International Civil Aviation Organization
CAR/SAM Regional Planning and Implementation Group (GREPECAS)
Seventeenth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/17)
(Cochabamba, Bolivia (Plurinational State of), 21 to 25 July 2014)

Agenda Item 3: Air Navigation Activities at Global, Intra-regional, and Inter-regional Level
3.2 Intra-regional air navigation activities

NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP) and the NAM/CAR Air Navigation Priorities

(Presented by the Secretariat)

SUMMARY

This working paper provides the status of the updated NAM/CAR RPBANIP, Version 3.1, which is aligned with the ICAO Aviation System Block Upgrade (ASBU) methodology. The RPBANIP serves as the basis for air navigation implementation matters in the NAM/CAR Regions, reflecting regional priorities and milestones.

References:

- Fourth North American, Central American and Caribbean Working Group Meeting (NACC/WG/4), Ottawa, Canada, 24 to 28 March 2014
- First NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/1), Mexico City, Mexico, 29 July to 1 August 2013
- Third Meeting of North American, Central American and Caribbean Directors of Civil Aviation (NACC/DCA/3), Punta Cana, Dominican Republic, 8-12 September 2008
- Fifth North American, Central American and Caribbean Directors of Civil Aviation Meeting (NACC/DCA/5), Port-of-Spain, Trinidad and Tobago, 28 to 30 April 2014
- Safety and Air Navigation Directors of the CAR Region Meeting (CAR/DCA/OPSAN), Mexico City, Mexico, 18 to 19 February 2014

Introduction

1.1 In order to harmonize air navigation system/services implementation in the NAM/CAR Regions, the NACC directors of civil aviation approved the *NAM/CAR RPBANIP* at the NACC/DCA/3 Meeting in 2008 and agreed that it would be the reference for all air navigation implementation activities and be reflected in each State/Territory National Plan.

1.2 Since 2008, the RPBANIP has been the reference for all NAM/CAR implementation working group action plans and implementation tasks. All Working Groups have reported annually on the progress and operational achievements accomplished.

2. RPBANIP Update and Approval

2.1 The RPBANIP was updated as a third edition, reviewed and analyzed by the NAM/CAR Air Navigation Implementation Working Group (ANI/WG) in July 2013. The RPBANIP was aligned with the Global Air Navigation Plan (GANP), the ICAO ASBU methodology and regional priorities were reviewed. The NAM/CAR RPBANIP, third edition, reflects the following key changes:

- Restructured sections
- A 5-year term plan
- ASBU B0 modules selected and the corresponding Air Navigation Report Forms (ANRFs) added
- Eight upgraded Regional Performance Objectives (RPOs) and a Search and Rescue (SAR) RPO added
- the adoption of the ASBU ANRFs for air navigation implementation monitoring and progress reporting on agreed NAM/CAR Regions implementation targets and milestones.
- Expansion of operational scenarios that justify the RPBANIP (traffic forecasts, homogeneous areas, etc.)
- Regional Performance Objectives and ANRF updates
- Explanation of categorization/prioritization of ASBU B0 modules (see following chart)
- Detailed glossary added

2.2 Following the ASBU methodology of the GANP, the following ASBU module categorization/priorization was adopted in the RPBANIP:

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
	Increased Runway Throughput through Optimized Wake Turbulence Separation	B0-70 WAKE	2
	Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)	B0-75 SURF	2
	Improved Airport Operations through Airport-CDM	B0-80 ACDM	1
PIA 2	Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration	B0-25 FICE	1
	Service Improvement through Digital Aeronautical Information Management	B0-30 DATM	1
	Meteorological Information Supporting Enhanced Operational Efficiency and Safety	B0-105 AMET	1
PIA 3	Improved Operations through Enhanced En-Route Trajectories	B0-10 FRTO	1

PIA	Module Description	Module	Priority
	Improved Flow Performance through Planning Based on a Network-Wide View	B0-35 NOPS	1
	Initial Capability for Ground Surveillance	B0-84 ASUR	1
	Air Traffic Situational Awareness(ATSA)	B0-85 ASEP	2
	Improved Access to Optimum Flight Levels through Climb/Descent Procedures using ADS-B	B0-86 OPFL	2
	ACAS Improvements	B0-101 ACAS	2
	Increased Effectiveness of Ground-Based Safety Nets	B0-102 SNET	2
PIA 4	Improved Flexibility and Efficiency in Continuous Descent Profiles (CDOs)	B0-05 CDO	2
	Improved Safety and Efficiency through the Initial Application of En-Route Data Link	B0-40 TBO	2
	Improved Flexibility and Efficiency Departure Profiles - Continuous Climb Operations (CCOs)	B0-20 CCO	2

2.3 The regional NAM/CAR priorities are expressed in the Regional Performance Objectives (RPOs). Cross-reference information between the RPOs and ASBU B0 modules was also included in the RPBANIP as shown in Figure 1. For the initial 5-year term of the RPBANIP, the 15 ASBU B0 modules were adopted as described in the following Table. ASBU B0 modules ASEP, OFPL and WAKE will be included in future reviews of the RPBANIP based on the maturity of the tasks and regional priorities.

ASBU / RPO	PIA1 Airport Operations					PIA2 SWIM			PIA3 Global Collaborative ATM							PIA4 Trajectory-based Operations		
	B015 RSEQ	B0 65 APTA	B070 WAKE	B075 SURF	B0 80 ACDM	B025 FICE	B030 DAIM	B0105 AMET	B010 FRTO	B035 NOPS	B084 ASUR	B085 ASEP	B086 OPFL	B0101 ACAS	B102 SNET	B005 CDO	B020 CCO	B040 TBO
PBN Implementation		X							X							X	X	
FUA									X									
DCB	X									X								
ATM Situational Awareness	X			X							X				X			X
Improve SAR																		
Improve Cap/Efficiency Aerodrome Operations				X	X													
COM					X	X								X				X
AIM							X											
MET								X										

2.4 The RPBANIP was also reviewed against the 38th Session of the ICAO Assembly Resolutions, in particular Resolution A38-2 - *ICAO global planning for safety and air navigation.*

2.5 The First Safety and Air Navigation Directors of the CAR Region (CAR/DCA/OPSAN/1) Meeting was briefed on the air navigation targets agreed by the ANI/WG. Five key targets were included in the *Port-of-Spain Declaration.* From the CAR/DCA/OPSAN/1 Meeting, the aerodrome certification target was adjusted to 48% by 2016, and the CO_2 reduction environmental target was included in the RPBANIP.

2.6 After the NACC/WG/4 Meeting carried out a final review of the RPBANIP, proposing several changes to the objectives and metrics, the Directors of North America, Central America and the Caribbean in their NACC/DCA/05 Meeting approved the RBANIP version 3.1 under Conclusion 5/3 - *Approval of the NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (NAM/CAR RPBANIP), Version 3.1*.

2.7 Similarly the NACC/DCA/05 Meeting urged all States/Territories to update their national Air Navigation Plans formulating conclusion 5-4 - *Update National Air Navigation Implementation Plans in Accordance with the RPBANIP, Version 3.1*. This version 3.1 is available at the following link: http://www.icao.int/NACC/Pages/namcar-RPBANIP.aspx

2.8 The RPBANIP contains all the air navigation targets for the NAM/CAR Regions, which are listed in **Appendix** to this paper.

3. Suggested Actions

3.1 The Meeting is invited to:

a) take note of the RPBANIP Version 3.1, the regional priorities and targets for air navigation;

b) identify and coordinate the necessary CAR/SAM interregional actions for the achievement of the RPBANIP and the regional targets; and

c) conduct any further actions as deemed necessary.

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APPENDIX
RPBANIP NAM/CAR AIR NAVIGATION TARGETS

Element	Targets
1. Airspace Planning	100% of States to have completed a PBN plan by Dec. 2018
2. Flexible Use Airspace	50% of selected segregated airspaces available for civil operations by Dec. 2016
3. AMAN And Time-Based Metering	10% of selected aerodromes with AMAN and time based metering by Dec. 2016
4. Departure Management (DMAN)	10% of selected aerodromes with DMAN by Dec. 2016
5. Movement Area Capacity Optimization	20% of selected aerodromes with Airport-capacity calculated by Dec. 2016
6. ADS-C Over Oceanic and Remote Areas	80% of selected FIRs with ADS-C implemented by December 2016
7. CPDLC	80% of selected FIRs with CPDLC implemented by June 2018
8. APV with Baro VNAV	80% of instrument runways to have APV with Baro VNAV implemented by December 2016 – Service Providers and users
9. APV with SBAS (WAAS)	20% of instrument runways to have APV with SBAS/WAAS implemented by December 2018– Service Providers and users
10. APV with GBAS	20% of instrument runways to have APV with GBAS by December 2018 – Initial implementation at some States (services providers)
11. LNAV	60% of instrument runways to have LNAV procedure implemented by December 2016 – Service Providers and users as per Assembly Resolution A37-11
12. Surveillance System for Ground Surface Movement (PSR, SSR, ADS B or Multilateration)	30% of selected aerodromes with SMR/ SSR Mode S/ ADS-B Multilateration for ground surface movement by June 2018 States/airport operator
13. On-board Surveillance Systems (transponder with ADS-B capacity)	20% of aircraft on the NAM/CAR State registries to have surveillance system on board (SSR transponder, ADS B capacity) by June 2018 Aircraft operators
14. Vehicle Surveillance Systems	20% of vehicles at selected aerodromes with a cooperative transponder systems by June 2018 Vehicle operators
15. Visual Aids for Navigation	70% of selected aerodromes complying with visual aid requirements as per Annex 14 by December 2015 States/Airport operators
16. Aerodrome Bird/Wildlife Organization and Control Programme	70% of selected airports with an aerodrome bird/wildlife organization and control programme by December 2018 Airport operators
17. Airport – CDM	60% of selected aerodromes with Airport-CDM by Dec. 2018 – Airport Operator, Stakeholders
18. Aerodrome Certification	48% of international aerodromes to be certified in the CAR Region by December 2016– State CAA
19. Heliport Operations	30% of selected Heliports with operational approval by Dec. 2018 – State CAA

Element	Targets
20. Implementation of ADS-B	30% of selected aerodromes with ADS-B implemented by Dec 2018
21. Implementation of Multilateration	80% of multilateration system implemented in selected aerodromes by June 2018
22. ACAS II (TCAS Version 7.1)	10% of aircraft on NAM/CAR State registries equipped with ACAS II (TCAS Version 7.1) by Dec 2018
23. Short-term Conflict Alert Implementation (STCA)	80% of selected ATS units with ground based safety nets (STCA) implemented by Dec 2015
24. Area Proximity Warning (APW)/ Minimum Safe Altitude Warning (MSAW)	70% of selected ATS units with ground based safety nets (APW) implemented / 70% of selected ATS units with ground based safety nets (MSAW) implemented by Dec 2015
25. Medium-term Conflict Alert (MTCA)	80% of selected ATS units with ground based safety nets (MTCA) implemented by Dec 2016
26. WAFS	100% of States implementation of WAFS Internet File Service (WIFS) by December 2014
27. IAVW	70% of MWOs with IAVW procedures implemented by December 2014. Volcanic Ash Advisory Centre, Washington USA and VAAC Montréal, Montréal, Canada
28. Tropical Cyclone Watch	100% of MWOs with tropical cyclone watch procedures implemented by December 2014. Tropical Cyclone Advisory Centre, Miami, USA
29. Aerodrome Warnings	50% of selected aerodromes/AMOs with Aerodrome warnings implemented by December 2014
30. Wind Shear Warnings and Alerts	20% of selected aerodromes/AMOs with wind shear warnings procedures implemented (MET provider services) by December 2015
31. SIGMET	90% of selected aerodromes/MWOs with SIGMET procedures implemented (MET provider services) by Dec. 2014
32. MEVA III IP Network Implementation	100% implementation of MEVA III IP Network by MEVA Member States by August 2015
33. AMHS Implementation	4 States with Air Traffic Services Message Handling Services (AMHS) interconnected with other AMHS by December 2014
34. AIDC Implementation	50% of FIRs within which all applicable ACCs have implemented at least one interface to use AIDC/OLDI with a neighbouring ACC by December 2016
35. ATN Router Structure Implementation	70% of ATN router structure implemented by June 2016
36. QMS - AIM	100 % of States QMS Certified by Dec.2016
37. e.TOD Implementation	10 % of States e-TOD Implemented by Dec.2018
38. AIXM 5.1 Implementation	40 % of States with AIXM 5.1 implemented by Dec.2018
39. e-AIP Implementation	45 % of States with e-AIP implemented by Dec.2018
40. Digital NOTAM	35 % of States with Digital NOTAM implemented by Dec. 2018
41. Air Traffic Flow Management	100% of FIRs within which all ACCs have ATFM measures available by Dec. 2018
42. CDO implementation	50% of selected. Aerodromes with continuous descent operations (CDO) implemented by Dec.2016

Element	Targets
43. PBN STARs	80% of selected. Aerodromes with PBN STARs implemented by Dec.2016
44. CCO Implementation	60 % of selected aerodromes with continuous climb operations (CCO) implemented by Dec.2016
45. PBN SIDs Implementation	60% of selected aerodromes with PBN SIDs implemented by Dec.2016

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