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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

ASBU BLOCK 0 ELEMENT COMPARISON BETWEEN THE 4TH AND 5TH EDITIONS OF THE GANP

(Presented by United States)

EXECUTIVE SUMMARY	
<p>The 5th edition of the ICAO Global Air Navigation Plan (GANP - Doc 9750-AN/963) published in 2016 introduced some revisions including definitions of Aviation System Block Upgrade (ASBU) Elements in Block 0 Modules from the 4th edition GANP dated 2013. This Information Paper highlights some of the revisions between the 2016 and 2013 documents as information for the ICAO NACC member States and Territories.</p>	
<i>Strategic Objectives:</i>	<ul style="list-style-type: none">• Safety• Air Navigation Capacity and Efficiency• Economic Development of Air Transport• Environmental Protection
<i>References:</i>	<ul style="list-style-type: none">• ICAO Doc 9750-AN/963, 2013-2028, the 4th edition of Global Air Navigation Plan (GANP)• The Aviation System Block Upgrades (ASBU), The Framework for Global Harmonization, Issued: March 2013• NAM ASBU Handbook: November 2015• 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 GANP was approved by the 39th ICAO Assembly in October 2016.

1.2 There were some revisions in the 5th edition of the GANP including definition of some Aviation System Block Upgrade (ASBU) Elements in Block 0 Modules which were previously defined in the 2013 4th edition of the GANP. These Block 0 Elements were defined as implementation ready with the exception of Block 0 WAKE Element 1 “New PANS-ATM wake turbulence categories and separation minima”.

1.3 The ICAO NACC member States and Territories were encouraged to align their State Air Navigation Plans (ANPs) with the GANP through the ASBU framework. Several ICAO NACC Member States and Territories evaluated the Block 0 Element implementation status and submitted their Air Navigation Reporting Forms (ANRFs) to the ICAO NACC Regional Office, other States are in the process of completing their ANRFs.

1.4 It is important that the changes made between the 4th and 5th GANP/ASBU Block 0 Elements are clarified and shared with the ICAO NACC Member States and Territories. This information paper provides the information on such changes and supports the transition from the 4th to the 5th edition of GANP/ASBU.

2. ASBU Block 0 Element Comparison between the 4th and 5th Editions of GANP

2.1 **Appendix** contains the table showing the mapping of Block 0 Elements between the 4th and 5th editions of GANP/ASBU.

3. Supporting Materials to Transit from the 4th to the 5th Edition of GANP

3.1 The “NACC ASBU Handbook – 2016” has been updated with the 5th edition of the GANP and provides information on Block 0 and Block 1 Elements and can be downloaded from the ASBU Task Force website provided by the ICAO NACC office.

3.2 In addition, the ANRF templates have been revised and are also available for download from the ASBU Task Force website provided by the ICAO NACC Regional Office.

3.3 Finally, the Block 0 Status Summary Table template is available for download from the ASBU Task Force website provided by the ICAO NACC Regional Office.

4. Recommendations

4.1 The recommendations for the Meeting are:

- a) review the Appendix ;
- b) review State ANRFs and revise accordingly with the 5th edition of GANP/ASBU;
- c) update the Block 0 Status Summary Table; and
- d) update the state or territory Air Navigation Plan (ANP) according to the 5th edition of GANP/ASBU Document.

APPENDIX

The following Table shows the mapping of Block 0 Elements between the 4th edition and the 5th edition of GANP/ASBU. The 1st column shows Modules which consists of multiple Elements. The 2nd and 4th columns present the Block 0 Elements of between the 4th edition and the 5th edition of GANP/ASBU, respectively. The 3rd column shows the mapping of Block 0 Elements from the 4th edition to the 5th edition of GANP/ASBU.

	4th Edition Elements	mapping	5th Edition Elements
Performance Improvement Area 1: Airport Operations			
ACDM	1. Airport CDM procedures	Old 1 and 2 are mapped onto new 1 - 4	1. Interconnection between aircraft operator & ANSP systems to share surface operations information
	2. Airport CDM tools		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
	3. Collaborative departure queue management	old 3 -> new 5	5. Collaborative departure queue management
APTA	1. PBN Approach Procedures with vertical guidance (LPV, LNAV/VNAV minima, using SBAS and Baro VNAV)	Old 1 mapped onto new 1 & 2	1. PBN approach procedures with vertical guidance to LNAV/VNAV minima
			2. PBN approach procedures with vertical guidance to LPV minima
	2. PBN Approach Procedures without vertical guidance (LP, LNAV minima; using SBAS)	old 2 -> new 3	3. PBN approach procedures without vertical guidance to LNAV minima
	3. GBAS Landing System (GLS) Approach procedures	old 3 -> new 4	4. GBAS Landing System (GLS) procedures to CAT I minima
RSEQ	1. AMAN via controlled time of arrival to a reference fix	No change	1. AMAN via controlled time of arrival to a reference fix
	2. AMAN via controlled time of arrival at the aerodrome	Deleted	Deleted
	3. Departure management	old 3 -> new 2	2. Departure management
	4. Departure flow management	old 4 -> new 3	3. Departure flow management
	5. Point merge	old 5 -> new 4	4. Point merge
SURF	1. A-SMGCS with at least one cooperative surface surveillance system	No change	
	2. Including ADS-B APT as an element of A-SMGCS	No change	
	3. A-SMGCS alerting with flight identification information	No change	3. A-SMGCS alerting with flight identification information
		New	4. EVS for taxi operations
	4. Airport vehicles equipped with transponders	old 4 -> new 5	5. Airport vehicles equipped with transponders

	4th Edition Elements	mapping	5th Edition Elements
Performance Improvement Area 1: Airport Operations			
WAKE	1. New PANS-ATM wake turbulence categories and separation minima	No change	
	2. Dependent diagonal paired approach procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	No change	
	3. Wake independent departure and arrival procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	No change	
	4. Wake turbulence mitigation for departures procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	No change	
	5. 6 wake turbulence categories and separation minima	No change	
Performance Improvement Area 2: Globally Interoperable Systems and Data			
AMET	1. WAFS	No change	
	2. IAVW	No change	
	3. TCAC forecasts	No change	
	4. Aerodrome warnings	No change	
	5. Wind shear warnings and alerts	No change	
	6. SIGMET	No change	
	7. Other OPMET information (METAR, SPECI and/or TAF)	No change	
	8. QMS for MET	No change	
DATM	1. Aeronautical Information Exchange Model (AIXM)	No change	
	2. eAIP	No change	
	3. Digital NOTAM	No change	
	4. eTOD	No change	
	5. WGS-84	No change	
	6. QMS for AIM	No change	
FICE	1. AIDC to provide initial flight data to adjacent ATSU's	No change	
	2. AIDC to update previously coordinated flight data	No change	
	3. AIDC for control transfer	No change	
	4. AIDC to transfer CPDLC logon information to the Next Data Authority	No change	

	4th Edition Elements	mapping	5th Edition Elements
Performance Improvement Area 3: Optimum Capacity and Flexible Flights			
ACAS	1. ACAS II (TCAS version 7.1)	No change	
	2. Auto Pilot/Flight Director (AP.FD) TCAS	No change	
	3. TCAS Alert Prevention (TCAP)	No change	
ASEP	1. ATSA-AIRB	No change	
	2. ATSA-VSA	No change	
ASUR	1. ADS-B	No change	
	2. Multilateration (MLAT)	No change	
FRTO	1. CDM incorporated into airspace planning	No change	
	2. Flexible Use of Airspace (FUA)	No change	
	3. Flexible route system	No change	
	4. CPDLC used to request and receive re-route clearances	No change	
NOPS	1. ATFM	Old 1 mapped onto new 1 & 2	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	No change	
SNET	1. Short Term Conflict Alert implementation (STCA)	No change	
	2. Area Proximity Warning (APW)	No change	
	3. Minimum Safe Altitude Warning (MSAW)	No change	
	4. Medium Term Conflict Alert (MTCA)	No change	
Performance Improvement Area 4: Efficient Flight Paths			
CCO	1. Procedure changes to facilitate CCO	No change	
	2. Route changes to facilitate CCO	No change	
	3. PBN SIDs	No change	
CDO	1. Procedure changes to facilitate CDO	No change	
	2. Route changes to facilitate CDO	No change	
	3. PBN STARs	No change	
TBO	1. ADS-C over oceanic and remote areas	No change	
	2. Continental CPDLC	Old 2 mapped onto new 2 & 3	1. CPDLC over continental area
			2. CPDLC over oceanic and remote area