



CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP)

Version 4.0

AMENDMENTS

Amendments will be submitted to all CAR States/Territories and stakeholders by the ICAO NACC Regional Office and an electronic version will be available on the ICAO NACC Regional Office website. The stakeholders should submit any Change Proposal to the ICAO NACC Regional Office who will conduct the appropriate coordination. The table below provides a means to record such amendments.

RECORD OF AMENDMENTS AND CORRIGENDA

AMENDMENTS				CORRIGENDA			
No.	Date applicable	Date entere	Entered by	No.	Date applicable	Date entere	Entered by

Document Revision History

Date	Description of Changes	Version
May 2008	First version of the Regional Performance-Based Implementation Plan	1.0
May 2011	Incorporates changes to the Regional Performance Objectives (RPOs) related to the ICAO model Flight Plan format and the CAR Region PBN Airspace Concept	2.0
April 2014	Incorporates changes in accordance with ASBU methodology and adopted ASBU BO modules for the NAM/CAR Regions, traffic forecast updates, revision to acronyms, and agreed targets of the Port-of-Spain Declaration and the ASBU selection criteria.	3.1
August 2018	Incorporates changes in accordance with ASBU and new ANRF included and important advance towards the eANP Vol III implementation in CAR Region.	4.0

TABLE OF CONTENTS

PART I – Introduction.....

1. Background.....
2. Regional performance framework and aviation system block upgrades (ASBUS)
3. Objectives and purpose of CAR Regional Air Navigation Plan (RPBANIP).....
4. The Central America and Caribbean Region (CAR).....

PART II – GENERAL PLANNING ASPECTS (GEN).....

1. Regional Collaboration
2. Regional Priorities
3. Planning Principles
4. Planning Methodology
5. Review and Evaluation of Air Navigation Planning
6. Metrics and Targets for State ANPs, RASI ANRFs, and ASBU.....
7. Regional Performance Objectives (RPOs).....
8. Reporting and monitoring results

Appendix A - CAR Regional Performance Objectives (RPOs) and Completion Instructions
Appendix B - CAR ASBU ANRF Template and Completion Instructions
Appendix C - CAR RASI ANRF Template and Completion Instructions

PART III – AVIATION SYSTEM BLOCK UPGRADES IMPLEMENTATION (ASBU)

1. Introduction.....
2. CAR ASBU Block 0 Implementation Targets and Status

Appendix A - CAR ASBU Handbook.....

Table CAR ASBU -1 – CAR Metrics and Targets for ASBU Block 0 Elements
Table CAR ASBU -2 – CAR Implementation Status of ASBU Block 0 Elements.....

PART IV – REGIONAL AVIATION SYSTEM IMPROVEMENT IMPLEMENTATION (RASI).....

1. Introduction.....

Appendix A:– CAR RASI-1 ANRF.....
Appendix B: - CAR RASI-2 ANRF.....
Appendix C: - CAR RASI-3 ANRF.....
Appendix D: - CAR RASI-4 ANRF

RPBANIP

PART I – INTRODUCTION

1. BACKGROUND

1.1 The ICAO NACC Regional Office (RO) has the mission to support and enable a regional air transport network that meets the development and broader connectivity needs of regional businesses and passengers, and acknowledging the clear need to air transport capacity by following years without unnecessary adverse impacts on system safety, efficiency or environmental performance, ICAO has established Strategic Objectives, in particular the Air Navigation Capacity and Efficiency and the Environmental Protection, that it looks to increase Safety, Capacity and improve the efficiency of the civil aviation system minimizing its adverse environmental effects. These Strategic Objectives are focused primarily on upgrading the air navigation and aerodrome infrastructure and developing new procedures to optimize aviation system performance.

1.2 This Document contains dynamic/flexible plan elements related to the implementation of the air navigation system and its modernization, reflects the regional requirements detailed in the regional priorities selected in line with the ICAO Aviation System Block Upgrades (ASBUs) and associated technology roadmaps described in the *Global Air Navigation Plan* (Doc 9750, GANP).

1.3 The information contained in RPBANIP is related mainly to:

- Planning: objectives set priorities and targets planned at regional or sub-regional levels
- Implementation monitoring and reporting: monitoring of the progress of implementation towards targets planned. This information should be used as the basis for reporting purposes (i.e. global and regional air navigation reports and performance dashboards); and/or
- Guidance: providing regional guidance material for the implementation of specific system/procedures in a harmonized manner

1.4 The Previous version of RPBANIP was addressed to the Performance-based air navigation plan for NAM and CAR Regions. This version 4.0 of RPBANIP is addressed to CAR Region only as the NAM will develop its own eANP Vol. III.

1.5 GREPECAS/18 in year 2018, concluded (**Conclusion 18/7**) on the postponement of the development of CAR/SAM eANP Volume III in expectation of major changes in 2019 of new versions of GANP and ASBU. The ICAO NACC RO needs to conduct the impact assessment of changes brought by the 2019 version of GANP and ASBU, specially the changes in Block 0 capability definitions.

1.6 The monitoring and reporting on the status of States and Territories' implementation of the improvement elements should be the responsibility of the ICAO NACC RO supported by States and Territories and base on the active work of the regional implementation groups. The status of implementation is updated on a regular basis.

2. REGIONAL PERFORMANCE FRAMEWORK AND AVIATION SYSTEM BLOCK UPGRADES (ASBUs)

2.1 The Following the Twelfth Air Navigation Conference (AN-Conf. /12) Recommendation 6/1 — Regional performance framework – planning methodologies and tools to align the ANSPs with the Fifth Edition of the Global Air Navigation Plan (GANP, Doc. 9750), ICAO conducted since 2013 and 2014 several activities through the ad-hoc of the eANP Working Group resulting in the changes to the regional ANPs with a new structure, format and content. Furthermore Recommendation 1/2 - Implementation of the AN-Conf. /12, as well as the new developments related to the performance based approach, the Aviation System Block Upgrades (ASBUs) methodology, it was agreed that the new ANP should also include elements related to the monitoring of the status of implementation, at least related to the ASBU Modules.

2.2 The ASBU Modules are key components to the GANP, noting that they will continue to evolve as more work is done on refining and updating their content and in subsequent development of related provisions, support material and training.

2.3 Although the GANP has a worldwide perspective, it is not intended that all ASBU Modules are required to be applied in every State, sub-region and/or region. Many of the ASBU Modules contained in the GANP are specialized packages that should be applied only where the specific operational requirement exists or corresponding benefits can be realistically projected. Accordingly, the ASBU establishes an important flexibility in the implementation of its various Modules depending on a region, sub-region and/or State's specific operational requirements. The NACC Region endorsed the Elements of the ASBU Modules as detailed in the NACC ASBU Handbook in Part III, Appendix A. Guided

by the GANP, ICAO NACC regional and State planning should identify Elements which best provide the needed operational improvements.

3. OBJECTIVES AND PURPOSE OF CAR REGIONAL AIR NAVIGATION PLAN (RPBANIP)

3.1 The regional ANP, RPBANIP defines the planning and implementation of air navigation systems within the CAR Region, in accordance with the agreed global and regional planning framework. The RPBANIP is developed to meet those needs of specific areas covered in the worldwide provisions. The development and maintenance of the RPBANIP is undertaken by ICAO NACC RO.

3.2 The RPBANIP encourages its member States, Territories and aviation stakeholders to follow the ASBU framework to implement the future aviation technologies guided by ICAO standards. The RPBANIP assists ICAO NACC RO to identify who and which area needs additional assistance to make the progress region as whole. Thus the RPBANIP will be used by the ICAO NACC RO to ensure that the Systemic Assistance Programme (previously no country left behind - NCLB) be successful in terms of implementation for future aviation technologies.

3.3 The RPBANIP contains provisions that States can follow in programming the provision of their air navigation facilities and services, with the assurance that facilities and services furnished in accordance with the plan will form with those of other States an integrated system adequate for the foreseeable future.

3.4 The RPBANIP supports the performance-based approach to planning adopted by ICAO to measure the efforts made by States in implementing the agreed requirements. The current v3.1 of the RPBANIP still valid at the end of year 2018 and new v4.0 will be valid initiating year 2019.

4. THE CENTRAL AMERICA AND CARIBBEAN REGION (CAR)

4.1 The ICAO NACC Office is responsible for, working very closely with a diverse mix of 21 Contracting States and 19 Territories. The member States range from the largest States to States with less complex systems. This RPBANIP addresses the air navigation plans for the 19 CAR States, Curaçao (including Aruba and Bonaire), and COCESNA as International Organization, as shown in **TABLE CAR INTRO 0-1 – States and Aerodromes in CAR Region**. Not all territories appear in this table; however the ICAO NACC RO will follow up with them through the States such territories belong to.

4.2 States selected those Aerodromes that they considered according with their own National Plans and requirements.

Comment [JCS1]: Selected for what?
Ya estan en AOP?? Francia y UK faltan

TABLE CAR INTRO 0-1 – States and Aerodromes in CAR Region

State	CAR /Aerodromes	ICAO Code
Antigua and Barbuda*	SAINT JOHNS/ V.C. Bird International Airport	TAPA
Bahamas*	ALICE TOWN/ Bimini International Airport COCKBURN TOWN/San Salvador International Airport FREEPORT/ Grand Bahama International Airport GOVERNOR'S HARBOUR/Governor's Harbour International Airport MARSH HARBOUR/ Marsh Harbour International Airport NASSAU/Lynden Pindling International Airport NORTH ELEUTHERA/ North Eleuthera International Airport STELLA MARIS/Stella Maris International Airport TREASURE CAY/ Treasure Cay International Airport WEST END/West End International Airport	MYBS MYSM MYGF MYEM MYAM MYNN MYEH MYLS MYAT MYGW
Barbados	BRIDGETOWN/Grantley Adams Intl	TBPB
Belize	BELIZE/Philip S.W. Goldson Intl	MZBZ
Costa Rica*	ALAJUELA/Juan Santamaría Intl. LIBERIA/Daniel Oduber Quirós LIMON/Limón Intl PAVAS/Tobias Bolaños Intl.	MROC MRLB MRLM MRPV
Cuba*	CAMAGUEY/Ignacio Agramonte CAYO COCO/Jardines del Rey CIENFUEGOS/Jaime González CAYO LARGO DEL SUR/Vilo Acuña SANTIAGO DE CUBA/ Antonio Maceo HABANA/José Martí HOLGUIN/Frank País MANZANILLO/Sierra Maestra SANTA CLARA/Abel Santamaría VARADERO/Juan Gualberto Gómez	MUCM MUCC MUCF MUCL MUCU MUHA MUHG MUMZ MUSC MUVR
Dominican Republic*	BARAHONA/Aeropuerto. Internacional María Montez HIGUERO/Dr. Joaquín Balaguer Intl. LA ROMANA/Casa de Campo Intl. PUERTO PLATA/ Gregorio Luperón Intl PUNTA CANA/Punta Cana Intl SANTIAGO/Cibao Intl SANTO DOMINGO/Jose Francisco Peña Gomez Intl SAMANA/El Catey Intl.	MDBH MDJB MDLR MDPP MDPC MDST MDSO MDCY
El Salvador*	SAN SALVADOR/ Aeropuerto Intl El Salvador SAN SALVADOR/ Ilopango Intl	MSLP MSSS
Grenada*	LAURISTON / Carriacou I. SAINT GEORGES /Maurice Bishop Intl.	TGPZ TGPY
Guatemala*	GUATEMALA/La Aurora	MGGT
Haiti*	CAP HAITIEN/Cap Haitien Intl	MTCH

State	CAR /Aerodromes	ICAO Code
	PORT-AU-PRINCE/Port-au-Prince Intl	MTPP
Honduras*	LA CEIBA/Goloson Intl ROATAN/Juan Manuel Gálvez Intl SAN PEDRO SULA/Ramón Villeda Morales Intl TEGUCIGALPA/Toncontín Intl	MHLC MHRO MHLM MHTG
Jamaica*	KINGSTON/Norman Manley Intl MONTEGO BAY/Sangster Intl OCHO RIOS/Ian Fleming Intl	MKJP MKJS MKBS
Mexico	GUADALAJARA/Miguel Hidalgo Costilla Intl MEXICO/Aeropuerto Intl Benito Juárez, Ciudad de México MONTERREY/Gral. Mariano Escobedo Intl TIJUANA/Gral. Abelardo L. Rodríguez Intl CANCUN/Cancún Intl	MMGL MMEX MMMYY MMTJ MMUN
Nicaragua*	MANAGUA/Augusto César Sandino Intl	MNMG
Saint Kitts and Nevis*	BASSETERRE/Robert L. Bradshaw, Saint Kitts I. CHARLESTOWN/Newcastle Nevis I.	TKPK TKPN
Saint Lucia	CASTRIES/George F. L. Charles VIEUX-FORT/Hewanorra Intl	TLPC TLPL
Saint Vincent and The Grenadines*	BEQUIA/J.F. Mitchell CANOUAN/Canouan KINGSTOWN/Argyle MUSTIQUE/Mustique UNION ISLAND/Union Island	TVSB TVSC TVSA TVSM TVSU
Trinidad and Tobago*	PORT OF SPAIN/PIARCO Intl, Trinidad I. SCARBOROUGH/Crown Point, Tobago I.	TTPP TTCP
Territory	Aerodromes	ICAO Code
Curaçao (Aruba) (Bonaire)	WILLEMSTAD/Hato, Curaçao I. ORANJESTAD/Reina Beatrix International Airport BONAIRE/Flamingo International Airport	TNCC TNCA TNCB
Organization	Aerodromes	ICAO Code
COCESNA	N/A	N/A

* - Indicates that the Aerodrome information is directly from the CAR/SAM ANP, Volume I, Table AOP I-1. Currently 72 aerodromes are listed in this table. The ICAO NACC RO will continue to work with those states to confirm the aerodromes they wish to include in this document.

Comment [JCS2]: Reviser comentario- porque esta table??

4.3 The airspace comprising of the CAR Region is complex with multiple Air Navigation Service Providers (ANSPs) with relatively small airspaces and irregular shapes. In some cases, upper airspace is managed by one ANSP and lower airspace is managed by different organization. The busy North-South routes with additional East-West routes make the management of this airspace challenging. Refer to the CAR/SAM eANP Volume I, PART IV, TABLE ATM I-1 FLIGHT INFORMATION REGIONS (FIR)/UPPDER INFORMATION REGIONS (UIR) IN THE CAR/SAM REGIONS and Volume II, PART IV, TABLE ATM II-CARSAM-1-CAR/SAM REGIONS ATS ROUTES.

4.4 **TABLE CAR INTRO 0-1 – States and Aerodromes in CAR Region** shows the regional requirements considered to be the minimum necessary for effective planning and implementation of Aerodromes Operations (AOP) facilities and services in the CAR Region. Some States and Territories communicated with the ICAO NACC RO of their aerodromes of interests to be included in the State ANP to actively evaluate ASBU capabilities for the aerodromes. This means the States are aware of new aerodrome-centric capabilities and appropriate ICAO standard documents if the State is interested to implement such capabilities for the aerodromes not listed in this table (INTRO 0-1). For those States not communicated with the aerodromes to be included in their State ANP, the ICAO NACC RO inserted the

aerodromes listed in the CAR/SAM Air Navigation Plan Volume I, Table AOP I-1 INTERNATIONAL AERODROMES REQUIRED IN THE CAR/SAM REGIONS.

4.5 Growth and Distribution of Air Traffic in CAR Region, based on Caribbean/South American Regional Traffic Forecasts 2011-2031 developed by the Ninth Meeting of the CAR/SAM Traffic Forecasting Group (CAR/SAM TFG), the economy has recovered from the declines registered in 2009; nevertheless, the growth is projected to be somewhat slower. Therefore, the air passenger traffic forecasts on the routes associated with North America and Europe are somewhat lower. The rest of the route groups in the region are projected to grow faster mainly due to better economic performance expected in the future. Figure 1 shows the aircraft movements forecast for 2011 to 2031.

4.6 Overall passenger traffic to, from, and within the region is projected to grow at an average annual rate of 6.1 %. It is anticipated that the average annual growth rates for the Central American/Caribbean route groups will be 8.9%. Figure 2 shows the passenger traffic forecast for 2011 to 2031.

4.7 The overall number of movements is forecasted to increase from about 1.2 million in 2011 to slightly over 3.7 million in 2031, which reflects an average annual growth rate of 5.9%. The average growth rates for the route groups will range from 4.5% (between North America and CAR/SAM routes) to 8% (between South America and Central America/Caribbean).

Major Route Groups	2011	2012	2013	2014	2016	2021	2031	Average Annual Growth (%)			
								2011-	2016-	2021-	2011-
								2016	2021	2031	2031
South Atlantic	38.49	40.62	42.94	45.39	50.90	62.57	97.85	5.7	4.2	4.6	4.8
Mid Atlantic	60.49	64.29	68.32	72.61	81.70	102.16	173.80	6.2	4.6	5.5	5.4
Intra-South America	147.99	162.33	178.06	195.31	230.74	317.83	614.95	9.3	6.6	6.8	7.4
Between South America and Central America/ Caribbean	76.70	83.81	92.43	101.93	123.96	172.22	357.43	10.1	6.8	7.6	8.0
Intra-Central America/Caribbean	266.44	292.26	320.58	351.64	410.72	561.59	1072.08	9.0	6.5	6.7	7.2
Between North America and South America / Central America / Caribbean	595.73	636.07	680.28	729.62	821.20	975.69	1446.78	6.6	3.5	4.0	4.5
TOTAL	1185.84	1279.38	1382.60	1496.50	1719.22	2192.06	3762.89	7.7	5.0	5.6	5.9

* OAG data

Figure 1 Aircraft movements forecast 2011-2031 (in thousands)

Major Route Groups	2011	2012	2013	2014	2016	2021	2031	Average Annual Growth			
								2011-2016	2016-2021	2021-2031	2011-2031
South Atlantic	8.89	9.39	9.92	10.49	11.76	14.83	23.35	5.7	4.7	4.6	4.9
Mid Atlantic	9.10	9.67	10.28	10.93	12.29	15.71	26.79	6.2	5.0	5.5	5.5
Intra-South America	19.99	21.93	24.06	26.39	31.17	45.11	93.31	9.3	7.7	7.5	8.0
Between South America Central America/ Caribbean	5.45	5.90	6.45	7.05	8.42	12.58	30.17	9.1	8.4	9.1	8.9
Intra-Central Between North America / Central America Caribbean	4.65	5.10	5.59	6.13	7.17	10.24	21.00	9.0	7.4	7.4	7.8
	65.38	69.48	73.96	78.96	88.03	108.93	175.26	6.1	4.4	4.9	5.1
TOTAL	113.47	121.48	130.27	139.94	158.85	207.39	369.88	7.0	5.5	6.0	6.1

Figure 2 Passenger Traffic forecast 2011-2031 (in millions)

4.8 **Intra-Central America/Caribbean:** Passenger traffic increased from about 3.4 million in 2001 to 4.7 million in 2011, which reflects an average annual growth rate of 3.3%. For the period 2011-2031, passenger traffic is forecast to grow at an average annual rate of 7.8%, reaching 21 million by 2031. The aircraft movements for the period 2011-2031 are projected to increase at an average annual growth rate of 7.2%, bringing total movements to 1.1 million by 2031.

4.9 **Between South America and Central America/Caribbean:** Passenger traffic increased from about 2.6 million in 2001 to almost 5.5 million in 2011, which reflects an average annual growth rate of 7.8%. For the period 2011 to 2031, passenger traffic is forecasted to increase at an average annual growth rate of 8.9%, reaching over 30 million passengers in 2031. The number of aircraft movements for the same period is projected to increase at an average annual growth rate of 8%, reaching just over 357,000 movements in 2031.

4.10 **Between North America and South America and Central America/Caribbean:** Passenger traffic increased from 43.3 million in 2001 to over 65 million passengers in 2011, which reflects an average annual growth rate of 4.2%. The corresponding number of trips for the same period is projected to be around 1.5 million, which represents a growth rate of 4.5% per year. For the period 2011-2031, passenger traffic is expected to increase at an average annual growth rate of 5.1%, bringing total traffic to slightly over 175 million passengers by 2031.

4.11 According to the ICAO GANP 5th edition Global air traffic has doubled in size once every 15 years since 1977 and will continue to do so.

RPBANIP

PART II - GENERAL PLANNING ASPECTS (GEN)

1. REGIONAL COLLABORATION

1.1 Each State, Territory, and Organization set their own priorities according to their individual ANPs, or equivalent, and collaborates with appropriate stakeholders continually to ensure their priorities are harmonized.

1.2 The ICAO NACC RO provides the bridging function between the GANP and State ANP through the RPBANIP. The ICAO NACC RO in coordination with States set regional priorities and identifies regional specific improvement needs. The ICAO NACC RO leads the collaboration in the region by providing guidance and supports.

1.3 One example of the support mechanism is the Air Navigation Implementation Working Group (ANI/WG) and its ASBU Task Force (TF). The ICAO NACC RO organized the Ad-hoc group in 2015 to discuss metrics of the ASBU B0 implementation status, performance reporting and revision to the Air Navigation Reporting Form (ANRF). The Ad-hoc group became the ANI/WG ASBU TF in 2017. The objectives of the ASBU TF are to assist the region in the implementation of harmonized technologies that support the operation. The ICAO NACC RO supports the ANI/WG website. Within this website, the ASBU TF webpage resides, to share information. All ICAO NACC regional States and Territories and stakeholders are the ASBU TF members.

1.4 ICAO NACC RO hosts various web-conferences, meetings, and workshops appropriate for the purpose of the discussion. The State ANP workshop hosted by the ICAO NACC RO was one of the key support activities. States, Territories, and Organizations attended this workshop drafted and prepared their State ANP that is aligned with RPBANIP and GANP.

1.5 The one of the objectives of ANI/WG is expedite the work progress, and improve regional harmonization focused on the ATM, CNS and AIM air navigation fields, with intention to include AGA, MET and SAR. The ANI/WG offers the oversight and guidance to the ASBU TF.

2. REGIONAL PRIORITIES

2.1 The ICAO NACC RO agrees and support the Priorities described in the GANP, Chapter 2, *“Implementation: Turning Ideas into implementation Actions”*. The CAR States and Organizations are encouraged to pay special attention to the below ASBU Block 0 (B0) modules and elements. When applicable, they are guided to follow appropriate ICAO documents when implementing such capabilities.

2.2 Performance-based Navigation (PBN) is the highest ICAO implementation priority. The ASBU B0 Airport Accessibility (APTA) describes the PBN capabilities. The ICAO NACC RO defined the B0 APTA Elements describing these capabilities and these capabilities are guided by multiple ICAO documents including ICAO Doc 9613, *Performance-based Navigation (PBN) Manual* and ICAO Doc 9849, *Global Navigation Satellite System (GNSS) Manual*.

2.3 The ASBU B0 Continuous Climb Operations (CCO) describes the continuous climb operations in conjunction with PBN. The ICAO defined the B0 CCO Elements describing these capabilities and these capabilities are guided on ICAO documents including ICAO Doc 9613, *Performance-based Navigation (PBN) Manual* and ICAO Doc 9993, *Continuous Climb Operations (CCO) Manual*.

2.4 For the ASBU B0 Continuous Descent Operations (CDO) describes the continuous decent operations in conjunction with PBN. ICAO defined the B0 CDO Elements describing these capabilities and these capabilities are guided with some ICAO documents like ICAO Doc 9613, *Performance-based Navigation (PBN) Manual* and ICAO Doc 9931, *Continuous Descent Operations Manual*.

2.5 Air Traffic Flow Management (ATFM) has a high implementation priority. The ASBU B0 Network Operation (NOPS) describes the ATFM capabilities. The ICAO NACC RO defined the B0 NOPS Elements describing these capabilities and these capabilities are guided by ICAO documentation including Doc 9971, *Manual on Collaborative Air Traffic Flow Management (ATFM)* and *Caribbean/South American Air Traffic Flow Management Concept of Operation (CAR/SAM ATFM CONOPS)*.

2.6 The NACC RO also identified regional specific improvement elements that are important for the region's unique situation and they are listed below:

- Aerodrome Certification – The NACC RO has a goal to have CAR aerodromes to be certified.
- Aerodrome Bird/Wildlife Organization and Control Program – The NACC RO has a goal to have CAR aerodromes to have an aerodrome bird/wildlife organization and control program in place and implemented.

2.7 The operational improvements facilitated by the implementation of ASBU elements serve to significantly reduce aviation emissions by more fuel efficiency in accordance with ICAO environmental protection aspirational goals and the consolidated statements of continuing ICAO policies and practices related to environmental protection particularly the States' action plans on CO2 emissions reduction initiative.

3 PLANNING PRINCIPLES

3.1 The CAR Region planning will be aligned on the principles of Performance-Based Approach as outlined in ICAO Doc 9883 Manual on Global Performance of the Air Navigation System.

3.2 The performance-based approach (PBA) is based on the following principles:

- strong focus on desired/required results through adoption of performance objectives and targets;
- informed decision-making, driven by the desired/required results; and
- reliance on facts and data for decision-making.

4 PLANNING METHODOLOGY

4.1 Guided by the GANP, the regional planning process starts by identifying the homogeneous ATM areas, major traffic flows and international aerodromes. An analysis of this data leads to the identification of opportunities for performance improvement. Available technologies and ASBU Modules are evaluated to identify which Elements best provide the needed operational improvements. Depending on the complexity of the selected technology or Elements, additional planning steps may need to be undertaken including financing and training needs. Finally, regional plans would be developed for the deployment of the improvements and supporting requirements. This is an iterative planning process which may require repeating several steps until a final plan with specific regional targets is in place. This planning methodology requires full involvement of States, service providers, airspace users and other stakeholders, thus ensuring commitment by all for implementation.

4.2 Block 0 features Modules characterized by technologies and capabilities which have already been developed and implemented in many parts of the world today. It therefore features a near-term availability milestone, or Initial Operating Capability (IOC - 2013), for high density airspace or aerodromes based on regional, sub-regional and State operational need. Blocks 1 through 3 are characterized by both existing and projected performance area solutions, with availability milestones beginning in 2019, 2025 and 2031 respectively.

4.3 Considering that some of the ASBU Modules contained in the GANP are specialized packages that may be applied where specific operational requirements or corresponding benefits exist, States will decide how each ASBU Element would fit into the national and regional plans.

5 REVIEW AND EVALUATION OF AIR NAVIGATION PLANNING

5.1 The progress and effectiveness against the priorities set out in the regional air navigation plans should be annually reported by States, using a consistent reporting format, to ICAO.

5.2 Performance monitoring requires a measurement strategy. Data collection, processing, storage and reporting activities supporting the identified global/regional performance metrics are fundamental to the success of performance-based approaches.

5.3 The air navigation planning and implementation performance framework prescribes reporting, monitoring, analysis and review activities being conducted on a cyclical, annual basis. An Air Navigation Reporting Form (ANRF) reflecting selected key performance areas as defined in the *Manual on Global Performance of the Air Navigation System* (ICAO Doc 9883) has been developed. The ANRF is a customized tool for the application of setting planning targets, monitoring implementation, and identifying challenges, measuring implementation/performance and reporting.

5.4 The NACC ANRFs provided at Part II are used for tracking analysis and implementation progress of ASBU Elements and Regional Aviation System Improvements (RASI).

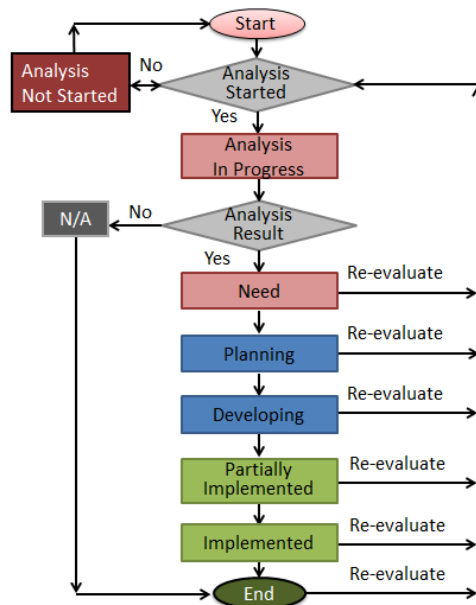
5.5 **Figure GEN I-1 – Analysis and Implementation Workflow** depicts the workflow for analyzing and implementing ASBU Elements. This same important method can be applied with respect to RASI or State Aviation System Improvements (SASI).

5.6 follows:

The significance of each step in the workflow as it pertains to regional planning is as

- **Analysis Not Started** – The requirement to implement this ASBU Element has not yet been assessed
- **Analysis In Progress** – A Need Analysis as to whether or not this ASBU Element is required is in progress
- **N/A** – The ASBU Element is not required
- **Need** - The Need Analysis concluded that the ASBU Element is required, but planning for the implementation has not yet begun
- **Planning** – Implementation of this ASBU Element is planned, but not started
- **Developing** – Implementation of this ASBU Element is in the development phase, but not yet operational
- **Partially Implemented** – Implementation of this ASBU Element is partially completed and/or operational but all planned implementations are not yet complete
- **Implemented** - Implementation of this ASBU Element has been completed and/or is fully operational everywhere the need was identified

Figure GEN I-1 – Analysis and Implementation Workflow



5.7 The Need Analysis of ASBU Elements will identify which ASBU Elements are required. In this context, “required” means that the benefits estimated from the implementation would justify the associated implementation costs or the potential safety benefits are deemed to justify the implementation costs. The implementation status of ASBU Elements which are not required should be indicated as “N/A”, meaning “not applicable”.

5.8 The analysis and implementation status determined in accordance with the above is reflected in the applicable ANRFs and in the ASBU Metrics and Target, and Implementation Status Tables in Part II.

6. METRICS AND TARGETS FOR STATE ANPs, RASI ANRFs, AND ASBU

6.1 The very first knowledge the ICAO NACC RO need is the status of each State in terms of RASI and ASBU Elements needs analysis and implementation. This communication will be done through State ANPs and ANRFs. Each state is allowed to use any format for its State ANP although the ICAO NACC RO recommends usage of the State ANP template provided. The recommended template is accessible through the ICAO NACC RO web site supporting the ANI/WG ASBU Task Force (<https://www.icao.int/NACC/Pages/nacc-regionalgroups-aniwg.aspx>).

6.2 TABLE GEN I-1 – Metrics and Targets for State ANPs, RASI ANRFs, and ASBU ANRFs describes the CAR Region’s Metrics and Targets to capture the State ANP readiness, RASI ANRF and ASBU ANRF filing status. If ANRFs are filed, States are aware of future aviation capability options and ICAO documents (i.e., SURPs and MOPS) supporting those capabilities.

TABLE GEN I-1 – Metrics and Targets for State ANPs, RASI ANRFs, and ASBU ANRFs

Metrics	Year	Targets	Progress & Remarks
State/Territory /Organization have its ANP	2018	At least 4 states have State ANPs (or 19% of States)	
	2019	At least 8 states have State ANPs (or 38% of States)	
	2020	At least 15 states have State ANPs (or 71% of States)	
	2021	At least 19 states have State ANPs (or 90% of States)	
	2022	At least 21 states have State ANPs (or 100% of States)	
RASI ANRF filled in	2018	At least 0 states have State ANPs (or 0% of States)	
	2019	At least 5 states have State ANPs (or 23% of States)	
	2020	At least 10 states have State ANPs (or 47% of States)	
	2021	At least 15 states have State ANPs (or 71% of States)	
	2022	At least 21 states have State ANPs (or 100% of States)	
ASBU B0 ANRF filled in	2018	At least 8 states have State ANPs (or 38% of States)	
	2019	At least 13 states have State ANPs (or 61% of States)	
	2020	At least 16 states have State ANPs (or 76% of States)	
	2021	At least 19 states have State ANPs (or 90% of States)	
	2022	At least 21 states have State ANPs (or 100% of States)	
ASBU B1 ANRF filled in	2020	Determine the targets upon release of the 2019 edition of the GANP/ASBU	
ASBU B1 ANRF filled in	2026	Determine the targets upon release of the 2025 edition of the GANP/ASBU	
ASBU B1 ANRF filled in	2032	Determine the targets upon release of the 2031 edition of the GANP/ASBU	

6.3 TABLE GEN I-2 – Detailed Status of Information Availability for State ANP, RASI ANRFs and ASBU ANRFs by States shows the status of information availability for State ANP, RASI ANRFs, and ASBU ANRFs. The details of the State ANPs, RASI ANRFs, and ASBU ANRFs are available at the ICAO NACC ANI/WG, ASBU TF Webpage (<https://www.icao.int/NACC/Pages/regional-group-asbu.aspx>). For each “Original” information indicates the date of first submission of such information while “Current” indicates the date of most recent submission of such information.

TABLE GEN I-2 – Detailed Status of Information Availability for State ANP, RASI ANRFs and ASBU ANRFs by States

Comment [JCS3]: Completar esta tabla ya que esta vacía en su contenido

State	State ANP	RASI	ASBU B0
Antigua and Barbuda	Original TBD Current TBD	Original TBD Current TBD	Original Oct 2016 Current Oct 2016
Bahamas	Original TBD Current TBD	Original TBD Current TBD	Original TBD Current TBD
Barbados	Original TBD Current TBD	Original TBD Current TBD	Original May 2017 Current May 2017
Belize	Original TBD Current TBD	Original TBD Current TBD	Original TBD Current TBD
Costa Rica	Original TBD Current TBD	Original TBD Current TBD	Original TBD Current TBD
Cuba	Original TBD Current TBD	Original TBD Current TBD	Original TBD Current TBD
Dominican Republic	Original TBD Current TBD	Original TBD Current TBD	Original TBD Current TBD
El Salvador	Original TBD Current TBD	Original TBD Current TBD	Original TBD Current TBD
Grenada	Original TBD Current TBD	Original TBD Current TBD	Original TBD Current TBD
Guatemala	Original TBD Current TBD	Original TBD Current TBD	Original TBD Current TBD
Haiti	Original	Original	Original

State	State ANP	RASI	ASBU B0
	TBD Current TBD	TBD Current TBD	TBD Current TBD
Honduras	Original TBD Current TBD	Original TBD Current TBD	Original TBD Current TBD
Jamaica	Original TBD Current TBD	Original TBD Current TBD	Original TBD Current TBD
Mexico	Original TBD Current TBD	Original TBD Current TBD	Original TBD Current TBD
Nicaragua	Original TBD Current TBD	Original TBD Current TBD	Original TBD Current TBD
Saint Kitts and Nevis	Original TBD Current TBD	Original TBD Current TBD	Original TBD Current TBD
Saint Lucia	Original TBD Current TBD	Original TBD Current TBD	Original TBD Current TBD
Saint Vincent and The Grenadines	Original TBD Current TBD	Original TBD Current TBD	Original TBD Current TBD
Trinidad and Tobago	Original TBD Current TBD	Original TBD Current TBD	Original TBD Current TBD
Territory			
Curaçao (Aruba) (Bonaire)	Original TBD Current TBD	Original TBD Current TBD	Original TBD Current TBD
Organization			
COCESNA	Original TBD Current TBD	Original TBD Current TBD	Original TBD Current TBD

7 Regional Performance Objectives (RPOs)

7.1 The establishment of Collaborative Decision-Making (CDM) processes ensures that all stakeholders are involved in and concur with the requirements, tasks, and timelines. The implementation of the RPO should address Air Navigation requirements on the basis of appropriate assessments and technical studies.

7.2 The RPOs will provide the elements that define the high-level tasks for implementing the regional priorities, establishing the metrics for the measurements of progress, benefits and implementation achievements. The following section describes the RPOs and their relation with the Global Air Navigation Plan elements.

7.3 The proposed strategy is to achieve a harmonized regional implementation in continuous evolution towards a global ATM system in the context of evolution of the air navigation system and requires a progressive series of tasks and regional implementation actions in accordance with the global planning framework of the GANP.

7.4 The strategy defines the most relevant components of the ATM system for regional implementation, such as: airspace organization, civil-military coordination, human factors, aeronautical regulation, safety management systems, among others.

7.5 The framework for the Regional activities should include coordination with the military authorities, who have an important participation in ensuring the best use of the available airspace resources, while protecting national security.

7.6 The RPOs should be designed with the primary objective of achieving the highest degree of interoperability at the highest level. And the results, deliverables and times to be reported must be measured in numerical terms, representing the progress made to the Council and the ICAO Air Navigation Commission.

7.7 According to Doc. 9854, the following ATM components are related to the type of ATM system components that describe the most significant tasks:

- **AOM** — Airspace Organization and Management
- **DCB** — Demand and Capacity Balancing
- **AO** — Aerodrome Operations
- **TS** — Traffic Synchronization
- **CM** — Conflict Management
- **AUO** — Airspace User Operations
- **SDM** — ATM Service Delivery Management

7.8 The ATM system components related to all phases of flight operations: (en-route, terminal, approach and airport), capacity management; airspace management including its flexible use, provision of meteorological service and aeronautical information management. Additionally, the required infrastructure and technical systems required on air/ground to support operations, communications, radio-electric spectrum management, navigation and surveillance, data processing and its interoperability and information management systems, including civil and military coordination.

7.9 State should mainly monitor the progress of the implementation in accordance with each process specific completion date, according to the following, it will be identified as

■ **Valid/ongoing** the activity has been confirmed, the work has been initiated

■ **Completed** implementation of the activity has been finalized

RPO and ASBU Methodology

7.10 The RPOs contain the baseline elements to be implemented for the different B0 ASBU modules adopted by the CAR Region.

7.11 In the initial 5-year term of the Regional Plan, some ASBU B0 modules have been adopted. The ASBU B0 modules - ASEP, OFPL and WAKE - will be included in future reviews of the RPBANIP of the Air Navigation Plan Vol III based on the maturity of regional priorities.

Air Navigation National Plans

7.12 States must develop their own air navigation national plan. Those plans will reflect the specific tasks along with expected benefits to be obtained and the date by which each should be completed according to national needs and based on the RPOs.

7.13 National plans must identify the individuals or teams responsible for achieving the RPOs, and the means for monitoring and periodically notify progress of such actions to ICAO using the Air Navigation Reporting Forms (ANRF). The responsibilities and timelines must be clearly defined, in order to ensure that involved parties keep their commitments throughout the implementation process.

7.14 States are responsible for ensuring their capacity to manage the growth of air traffic and operational safety. In addition to meet the challenges of securing their CNS and airport infrastructure, as well as to optimize their airspace to ensure the management of the growth demand. of its operations.

7.15 States must develop their air navigation plan in coordination with all interested parties to ensure its proper development and that it is aligned with regional and global navigation plans to ensure their interoperability. These air navigation plans should serve as reference documents for national investment in air navigation infrastructure.

7.16 States must take into account the development of their air navigation plans issues; such as: human talent management, connectivity, integrity and quality of information, future challenges; such as: cyber security, as well as being more competitive, efficient and friendly to the environment.

7.17 The RPOs are provided in **Appendix A**.

8. REPORTING AND MONITORING RESULTS

8.1 Reporting and monitoring results will be applied to update Tables in the RPBANIP. The results will be analyzed by the Regions and States to steer the air navigation improvements, take corrective actions and review the allocated objectives, priorities and targets if needed. The results will also be used by ICAO and aviation partner stakeholders to develop the annual report. The report results will provide an opportunity for the international civil aviation community to compare progress across different ICAO regions in the establishment of air navigation infrastructure and performance-based procedures.

8.2 The reports will also provide the ICAO Council with detailed annual results on the basis of which tactical adjustments will be made to the performance framework work programme, as well as triennial policy adjustments to the GANP and the ASBU Modules.

8.3 The information provided by States, Territories, and organization in the form of State ANP, RASI ANRF, and ASBU ANRF should be periodically reviewed and updated if subsequent analysis results in a change to the applicability of any RASI and ASBU Elements, whether or not they were selected.

8.4 Regions and States should select the RASI and ASBU Elements relevant to their needs and to identify additional Elements, as deemed necessary.

8.5 The customized CAR ASBU Air Navigation Reporting Form (ANRF) Template is provided in Appendix B (form is available at <https://www.icao.int/NACC/Pages/regional-group-asbu.aspx>), to this Part and the NACC RASI Air Navigation Reporting Form (ANRF) Template is provided in Appendix C.

APPENDIX A - RPOs

1. IMPLEMENTATION OF PERFORMANCE BASED NAVIGATION (PBN)				
Benefits				
Environment	<input type="checkbox"/> Reductions in fuel consumption			
Efficiency	<input type="checkbox"/> Ability of aircraft to conduct flight more closely to preferred trajectories <input type="checkbox"/> Increase in airspace capacity <input type="checkbox"/> Facilitate the utilization of advanced technologies (e.g., FMS based arrivals) and ATC decision support tools (e.g., metering and sequencing)			
Strategy				
ATM Component	TASK DESCRIPTION	START-END	RESPONSIBLE	STATUS
AOM	a) Implement Collaborative Decision-Making (CDM) process and PBN approval training in coordination with stakeholders	2013- 2020	States, Territories, Int. Orgs	Valid
	b) Conduct assessment on PBN implementation status of each State, Territory, Int. Organization within the Region	2018-2020	ICAO NACC Office	Valid
	c) Implement PBN airspace concept in accordance with the ICAO PBN Manual	2018- 2019	States, Territories, Int. Orgs	Valid
	c) Update Letters of Agreement between ATC units and neighboring FIRs	2013- 2020	States, Territories, Int. Orgs	Valid
	d) Publish regulations and procedures for PBN operational approval	2013- 2020	States, Territories, Int. Orgs	Valid
	e) Evaluate and implement PBN requirements for ATC automated systems, as required	2013- 2020	States, Territories, Int. Org	Valid
	f) Analyze and enhance communication, navigation and surveillance infrastructure in accordance with PBN requirements	2013- 2020	States, Territories, Int. Orgs	Valid
	g) Develop and implement PBN training programme for pilots, ATCOs, operators and regulators, as well as implementation of GNSS technologies	2013- 2020	States, Territories, Int. Orgs	Valid
	h) Optimize the ATS route structure through implementation of RNAV-5 /2 routes and gradual removal of conventional ATS routes	2019- 2020	States, Territories, Int. Orgs	Valid
	i) Implement CDOs/CCOs for SIDs/STARS in terminal areas based on RNAV 1-2 and RNP 1-/2 navigation specification, as required	2013- 2020	States, Territories, Int. Org	Valid
	j) Optimize and adjust TMAs structure according to the new SIDs/STARS implemented following CAR Flight Procedures Programme (FPP)	2018-2020	States, Territories, Int. Orgs	Valid
	k) Design and implement PBN APV in accordance with Assembly Resolution A37-11 and FPP regional activities	2013- 2020	States, Territories, Int. Orgs	Valid
	l) Conduct PBN safety assessment based ATC simulations (fast time and/or real time), live trials, etc., as required	2013- 2020	States, Territories, Int. Orgs	Valid
	m) Coordinate-Integrate-Improve ATFM system to the new PBN concept	2018-2020	States, Territories, Int. Orgs	Valid
	n) Develop performance measurement programme and its related Safety Assessment	2013- 2020	States, Territories, Int. Orgs	Valid
o) Develop post-implementation PBN Safety Assessment Programme	2013- 2020	States, Territories, Int. Orgs	Valid	

	p) Monitor implementation progress	2013- 2020	States, Territories, Int. Orgs	Valid
GPIs	GPI/5: Performance-Based Navigation; GPI/7: Dynamic And Flexible ATS Route Management; GPI/8: Collaborative Airspace Design And Management; GPI/10: Terminal Area Design and Management; GPI/11: RNP and RNAV SIDS and STARS; and GPI/12: FMS-Based Arrival Procedures			

2. IMPLEMENTATION OF FLEXIBLE USE AIRSPACE (FUA)

Benefits

- | | |
|-------------------|---|
| Efficiency | <ul style="list-style-type: none"> • Increase airspace capacity • Improve ATS route structure efficiency • Ensure safe and efficient action in the event of unlawful interference |
| Continuity | <ul style="list-style-type: none"> • Make available military restricted airspace more hours of the day so that aircraft can fly on their preferred trajectories • Allow military operations to take place, when needed, without restricting permanently civilian available airspace • Improve search and rescue services |

Strategy

ATM Component	TASK DESCRIPTION	START-END	RESPONSIBLE	STATUS
AOM	a) Establish civil/military coordination bodies	2013- 2020	States, Territories	Valid
	b) Arrange for permanent liaison and close cooperation between civil ATS units and appropriate air defence units	2013- 2020	States, Territories	Valid
	c) Conduct a regional review of Special Use Airspace: <ul style="list-style-type: none"> i. assess use of airspace management processes; ii. improve current national airspace management to adjust dynamic changes in tactical stage to traffic flows; and iii. introduce improvements in ground support systems and associated procedures for the extension of FUA with dynamic airspace management processes 	2013- 2020	States, Territories, Int. Orgs, ICAO	Valid
	d) implement dynamic ATC sectorization in order to provide the best balance between demand and capacity to respond in real-time to changing situations in traffic flows and to accommodate the preferred routes of users in short-term	2013-2020	States, Territories, Int. Orgs, ICAO	Valid
	e) Develop performance measurement programme	2013- 2020	States, Territories, Int. Orgs	Valid
	f) Monitor implementation progress	2013- 2020	ICAO	Valid
GPIs	GPI/1: Flexible Use Airspace			

Comment [JCS4]: Atención con la priorización FMUs

3. IMPROVE DEMAND AND CAPACITY BALANCING (DCB)				
Benefits				
Environment	<ul style="list-style-type: none"> Reduced weather and traffic-induced holding leading to reduced fuel consumption and emissions 			
Efficiency	<ul style="list-style-type: none"> Improved and smoother traffic flows Improved predictability Improved management of excess demand for service in ATC sectors and aerodromes Improved aerodrome and airspace operational efficiency 			
Strategy				
ATM Component	TASK DESCRIPTION	START-END	RESPON-SIBLE	STATUS
DCB	a) Identify key stakeholders (ATC service providers and users, military authorities, airport authorities, aircraft operators and relevant organizations) for purposes of coordination and cooperation - using a CDM process	2013- 2016	States, Territories, Int. Orgs	Valid
	b) Develop agreed strategic, pre-tactical, and tactical CDM processes and procedures between ANSPs and key stakeholders		States, Territories, Int. Orgs	Valid
	c) Develop regular CDM quality review processes with key stakeholders		States, Territories, Int. Orgs	Valid
	d) Analyze traffic flow problems and develop methods for improving efficiencies on a gradual basis, as needed for: <ul style="list-style-type: none"> i. Aerodrome capacity ii. ATS capacity iii. ATS letters of agreement iv. Airspace sector capacities v. Airspace and route optimization 	2013- 2016	States, Territories, Int. Orgs	Valid
	e) Define common elements of situational awareness between FMUs: <ul style="list-style-type: none"> i. Common traffic displays ii. Common understanding of constraints and associated traffic management measures iii. Common weather displays iv. Communications (teleconferences, web) v. Daily teleconference/messages methodology advisories 	2013- 2016	States, Territories, Int. Orgs	Valid
	f) Develop methods to establish static and dynamic capacity forecasting.	2013- 2016	States, Territories, Int. Orgs	Valid
	g) Develop methods for reliable demand prediction		States, Territories, Int. Orgs	Valid
	h) Define common electronic information and minimum databases required for decision support and alerting systems for interoperable situational awareness between centralized ATFM units	2013- 2016	States, Territories, Int. Orgs	Valid

	i) Develop regional procedures for efficient and optimum use of aerodrome and runway capacity	2013- 2016	States, Territories, Int. Orgs	Valid
	j) Develop a national ATFM Procedures Manual to manage demand/capacity balancing	2013- 2016	GREPECAS	Completed
	k) Develop regional coordination for implementation of ATFM units	2013- 2016	States, Territories, Int. Orgs	Valid
	l) Develop operational agreements and cross border procedures between ATFM units for interregional demand/capacity balancing	2013- 2016	States, Territories, Int. Orgs	Valid
	m) Monitor and report implementation progress	2013- 2016	ICAO	Valid
GPIs	GPI/1: Flexible Use Airspace; GPI/6: Air Traffic Flow Management; GPI/7: Dynamic and Flexible ATS Route Management; GPI/9: Situational Awareness; GPI/13: Aerodrome Design and Management; GPI/14: Runway Operations; and GPI/16: Decision Support Systems and Alerting Systems			

4. IMPROVE SITUATIONAL AWARENESS				
Benefits				
Efficiency	<ul style="list-style-type: none"> Enhanced traffic surveillance Enhanced collaboration between flight crews and the ATM system Improved collaborative decision-making through electronic aeronautical data sharing Reduced workload for both pilots and controllers Improved operational efficiency Improved implementation on a cost-effective basis 			
Safety	<ul style="list-style-type: none"> Improved available electronic terrain and obstacle data in the cockpit Reduced number of controlled flight into terrain related accidents Improved safety management 			
Regional Goal (proposal)	<ul style="list-style-type: none"> Increase in flight management by sector. Support for the reduction of longitudinal separations between operations at 10 nautical miles 			
Strategy				
ATM Component	TASK DESCRIPTION	START-END	RESPONSIBLE	STATUS
SDM	a) Identify the automation level required according to the ATM service provided in airspace and international aerodromes, assessing: <ul style="list-style-type: none"> Operational architecture design Characteristics and attributes for interoperability Data bases and software Technical requirements 	2013- 2018	States, Territories, Int. Orgs	Valid
	b) Implement flight plan data processing systems and electronic transmission tools	2013- 2019	States, Territories, Int. Orgs	Valid
	c) Implement radar data sharing programmes where benefits can be obtained	2013- 2017	States, Territories, Int. Orgs	Valid
	d) Develop situational awareness training programmes	2013- 2020	States, Territories, Int. Orgs	Valid
	e) Identify and implement additional ATM surveillance systems to improve accuracy and coverage of traffic situational information (ADS-B, MLAT, etc.) and associated procedures	2013- 2020	States, Territories, Int. Orgs	Valid
	f) Implement ATS automated message exchanges as required (FPL, CPL, CNL, DLA, etc.)	2013- 2020	States, Territories, Int. Orgs	Valid
	g) Implement automated radar handoffs where possible	2013- 2020	States, Territories, Int. Orgs	Valid
	h) Implement ground and air electronic warnings as needed: <ul style="list-style-type: none"> Conflict prediction Terrain proximity MSAW DAIW Surveillance system for surface movement 	2013- 2017	States, Territories, Int. Orgs	Valid
	i) Implement data link surveillance technologies and applications as required: ADS , CPDLC, AIDC	2014- 2018	States, Territories, Int. Orgs	Valid

SDM	j) Implement additional/advanced automation support tools to increase aeronautical information sharing i. ETMS or similar ii. MET information iii. AIS/NOTAM dissemination iv. Surveillance tools to identify airspace sector constraints	2014- 2018	States, Territories, Int. Orgs	Valid
	k) Training in the application and implementation of automated surveillance technologies and ATS system automation	2013-2018	States, Territories, Int. Orgs	Valid
	l) Enhance the training infrastructure of the region and the training programmes related to surveillance and automated systems	2013-2018	States, Territories, Int. Orgs	Valid
	m) Implement ACAS 7.1	2013-2018	States, Territories	Valid
	n) Monitor implementation progress	2013-2018	ICAO	Valid
GPIs	GPI/1: Flexible Use Airspace; GPI/6: Air Traffic Flow Management; GPI/7: Dynamic and Flexible ATS Route Management; GPI/9: Situational Awareness; GPI/13: Aerodrome Design and Management; GPI/14: Runway Operations; GPI/16: Decision Support and Alerting Systems; GPI/17: Implementation of Data Link Applications; GPI/18: Aeronautical Information; GPI/19: Meteorological Systems			

5. ENHANCE CAPACITY AND EFFICIENCY OF AERODROME OPERATIONS IN THE CAR REGION

Benefits

Safety

- Increased number of certified aerodromes in the region
- Increased safety of aerodromes operations
- Efficient use of aerodrome resources
- Safe manoeuvring in all weather conditions
- Precision surface movement and guidance in the movement area
- Reduced incident/accident factors
- Reduced number of deficiencies
- Increased runway usability factors
- Reduced number of bird/wildlife events
- Enhanced land-use management around aerodromes

Strategy

ATM Components	TASK DESCRIPTION	Start – End	Status
AO	a. Monitor and ensure promulgation of national regulations for the design and operations of aerodromes, including the aerodrome certification requirement, in accordance with established criteria and certification process. States should send to the ICAO NACC Regional Office a 3-year Plan for the certification of their aerodromes by 30 Dec 2018	2013 -2020	Valid
	b. Monitor and ensure that the aerodrome certification process includes procedures for dealing with non-compliance with the established requirements, including aeronautical studies, a risk assessment mechanism, and notification procedure.	2013 -2020	Valid
	c. Provide training to personnel from the regulatory staff dealing with aerodrome certification and the aerodrome operator for completion of the certification process.	2013 –2020	Valid
	d. Monitor phase implementation of SMS with performance objectives agreed with States and ensure clearly defined lines of safety accountability throughout a certified aerodrome.	2013 –2020	Valid

<p>e. Optimize airport operations through Airport Collaborative Decision Making (A-CDM) prioritizing the following aspects:</p> <ul style="list-style-type: none"> • Define the rules and procedures used by aerodrome stakeholders to share information and work together to efficiently manage operations at aerodromes and enhance the planning and management of en-route operations. • Optimize the use of all aerodrome resources, reduce arrival and departure delays, and improve predictability during regular and irregular operations <p>Use as a reference ICAO Doc. 9971 - Manual on Collaborative Air Traffic Flow Management (ATEM) Third Edition 2018</p>	2019 - 2022	States, Territories	Valid
<p>f. Application of the operational and performance requirements through the Advanced surface movement and guidance system (A-SMGS), with main objectives:</p> <ul style="list-style-type: none"> • enhancing the surveillance function to ensure that controllers receive all necessary information on all aircraft and vehicles on the movement area • developing routing facilities in order to make full use of aerodrome capacity. This will require the provision of a tactical planning tool • providing clear indications of assigned routes to pilots and vehicle drivers in the movement area so that they can follow the assigned routes down to the AVOL; and • improving the control of runway and taxiing operations by implementing incursion alerts and tools to predict, detect and resolve 	2014 - 2022	States, Territories	Valid

	<p>g. The Bird/Wildlife Hazard Management Plan forms part of an integrated Airport Risk/Safety Management System</p> <ul style="list-style-type: none"> • identify the specific hazards or risks associated with bird wildlife conflicts with aircraft at the Airport • Bird and animal species at the airport are ranked according to the risk posed to aircraft by the various factors including: <ul style="list-style-type: none"> ○ The local and regional bird/wildlife population size (<i>use Airport Bird Count Data, Safety Officer Log entries, Off Airport Counts</i>) ○ Size of the bird and flocking nature as a measure of its propensity to cause damage ○ Location observed on or near the airport and movement patterns ○ Strike History (Ability to avoid aircraft) • The following aspects should be considered in identifying the risk of bird/wildlife strike at the Airport: <ul style="list-style-type: none"> ○ Species that frequent the airport in terms of <ul style="list-style-type: none"> ▪ Numbers on and transiting the airport : Seasonal or Resident ▪ Body mass of the species ▪ Flocking behaviour of the bird o Historical strike numbers ▪ Population growth ○ The airport habitat ○ The activities on the airport ○ The airport's surrounding land use ○ Off airport activities 	2013-2022	ICAO, States, Territories	Valid
GPIs	GPI/6 Air Traffic Flow Management; GPI/9 Situational Awareness; GPI/13 Aerodrome Design and Management; GPI/14 Runway Operations; GPI/15 Match IMC and VMC Operating Capacity; GPI/18 Aeronautical Information.			

Comment [JCS5]: Sintetizar - mucho detalles
Contenido se corta entre celdas

6. OPTIMIZATION AND MODERNIZATION OF COMMUNICATION INFRASTRUCTURE

Benefits

Efficiency	<ul style="list-style-type: none"> • Improved ATS coordination • Increased communications availability • Communication misunderstandings avoided • Facilitated utilization of advanced technologies
Continuity	<ul style="list-style-type: none"> • Improved airspace interoperability and seamlessness • Improved provision of air traffic control services to all aircraft operations
Safety	<ul style="list-style-type: none"> • Improved airspace and aerodrome safety
Regional Goal (Proposal)	<ul style="list-style-type: none"> • Have an aeronautical infrastructure that supports the data channels that require a greater bandwidth by 2020. • Have a main and backup communications infrastructure that meets the needs of the States and that evolves according to the new needs. • Integrate cybersecurity requirements into the media before 2020.

Strategy

ATM Component	TASK DESCRIPTION	START-END	RESPONSIBLE	STATUS
AO, TS, CM, AUO AOM, SDM	a) Review the performance status of current AFS services and identify deficiencies or improvements (AFTN, oral ATS services, A/G communications)	2013-2018	States, Territories	Valid
	b) Implement communication service improvements as required to support current and planned Air Navigation applications, including Required Communication Performance (RCPs).	2014-2020	States, Territories	Valid
	c) Develop regional ATN planning documents	2013-2019	GREPECAS	Valid
	d) Coordinate and test ATN G-G application implementation aspects (AMHS, AIDC, etc.)	2013-2020	States, Territories	Valid
	e) Conduct planning, trial and implementation activities for A-G data applications (DCL, D-ATIS, etc.)	2014-2019	States, Territories	Valid
	f) Carry out technical review of regional telecommunication networks for ATN implementation	2013-2020	States, Territories	Valid
	g) Implement available technologies in order to facilitate ground and airborne applications (CPDLC, ADS-C, ADS-B)	2013-2019	States, Territories	Valid
	h) Implement the necessary communications network for ACDM	2014-2019	States, Territories	Valid
	i) Support ICAO position during the ITU WRC and ensure regional coordination for the protection of the aviation spectrum	2013-2019	States, Territories	Valid
	j) Ensure participation of civil aviation experts in State delegations to ITU WRC meetings	2013-2019	States, Territories	Valid
	k) Disseminate ICAO policy statements on aeronautical radio frequency spectrum requirements	2013-2019	States, Territories	Valid
	l) Implement frequency spectrum management for protection and new services	2013-2020	States, Territories	Valid
	m) Support training on the application and implementation of advanced communication related technologies and ATN	2013-2020	States, Territories	Valid

	n) Enhance the regional training infrastructure and training programmes related to communications	2013-2020	States, Territories	Valid
	o) Monitor implementation and improvement of telecommunications and ATN application issues	2013-2020	ICAO	Valid
GPIs	GPI/1: Flexible Use Airspace; GPI/6: Air Traffic Flow Management; GPI/7: Dynamic Flexible ATS Route Management; GPI/9: Situational Awareness; GPI/14: Runway Operations; GPI-17: Data Link Application; GPI-21: Navigation Systems; GPI-22: Communications Infrastructure			

7. IMPLEMENTATION OF AERONAUTICAL INFORMATION MANAGEMENT (AIM)

Benefits

Efficiency	<ul style="list-style-type: none"> Implemented SARPs from Annex 15 and Doc 8126 that apply to the wide range of aeronautical information products of the Integrated Aeronautical Information Package (IAIP), services, and electronic aeronautical information technologies Generated and distributed aeronautical information that serves to improve the safety, accessibility and cost-effectiveness of ATS Support PBN Improved aircraft operating limitations analysis
Safety	<ul style="list-style-type: none"> Support Electronic aeronautical chart production and on-board FMS database Improved situational awareness Harmonized and integrated aeronautical information safety solutions Improved cockpit display electronic terrain and obstacle data and electronic aeronautical chart data Reduced CFIT accidents Support Ground Proximity (GPWS) and Minimum Safe Altitude Warning (MSAW) system

Regional Goal (proposal)

-

Strategy

ATM Component	TASK DESCRIPTION	START END	RESPON-SIBLE	STATUS
CM, AUO, DCB, TS, AOM, AO, SDM	The tasks to implement the identified steps in the roadmap must be specified and conducted in accordance with the phases for the transition from AIS to AIM as follows:	2013–2015	States / Territories	Valid
	a) Comply with the process to introduce and implement Annex15 and 4 amendments to the Chicago Convention			
	b) Periodically report on the generation and distribution of Integrated IAIP aeronautical information that improves the safety of ATS in the Region to the ICAO NACC Office	2013–2016	States / Territories	Valid
	c) Develop a method to measure the performance and outcomes from States, Territories and international organizations with distribution of quality aeronautical information to improve recognition of ATM requirements, safety, and effectiveness related to the electronic distribution	2013–2016	ICAO, GREPECAS	Valid

	of information			
	d) Assist States, Territories and international organizations to improve decision making related to their transition to AIM	2013–2016	ICAO	Valid
	e) Assist States, Territories and international organizations with the AIM, in order to implement ICAO Standards for aeronautical information products, services, and technologies in electronic format, as required	2013–2018	ICAO, GREPECAS	Valid
	f) Support AIM developments to achieve the ATM system improvements in the <i>Global Air Traffic Management Operational Concept</i> ; including NOTAM contingency plans	2013–2018	States / Territories	Valid
CM, AUO, DCB, TS, AOM, AO, SDM	g) Ensure that AIM requirements harmonize and integrate at a regional and international level, on-board electronic management of aeronautical information for the requirements or the use of ground systems	2013–2018	ICAO States / Territories	Valid
	h) Share experience and resources with implementation of e-TOD through establishment of an e-TOD regional working group	2013-2018	GREPECAS States / Territories	Valid
	i) Implement ICAO Doc 9881 technical requirements as required	2013-2018	States / Territories	Valid
	j) Report requirements to the ICAO NACC Regional Office and monitor implementation status of e-TOD using electronic media	2013-2018	States / Territories	Valid
	k) Develop a high-level agreement for the management of a national e-TOD programme	2013-2018	States / Territories	Valid
	l) Monitor implementation progress	2013-2018	ICAO, States/ Territories	Valid
GPIs	GPI-5: Performance-Based Navigation; GPI-9: Situational Awareness; GPI-11: RNP and RNAV SIDS and STARS; GPI-18: Aeronautical Information; GPI-20: WGS-84; GPI-21: Navigation Systems			

7. IMPLEMENTATION OF AERONAUTICAL INFORMATION MANAGEMENT (AIM)

Benefits

Efficiency	<ul style="list-style-type: none"> Implemented SARPs from Annex 15, Annex 4 and Doc 8126 as well as all ICAO documents related, that apply to the wide range of aeronautical information products and data of the Integrated Aeronautical Information Package (IAIP), services, and electronic aeronautical information technologies; Support generation and distribution of aeronautical information in digital and electronic format that allow improvement of the safety, accessibility and cost-effectiveness and efficient air traffic services; Support PBN implementation; Improve aircraft operating limitations analysis mainly in IMC conditions;
Safety	<ul style="list-style-type: none"> Support Electronic aeronautical chart production, GIS systems and on-board FMS database; Improved situational awareness; Harmonized and integrated aeronautical information safety and data solutions; Improved cockpit display electronic terrain and obstacle data and electronic aeronautical chart data; Reduced CFIT accidents; Support Ground Proximity (GPWS) and Minimum Safe Altitude Warning (MSAW) system

Strategy

ATM Component	TASK DESCRIPTION	START END	RESPONSIBLE	STATUS
CM, AUO, DCB, TS, AOM, AO, SDM	The tasks for the implementation of the 21 identified step in the ICAO roadmap must be specified and conducted in accordance with the 3 phases for the transition from AIS to AIM as follows: a) Comply with the process to implement Annex 15 and 4 amendments to the Chicago Convention that integrate AIM in those Annexes.	2019–2022	States / Territories	Valid
	b) Periodically report on the generation and distribution of Integrated IAIP aeronautical information to improve the safety of ATS in the Region to the ICAO NACC Office	2013–2016	States / Territories	Completed
	c) Develop a method to measure the performance and outcomes from States, Territories and international organizations with distribution of quality aeronautical information and for a better recognition of ATM requirements, safety, and effectiveness related with the electronic distribution of information	2019–2022	ICAO, GREPECAS	In progress
	d) Assist States, Territories and international organizations to improve decision making related to their transition to AIM	2013–2016	ICAO	Completed
	e) Assist States, Territories and international organizations with the AIM, in order to implement ICAO Standards for aeronautical information products, services, and technologies in electronic format, as required	2019–2022	ICAO, GREPECAS	In progress
	f) Support AIM developments to achieve the ATM system improvements in the <i>Global Air Traffic Management Operational Concept</i> ; including NOTAM contingency plans	2019–2022	States / Territories	Valid

ATM Component	TASK DESCRIPTION	START END	RESPON-SIBLE	STATUS
CM, AUO, DCB, TS, AOM, AO, SDM	The tasks for the implementation of the 21 identified step in the ICAO roadmap must be specified and conducted in accordance with the 3 phases for the transition from AIS to AIM as follows: a) Comply with the process to implement Annex 15 and 4 amendments to the Chicago Convention that integrate AIM in those Annexes.	2019–2022	States / Territories	Valid
	b) Periodically report on the generation and distribution of Integrated IAIP aeronautical information to improve the safety of ATS in the Region to the ICAO NACC Office	2013–2016	States / Territories	Finalized
	c) Develop a method to measure the performance and outcomes from States, Territories and international organizations with distribution of quality aeronautical information and for a better recognition of ATM requirements, safety, and effectiveness related with the electronic distribution of information	2019–2022	ICAO, GREPECAS	In progress
	d) Assist States, Territories and international organizations to improve decision making related to their transition to AIM	2013–2016	ICAO	Finalized
	e) Assist States, Territories and international organizations with the AIM, in order to implement ICAO Standards for aeronautical information products, services, and technologies in electronic format, as required	2019–2022	ICAO, GREPECAS	In progress
	f) Support AIM developments to achieve the ATM system improvements in the <i>Global Air Traffic Management Operational Concept</i> ; including NOTAM contingency plans	2019–2022	States / Territories	Valid
	g) Ensure that AIM requirements harmonize and integrate at a regional and international level, for the use of the GNSS systems and in the electronic management and data of aeronautical	2019–2022	ICAO States / Territories	In progress
	h) Share experience and resources in the implementation of e-TOD through establishment of an e-TOD regional working group	2019–2022	GREPECAS States / Territories	Valid
	j) Implement ICAO Doc 9881 (Guidelines for electronic terrain, obstacles and aerodromes mapping information) technical requirements as required	2019-2025	States / Territories	Valid
	j) Report requirements to the ICAO NACC Regional Office and monitor implementation status of e-TOD using electronic media	2019-2025	States / Territories	In progress
	k) Develop a high-level agreement for the management of a national e-TOD programme as part of the PBN requirements and the SWIM concept	2019-2025	States / Territories	Valid

	l) Monitor implementation progress of AIM elements associated with the SWIM (Doc 10039 Vol. I)	2018-2022	ICAO, States/ Territories	Valid
GPIs	GPI-5: Performance-Based Navigation; GPI-9: Situational Awareness; GPI-11: RNP and RNAV SIDS and STARS; GPI-18: Aeronautical Information; GPI-20: WGS-84; GPI-21:GNSS Navigation Systems			

8. IMPROVE AVAILABILITY OF METEOROLOGICAL INFORMATION				
Benefits				
Efficiency	<ul style="list-style-type: none"> Improved aerodrome and airspace capacity Reduced unnecessary consumption of fuel and avoid unjustified delays due to aerodrome minimum meteorological conditions 			
Safety	<ul style="list-style-type: none"> Increase flights through areas of fair weather conditions and avoid or reduced flights through areas of adverse meteorological conditions Guarantee meteorological service quality for international air navigation 			
Strategy				
ATM Component	TASK DESCRIPTION	START - END	RESPON-SIBLE	STATUS
AOM, DCB, AO, TS, AUO	a) Increase facilities to disseminate and exchange aeronautical meteorological information: <ul style="list-style-type: none"> i) Increase the facilities of AMHS communications terminals and Internet to disseminate OPMET meteorological data from meteorological offices. ii) Increase communications facilities to relay special meteorological reports from aircraft from the ATC units to the meteorological offices iii) Maintain and expand the number of workstations used to receive meteorological World Area Forecast System products iv) Develop and implement a transition plan for OPMET information in XML/GML IWXXM format vi) Implementation of Space Meteorology services 	2018- 2020	States, Territories	Valid
	b) Implement a programme to update aerodrome climatological tables and summaries c) Increase availability, timeliness and quality of OPMET weather data: <ul style="list-style-type: none"> i) Improve use of METAR and TAF codes/templates to disseminate meteorological reports and aerodrome forecasts ii) Enhance availability of text and graphic SIGMET information iii) Enhance availability of landing forecasts, TREND, considering user requirements iv) Update the letters of agreements between the CAA/MET/Volcanological Observatories of States, highlighting the responsibilities of each institution (including VONA format) 	2019- 2021	States, Territories	Valid
	d) Establish contingency procedures to disseminate OPMET data via Internet in case of available facilities and services failure	2019- 2021	States, Territories, ICAO	Valid

AO	e) Improve the quality of data provided by meteorological sensors used in meteorological reports: Establish data verification and calibration programmes of data provided by meteorological instruments and automated meteorological systems	2019– 2020	States, Territories	Valid
AUO	f) Implement oversight programmes to ensure availability and quality of meteorological OPMET data issued by CAR States and Territories and provide assistance if necessary	2019– 2021	States, Territories	Valid
	g) Monitor the participation of States and Territories in SIGMET emission	2019– 2021	ICAO, VAAC Washington TCAC	Valid
AOM, DCB, AO, TS, AUO	h) Implement Quality Assurance System programmes for aeronautical meteorological service	2019-2021	States, Territories	Valid
AUO	i) Develop yearly analyzes on personnel needs and training programmes for the provision of the aeronautical meteorological service and safety supervision	2019-2021	States, Territories, ICAO, WMO AR	Valid
AO, TS	j) Increase the number of automated meteorological systems at aerodromes	2019-2021	States, Territories	Valid
	k) Implement meteorological data downlinks at MET and ATS units	2019--2021	States, Territories	Valid
	l) Implement meteorological data uplinks from automated meteorological stations and MET and ATS units	2019--2021	States, Territories	Valid
SDM	m) Monitor implementation progress	2018-2020	ICAO, States/ Territories	Valid
GPIs	GPI/6: Air Traffic Flow Management; GPI/7: Flexible/Dynamic ATS Route Management; GPI/9: Situational Awareness; GPI/14: Runway Operations; GPI/17: Implementation of Data link Applications; GPI/18: Aeronautical Information; GPI 19: Meteorological Systems			

9. IMPROVE SEARCH AND RESCUE (SAR) SERVICES				
Benefits				
Efficiency	<ul style="list-style-type: none"> Enhanced response to contingency situations Enhanced collaboration among stakeholders 			
Safety	<ul style="list-style-type: none"> Improved operational efficiency Improved safety 			
Strategy				
ATM Component	TASK DESCRIPTION	START-END	RESPONSIBLE	STATUS
SDM	a) Conduct comprehensive analysis of State SAR requirements based on risk assessment and quality assurance principles	2013- 2020	States, Territories, Int. Orgs, ICAO	Valid

	b) Support States for the establishment of an entity which provides, on a 24-hour basis, SAR services within its territory and the areas where the State has accepted responsibility to provide SAR to ensure that assistance is rendered to persons in distress	2018-2020	ICAO NACC Office	Valid
	c) Foster the harmonization of policies, regulations, practices, and procedures of the aeronautical/maritime SAR services in accordance with ICAO and IMO provisions	2013- 2020	States, Territories, Int. Orgs, ICAO	Valid
	d) Develop and update SAR agreements between Rescue Coordination Centres (RCCs) of adjacent States and SAR service international agencies, as required according with ICAO SAR Strategy	2019- 2020	States, Territories, Int. Orgs	Valid
	e) Foster the establishment of joint aeronautical/maritime SAR Committees, including the integration of voluntary SAR organizations as well as the development of agreements between all stakeholders of the national SAR service	2013- 2020	States, Territories, Int. Orgs, ICAO	Valid
	f) Develop human resource and training planning strategy in line with ICAO SAR provisions	2013- 2020	States, Territories, Int. Orgs, ICAO	Valid
	g) Monitor implementation progress	2013- 2020	ICAO, States/ Territories	Valid
GPIs	GPI/6: Air Traffic Flow Management; GPI/9: Situational Awareness			

APPENDIX B - ASBU ANRF TEMPLATE

ASBU Air Navigation Reporting Form (ASBU ANRF)			
PIA		Block - Module	Date
Module Description			
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		
etc.	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			

1.1 ANRFs should be reviewed at least once per year and updated if required. Updated ANRFs should be submitted to the relevant ICAO Regional Office.

1.2 An ASBU ANRF should be completed for each ASBU Module as follows:

PIA The Performance Improvement Area (1, 2, 3 or 4) for the ASBU Module, as per the *NACC ASBU Handbook*.

Block - Module The Module Designation for the ASBU Module, as per the *NACC ASBU Handbook*.

Date The date when the form was completed or updated.

Module Description The Summary Description for the ASBU Module, as per the *NACC ASBU Handbook*.

Element Review the descriptive text for each Element, as per the *NACC ASBU Handbook*. It is not necessary to include the Defined, Derived from or Identified By information. Insert additional rows, if necessary, to accommodate all of the Elements listed for the ASBU Module.

Date Planned or Implemented The month and year when the Element was fully implemented or the year when it is planned for the Element to be fully implemented by all applicable States or at all applicable aerodromes. This field should be left blank if the Status for the Element is "Analysis Not Started" or "Not Applicable" for all States or aerodromes in the Region.

Status Consider the Need Analysis or Implementation status for the Element. Indicate the status as per **Figure GEN I-1 Analysis and Implementation Workflow**.

Status Details Further information to support or explain the reported status. The reason(s) an Element was found to be "Not Applicable" for all the aerodromes (or States) in the Region. Identify the reason(s) why the Need Analysis has not been completed for all or some of the aerodromes (or States) in the Region. Information on where implementation has or has not been completed (as appropriate) if the reported status is "Partially Implemented".

Achieved Benefits Describe the achieved benefits for the entire Module or particular Elements. The benefits can be quantitative or qualitative. The benefits should be described for the following 5 of the 11 Key Performance Areas (KPA) as defined in the *Manual on Global Performance of the Air Navigation System (Doc 9883)*:

Access & Equity: Improving the operating environment so as to ensure all airspace users have the right of access to ATM resources needed to meet their specific operational requirements; and ensuring that the shared use of the airspace for different airspace users can be achieved safely. Providing equity for all airspace users that have access to a given airspace or service. Generally, the first aircraft ready to use the ATM resources will receive priority, except where significant overall safety or system operational efficiency would accrue or

national defence considerations or interests dictate by providing priority on a different basis.

Capacity: Improving the ability to meet airspace user demand at peak times and locations while minimizing restrictions on traffic flow. Responding to future growth by increasing capacity, efficiency, flexibility, and predictability while ensuring that there are no adverse impacts to safety and giving due consideration to the environment. It is important increasing resiliency to service disruption and minimising resulting temporary loss of capacity.

Efficiency: Improving the operational and economic cost effectiveness of gate-to-gate flight operations from the airspace users' perspective. Increasing the ability for airspace users to depart and arrive at the times they select and fly the trajectory they determine to be optimum in all phases of flight.

Environment: Contributing to the protection of the environment by minimizing or reducing noise, gaseous emissions, and other negative environmental effects in the implementation and operation of the air navigation system.

Safety: Reducing the likelihood or severity of operational safety risks associated with the provision or use of air navigation services.

**Implementation
Challenges**

A description of any circumstances that have been encountered or are foreseen that might prevent or delay implementation. Challenges should be categorized and described under the applicable subject area.

Notes

Look for any further information as deemed appropriate.

RPBANIP

PART III –AVIATION SYSTEM BLOCK UPGRADES IMPLEMENTATION (ASBU)

1. INTRODUCTION

1.1. The GANP and the ASBU concept and documents were developed to provide the framework and strategic direction for a global and harmonized aviation system. They provide strategic direction and define measurable operational improvements and include key civil aviation policy principles to assist ICAO Regions and States with the preparation and implementation of their air navigation plans.

1.2. In accordance with Recommendation 6/1 of the Twelfth Air Navigation Conference (AN-Conf/12), PIRGs (GREPECAS) are requested to establish priorities and targets for air navigation, in line with the ASBU concept.

1.3. The planning and implementation of improvements to the CAR Region infrastructure and services should be undertaken within the framework of the coordination arrangements among CAR States and Territories, including regulatory personnel. Part II provides ASBU implementation metrics, targets and status in the CAR Region.

1.4. The *NACC ASBU Handbook* (Appendix A to this Part) provides descriptions of the ASBU Modules to the Element level.

2. CAR ASBU BLOCK 0 IMPLEMENTATION TARGETS AND STATUS

2.1. Metrics and targets should be established for States or aerodromes, as appropriate for the Element concerned. Progress toward the targets reported in the ANP should only be in relation to the aerodromes listed in **TABLE CAR INTRO 0-1 – States and Aerodromes in CAR Region**. This RPBANIP includes 19 States, Curacao (including Aruba and Bonaire), and COCESNA. Although 72 aerodromes are assumed in the **TABLE CAR INTRO 0-1 – States and Aerodromes in CAR Region**, the ICAO NACC RO is working to obtain the accurate aerodrome information that should be included in the RPBANIP.

2.2. **TABLE CAR ASBU -1 – CAR Metrics and Targets for ASBU Block 0 Elements** lists the Elements and associated metrics, targets and progress for each of the eighteen ASBU Block 0 Modules as agreed by the CAR Region. Some elements have aerodrome-centric capabilities while other elements have state-centric capabilities.

2.3. Instructions for completing Table CAR ASBU -1 are as follows:

Metrics

- a. To determine how many states have been assessed for the needs of a particular capability, consider only whether it has been assessed or not.
- b. To determine how many states or aerodromes need a particular capability, consider only whether it is in need or not, regardless of the phase of implementation.

- c. To determine how many states or aerodromes have implemented a particular capability, only full implementation should be considered.

Targets

- a. When determining how many states have assessed, include the target date for those not assessed.
- b. When determining how many states or aerodromes have implemented a capability, include the target date for those not yet implemented.

TABLE CAR ASBU -1 – CAR Metrics and Targets for ASBU Block 0 Elements
(This table will be filled in at the next revision cycle.)

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
Performance Improvement Area 1: Airport Operations				
ACDM	1. Interconnection between aircraft operator & ANSP systems to share surface operations information	Number of aerodromes to be considered: 72 a. How many states have assessed the need? <i>None, 1, 2, or 21</i> b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i> c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i>	B0-ACDM-1. Target 1: Assess by TBD date a. TBD b. TBD B0-ACDM-1. Target 2: Assess by TBD date c. TBD	
	2. Interconnection between aircraft operator & airport operator systems to share surface operations information	Number of aerodromes to be considered: 72 a. How many states have assessed the need? <i>None, 1, 2, or 21</i> b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i> c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i>	B0-ACDM-2. Target 1: Assess by TBD date a. TBD b. TBD B0-ACDM-2. Target 2: Assess by TBD date c. TBD	
	3. Interconnection between airport operator & ANSP systems to share surface operations information	Number of aerodromes to be considered: 72 a. How many states have assessed the need? <i>None, 1, 2, or 21</i> b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i> c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i>	B0-ACDM-3. Target 1: Assess by TBD date a. TBD b. TBD B0-ACDM-3. Target 2: Assess by TBD date c. TBD	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	4. Interconnection between airport operator, aircraft operator & ANSP systems to share surface operations information	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>B0-ACDM-4. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0-ACDM-4. Target 2: Assess by TBD date c. TBD</p>	
	5. Collaborative departure queue management	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>B0-ACDM-5. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0-ACDM-5. Target 2: Assess by TBD date c. TBD</p>	
APTA	1. PBN approach procedures with vertical guidance to LNAV/VNAV minima	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>B0-APTA-1. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0-APTA-1. Target 2: Assess by TBD date c. TBD</p>	
	2. PBN approach procedures with vertical guidance to LPV minima	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>B0-APTA-2. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0-APTA-2. Target 2: Assess by TBD date c. TBD</p>	

Comment [JCS6]: Completer esta tabla

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	3. PBN Approach Procedures without vertical guidance (LP, LNAV minima; using SBAS)	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>BO-APTA-3. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-APTA-3. Target 2: Assess by TBD date c. TBD</p>	
	4. GBAS Landing System (GLS) Approach procedures	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>BO-APTA-4. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-APTA-4. Target 2: Assess by TBD date c. TBD</p>	
RSEQ	1. AMAN via controlled time of arrival to a reference fix	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>BO-RSEQ-1. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-RSEQ-1. Target 2: Assess by TBD date c. TBD</p>	
	2. Departure management	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>BO-RSEQ-2. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-RSEQ-2. Target 2: Assess by TBD date c. TBD</p>	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	3. Departure flow management	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>BO-RSEQ-3. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO- RSEQ-3. Target 2: Assess by TBD date c. TBD</p>	
	4. Point merge	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>BO-RSEQ-4. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO- RSEQ-4. Target 2: Assess by TBD date c. TBD 0</p>	
SURF	1. A-SMGCS with at least one cooperative surface surveillance system	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>BO-SURF-1. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO- SURF-1. Target 2: Assess by TBD date c. TBD</p>	
	2. Including ADS-B APT as an element of A-SMGCS	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>BO-SURF-2. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO- SURF-2. Target 2: Assess by TBD date c. TBD</p>	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	3. A-SMGCS alerting with flight identification information	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>BO-SURF-3. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-SURF-3. Target 2: Assess by TBD date c. TBD</p>	
	4. EVS for taxi operations	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>BO-SURF-4. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-SURF-4. Target 2: Assess by TBD date c. TBD</p>	
	5. Airport vehicles equipped with transponders	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>BO-SURF-5. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-SURF-5. Target 2: Assess by TBD date c. TBD</p>	
WAKE	1. New PANS-ATM wake turbulence categories and separation minima	<i>ICAO has not developed new minima</i>	N/A	
	2. Dependent diagonal paired approach procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>BO-WAKE-2. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-WAKE-2. Target 2: Assess by TBD date c. TBD</p>	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	3. Wake independent departure and arrival procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>B0-WAKE-3. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0- WAKE-3. Target 2: Assess by TBD date c. TBD</p>	
	4. Wake turbulence mitigation for departures procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>B0-WAKE-4. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0- WAKE-4. Target 2: Assess by TBD date c. TBD</p>	
	5. 6 wake turbulence categories and separation minima	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>B0-WAKE-5. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0- WAKE-5. Target 2: Assess by TBD date c. TBD</p>	
Performance Improvement Area 2: Globally Interoperable Systems and Data				
AMET	1. WAFS	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>B0-AMET-1. Target 1 Assess by TBD date a. TBD b. TBD</p> <p>B0-AMET-1. Target 2: Assess by TBD date c. TBD</p>	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	2. IAVW	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>BO-AMET-2. Target 1 Assess by TBD date a. TBD b. TBD</p> <p>BO-AMET-2. Target 2: Assess by TBD date c. TBD</p>	
	3. TCAC forecasts	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>BO-AMET-3. Target 1 Assess by TBD date a. TBD b. TBD</p> <p>BO-AMET-3. Target 2: Assess by TBD date c. TBD</p>	
	4. Aerodrome warnings	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>BO-AMET-4. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-AMET-4. Target 2: Assess by TBD date c. TBD</p>	
	5. Wind shear warnings and alerts	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>BO-AMET-5. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-AMET-5. Target 2: Assess by TBD date c. TBD</p>	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	6. SIGMET	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>B0-AMET-6. Target 1 Assess by TBD date a. TBD b. TBD</p> <p>B0-AMET-6. Target 2: Assess by TBD date c. TBD</p>	
	7. Other OPMET information (METAR, SPECI and/or TAF)	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>B0-AMET-7. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0-AMET-7. Target 2: Assess by TBD date c. TBD</p>	
	8. QMS for MET	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>B0-AMET-8. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0-AMET-8. Target 2: Assess by TBD date c. TBD</p>	
DATM	1. Aeronautical Information Exchange Model (AIXM)	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>B0-DATM-1. Target 1: Assess by TBD date a. TBD</p> <p>b. TBD</p> <p>B0-DATM-1. Target 2: Assess by TBD date c. TBD</p>	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	2. eAIP	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>B0-DATM-2. Target 1: Assess by TBD date a. TBD</p> <p>b. TBD</p> <p>B0-DATM-2. Target 2: Assess by TBD date c. TBD</p>	
	3. Digital NOTAM	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>B0-DATM-3. Target 1: Assess by TBD date a. TBD</p> <p>b. TBD</p> <p>B0-DATM-3. Target 2: Assess by TBD date c. TBD</p>	
	4. eTOD	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>B0-DATM-4. Target 1: Assess by TBD date a. TBD</p> <p>b. TBD</p> <p>B0-DATM-4. Target 2: Assess by TBD date c. TBD</p>	
	5. WGS-84	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>B0-DATM-5. Target 1: Assess by TBD date a. TBD</p> <p>b. TBD</p> <p>B0-DATM-5. Target 2: Assess by TBD date c. TBD</p>	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	6. QMS for AIM	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 21</i></p> <p>b. How many states need this capability? <i>None, 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>BO-DATM-6. Target 1: Assess by TBD date a. TBD</p> <p>b. TBD</p> <p>BO-DATM-6. Target 2: Assess by TBD date c. TBD</p>	
FICE	1. AIDC to provide initial flight data to adjacent ATSUs	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>BO-FICE-1. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-FICE-1. Target 2: Assess by TBD date c. TBD</p>	
	2. AIDC to update previously coordinated flight data	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>BO-FICE-2. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-FICE-2. Target 2: Assess by TBD date c. TBD</p>	
	3. AIDC for control transfer	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>BO-FICE-3. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-FICE-3. Target 2: Assess by TBD date c. TBD</p>	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	4. AIDC to transfer CPDLC logon information to the Next Data Authority	Number of states to be considered: 21 a. How many states have assessed the need? <i>None, 1, 2, or 21</i> b. How many states need this capability? <i>None, 1, 2, or 21</i> c. How many states have implemented this capability? <i>None, 1, 2, or 21</i>	B0-FICE-4. Target 1: Assess by TBD date a. TBD b. TBD B0-FICE-4. Target 2: Assess by TBD date c. TBD	
Performance Improvement Area 3: Optimum Capacity and Flexible Flights				
ACAS	1. ACAS II (TCAS version 7.1)	Number of states to be considered: 21 a. How many states have assessed the need? <i>None, 1, 2, or 21</i> b. How many states need this capability? <i>None, 1, 2, or 21</i> c. How many states have implemented this capability? <i>None, 1, 2, or 21</i>	B0-ACAS-1. Target 1: Assess by TBD date a. TBD b. TBD B0-ACAS-1. Target 2: Assess by TBD date c. TBD	
	2. Auto Pilot/Flight Director (AP/FD) TCAS	Number of states to be considered: 21 a. How many states have assessed the need? <i>None, 1, 2, or 21</i> b. How many states need this capability? <i>None, 1, 2, or 21</i> c. How many states have implemented this capability? <i>None, 1, 2, or 21</i>	B0-ACAS-2. Target 1: Assess by TBD date a. TBD b. TBD B0-ACAS-2. Target 2: Assess by TBD date c. TBD	
	3. TCAS Alert Prevention (TCAP)	Number of states to be considered: 21 a. How many states have assessed the need? <i>None, 1, 2, or 21</i> b. How many states need this capability? <i>None, 1, 2, or 21</i> c. How many states have implemented this capability? <i>None, 1, 2, or 21</i>	B0-ACAS-3. Target 1: Assess by TBD date a. TBD b. TBD B0-ACAS-3. Target 2: Assess by TBD date c. TBD	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
ASEP	1. ATSA-AIRB	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, or 2</i></p>	<p>BO-ASEP-1. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-ASEP-1. Target 2: Assess by TBD date c. TBD</p>	
	2. ATSA-VSA	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>BO-ASEP-2. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-ASEP-2. Target 2: Assess by TBD date c. TBD</p>	
ASUR	1. ADS-B	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>BO-ASUR-1. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-ASUR-1. Target 2: Assess by TBD date c. TBD</p>	
	2. Multilateration (MLAT)	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 72</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>BO-ASUR-2. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-ASUR-2. Target 2: Assess by TBD date c. TBD</p>	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
FRTO	1. CDM incorporated into airspace planning	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>BO-FRTO-1. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-FRTO-1. Target 2: Assess by TBD date c. TBD</p>	.
	2. Flexible Use of Airspace (FUA)	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>BO-FRTO-2. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-FRTO-2. Target 2: Assess by TBD date c. TBD</p>	
	3. Flexible route systems	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>BO-FRTO-3. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-FRTO-3. Target 2: Assess by TBD date c. TBD</p>	
	4. CPDLC used to request and receive re-route clearances	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>BO-FRTO-4. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-FRTO-4. Target 2: Assess by TBD date c. TBD</p>	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
NOPS	1. Sharing prediction of traffic load for next day	<p>Number of states to be considered: 21</p> <p>a.How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b.How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c.How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>BO-NOPS-1. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-NOPS-1. Target 2: Assess by TBD date c. TBD</p>	
	2. Proposing alternative routings to avoid or minimize ATFM delays	<p>Number of states to be considered: 21</p> <p>a.How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b.How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c.How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>BO-NOPS-2. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-NOPS-2. Target 2: Assess by TBD date c. TBD</p>	
OPFL	1. ITP using ADS-B	<p>Number of states to be considered: 21</p> <p>a.How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b.How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c.How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>BO-OFTL-1. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-OFTL-1. Target 2: Assess by TBD date c. TBD</p>	
SNET	1. Short Term Conflict Alert (STCA)	<p>Number of states to be considered: 21</p> <p>a.How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b.How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c.How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>BO-SNET-1. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-SNET-1. Target 2: Assess by TBD date c. TBD</p>	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	2. Area Proximity Warning (APW)	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>B0-SNET-2. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0-SNET-2. Target 2: Assess by TBD date c. TBD</p>	
	3. Minimum Safe Altitude Warning (MSAW)	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>B0-SNET-3. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0-SNET-3. Target 2: Assess by TBD date c. TBD</p>	
	4. Medium Term Conflict Alert (MTCA)	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>B0-SNET-4. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0-SNET-4. Target 2: Assess by TBD date c. TBD</p>	
Performance Improvement Area 4: Efficient Flight Paths				
CCO	1. Procedure changes to facilitate CCO	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>B0-CCO-1. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0-CCO-1. Target 2: Assess by TBD date c. TBD</p>	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	2. Route changes to facilitate CCO	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>B0-CCO-2. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0-CCO-2. Target 2: Assess by TBD date c. TBD</p>	
	3. PBN SIDs	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>B0-CCO-3. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0-CCO-3. Target 2: Assess by TBD date c. TBD</p>	
CDO	1. Procedure changes to facilitate CDO	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>B0-CDO-1. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0-CDO-1. Target 2: Assess by TBD date c. TBD</p>	
	2. Route changes to facilitate CDO	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>B0-CDO-2. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0-CDO-2. Target 2: Assess by TBD date c. TBD</p>	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	3. PBN STARS	<p>Number of aerodromes to be considered: 72</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, 2, ... or 72</i></p> <p>c. How many aerodromes have implemented this capability? <i>None, 1, 2, ... or 72</i></p>	<p>B0-CDO-3. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0-CDO-3. Target 2: Assess by TBD date c. TBD</p>	
TBO	1. ADS-C over oceanic and remote areas	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>B0-TBO-1. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0-TBO-1. Target 2: Assess by TBD date c. TBD</p>	
	2. CPDLC over continental areas	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>B0-TBO-2. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0-TBO-2. Target 2: Assess by TBD date c. TBD</p>	
	3. CPDLC over oceanic and remote areas	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>B0-TBO-3. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>B0-TBO-3. Target 2: Assess by TBD date c. TBD</p>	

Block 0 Modules	Elements	Metrics	Targets	Progress & Remarks
	4. SATVOICE direct controller-pilot communications (DCPC)	<p>Number of states to be considered: 21</p> <p>a. How many states have assessed the need? <i>None, 1, 2, or 21</i></p> <p>b. How many states need this capability? <i>None, 1, 2, or 21</i></p> <p>c. How many states have implemented this capability? <i>None, 1, 2, or 21</i></p>	<p>BO-TBO-4. Target 1: Assess by TBD date a. TBD b. TBD</p> <p>BO-TBO-4. Target 2: Assess by TBD date c. TBD</p>	

2.4. **TABLE CAR ASBU -2 – CAR Implementation Status of ASBU Block 0 Elements** presents the implementation status of ASBU Block 0 Elements. For each status category, the number indicates how many States belong to that status if the Element is state-centric capability. Similarly, the number indicates how many aerodromes belong to that status if the Element is aerodrome-centric capability. The ICAO CAR Region includes 21 States, Territory, and organization. And currently 72 aerodromes are assumed.

Note: States' individual ASBU implementation status is available from ASBU link on the ICAO NACC ANI/WG site: <https://www.icao.int/NACC/Pages/regional-group-asbu.aspx> by selecting the appropriate state flag.

2.5. Implementation status should be determined in accordance with the **Figure GEN I-1 – Analysis and Implementation Workflow**.

2.6. As of summer of 2018, ICAO NACC RO does not have sufficient data from its States to complete **TABLE CAR ASBU -2 – CAR Implementation Status of ASBU Block 0 Elements**. It is the plan of the ICAO NACC RO to fill in this table for the next revision of this regional ANP (please refer to ICAO web <https://www.icao.int/NACC/Pages/regional-group-asbu.aspx>).

TABLE CAR ASBU -2 – CAR Implementation Status of ASBU Block 0 Elements
(This table will be filled in at the next revision cycle.)

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. Including ADS-B APT as an element of A-SMGCS								
	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								

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
	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								
	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				v				
	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)								
FRT0	1. CDM incorporated into airspace planning								

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
	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								
	4. SATVOICE direct controller-pilot communications (DCPC)								

3. CAR ASBU BLOCK 1 IMPLEMENTATION TARGETS AND STATUS

3.1. This section will be developed upon the release of the 2019 edition of the Global Air Navigation Plan (GANP).

4. CAR ASBU BLOCK 2 IMPLEMENTATION TARGETS AND STATUS

4.1. This section will be developed upon the release of the 2025 edition of the Global Air Navigation Plan (GANP).

5. CAR ASBU BLOCK 3 IMPLEMENTATION TARGETS AND STATUS

5.1. This section will be developed upon the release of the 2031 edition of the Global Air Navigation Plan (GANP).

Appendix A - CAR ASBU HANDBOOK

Comment [JCS7]: Controlar numeracion ya que hay dos appendices A y B

For information and the NACC ASBU Handbook, please refer to the NACC ASBU at the following ICAO NACC website:

https://www.icao.int/NACC/Documents/RegionalGroups/ANIWG/ASBU/2016%20NACC%20ASBU%20Handbook_final-Jan%209%202017.pdf

RPBANIP

PART IV – REGIONAL AVIATION SYSTEM IMPROVEMENT IMPLEMENTATION (RASI)

Comment [JCS8]: pendice de RASI debe estar en esta parte del Plan

1. INTRODUCTION

RASI Air Navigation Reporting Form (RASI ANRF)		
CAR Regional Initiatives	Date	
Improvement Description <i>Describe the improvement</i>		

1.1 A CAR Regional Aviation System Improvement (RASI) ANRF should be completed for each planned improvement to the CAR Region infrastructure that is not included in an ASBU Module. There should be one form for each of the following areas: procedures, technical, safety and training.

1.2 ANRFs should be reviewed at least once per year and updated if required. Updated ANRFs should be submitted to the relevant ICAO Regional Office.

1.3 A RASI ANRF should be completed for each agreed regional improvement follows:

- **Date** The date when the form was completed or updated.
- **Improvement Description** Include a description of the improvement.

1.4 For the remainder of the ANRF refer to the instructions above on completing an ASBU ANRF on the previous pages.

Comment [JCS9]: Copy from previos section

1.5 The ICAO NACC RO's implementation priority of PBN (APTA), CCO, CDO, and ATFM (NOPS) are reported as part of ASBU B0. The CAR Regional specific Elements not part of ASBU will be reported using the RASI ANRF. These Elements are:

- Aerodrome Certification – aerodrome-centric element
- Aerodrome Bird/Wildlife Organization and Control Program – aerodrome-centric element

1.6 **Table CAR RASI 1 – CAR Metrics and Targets for RASI Elements** lists the Elements and associated metrics, targets and progress. For the instruction completing this table, refer to the ASBU Metrics and Targets table in Part II.

1.7 **Table CAR RASI 2 – CAR Implementation Status of RASI** presents the implementation status of RASI Elements. For the presentation of this table, refer to the ASBU Implementation Status.

TABLE CAR RASI-1 – CAR Metrics and Targets for RASI Elements
(This table will be filled in at the next revision cycle.)

Elements	Metrics	Targets	Progress & Remarks
1. Aerodrome Certification	<p>Number of aerodromes to be considered: 72</p> <p>a. How many States have assessed the need? 21</p> <p>b. How many aerodromes need this capability? 72</p> <p>c. How many aerodromes have implemented this capability? <i>36 implemented</i></p>	<p>BO-ACER-1. Target 1: Assess by date a. 2025</p> <p>b. 2018-2021</p> <p>BO-ACER-1. Target 2: Assess by date c. other 36 by 2025</p>	-----
2. Aerodrome Bird/Wildlife Organization and Control Program	<p>Number of aerodromes to be considered: 72</p> <p>a. How many States have assessed the need? 21</p> <p>b. How many aerodromes need this capability? 72</p> <p>c. How many aerodromes have implemented this capability? <i>36 implemented</i></p>	<p>BO-BIRD-4. Target 1: Assess by date a. 2025</p> <p>b. 2018-2021</p> <p>BO-BIRD-4. Target 2: Assess by TBD date c. other 36 by 2025</p>	-----

TABLE CAR RASI-2 – CAR Implementation Status of RASI Elements
(This table will be filled in at the next revision cycle.)

Elements	Need Analysis					Implementation Status (if Element is needed)			
	Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented	
1. Aerodrome Certification									
2. Aerodrome Bird/Wildlife Organization and Control Program									

TERMS AND DEFINITIONS

When the following terms are used in this document they have the following meanings. Where the term has “(ICAO)” annotated, the term has already been defined as such in SARPs and/or PANS.

Acronym	Description
ACARS	Aircraft communications addressing and reporting system
ACAS	Aircraft collision avoidance system
ACC	Area Control Centre
ADS	Automatic Dependent Surveillance (retained for reference with non-updated documents. This term would normally be used to refer to ADS-C)
ADS-B	Automatic Dependent Surveillance – broadcast
ADS-C	Automatic Dependent Surveillance – contract
AFTN	Aeronautical Fixed Telecommunication Network
AIDC	ATS Inter-facility Data Communications
AIM	Aeronautical Information Management
AIP	Aeronautical Information Publication
ANSP	Air Navigation Service Provider
APV	An instrument procedure that utilizes lateral and vertical guidance but does not meet the requirements established for precision approach and landing operations
ATC	Air Traffic Control
ATM	Air Traffic Management
ATN	Aeronautical Telecommunication Network
ATS	Air Traffic Service
ATSU	ATS Unit
CNS	Communications, Navigation And Surveillance
CPDLC	Controller-Pilot Data Link Communications
CPL	Current Flight Plan
DAIM	Digital AIM
D-ATIS	Data link – Automatic Terminal Information Service (data link service)
FANS	Future Air Navigation System
FANS 1/A	Future Air Navigation System
FIR	Flight Information Region
FMS	Flight Management System
FPL	The Flight Plan as filed with an ATS unit by the pilot or a designated representative, without any subsequent changes
NOTAM	A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.
RCP	Required Communication Performance
RNAV	Area navigation
RNP	Required Navigation Performance
PBN	Performance-Based Navigation
SARPs	Standards and Recommended Practices
SBAS	Satellite-Based Augmentation System
SID	Standard Instrument Departure
STAR	Standard Instrument Arrival Route

REFERENCES

- ICAO Annexes (all 19)
- ICAO PANS-OPS (Doc 8168, Doc 9905)
- ICAO Aeronautical Information Services Manual (Doc 8126)
- ICAO Guidance for Electronic Terrain, Obstacle and Aerodrome Mapping Information (Doc 9881)
- ICAO Global Air Navigation Plan (Doc 9750)
- ICAO Global Navigation Satellite System (GNSS) Manual (Doc 9849)
- ICAO Global Air Traffic Management Operational Concept (Doc 9854)
- ICAO Manual on Required Communication Performance /RCP (Doc 9869)
- ICAO Manual on Air Traffic Management System Requirements (Doc 9882)
- ICAO Manual on Global Performance of the Air Navigation System /PBN (Doc 9883)
- ICAO Required Navigation Performance Authorization Required (RNP AR) Procedure Design Manual (Doc 9905)
- ICAO Quality Assurance Manual for Flight Procedure Design (Doc 9906)
- ICAO Quality Management System AIM (Doc 9839)
- ICAO Continuous Descent Operations /CDO (Doc 9931)
- ICAO Continuous Climb Operation /CCO (Doc 9933)
- ICAO CAR/SAM Traffic Forecasts 2009–2030 (Doc 9940)
- ICAO Manual on Flight and Flow — Information for a Collaborative Environment (Doc 9965)
- ICAO Manual on Collaborative Air Traffic Flow Management (Doc 9971)
- ICAO PBN Operational Approval (Doc 9997)
- ICAO PBN airspace design (Doc 9992)

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