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North American, Central American and Caribbean Office

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

UNITED STATES IMPLEMENTATION OF THE AVIATION SYSTEM BLOCK UPGRADES (ASBU) BLOCK 0 MODULES STATUS ADJUSTED FOR THE 5TH EDITION GLOBAL AIR NAVIGATION PLAN (GANP)

(Presented by United States)

EXECUTIVE SUMMARY

The 5th edition of the ICAO Global Air Navigation Plan (GANP – Doc 9750-AN/963) introduced some changes, including a revision of the definition of Aviation System Block Upgrades (ASBU) Elements in Block 0 Modules. This Information Paper presents information on the United States implementation of the ASBU Block 0 Elements in support of the 5th edition of the GANP.

Strategic Objectives:	• Safety • Air Navigation Capacity and Efficiency • Security & Facilitation • Economic Development of Air Transport • Environmental Protection
References:	• ICAO Doc 9750-AN/963, 2016-2030, the fifth edition of Global Air Navigation Plan (GANP) • The Aviation System Block Upgrades (ASBU), The Framework for Global Harmonization, Issued: July 2016 • NAM ASBU Handbook – 2016: November 2016

1. Introduction

1.1 The 5th edition of the ICAO Global Air Navigation Plan (GANP - Doc 9750-AN/963) represents a rolling, 15-year strategic methodology which leverages existing technologies and anticipates future developments based on State/industry agreed operational objectives. It is designed to guide complementary and sector wide air transport progress over 2016-2030 and is approved triennially by the ICAO Council. The most recent version of the GANP was approved by the 39th ICAO Assembly in October 2016.

1.2 Revisions to the 5th edition of the GANP included changes to the definition of Aviation System Block Upgrade (ASBU) Elements in Block 0 Modules from the 4th edition of the GANP published in 2013. These Block 0 Elements are defined as implementation ready with the exception of Block 0 WAKE Element 1 “New PANS-ATM wake turbulence categories and separation minima”.

1.3 United States has reported its status on the ASBU Block 0 implementation in previous ICAO meetings including Fourteenth Directors of Civil Aviation of the Central Caribbean Meeting (C/CAR/DCA/14) held in May 2015, the Second and Third NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG) held in June 2015 and April 2016 respectively. United States presents the ASBU Block 0 implementation status with the Elements that are adjusted against the 5th edition of GANP in this Information Paper.

1.4 The differences in Block 0 Elements between the 4th and 5th editions are addressed in IP/07 of this Meeting (NACC/WG/5) by United States.

2. Information on the United States ASBU Block 0 Implementation Status

2.1 Table 2.1 shows the status of United States implementation of the 4th edition ASBU Block 0 Elements as of February 2016. There were 18 Modules and 63 Elements in Block 0 as shown in Table 2.1.

Table 2.1: Summary of United States 4th Edition ASBU B0 Element Implementation Status

Performance Improvement Area (PIA)	Need Analysis				Implementation Status (if Element is needed)				Total
	Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented	
PIA 1: Airport Operations	0	0	0	2	0	2	3	13	**20**
PIA 2: Globally Interoperable Systems and Data	0	0	0	0	1	0	0	17	**18**
PIA 3: Optimum Capacity and Flexible Flights	0	0	0	3	0	0	0	14	**17**
PIA 4: Efficient Flight Paths	0	0	0	0	0	0	0	8	**8**
Total	**0**	**0**	**0**	**5**	**1**	**2**	**3**	**52**	**63**

2.2 Table 2.2 shows the status of United States implementation of the 5th edition ASBU Block 0 Elements as of April 2017. There were 18 Modules and 68 Elements in Block 0 as shown in Table 2.2.

Table 2.2: Summary of United States 5th Edition ASBU B0 Element Implementation Status

Performance Improvement Area (PIA)	Need Analysis				Implementation Status (if Element is needed)				Total
	Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented	
PIA 1: Airport Operations	0	0	0	3	0	1	3	16	**23**
PIA 2: Globally Interoperable Systems and Data	0	0	0	0	1	0	0	17	**18**
PIA 3: Optimum Capacity and Flexible Flights	0	0	0	3	0	0	0	15	**18**
PIA 4: Efficient Flight Paths	0	0	0	0	1	0	0	8	**9**
Total	**0**	**0**	**0**	**6**	**2**	**1**	**3**	**56**	**68**

2.3. Table 2.3 shows the status of United States 5th Edition ASBU B0 Element Implementation Status at the Element level.

Table 2.3: Summary of United States 5th Edition ASBU B0 Element Implementation Status at the Element level

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								√

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
	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. AP.FD 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	**0**	**0**	**0**	**6**	**2**	**1**	**3**	**56**

2.4. The individual Air Navigation Reporting Form (ANRFs) describing the status of each Block 0 Elements are filed and accessible via the ICAO NACC's ASBU Task Force website.

3. Recommendations

3.1 The recommendations for the Meeting are:

a) note the ASBU Elements in this paper regarding United States implementation of the ASBU; and

b) support efforts that promote the regional implementation of the ASBU.

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