	D	2

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