



**FAA**  
Air Traffic Organization



# ASBU Block 0 Implementation and Regional ANPs

For: Joint ACAO/ICAO ASBU Symposium  
for EUR/NAT and MID Region

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Global ATM Program Manager

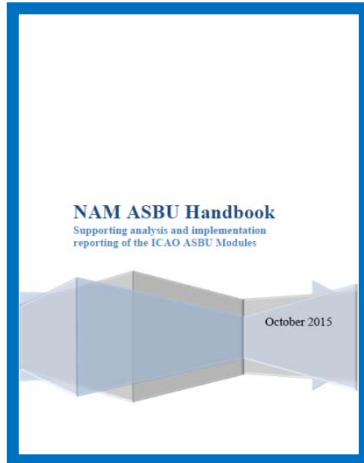
Date: December 10-13, 2018

# Contents

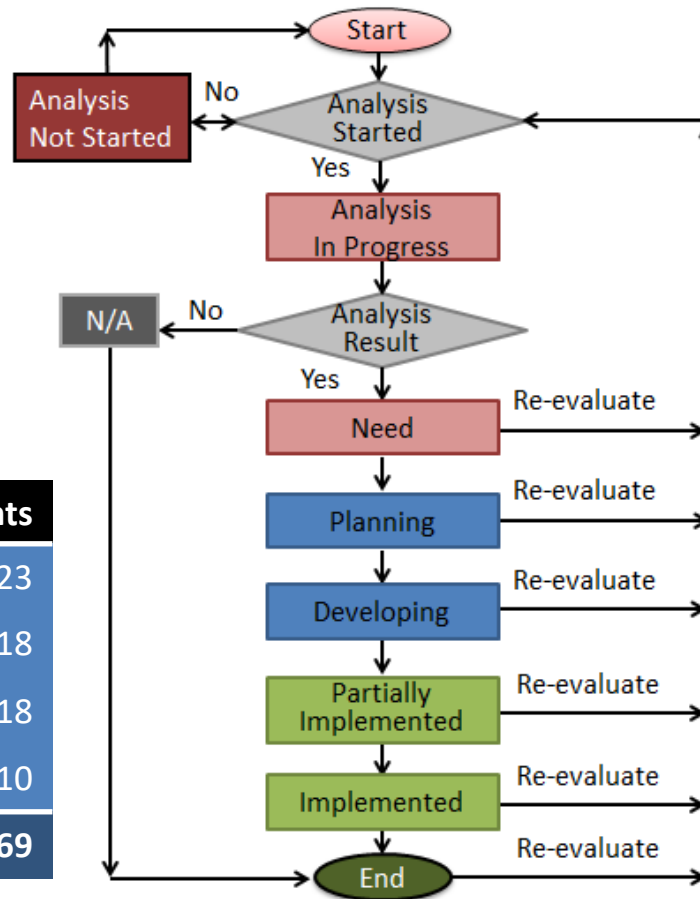
1. USA/FAA Block 0 Implementation Status
2. North American (NAM) (electronic) Air Navigation Plan (eANP) Volume III
3. Central America and Caribbean Region - ANP Status (inc. ASBU B0 Implementation Status)
4. Regional Performance-Based Air Navigation Implementation Plan (RPBANIP) – ICAO NACC RO ANP



# Following the Process



BO PIA	Modules	Elements
PIA 1	5	23
PIA 2	3	18
PIA 3	7	18
PIA 4	3	10
<b>Total</b>	<b>18</b>	<b>69</b>



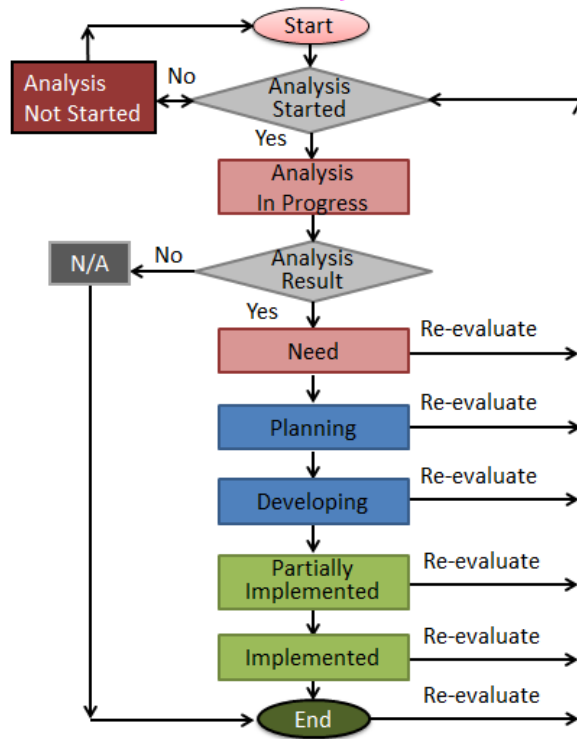
[STATE] ASBU Air Navigation Reporting Form (ANRF)			
PIA	Block - Module	BO - CDO	Date
4			Month Day, 2016
Module Description: Performance-based airspace and arrival procedures allowing aircraft to fly their optimum profile using continuous descent operations (CDOs). This will optimize throughput, allow fuel efficient descent profiles, and increase capacity in terminal areas.			
Element Implementation Status:			
1	Element Description: (Derived from Element 1) Procedure changes to facilitate CDO	Date Planned/Implemented	Status
Status Details:			
2	Element Description: (Derived from Element 1) Route changes to facilitate CDO	Date Planned/Implemented	Status
Status Details:			
3	Element Description: (Derived from Element 2) PBN STARS	Date Planned/Implemented	Status
Status Details:			
Achieved Benefits:			
Access and Equity			
Capacity			
Efficiency			
Environment			
Safety			
Implementation Challenges:			
Ground system Implementation			
Avionics Implementation			
Procedures Availability			
Operational Approvals			
Notes			



# Analysis and Results

**Airport-centric Elements**

**State-centric Elements**



Module	Elements	Need Analysis					Implementation Status				
		Not Started	In Progress	Need	Plan	Develop	Partially Implemented	Implemented	Other	Other	
<b>Performance Improvement Area 1: Airport Operations</b>											
ACDM	1. Interconnection between airport operator & ANSP to share surface operations information										
	2. Interconnection between airport operator & ANSP to share surface operations information										
	3. Interconnection between airport operator & ANSP to share surface operations information										
	4. Interconnection between airport operator, airport operator & ANSP to share surface operations information										
APFA	1. PBN approach procedures with vertical guidance to LNAV/VNAV minima										
	2. PBN approach procedures with vertical guidance to LPZ minima										
	3. PBN approach procedures with vertical guidance to LNAV minima										
BMDJ	1. GBAS Landing System (GLS) procedures to CAT 1 minima										
	2. A-MAN via controlled time of arrival to a reference fix										
	3. Dependent approach procedures with vertical guidance to LNAV/VNAV minima										
SDFP	1. A-SMRCS with at least one cooperative surface surveillance system										
	2. A-SMRCS										
	3. A-SMRCS starting with flight identification information										
WAKE	1. Use of ANSP ATIS with reference to operations and operations minima										
	2. Dependent diagonal parallel approach procedures for parallel runways with common ground less than 700 meters (2,300 feet) apart										
	3. Wake turbulence departure and arrival operations (WTDAS) for parallel runways with common ground less than 700 meters (2,300 feet) apart										
<b>Performance Improvement Area 2: Globally Interoperable Systems and Data</b>											
AMBT	1. ICAO										
	2. ICAO forecast										
	3. Airborne storage and alert										
BADM	1. Digital NOTAM										
	2. eFIS										
	3. eFIS										
FDC	1. ADE to provide aerial flight data to adjacent ATISs										
	2. ADE to update previously coordinated flight data										
	3. ADE to transfer CPDLC leg information to the Next Data Authority										
<b>Performance Improvement Area 3: Optimize Capacity and Flexible Flights</b>											
ACAS	1. ACAS II (CAS version 7.1)										
	2. CPDLC function										
	3. TCAS function										
AMT	1. ATIS-ARR										
	2. ATIS-ARR										
	3. ATIS-ARR										
AMR	1. AMR										
	2. AMR										
	3. AMR										
FED	1. CDM incorporated into airport planning										
	2. Flexible Use of Airspace (FUA)										
	3. Flexible routing										
NOPS	1. CPDLC used to request and receive re-route clearances										
	2. Warning prediction of traffic load for next day										
	3. Preparing alternative route to avoid or minimize ATFM delays										
SNP	1. IEP using ADS-B										
	2. Short Term Conflict Alert implementation (STCA)										
	3. Area Proximity Warning (APW)										
TBO	1. Minimum Safe Altitude Warning (MSAW)										
	2. MSAW										
	3. MSAW										
<b>Performance Improvement Area 4: Efficient Flight Paths</b>											
CDO	1. Procedure changes to facilitate CDO										
	2. Airspace changes to facilitate CDO										
	3. PBN minima										
CDO	1. Procedure changes to facilitate CDO										
	2. Airspace changes to facilitate CDO										
	3. PBN minima										
TBO	1. ADE to provide aerial flight data to adjacent ATISs										
	2. ADE to update previously coordinated flight data										
	3. ADE to transfer CPDLC leg information to the Next Data Authority										

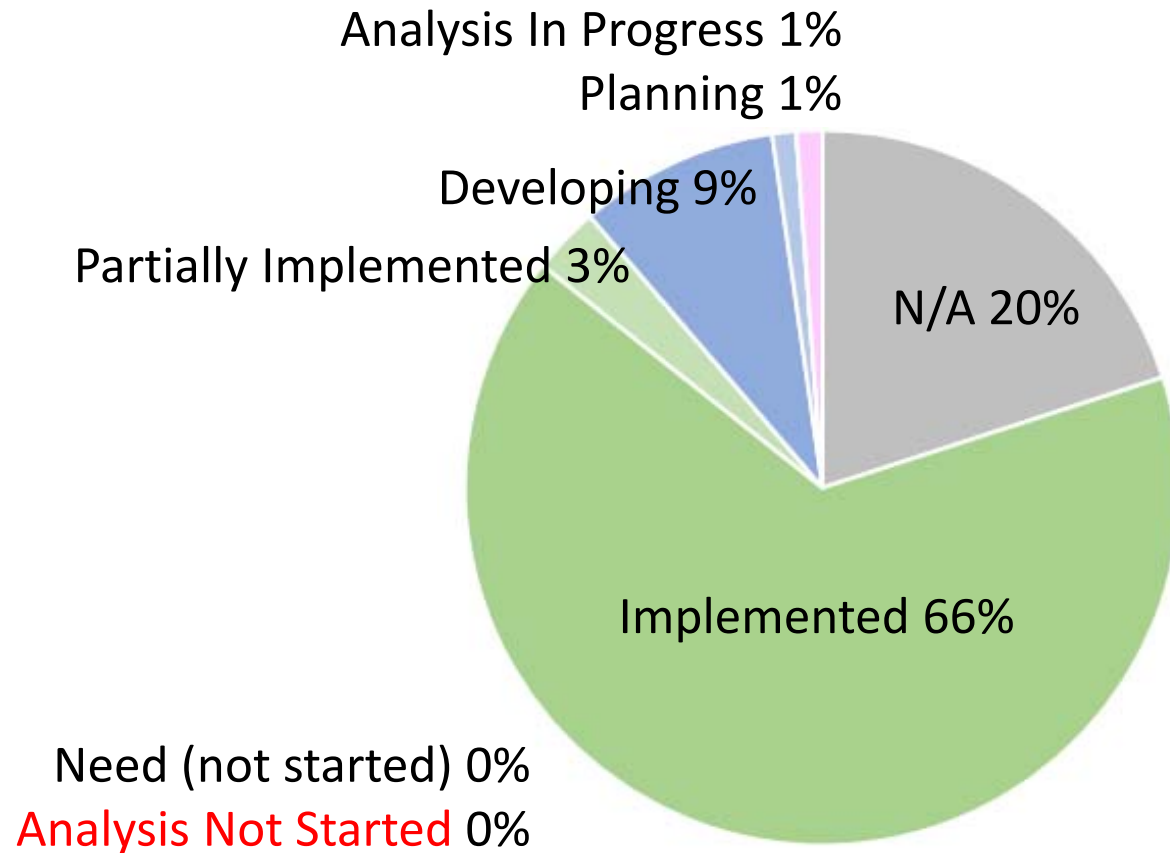
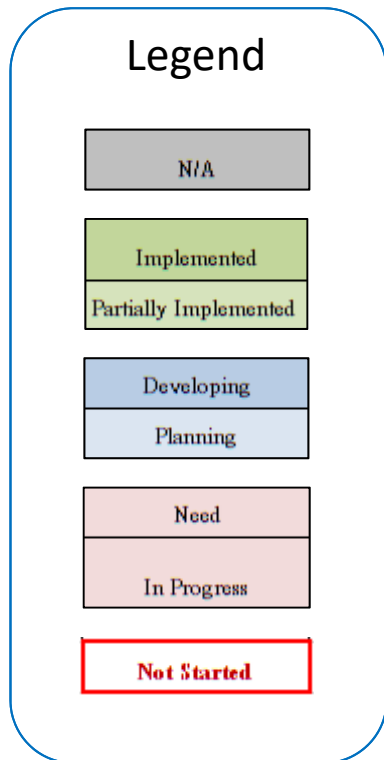


# Sample Entries

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
<b>WAKE</b>	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		2		20				8
	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		10		20				
	5. 6 wake turbulence categories and separation minima				4		9		17
<b>AMET</b>	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								✓
<b>CDO</b>	1. Procedure changes to facilitate CDO								30
	2. Airspace changes to facilitate CDO								30
	3. PBN STARs								30
<b>TBO</b>	1. ADS-C over oceanic and remote areas								✓
	2. CPDLC over continental areas							✓	
	3. CPDLC over oceanic and remote areas								✓
	4. SATVOICE direct controller-pilot communications (DCPC)				✓				

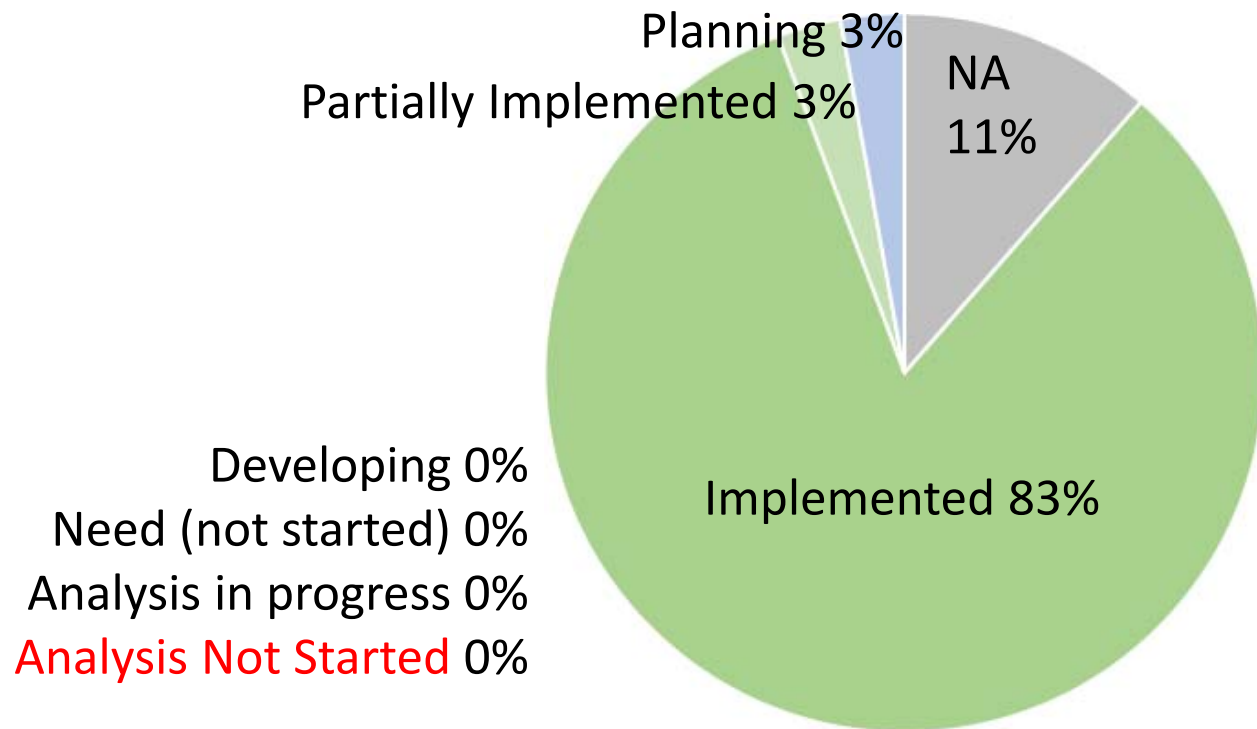
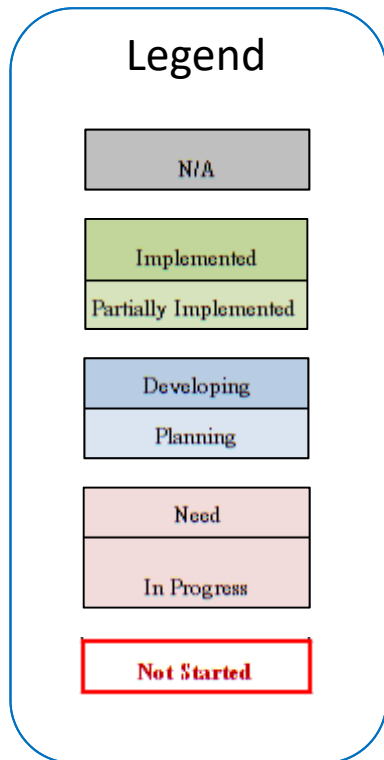


# FAA B0 Implementation Status Airport-centric Elements



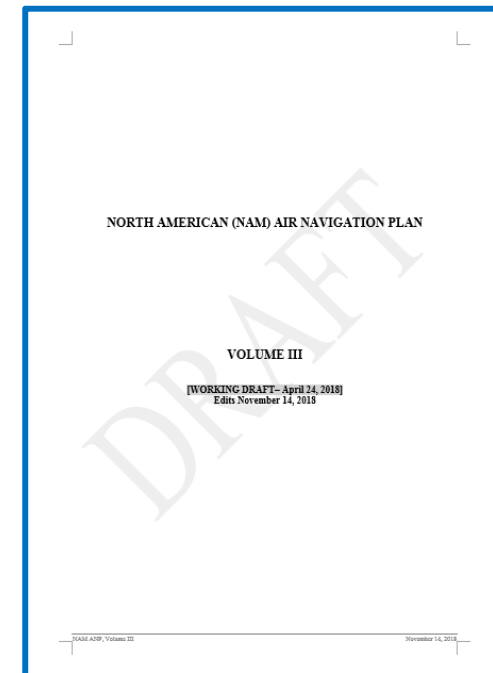


# FAA B0 Implementation Status State-centric Elements



# NAM eANP Volume III

- Guidance from ICAO NACC RO
- Two states: Canada and USA
- ASBU B0 Implementation Status
- **NAM Regional Aviation System Improvements (RASI)**
- Target delivery: Fall 2019





# NAM Region (draft – as of Nov 14, 2018)

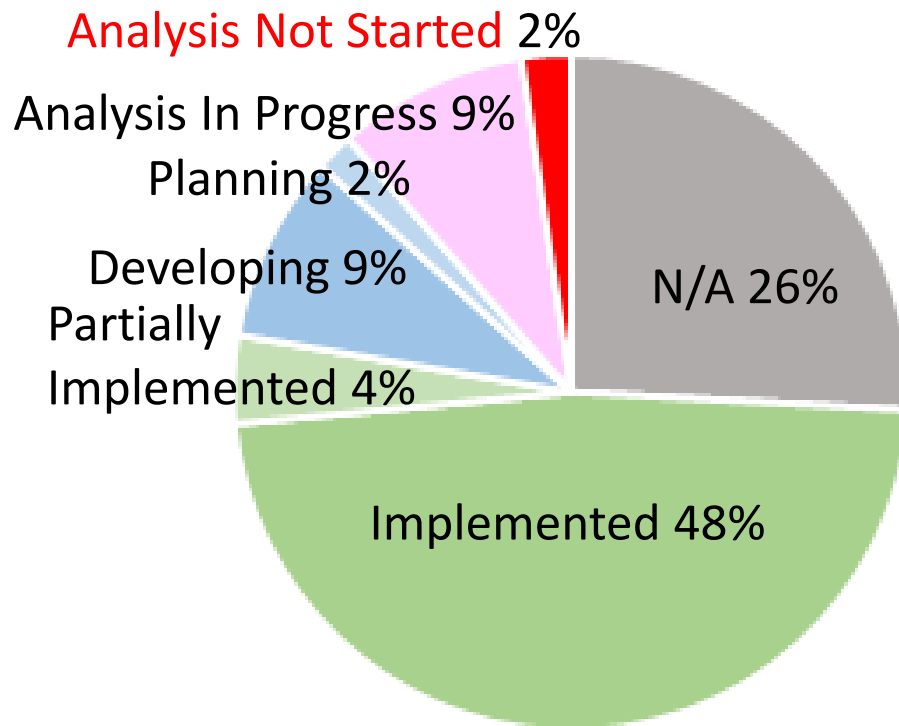
## Sample Entries

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
<b>RSEQ</b>	1. AMAN via controlled time of arrival to a reference fix						20		30
	2. Departure management				3	20	26	1	
	3. Departure flow management		20		3		27		
	4. Point merge				50				
<b>DATM</b>	1. Standardized Aeronautical Information Exchange Model (AIXM)					1			1
	2. <u>eAIP</u>						1		1
	3. Digital NOTAM		1						1
	4. <u>eTOD</u>						20		30
	5. WGS-84						1		1
	6. QMS for AIM								2
<b>ASUR</b>	1. ADS-B								2
	2. <u>Multilateration (MLAT)</u>				16				34
<b>NOPS</b>	1. Sharing prediction of traffic load for next day								2
	2. Proposing alternative routings to avoid or minimize ATFM delays								2



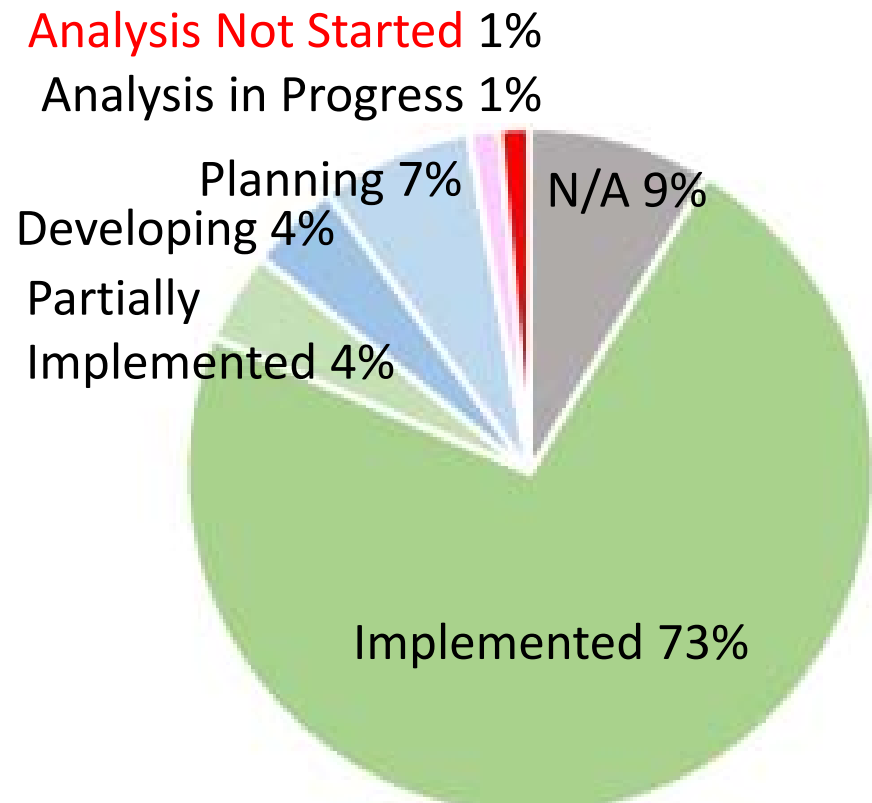
# NAM Region (draft – as of Nov 14, 2018)

## ASBU B0 Implementation Status



Need (not started) 0%

### Airport-centric Elements



Need (not started) 0%

### State-centric Elements



# Central America and Caribbean Region - ANP Status (inc. ASBU B0 Implementation Status)

- **Performance target:** All 21 state/organizations to have ANPs that are aligned with the GANP/Regional ANP

NO COUNTRY LEFT BEHIND

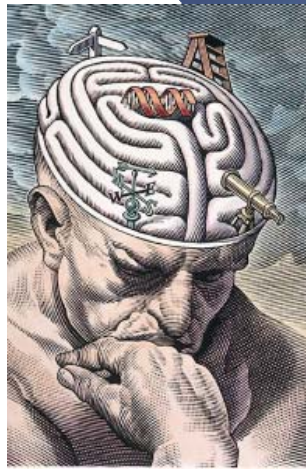


- Bidirectional feedback between RPBANIP and state/organization ANPs



# ASBU Element Analysis and Implementation Process

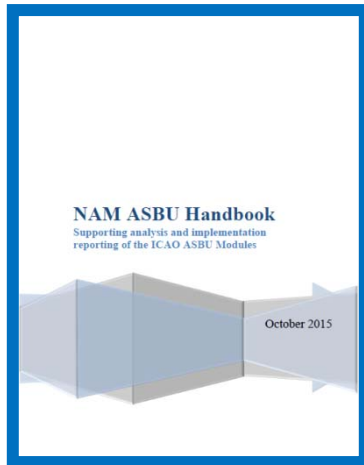
Concept



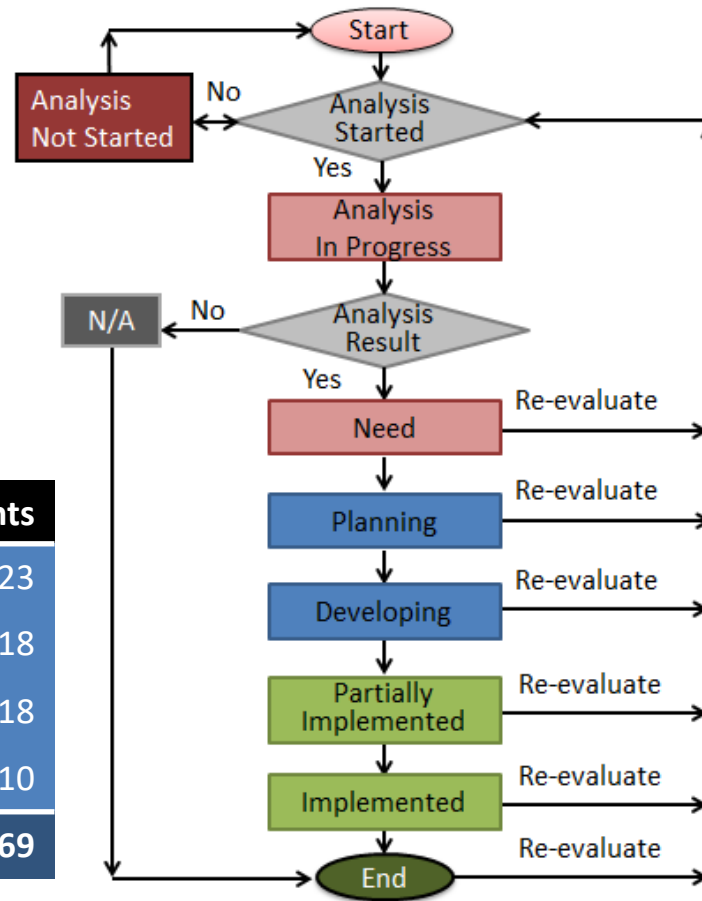
**REALITY**



# Simple and Realistic Process



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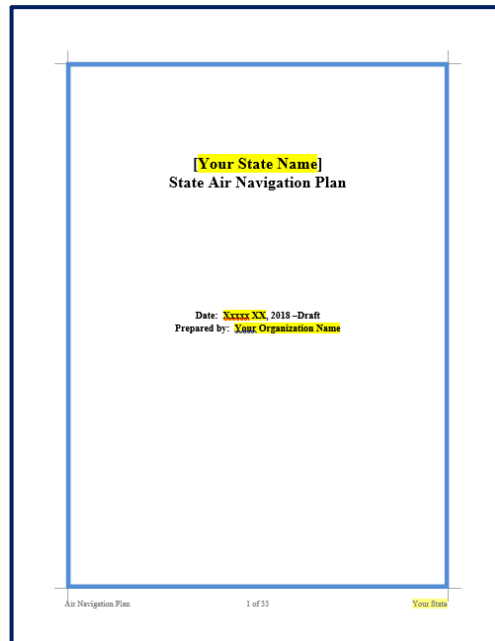
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# Using the Template

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- SASI

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**GANP**

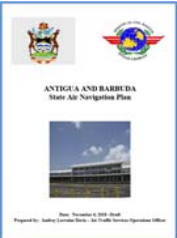

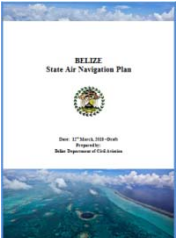

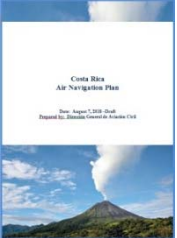
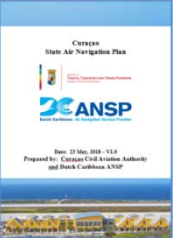
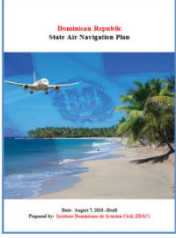
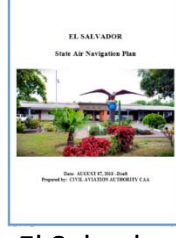
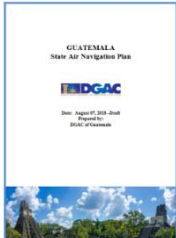

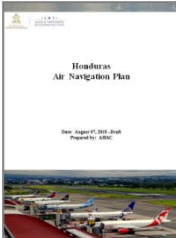

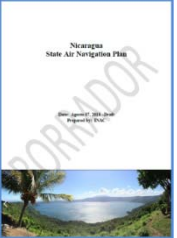
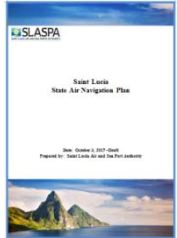

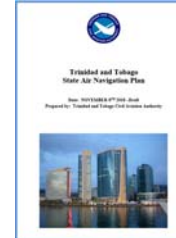


**RPBANIP**



**ANP**

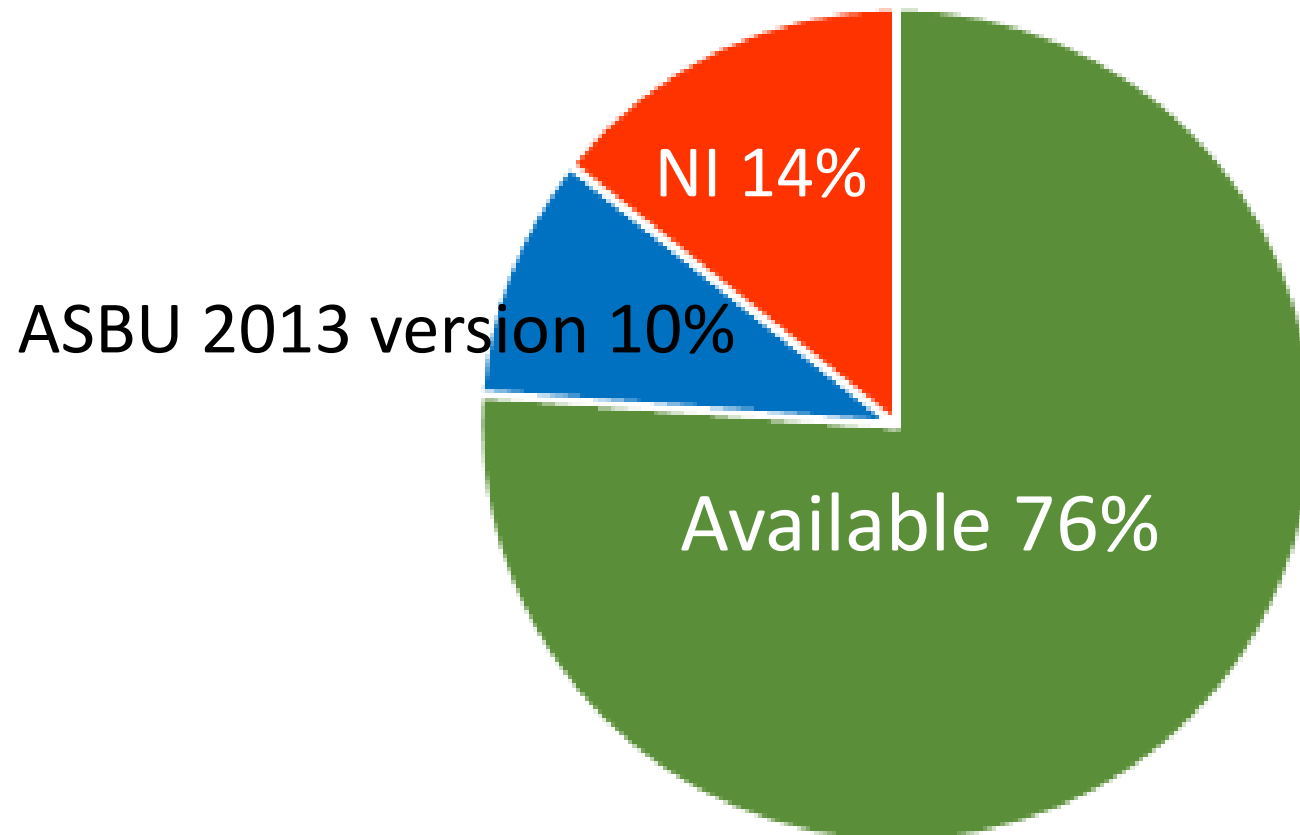
For CAR,  
there will be  
21 ANPs:  
19 States  
1 Territory  
1 Organization

 <b>Antigua &amp; Barbuda</b>	<p>Coming Soon</p> <p><b>Bahamas</b></p>	 <b>Barbados</b>	 <b>Belize</b>	 <b>COCESNA</b>
 <b>Costa Rica</b>	<p>Coming Soon</p> <p><b>Cuba</b></p>	 <b>Curacao</b>	 <b>Dominican Republic</b>	 <b>El Salvador</b>
<p>Coming Soon</p> <p><b>Grenada</b></p>	 <b>Guatemala</b>	 <b>Haiti</b>	 <b>Honduras</b>	<p>Coming Soon</p> <p><b>Jamaica</b></p>
 <b>Mexico</b>	 <b>Nicaragua</b>	<p>Coming Soon</p> <p><b>St Kitts &amp; Nevis</b></p>	 <b>Saint Lucia</b>	 <b>St. Vincent &amp; Grenadines</b>
				 <b>Trinidad &amp; Tobago</b>

(As of Nov 2018)

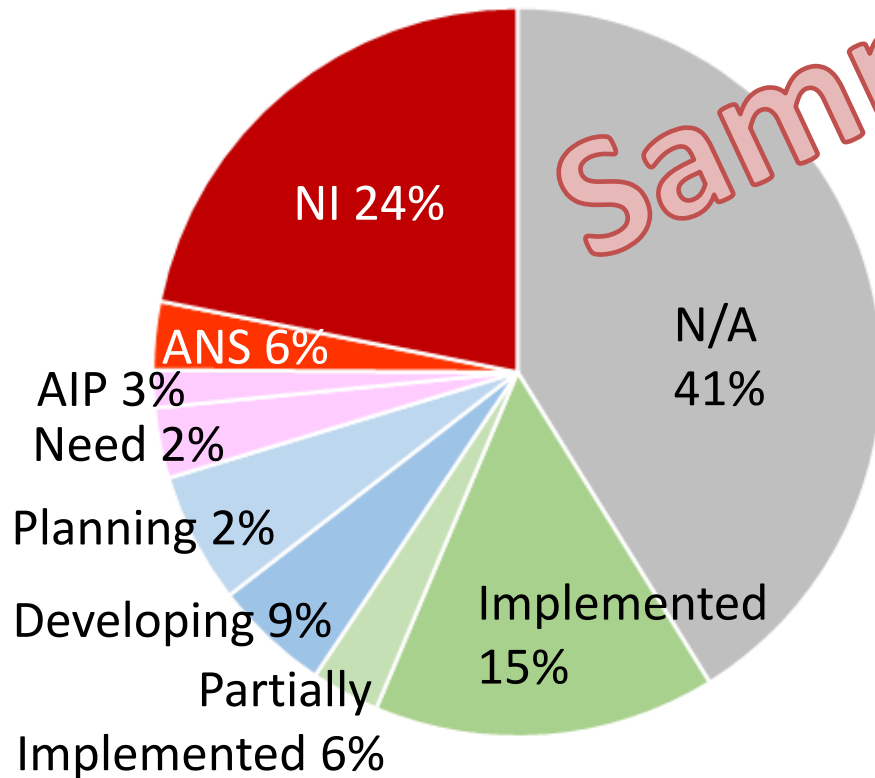


# ASBU B0 Information Availability Central America and Caribbean Region

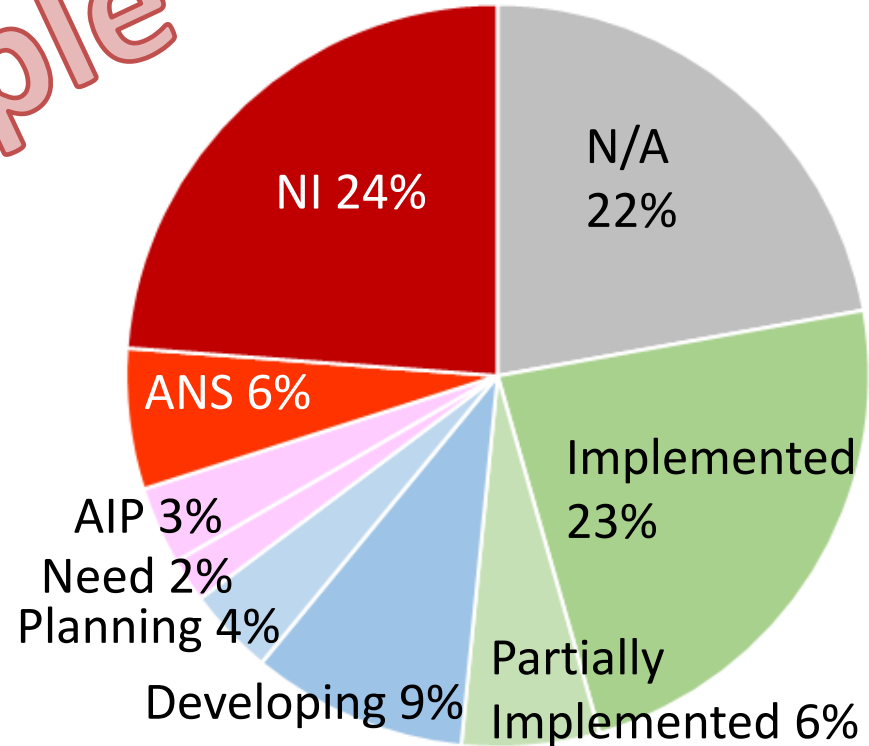


# ASBU B0 Implementation Status Central America and Caribbean Region

Sample



Airport-centric Elements



State-centric Elements



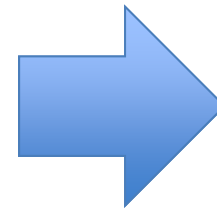
# RPBANIP

## ICAO NACC Regional ANP

RPBANIP ver 3



21 state/  
organization  
ANPs



RPBANIP ver 4



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# Questions?



# Thank you!

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