Dominican Republic
State Air Navigation Plan

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1. Introduction

This document is Dominican Republic State Air Navigation Plan (ANP) describing the plan and status of aviation technology implementation. The background of the State ANP and the environment of our air navigation system are presented along with the method and process to evaluate and monitor aviation technology implementation.

1.1 Background

The ICAO Global Air Navigation Plan (Doc 9750, GANP) provides ICAO's vision to achieve sustainable growth of the global civil aviation system. It also presents all States with a comprehensive planning tool supporting a harmonized global air navigation system. The GANP is an overarching framework that includes key civil aviation policy principles to assist ICAO Regions and States with the preparation of their Regional and State Air Navigation Plans (ANPs).

Planning and Implementation Regional Groups (PIRGs) are expected to develop the regional ANPs reflecting the regional requirements. GANP obligates States to map their individual or regional programmes against the harmonized GANP, but provides them with far greater certainty of investment. GANP requires active collaboration among States through the PIRGs in order to coordinate initiatives within applicable regional ANPs.

The GANP introduces the Aviation System Block Upgrades (ASBU) methodology. The ASBU methodology and its description of future aviation capabilities define programmatic and flexible global systems engineering approaches allowing all States to advance their air navigation capacities based on their specific operational requirements.

To this extent, the North American, Central American and Caribbean (NACC) Regional Office (RO), has published the NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (RPBANIP, v3.1 in April 2014) aligning the activities and strategies with the ICAO ASBU methodology.

This document is the ANP for Dominican Republic aligning activities and strategies to the GANP and RPBANIP. The information contained in the Dominican Republic ANP is related mainly to:

- Planning: objectives set, priorities and targets planned at the state level

- Implementation monitoring and reporting: monitoring the progress of implementation towards targets planned. This information should be used for reporting purposes (i.e.: global and regional air navigation reports and performance dashboards); and/or

- Guidance: providing state guidance material for the implementation of specific system/procedures in a harmonized manner.

The Dominican Republic ANP would be used as a tool for planning, monitoring, and reporting the status of implementation of the aviation capabilities.

1.2 Environment

The environments of Air Navigation of Dominican Republic, such as authority, airspace and airports, and air traffic are described in this section.

1.2.1 Authority of **Dominican Republic**

The Dominican Institute of Civil Aviation (IDAC) created by the law 491-06, promulgated on Dicember 28, 2016, as an autonomous state agency that regulates, certifies, supervises and promotes civil aviation in the Dominican Republic; through the Direccion de Navegacion Aerea (DINA), it is also the provider of air navigation services.

IDAC, manages the entire operational activities of civil aviation, overseeing compliance with national and international standards, promoting growth and ensuring safety of air operations. The organization is organized as shown in Figure 1.2.1.
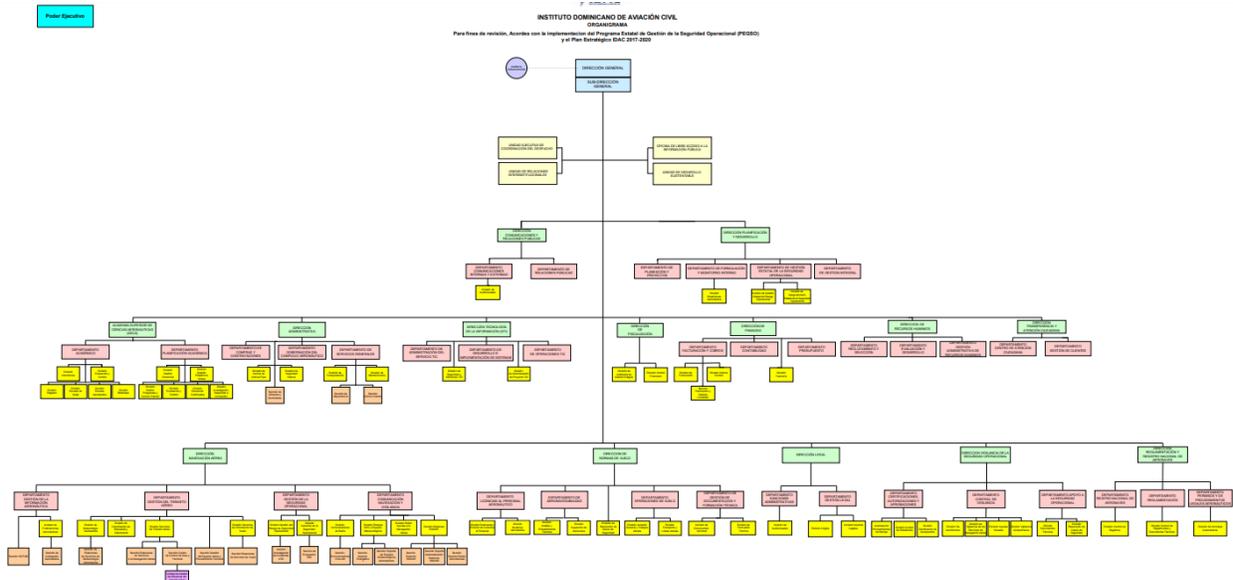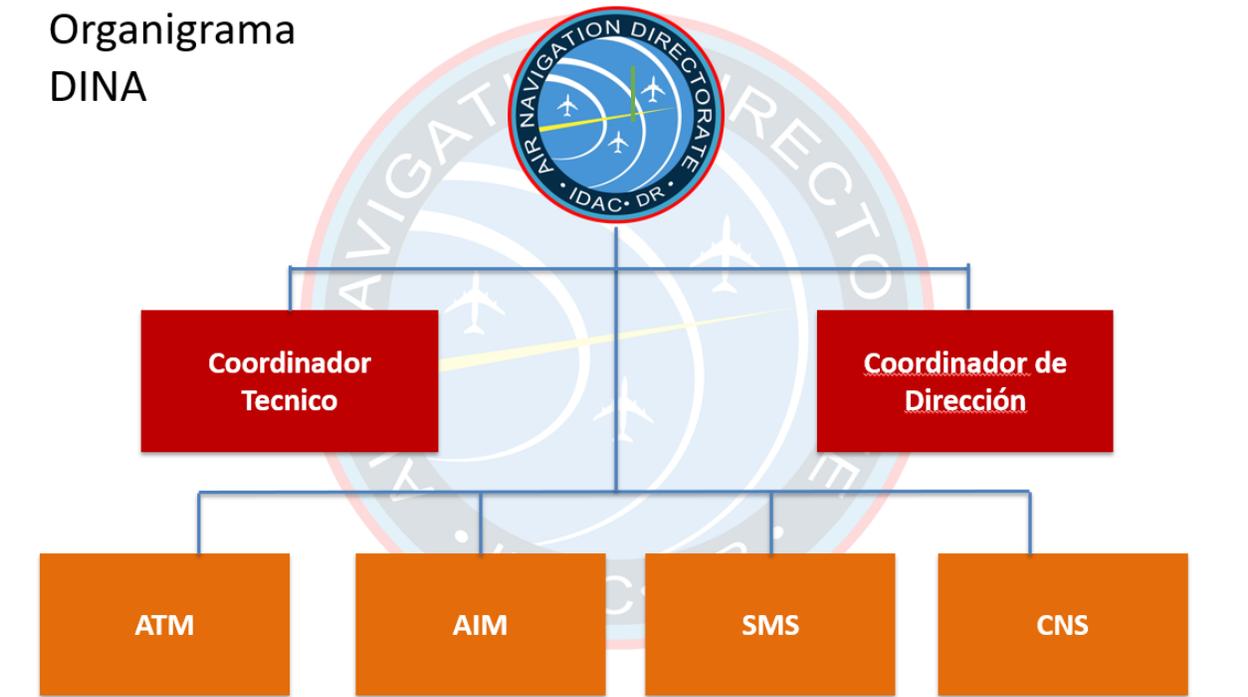
Figure 1.2.1: Organizational Structure of Dominican Republic

1.2.2 Airspace

Dominican Republic manages the Santo Domingo Flight Information Region (FIR), through the Direccion de Navegacion Aerea (DINA), the Dominican Republic territory, ocupe an extension of 48,448 Km2 of the Ispaniola Island, the FIR Santo Domingo (MDCS) have a dimention of 172,578 Km2, sorounded by the FIRs of Miami (KZMA), San Juan (TJZS), Curacao (TNCF) and Port ou Prince (MTEG), as depited in figure 1.2.2.
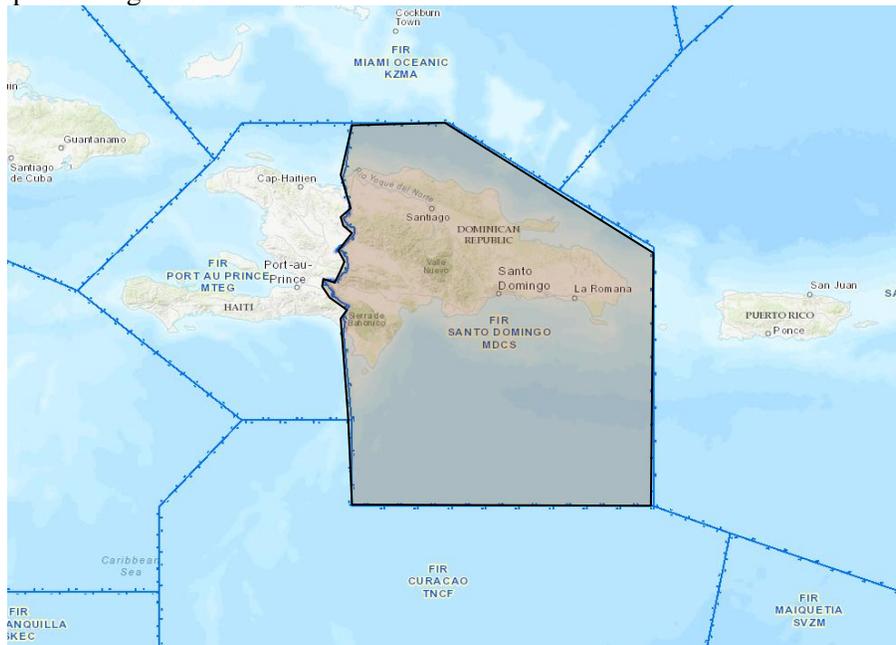
Figure 1.2.2: MDCS FIR and Domninican Republic Territory

1.2.3 Aerodromes

Two major aerodromes in Dominican Republic are: Punta Cana International Airport (MDPC) and Las Americas International Airport (MDSD). These two aerodromes are listed in the ICAO's regional ANP titled, "Caribbean and South American Air Navigation Plan, Volume I (dated October 2015), Table AOP I-1, International Aerodromes Required in the CAR/SAM Regions". The MDPC has the capacity of 40-45 air traffic movements per hour. The MDSD has the capacity of 35-40 air traffic movements per hour.

Punta Cana International Airport (MDPC)

	Runway 09	Runway 27
Length x Width	3100 x 45 m	3100 x 45 m
Surface Type	asphalt	asphalt
TDZ-Elev	47 ft	36 ft
Lighting	Edge, THR LGT, VASIS, RWY End and APCH LGT.	Edge, THR LGT, VASIS, and RWY End.
Displace Threshold	N/A	N/A

	Runway 08	Runway 26
Length x Width	3100 x 45 m	3100 x 45 m
Surface Type	asphalt	asphalt
TDZ-Elev	43 ft	37 ft
Lighting	Edge, THR LGT, VASIS, RWY	Edge, THR LGT, VASIS, RWY

	End and APCH LGT.	End and APCH LGT.
Displace Threshold	N/A	N/A

Las Americas International Airport (MDSD)

	Runway 17	Runway 35
Length x Width	3354 X 60 M	3354 X 60 M
Surface Type	ASPHALT	ASPHALT
TDZ-Elev	55.51FT	58.92FT
Lighting	APCH, THR, VASIS,EDGE,RWY END AND SWY LITHTS.	APCH, THR, VASIS,EDGE,RWY END AND SWY LITHTS.
Displace Threshold	N/A	N/A

1.2.4 Traffic Forecast

Number of typical daily operation (arrivals/departures) at Punta Cana International Airport (MDPC) and Las Americas International Airport (MDSD) are 55/55 (total of 110 movements) and 40/40 (total of 80 movements), respectively. The RPBANIP forecasted that average annual growth of air traffic in the Caribbean region would increase 5.9% during 2011-2031. The Dominican Republic feels more comfortable using annual increase rate of 6% for MDPC and 5% for MDSD. Estimated daily operations at MDPC and MDSD are shown in Tables 1.2.4 applying the increase forecasts to each year from 2018 to 2032.

Year	MDPC	MDSD
2018	110	80
2019	117	84
2020	124	89
2021	131	94
2022	139	100
2023	147	106
2024	156	112
2025	165	119
2026	175	126
2027	186	134
2028	197	142
2029	209	150
2030	221	159
2031	235	169
2032	249	179

Table 1.2.4: Air Traffic Forecasts at MDPC and MDSD (number of daily operation) using annual increase rate of 6% for MDPC and 5% for MDSD.

1.3 Planning Methodology

Guided by the GANP and RPBANIP, the state planning process starts by identifying the state responsible 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 Elements 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, state plans would be developed for the deployment of 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.

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

In establishing and updating the implementation priorities detailed in the Dominican Republic ANP, due consideration should be given to the safety priorities set out in the Global Aviation Safety Plan (GASP) and the NAM/CAR regional safety strategy. Dominican Republic would establish its own air navigation objectives, priorities and targets to meet its individual needs and circumstances in line with the global and regional air navigation objectives, priorities, and targets.

1.4 Air Navigation Planning Process

The air navigation planning process prescribes evaluation, implementation, reviewing, reporting, and monitoring activities. It is recommended to conduct the process on a cyclical, annual basis. An Air Navigation Reporting Form (ANRF) is a tool to monitor and report the implementation status of capabilities. The Dominican Republic ANRF is a customized tool for the application of setting planning targets, monitoring implementation, and identifying challenges, measuring implementation/performance and reporting. The ANRF reflects selected key performance areas as defined in the Manual on Global Performance of the Air Navigation System (ICAO Doc 9883).

Many of the future capabilities are described in terms of ASBU Elements. Some capabilities are specific to the need of the Caribbean Region and/or the State needs. These specific needs are described as Regional Aviation System Improvements (RASI) and State Aviation System Improvements (SASI). Both Analysis and Work Flow and ANRF are useful to manage the implementation status of ASBU, RASI, and SASI capabilities.

1.4.1 Analysis and Work Flow Process

Figure 1.4.1 depicts the workflow for analyzing and implementing ASBU Elements. This flow process should be applied to each of the ASBU Elements. If the Element is applicable to an airport, each airport needs to be evaluated through this flow process. This same flow process is applicable to RASI and SASI.

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

- **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 yet 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
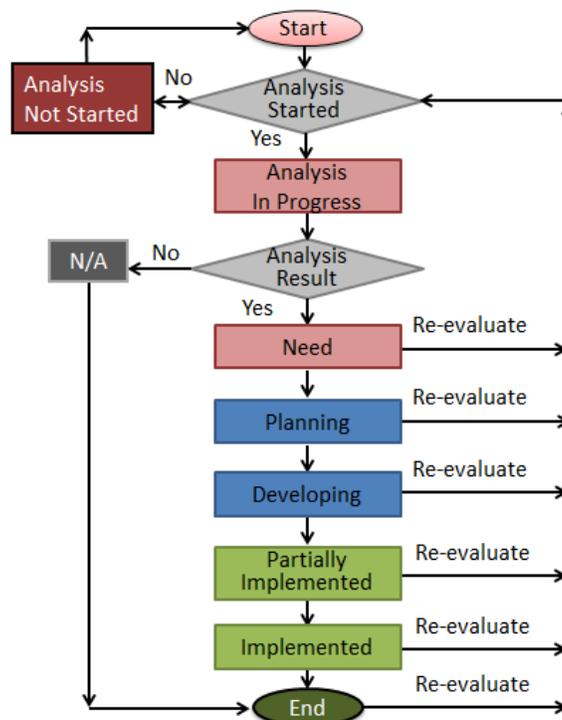
Figure 1.4.1: Analysis and Work Flow

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".

The analysis and implementation status determined in accordance with the above is reflected in the applicable ANRFs and in the ASBU Implementation Status Tables.

1.4.2 Monitoring and Reporting Results

Monitoring and reporting results will be analyzed by the Regions, States and the ICAO Secretariat 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 Global Air Navigation 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. 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.

The information provided in the Dominican Republic ANRFs should be periodically reviewed and updated if subsequent analysis results in a change to the applicability of any ASBU Elements, whether or not they were selected. The explanation of ANRF is provided in Appendix A. The customized Dominican Republic ASBU Air Navigation Reporting Form Template is provided in Appendix B. The Dominican Republic RASI and SASI Air Navigation Reporting Form Templates are provided in Appendix C.

1.5 Problem Identification

To provide and promote safe and efficient aviation services to the customers, it is important to resolve ongoing challenges that hindering the mission. It is also important to anticipate and address the potential problems in the future.

1.5.1 Existing Problems

The demands of MDPC and MDSD are expected to increase in the future. The current infrastructure in both airports, despite the updates and expansions over the years, these do not adequately meet the maximum capacity demand during Hight seasons, this demand is produced by the need of end users, the tour operators, sell them seasonal packages, usually for weeks, creating blocks arrivals and departures between the period Friday to Monday, on the other hand, check-in check-out hours of the hotels, take place between during the hours of 11:00 AM a 3:00 PM, what turns this block of time into peak hours and days, which indicates that in the future we would have to plan the implementation of a Collaborative departure queue management system.

1.5.2 Future Problems

As we explain in 1.5.1

2. Dominican Republic's Aviation System Block Upgrade (ASBU) Implementation Status

The status of ASBU implementation is provided in this section. Though there are Block 0 to Block 4 (B0, B1, B2, and B3), only B0 capacities are ready to be implemented with supporting documents such as standards, procedures, specifications, and training materials. ICAO will provide supporting documents for B1 in 2019, B2 in 2025, and B3 in 2031.

2.1 ASBU Block 0 Implementation Metrics, Targets, and Status

ASBU B0 Implementation Targets and Status are presented in this section. Dominican Republic considers two airports, MDPC and MDSD for airport oriented Elements.

2.1.1 ASBU B0 Implementation Metrics and Targets

Table 2.1.1 provides the ASBU B0 Implementation Metrics, Targets, and Progress for each B0 Element.

Block 0 Modules	Elements	Metrics	Targets	Status & 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: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-ACDM-1 Target 1:** Assessed in Dec 2016 **a.** Yes **b.** 2 **B0-ACDM-1 Target 2:** Implement by Dec 2016 **c.** 2	Status – Implemented Only MDPC MDSD needs this capability.
	2. Interconnection between aircraft operator & airport operator systems to share surface operations information	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-ACDM-2 Target 1:** Assessed in Dec 2016 **a.** Yes **b.** 2 **B0-ACDM-2 Target 2:** Implement by Dec 2016 **c.** 2	Status – Implemented Only MDPC MDSD needs this capability.
	3. Interconnection between airport operator & ANSP systems to share surface operations information	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-ACDM-3 Target 1:** Assessed in Dec 2016 **a.** Yes **b.** 2 **B0-ACDM-3 Target 2:** Implement by Dec 2016 **c.** 2	Status – Implemented Only MDPC MDSD needs this capability.
	4. Interconnection between airport operator, aircraft operator & ANSP systems to share surface operations information	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-ACDM-4 Target 1:** Assessed in Dec 2016 **a.** Yes **b.** 2 **B0-ACDM-4 Target 2:** Implement by Dec 2019 **c.** 2	Status – Implemented Only MDPC MDSD needs this capability.
	5. Collaborative departure queue management	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-ACDM-5 Target 1:** Assessed in Dec 2019 **a.** Yes **b.** 1 **B0-ACDM-5 Target 2:** Implement by Dec 2019 **c.** none	Status – Planning Only MDPC needs this capability.

Block 0 Modules	Elements	Metrics	Targets	Status & Remarks
APTA	**1.** PBN approach procedures with vertical guidance to LNAV/VNAV minima	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-APTA-1 Target 1:** Assessed in Mar, 2019 **a.** Yes **b.** 2 **B0-APTA-1 Target 2:** Dec 2019 **c.** None	Status – Planning Only MDPC MDSD needs this capability.
	2. PBN approach procedures with vertical guidance to LPV minima	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-APTA-2 Target 1:** Assessed in Sep 2017 **a.** No **b.** None **B0-APTA-2 Target 2:** **c.** None	Status – N/A
	3. PBN Approach Procedures without vertical guidance (LP, LNAV minima; using SBAS)	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-APTA-3. Target 1:** Assessed in Aug 2010 **a.** Yes **b.** 2 **B0-APTA-3 Target 2:** Implemented in Aug 2010 **c.** 2	Status – Implemented At both MDPC MDSD.
	4. GBAS Landing System (GLS) Approach procedures	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-APTA-4. Target 1:** Assessed in Sep 2017 **a.** Yes **b.** 1 (MDPC) **B0-APTA-4. Target 2:** Implement by Dec 2019 **c.** None	Status –Developing Only at MDPC
RSEQ	**1.** AMAN via controlled time of arrival to a reference fix	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-RSEQ-1. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** None **B0- RSEQ-1 Target 2:** **c.** None	Status – N/A
	2. Departure management	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-RSEQ-2. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** None **B0-RSEQ-2. Target 2:** **c.** None	Status – N/A
	3. Departure flow management	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-RSEQ-3. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** None **B0-RSEQ-3. Target 2:** **c.** None	Status – N/A
	4. Point merge	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-RSEQ-4. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** None **B0-RSEQ-4. Target 2:** **c.** None	Status – N/A

Block 0 Modules	Elements	Metrics	Targets	Status & Remarks
SURF	**1.** A-SMGCS with at least one cooperative surface surveillance system	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-SURF-1. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** None **B0-SURF-1. Target 2:** **c.** None	Status – N/A
	2. Including ADS-B APT as an element of A-SMGCS	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-SURF-2. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** None **B0-SURF-2. Target 2:** **c.** None	Status – N/A
	3. A-SMGCS alerting with flight identification information	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-SURF-3. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** None **B0-SURF-3. Target 2:** **c.** None	Status – N/A
	4. EVS for taxi operations	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-SURF-4. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** None **B0-SURF-4. Target 2:** **c.** None	Status – N/A
	5. Airport vehicles equipped with transponders	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-SURF-5. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** None **B0-SURF-5. Target 2:** **c.** None	Status – N/A
WAKE	**1.** New PANS-ATM wake turbulence categories and separation minima	*ICAO has not developed new minima.*	N/A	Status – N/A
	2. Dependent diagonal paired approach procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-WAKE-2. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** None **B0-WAKE-2. Target 2:** **c.** None	Status – N/A
	3. Wake independent departure and arrival procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-WAKE-3. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** None **B0-WAKE-3. Target 2:** **c.** None	Status – N/A

Block 0 Modules	Elements	Metrics	Targets	Status & Remarks
	4. Wake turbulence mitigation for departures procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-WAKE-4. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** None **B0-WAKE-4. Target 2:** **c.** None	Status – N/A
	5. 6 wake turbulence categories and separation minima	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-WAKE-5. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** None **B0-WAKE-5. Target 2:** **c.** None	Status – N/A
Performance Improvement Area 2: Globally Interoperable Systems and Data				
AMET	**1.** WAFS	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-AMET-1.Target 1:** Assessed in Dec 2013 **a.** Yes **b.** Yes **B0-AMET-1.Target 2:** Implemented in Dec 2013 **c.** Yes	Status – Implemented
	2. IAVW	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-AMET-2. Target 1:** Assessed in Dec 2013 **a.** Yes **b.** Yes **B0-AMET-2. Target 2:** Implemented in Dec 2013 **c.** Yes	Status – Implemented
	3. TCAC forecasts	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-AMET-3. Target 1:** Assessed in Dec 2013 **a.** Yes **b.** Yes **B0-AMET-3.Target 2:** Implemented in Dec 2013 **c.** Yes	Status – Implemented
	4. Aerodrome warnings	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-AMET-4. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** 2 **B0-AMET-4.Target 2:** Implemented in Dec 2013 **c.** 2	Status – Implemented
	5. Wind shear warnings and alerts	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-AMET-5. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** 2 **B0-AMET-5.Target 2:** Implement by Dec 2020 **c.** 2	Status – Planning
	6. SIGMET	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-AMET-6. Target 1:** Assessed in Dec 2013 **a.** Yes **b.** Yes **B0-AMET-6. Target 2:** Implemented in Dec 2013 **c.** Yes	Status – Implemented

Block 0 Modules	Elements	Metrics	Targets	Status & Remarks
	7. Other OPMET information (METAR, SPECI and/or TAF)	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-AMET-7. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** 2 **B0-AMET-7.Target 2:** Implemented in Dec 2013 **c.** 2	Status – Implemented
	8. QMS for MET	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-AMET-8. Target 1:** Assessed in Aug 2018 **a.** Yes **b.** Yes **B0-AMET-8.Target 2:** Implement by Mar 2019 **c.** No	Status - Planning
DATM	1. Aeronautical Information Exchange Model (AIXM)	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-DATM-1. Target 1:** Assess by Dec 2017 **a.** Yes **b.** Yes **B0-DATM-1. Target 2:** Implement by Dec 2020 **c.** No	Status - Planning
	2. eAIP	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-DATM-2. Target 1:** Assess by Dec 2017 **a.** Yes **b.** Yes **B0-DATM-2. Target 2:** Implement by Dec 2020 **c.** No	Status - Planning
	3. Digital NOTAM	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-DATM-3. Target 1:** Assess by Dec 2017 **a.** Yes **b.** Yes **B0-DATM-3. Target 2:** Implement by Dec 2020 **c.** No	Status - Planning
	4. eTOD	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-DATM-4. Target 1:** Assess by Dec 2017 **a.** Yes **b.** 2 **B0-DATM-4. Target 2:** Implement by Dec 2020 **c.** None	Status - Planning
	5. WGS-84	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-DATM-5. Target 1:** Assessed in Dec 2010 **a.** Yes **b.** Yes **B0-DATM-5. Target 2:** Implemented in Dec 2013 **c.** Yes	Status – Implemented
	6. QMS for AIM	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-DATM-6. Target 1:** Assessed in Dec 2010 **a.** Yes **b.** Yes **B0-DATM-6. Target 2:** Implemented in Dec 2010 **c.** Yes	Status – Implemented
FICE	1. AIDC to provide initial flight data to adjacent ATSUs	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-FICE-1. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** Yes **B0-FICE-1. Target 2:** Implement by Jan 2019 **c.** No	Status - Developing

Block 0 Modules	Elements	Metrics	Targets	Status & Remarks
	2. AIDC to update previously coordinated flight data	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-FICE-2. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** Yes **B0-FICE-2. Target 2:** Implement by Jan 2019 **c.** No	Status - Developing
	3. AIDC for control transfer	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-FICE-3. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** Yes **B0-FICE-3. Target 2:** Implement by Jan 2019 **c.** No	Status - Developing
	4. AIDC to transfer CPDLC logon information to the Next Data Authority	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-FICE-4. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** No **B0-FICE-4. Target 2:** **c.** No	Status - N/A
Performance Improvement Area 3: Optimum Capacity and Flexible Flights				
ACAS	**1.** ACAS II (TCAS version 7.1)	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-ACAS-1. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** Yes **B0-ACAS-1. Target 2:** Implement in Jan2017 **c.** Yes	Status - Implemented
	2. Auto Pilot/Flight Director (AP/FD) TCAS	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-ACAS-2. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** No **B0-ACAS-2. Target 2:** **c.** No	Status - N/A
	3. TCAS Alert Prevention (TCAP)	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-ACAS-3. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** No **B0-ACAS-3. Target 2:** **c.** N/A	Status - N/A
ASEP	**1.** ATSA-AIRB	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-ASEP-1. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** No **B0-ASEP-1. Target 2:** **c.** N/A	Status - N/A
	2. ATSA-VSA	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-ASEP-2. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** No **B0-ASEP-2. Target 2:** **c.** N/A	Status - N/A
ASUR	**1.** ADS-B	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-ASUR-1. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** No **B0-ASUR-1. Target 2:** N/A **c.** No	Status – needed
	2. Multilateration (MLAT)	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-ASUR-2. Target 1** Assessed in Dec 2016**:** **a.** Yes **b.** None **B0-ASUR-2. Target 2:** **c.** None	Status – N/A

Block 0 Modules	Elements	Metrics	Targets	Status & Remarks
FRTO	**1.** CDM incorporated into airspace planning	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-FRTO-1. Target 1:** Assessed in Dec Dec 2004 **a.** Yes **b.** Yes **B0-FRTO-1. Target 2:** Implemented in Dec 2004 **c.** Yes	Status - Implemented
	2. Flexible Use of Airspace (FUA)	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-FRTO-2. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** Yes **B0-FRTO-2. Target 2:** Implement by Dec 2018 **c.** No	Status - Planning
	3. Flexible route systems	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-FRTO-3. Target 1** Assessed in Dec 2015**:** **a.** Yes **b.** Yes **B0-FRTO-3. Target 2:** Implemented in Dec 2015 **c.** Yea	Status - Implemented
	4. CPDLC used to request and receive re-route clearances	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-FRTO-4. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** Yes **B0-FRTO-4. Target 2:** Implement by Dec 2018 **c.** N/A	Status - Planning
NOPS	**1.** Sharing prediction of traffic load for next day	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-NOPS-1. Target 1:** Assessed in Sep 2017 **a.** Yes **b.** Yes **B0-NOPS-1. Target 2:** Implement by Dec 2019 **c.** Yes	Status – Partially Implemented
	2. Proposing alternative routings to avoid or minimize ATFM delays	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-NOPS-2. Target 1:** Assessed in Sep 2017 **a.** Yes **b.** Yes **B0-NOPS-2. Target 2:** Implement by Dec 2019 **c.** Yes	Status - Partially Implemented
OPFL	**1.** ITP using ADS-B	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-OFTL-1. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** No **B0-OFTL-1. Target 2:** **c.** No	Status - N/A
SNET	**1.** Short Term Conflict Alert (STCA)	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-SNET-1. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** Yes **B0-SNET-1. Target 2:** Implement in Dec 2014 **c.** Yes	Status - Implemented
	2. Area Proximity Warning (APW)	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-SNET-2. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** Yes **B0-SNET-2. Target 2:** Implement in Dec 2014 **c.** Yes	Status - Implemented

Block 0 Modules	Elements	Metrics	Targets	Status & Remarks
	3. Minimum Safe Altitude Warning (MSAW)	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-SNET-3. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** Yes **B0-SNET-3. Target 2:** Implement in Dec 2014 **c.** Yes	Status - Implemented
	4. Medium Term Conflict Alert (MTCA)	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-SNET-4. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** Yes **B0-SNET-4. Target 2:** Implement in Dec 2014 **c.** Yes	Status - Implemented
Performance Improvement Area 4: Efficient Flight Paths			
CCO	**1.** Procedure changes to facilitate CCO	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-CCO-1. Target 1:** Assessed in Dec 2004 **a.** Yes **b.** 2 **B0-CCO-1. Target 2:** Implement in Dec 2004 **c.** 2	Status - Implemented
	2. Route changes to facilitate CCO	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-CCO-2. Target 1:** Assessed in Dec 2004 **a.** Yes **b.** 2 **B0-CCO-B0-CCO-2. Target 2:** Implement in Dec 2004 **c.** 2	Status - Implemented
	3. PBN SIDs	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-CCO-3. Target 1:** Assessed in Dec 2004 **a.** Yes **b.** 2 **B0-CCO-B0-CCO-3. Target 2:** Implement in Dec 2004 **c.** 2	Status – Implemented
CDO	**1.** Procedure changes to facilitate CDO	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-CDO-1. Target 1:** Assessed in Dec 2004 **a.** Yes **b.** 2 **B0-CCO-B0-CDO-1. Target 2:** Implement in Dec 2004 **c.** 2	Status - Implemented
	2. Route changes to facilitate CDO	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** Have we implemented the capability? *None, 1, or 2*	**B0-CDO-2. Target 1:** Assessed in Dec 2004 **a.** Yes **b.** 2 **B0-CCO-B0-CDO-2. Target 2:** Implement in Dec 2004 **c.** 2	Status - Implemented
	3. PBN STARs	Number of aerodromes to be considered: 2 **a.** Have we assessed the need? *Yes or No* **b.** How many aerodromes need this capability? *None, 1, or 2* **c.** How many aerodromes implemented the capability? *None, 1, or 2*	**B0-CDO-3. Target 1:** Assessed in Dec 2004 **a.** Yes **b.** 2 **B0-CCO-B0-CDO-3. Target 2:** Implement in Dec 2004 **c. 2**	Status – Implemented

Block 0 Modules	Elements	Metrics	Targets	Status & Remarks
TBO	**1.** ADS-C over oceanic and remote areas	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-TBO-1. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** None **B0-TBO-1. Target 2:** **c.** No	Status - N/A
	2. CPDLC over continental areas	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-TBO-2. Target 1:** Assessed in Sep 2017 **a.** Yes **b.** None **B0-TBO-2. Target 2:** **c.** No	Status - N/A
	3. CPDLC over oceanic and remote areas	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-TBO-3. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** None **B0-TBO-3. Target 2:** **c.** No	Status - N/A
	4. SATVOICE direct controller-pilot communication (DCPC)	**a.** Have we assessed the need? *Yes or No* **b.** Do we need this capability? *Yes or No* **c.** Have we implemented the capability? *Yes or No*	**B0-TBO-4. Target 1:** Assessed in Dec 2016 **a.** Yes **b.** None **B0-TBO-4. Target 2:** **c.** No	Status - N/A

Table 2.1.1: ASBU B0 Implementation Metrics and Targets

2.1.2 ASBU B0 Implementation Status Summary

The summary of ASBU B0 implementation status is provided in the Table 2.1. The details of ASBU B0 implementation status is recorded using ANRFs and provided in Appendix D.

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
	2. Interconnection between aircraft operator & airport operator systems to share surface operations information								2
	3. Interconnection between airport operator & ANSP systems to share surface operations information								2
	4. Interconnection between airport operator, aircraft operator & ANSP systems to share surface operations information								2
	5. Collaborative departure queue management				1	1			
APTA	1. PBN approach procedures with vertical guidance to LNAV/VNAV minima					2			
	2. PBN approach procedures with vertical guidance to LPV minima				2				
	3. PBN approach procedures without vertical guidance to LNAV minima								2
	4. GBAS Landing System (GLS) procedures to CAT I minima				1		1		
RSEQ	1. AMAN via controlled time of arrival to a reference fix				2				
	2. Departure management				2				
	3. Departure flow management				2				
	4. Point merge				2				
SURF	1. A-SMGCS with at least one cooperative surface surveillance system				2				
	2. Including ADS-B APT as an element of A-SMGCS				2				
	3. A-SMGCS alerting with flight identification information				2				

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
	4. EVS for taxi operations				2				
	5. Airport vehicles equipped with transponders				2				
WAKE	1. New PANS-ATM wake turbulence categories and separation minima				2				
	2. Dependent diagonal paired approach procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart				2				
	3. Wake independent departure and arrival operations (WIDAO) for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart				2				
	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				2				
	5. 6 wake turbulence categories and separation minima				2				
Performance Improvement Area 2: Globally Interoperable Systems and Data									
AMET	1. WAFS								√
	2. IAVW								√
	3. TCAC forecasts								√
	4. Aerodrome warnings								2
	5. Wind shear warnings and alerts								2
	6. SIGMET								√
	7. Other OPMET information (METAR, SPECI and/or TAF)								2
	8. QMS for MET								√
DATM	1. Standardized Aeronautical Information Exchange Model (AIXM)					√			
	2. eAIP					√			
	3. Digital NOTAM					√			
	4. eTOD					2			
	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)				1	1			
FRTO	1. CDM incorporated into airspace planning								√
	2. Flexible Use of Airspace (FUA)					√			
	3. Flexible routing								√
	4: CPDLC used to request and receive re-route clearances				√				
NOPS	1. Sharing prediction of traffic load for next day							√	
	2. Proposing alternative routings to avoid or minimize ATFM delays							√	
OPFL	1. ITP using ADS-B				√				
SNET	1. Short Term Conflict Alert implementation (STCA)								√
	2. Area Proximity Warning (APW)								√
	3. Minimum Safe Altitude Warning (MSAW)								√
	4. Medium Term Conflict Alert (MTCA)								√
Performance Improvement Area 4: Efficient Flight Paths									
CCO	1. Procedure changes to facilitate CCO								2

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
	2. Airspace changes to facilitate CCO								2
	3. PBN SIDs								2
CDO	1. Procedure changes to facilitate CDO								2
	2. Airspace changes to facilitate CDO								2
	3. PBN STARs								2
TBO	1. ADS-C over oceanic and remote areas				√				
	2. CPDLC over continental areas				√				
	3. CPDLC over oceanic and remote areas				√				
	3. SATVOICE direct controller-pilot communication (DCPC)				√				

Table 2.1.2 ASBU B0 Implementation Status Summary

2.2 ASBU Block 1 Implementation Targets and Status

This section will be written after 2019. Appendix E is reserved for ASBU B1 ANRFs.

2.3 ASBU Block 2 Implementation Targets and Status

This section will be written after 2025. Appendix F is reserved for ASBU B2 ANRFs.

2.4 ASBU Block 3 Implementation Targets and Status

This section will be written after 2031. Appendix G is reserved for ASBU B3 ANRFs.

3. ICAO NACC Regional Aviation System Improvements (RASI) Status

The RPBANIP is aligned with GANP and provides guidance to States in the NACC region. The ICAO NACC RO also provides guidance to implement certain capabilities outside the ASBU scope, yet regionally important improvements. Currently 4 aerodrome associated NACC region specific improvements are identified and shown below. RASI ANRF for ICAO NACC Regional Initiatives is prepared and provided in Appendix H.

- Aerodrome certification – Status: Implemented at both airport MDPC and MDSD
- Heliport operational approval – Status: Planned
- Visual aids for navigation – Status: Implemented
- Aerodrome Bird/Wildlife Organization and Control Programme – Status: Implemented

4. Dominican Republic State Aviation System Improvements (SASI) Status

Dominican Republic State Aviation System Improvements (SASI) are broken into three categories; (1) Equipment upgrades; (2) Procedure upgrades; and (3) Infrastructure upgrades. The details of upgrades were recorded using SASI ANRFs and provided in Appendix I.

4.1 Equipment Upgrades

Equipment upgrades are not identified at this time.

4.2 Procedure Upgrades

Procedure upgrades are not identified at this time.

4.3 Infrastructure Upgrades

Infrastructure Upgrade not identified at this time.

5. Dominican Republic State ANP Next Review Schedule
The next review and revision of this document is scheduled in December 2019.

Appendix A: ANRF Explained

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

PIA

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

Block - Module

The Module Designation for the ASBU Module, as per the *NAM ASBU Handbook*.

Date

The date when the form was completed or updated.

Module Description

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

Element

The descriptive text for each Element, as per the *NAM 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

The Need Analysis or Implementation status for the Element, in accordance with Table NAM ASBU III-1, III-2, III-3 or III-4. Indicate the status as follows:

Not Started: if the Need Analysis has not been started for any of the States or aerodromes

In Progress: if at least one Need Analysis has been started but none have yet been completed

Need: if at least on Need Analysis has determined a requirement for the Element, but no implementation planning has yet been initiated

Not Applicable: 1) if all of the Need Analyses completed to date have concluded the Element is not required, or 2) if the Element is not an aerodrome-related improvement and the Region has not adopted the improvement for region-wide implementation.

Planning: if at least one implementation is in the Planning phase and no implementations have yet been completed.

Developing: if at least one implementation is in the Developing phase but no implementations have yet been completed.

Partially Implemented: if at least one, but not all, implementations have been completed.

Implemented: if all of Needed implementations have been completed.

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. 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 (KPAs) defined 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. 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   Any further information as deemed appropriate.

Appendix B: ASBU ANRF Template

Dominican Republic ASBU Air Navigation Reporting Form (ANRF)					
PIA	4	**Block - Module**	B0 - CDO	**Date**	August 8, 2018

Module Description: To use performance-based airspace and arrival procedures allowing an aircraft to fly its optimum profile using continuous descent operations. This will optimize throughput, allow fuel efficient descent profiles, and increase capacity in terminal areas. The application of PBN enhances CDO.

Element Implementation Status

1	**Element Description:** Procedure changes to facilitate CDO	**Date Planned/Implemented** Dec 15, 2013	**Status** Implemented
	Status Details Describe status.		
2	**Element Description** Route changes to facilitate CDO	**Date Planned/Implemented** Dec 15, 2013	**Status** Planning
	Status Details Describe status.		
3	**Element Description** PBN STARs	**Date Planned/Implemented** Dec 15, 2013	**Status** Developing
	Status Details Describe status.		

Achieved Benefits

Access and Equity
Element 1: Describe if you can, else leave it blank.
Element 3: Describe if you can, else leave it blank.

Capacity

Efficiency

Environment

Safety

Implementation Challenges

Ground system Implementation

Avionics Implementation

Procedures Availability

Operational Approvals

Notes
Provide notes if applicable.

Appendix C: RASI and SASI ANRF Templates

RASI and SASI ANRF templates are the same with ASBU ANRF template with exception of the header as shown in this Appendix. The first header is for the ICAO NACC Regional Office specific improvements while the second header is for the State specific improvements.

Section C.1: Regional Aviation System Improvements (RASI) ANRF Header

Enter appropriate State Name and Date. Describe the Module (i.e., improvement group description.)

Dominican Republic RASI Air Navigation Reporting Form (ANRF)		
ICAO NACC Regional Initiatives	**Date**	September 1, 2017
Module Description: ICAO NACC RO has identified airport improvements.		
Refer to the ASBU ANRF for the remaining sections (i.e., Element Implementation Status, Achieved Benefits, Implementation Challenges, and Notes)		

Section C.2: State Aviation System Improvements (RASI) ANRF Header

Enter appropriate State Name, Upgrades category (i.e., Equipment, Procedure, Infrastructure, etc.), Date. Describe the Module (i.e., Upgrades category description.)

Dominican Republic SASI Air Navigation Reporting Form (ANRF)		
Infrastructure Upgrades	**Date**	September 1, 2017
Module Description: Describe module.		
Refer to the ASBU ANRF for the remaining sections (i.e., Element Implementation Status, Achieved Benefits, Implementation Challenges, and Notes)		

Appendix D: Dominican Republic ASBU Block 0 ANRFs

Dominican Republic ASBU Air Navigation Reporting Form (ANRF)					
PIA	1	**Block - Module**	B0 - ACDM	**Date**	<mark>Month XX,</mark> 2017

Module Description: To implement collaborative applications that will allow the sharing of surface operations data among the different stakeholders on the airport. This will improve surface traffic management reducing delays on movement and manoeuvring areas and enhance safety, efficiency and situational awareness.

Element Implementation Status

1	**Element Description:** Interconnection between aircraft operator and ANSP systems to share surface operations information	**Date Planned/Implemented** August 8, 2018	**Status** Implemented
	Status Details <mark>Enter status details</mark>		
2	**Element Description:** Interconnection between aircraft operator and airport operator systems to share surface operations information	**Date Planned/Implemented** August 8, 2018	**Status** Implemented
	Status Details <mark>Enter status details</mark>		
3	**Element Description:** Interconnection between airport operator and ANSP systems to share surface operations information	**Date Planned/Implemented** August 8, 2018	**Status** Implemented
	Status Details <mark>Enter status details</mark>		
4	**Element Description:** Interconnection between airport operator, aircraft operator and ANSP systems to share surface operations information	**Date Planned/Implemented** August 8, 2018	**Status** Implemented
	Status Details <mark>Enter status details</mark>		
5	**Element Description:** Collaborative departure queue management	**Date Planned/Implemented** August 8, 2018	**Status** Implemented
	Status Details <mark>Enter status details</mark>		

Achieved Benefits
Access and Equity
Capacity
Efficiency
Environment
Safety
Implementation Challenges
Ground system Implementation
Avionics Implementation
Procedures Availability
Operational Approvals
Notes

Dominican Republic ASBU Air Navigation Reporting Form (ANRF)					
PIA	1	**Block - Module**	B0 - APTA	**Date**	August 8, 2018

Module Description: The use of Performance-based Navigation (PBN) and ground-based augmentation system (GBAS) landing system (GLS) procedures to enhance the reliability and predictability of approaches to runways, thus increasing safety, accessibility and efficiency. This is possible through the application of basic global navigation satellite system (GNSS), Baro-vertical navigation (VNAV), satellite-based augmentation system (SBAS) and GLS. The flexibility inherent in PBN approach design can be exploited to increase runway capacity.

Element Implementation Status

1	**Element Description:** PBN Approach Procedures with vertical guidance (LNAV/VNAV minima)	**Date Planned/Implemented** December 2018	**Status** Planning
	Status Details PBN approach procedures with Baro VNAV to be implement in selected aerodromes: RNAV : 8		
2	**Element Description:** PBN approach procedures with vertical guidance to LPV minima	**Date Planned/Implemented** N/A	**Status** N/A
	Status Details		
3	**Element Description:** PBN Approach Procedures without vertical guidance (LP, LNAV minima)	**Date Planned/Implemented** December 2004	**Status** Implemented
	Status Details: PBN approach procedures without vertical guidance published by IDAC (as of 2004) RNAV (LPV).		
4	**Element Description:** GBAS Landing System (GLS) Approach procedures	**Date Planned/Implemented** October 2018	**Status** Developing
	Status Details GLS ongoing implementation in Punta Cana International Airport: GBAS already installed, flight check pending.		

Achieved Benefits

Access and Equity

Element 2*:* Increased access to airports, especially around mountains and in low visibility operating conditions.

Capacity
Element 2*:* Increased runway capacity at locations where new procedures were published with lower minima (compared to procedures that were available in the past)
Efficiency
Element 2*:* Reduced fuel burn due to lowering minima for landing that result in fewer diversions, cancellations, and/or delays.
Environment
Element 2*:* Reduced emissions due to reduced fuel burn.
Safety
Element 2*:* Increased safety through more stabilized approaches.
Implementation Challenges
Ground system Implementation
None
Avionics Implementation
Fleet not equipped at the time of the implementation. More common use nowadays
Procedures Availability
None
Operational Approvals
None
Notes
None

[STATE] ASBU Air Navigation Reporting Form (ANRF)					
PIA	1	**Block - Module**	B0 - RSEQ	**Date**	August 8, 2018

Module Description: To manage arrivals and departures (including time-based metering) to and from a multi-runway aerodrome or locations with multiple dependent runways at closely proximate aerodromes, to efficiently utilize the inherent runway capacity.

Element Implementation Status

1	**Element Description:** AMAN via controlled time of arrival to a reference fix	**Date Planned/Implemented** August 8, 2018	**Status** N/A
	Status Details Enter status details		
2	**Element Description:** Departure management	**Date Planned/Implemented** August 8, 2018	**Status** N/A
	Status Details Enter status details		
3	**Element Description:** Departure flow management	**Date Planned/Implemented** August 8, 2018	**Status** N/A
	Status Details Enter status details		
4	**Element Description:** Point merge	**Date Planned/Implemented** August 8, 2018	**Status** N/A
	Status Details Enter status details		

Achieved Benefits

Access and Equity
Capacity
Efficiency
Environment
Safety

Implementation Challenges

Ground system Implementation
Avionics Implementation
Procedures Availability
Operational Approvals

Notes

[STATE] ASBU Air Navigation Reporting Form (ANRF)					
PIA	1	**Block - Module**	B0 - SURF	**Date**	August 8, 2018

Module Description: First levels of advanced-surface movement guidance and control systems (A-SMGCS) provides surveillance and alerting of movements of both aircraft and vehicles at the aerodrome, thus improving runway/aerodrome safety.

Automatic dependent surveillance-broadcast (ADS-B) information is used when available (ADS-B APT). Enhanced vision systems (EVS) is used for low-visibility operations.

Element Implementation Status

	Element Description:	Date	Status
1	A-SMGCS with at least one cooperative surface surveillance system	**Date** **Planned/Implemented** August 8, 2018	**Status** N/A
	Status Details Enter status details		
2	ADS-B APT	**Date** **Planned/Implemented** August 8, 2018	**Status** N/A
	Status Details Enter status details		
3	A-SMGCS alerting with flight identification information	**Date** **Planned/Implemented** August 8, 2018	**Status** N/A
	Status Details Enter status details		
4	EVS for taxi operations	**Date** **Planned/Implemented** August 8, 2018	**Status** N/A
	Status Details Enter status details		
5	Airport vehicles equipped with transponders	**Date** **Planned/Implemented** August 8, 2018	**Status** N/A
	Status Details Enter status details		

Achieved Benefits

Access and Equity
Capacity
Efficiency
Environment
Safety

Implementation Challenges

Ground system Implementation
Avionics Implementation

Procedures Availability	
Operational Approvals	
Notes	

[STATE] ASBU Air Navigation Reporting Form (ANRF)					
PIA	1	**Block - Module**	B0 - WAKE	**Date**	August 8, 2018

Module Description: Improved throughput on departure and arrival runways through optimized wake turbulence separation minima, revised aircraft wake turbulence categories and procedures.

Element Implementation Status			
1	**Element Description:** New PANS-ATM wake turbulence categories and separation minima	**Date Planned/Implemented** August 8, 2018	**Status** N/A
	Status Details <mark>Enter status details</mark>		
2	**Element Description:** Dependent diagonal paired approach procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	**Date Planned/Implemented** August 8, 2018	**Status** N/A
	Status Details <mark>Enter status details</mark>		
3	**Element Description:** Wake independent departure and arrival operations (WIDAO) for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	**Date Planned/Implemented** August 8, 2018	**Status** N/A
	Status Details <mark>Enter status details</mark>		
4	**Element Description:** 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	**Date Planned/Implemented** August 8, 2018	**Status** N/A
	Status Details <mark>Enter status details</mark>		
5	**Element Description:** 6 wake turbulence categories and separation minima	**Date Planned/Implemented** August 8, 2018	**Status** N/A
	Status Details <mark>Enter status details</mark>		

Achieved Benefits
Access and Equity
Capacity
Efficiency
Environment
Safety
Implementation Challenges

Ground system Implementation	
Avionics Implementation	
Procedures Availability	
Operational Approvals	
Notes	

Dominican Republic ASBU Air Navigation Reporting Form (ANRF)						
PIA	1	**Block - Module**	B0 - AMET	**Date**	April 2017	

Module Description: Global, regional and local meteorological information:
  a) forecasts provided by world area forecast centres (WAFC), volcanic ash advisory centres (VAAC) and tropical cyclone advisory centres (TCAC);
  b) aerodrome warnings to give concise information of meteorological conditions that could adversely affect all aircraft at an aerodrome including wind shear; and
  c) SIGMETs to provide information on occurrence or expected occurrence of specific enroute weather phenomena which may affect the safety of aircraft operations and other operational meteorological (OPMET) information, including METAR/SPECI and TAF, to provide routine and special observations and forecasts of meteorological conditions occurring or expected to occur at the aerodrome.

This information supports flexible airspace management, improved situational awareness and collaborative decision making, and dynamically optimized flight trajectory planning.

This module includes elements which should be viewed as a subset of all available meteorological information that can be used to support enhanced operational efficiency and safety.

Element Implementation Status

1	**Element Description:** WAFS	**Date** **Planned/Implemented** December 2013	**Status** Implemented
	Status Details Enter status details (Revisar) Tenemos acceso a la cuenta WIS		
2	**Element Description:** IAVW	**Date** **Planned/Implemented** December 2013	**Status** Implemented
	Status Details Enter status details		
3	**Element Description:** TCAC forecasts	**Date** **Planned/Implemented** December 2013	**Status** Implemented
	Status Details Enter status details		
4	**Element Description:** Aerodrome warnings	**Date** **Planned/Implemented** December 2013	**Status** Implemented
	Status Details Enter status details.		
5	**Element Description:** Wind shear warnings and alerts	**Date** **Planned/Implemented** December 2020	**Status** Planning

	Status Details		
	Enter status details.		
6	**Element Description:** SIGMET	**Date Planned/Implemented** December 2013	**Status** Implemented
	Status Details		
	Enter status details		
7	**Element Description:** Other OPMET information (METAR, SPECI and/or TAF)	**Date Planned/Implemented** December 2013	**Status** Implemented
	Status Details		
	Enter status details		
8	**Element Description:** QMS for MET	**Date Planned/Implemented** March 2019	**Status** Implemented
	Status Details IDAC has implemented ISO 9001:2008 quality management system (QMS) since 2010 in all Air Navigation Services and recently migrated to ISO 9001:2015. The MET Services will be certified as specified in ICAO Annex 3.		
Achieved Benefits			
Access and Equity			
Capacity			
Efficiency			
Environment			
Safety			
Implementation Challenges			
Ground system Implementation			
Avionics Implementation			
Procedures Availability			
Operational Approvals			
Notes			

Dominican Republic ASBU Air Navigation Reporting Form (ANRF)					
PIA	2	**Block - Module**	B0 - DATM	**Date**	March 2018

Module Description: The initial introduction of digital processing and management of information through, aeronautical information service (AIS)/aeronautical information management (AIM) implementation, use of aeronautical exchange model (AIXM), migration to electronic aeronautical information publication (AIP) and better quality and availability of data.

Element Implementation Status

1	**Element Description:** Aeronautical Information Exchange Model (AIXM)	**Date Planned/Implemented** December 2020	**Status** Planning
	Status Details The introduction of digital processing and digital management of information using the aeronautical information exchange model (AIXM) has been initiated, but not complete.		
2	**Element Description:** eAIP	**Date Planned/Implemented** December -2020	**Status** Planning
	Status Details Implementation of eAIP has been initiated, but not completed. The effort is ongoing.		
3	**Element Description:** Digital NOTAM	**Date Planned/Implemented** December 2020	**Status** Implemented
	Status Details The Digital NOTAM has been implemented.		
4	**Element Description:** eTOD	**Date Planned/Implemented** March 2019	**Status** Planning
	Status Details Plans in place to provide AIXM 5.1 obstacle point data in WGS-84.		
5	**Element Description:** WGS-84	**Date Planned/Implemented** December 2013	**Status** Implemented
	Status Details Currently a subset of Aeronautical Information and specific aeronautical products are disseminated in WGS-84. Plans in place to disseminate all aeronautical information in AIXM 5.1 WGS-84.		
6	**Element Description:** QMS for AIM	**Date Planned/Implemented** December 2010	**Status** Implemented

Status Details
IDAC has implemented ISO 9001:2008 quality management system (QMS) since 2010 in all Air Navigation Services and recently migrated to ISO 9001:2015. In AIM, aids to standardizing processes for the verification of aeronautical data to allow any data anomalies or errors to be detected by root cause, corrected and communicated.

Achieved Benefits
Access and Equity
None.
Capacity
None.
Efficiency
Fewer or no errors in AIM data since the system implementation.
Environment
Reduction of paper and toner consumption, due to digital information publications.
Safety
No report.

Implementation Challenges
Ground system Implementation
None
Avionics Implementation
None
Procedures Availability
None
Operational Approvals
None

Notes
None

Dominican Republic ASBU Air Navigation Reporting Form (ANRF)					
PIA	2	**Block - Module**	B0 - FICE	**Date**	March 2018

Module Description: Improves coordination between air traffic service units (ATSUs) by using ATS interfacility data communication (AIDC) defined by the ICAO Manual of Air Traffic Services Data Link Applications (Doc 9694). The transfer of communication in a data link environment improves the efficiency of this process, particularly for oceanic ATSUs.

Element Implementation Status

	Element Description:	**Date Planned/Implemented**	**Status**
1	AIDC to provide initial flight data to adjacent ATSUs	January 2019	Developing
	Status Details		
	The Dominican Republic supports the notification, coordination and the transfer of communications and control phases in their AIDC interfaces with adjacent Flight Information Regions (FIR). Currently in a test phase with, the United States.		
2	**Element Description:** AIDC to update previously coordinated flight data	**Date Planned/Implemented** January 2019	**Status** Developing
	Status Details		
	Updating of data will be performed in the AIDC coordination functionality.		
3	**Element Description:** AIDC for control transfer	**Date Planned/Implemented** **January 2019**	**Status** Developing
	Status Details		
	AIDC protocols supports the notification, coordination and specifically the transfer of communications and control phases as defined in bilateral agreements between the Dominican Republic and interfaced ATSUs.		
4	**Element Description:** AIDC to transfer CPDLC logon information	**Date Planned/Implemented** N/A	**Status** N/A
	Status Details		
	The Dominican Republic is not scheduled to implement CPDLC logon information, because it does not have Oceanic airspace under its responsibilities, any way the system support CPDLC.		

Achieved Benefits

Access and Equity

No report.

Capacity

No report.

Efficiency

No report.

Environment	
No report.	
Safety	
No report.	
Implementation Challenges	
Ground system Implementation	
The compatibility of the systems is the biggest challenge.	
Avionics Implementation	
None	
Procedures Availability	
None	
Operational Approvals	
None	
Notes	
None	

[STATE] ASBU Air Navigation Reporting Form (ANRF)						
PIA	3	**Block - Module**	B0 - ACAS	**Date**	March, 2018	

Module Description: To provide short-term improvements to existing airborne collision avoidance systems (ACAS) to reduce nuisance alerts while maintaining existing levels of safety. This will reduce trajectory deviations and increase safety in cases where there is a breakdown of separation.

Element Implementation Status

1	**Element Description:** ACAS II (TCAS version 7.1)	**Date Planned/Implemented** January 1, 2017	**Status** Implemented
	Status Details a) All aircraft with certified take-off mass upper to 5,700 kg or authorized to transport more than 19 passengers, most be equipped with ACAS II/TCAS II and appropriated Mode S transponder. b) Effective January 1, 2014, all new ACAS II/TCAS II units installations, shall monitor their own vertical speed to verify compliance with the Resolution Advisory (RA). The ACAS II/TCAS II 7.1 comply with this requirement. c) Effective January 1, 2017, all TCAS II/ACAS II units, should comply paragraph (b) specifications.		
2	**Element Description:** AP/FD function	**Date Planned/Implemented** N/A	**Status** N/A
	Status Details IDAC has no plans to implement Auto Pilot/Flight Director (AP/FD) TCAS.		
3	**Element Description:** TCAP function	**Date Planned/Implemented** N/A	**Status** N/A
	Status Details IDAC has no plans to implement TCAS Alert Prevention (TCAP).		

Achieved Benefits

Access and Equity
Capacity
Efficiency
Environment
Safety

Implementation Challenges

Ground system Implementation
Avionics Implementation
Procedures Availability
Operational Approvals

Notes

[STATE] ASBU Air Navigation Reporting Form (ANRF)					
PIA	3	**Block - Module**	B0 - ASEP	**Date**	August 8, 2018

Module Description: Two air traffic situational awareness (ATSA) applications which will enhance safety and efficiency by providing pilots with the means to enhance traffic situational awareness and achieve quicker visual acquisition of targets:

a) AIRB (basic airborne situational awareness during flight operations).

b) VSA (visual separation on approach).

Element Implementation Status

1	**Element Description:** ATSA-AIRB	**Date Planned/Implemented** August 8, 2018	**Status** N/A
	Status Details Enter status details		
2	**Element Description:** ATSA-VSA	**Date Planned/Implemented** August 8, 2018	**Status** N/A
	Status Details Enter status details		

Achieved Benefits

Access and Equity
Capacity
Efficiency
Environment
Safety

Implementation Challenges

Ground system Implementation
Avionics Implementation
Procedures Availability
Operational Approvals

Notes

Dominican Republic ASBU Air Navigation Reporting Form (ANRF)					
PIA	3	**Block - Module**	B0 - ASUR	**Date**	March 2018

Module Description: Provides initial capability for lower cost ground surveillance supported by new technologies such as ADS-B OUT and wide area multilateration (MLAT) systems. This capability will be expressed in various ATM services, e.g. traffic information, search and rescue and separation provision.

Element Implementation Status

	Element Description: ADS-B to improve airspace surveillance	**Date Planned/Implemented** September 2018	**Status** N/A
1	**Status Details** The ADS-B/MLAT surveillance coverage to complement the surveillance in mountainous area will be completed in September 2018		

Achieved Benefits

Access and Equity

No report.

Capacity

No report.

Efficiency

No report.

Environment

No report.

Safety

No report.

Implementation Challenges

Ground system Implementation

None

Avionics Implementation

None

Procedures Availability

None

Operational Approvals

None

Notes

None

Dominican Republic ASBU Air Navigation Reporting Form (ANRF)					
PIA	3	**Block - Module**	B0 - FRTO	**Date**	March 2018

Module Description: Allow the use of airspace which would otherwise be segregated (i.e. Special Use Airspace) along with flexible routing adjusted for specific traffic patterns. This will allow greater routing possibilities, reducing potential congestion on trunk routes and busy crossing points, resulting in reduced flight lengths and fuel burn.

Element Implementation Status

	Element Description:	**Date**	**Status**
1	CDM incorporated into airspace planning	**Planned/Implemented** December 2004	Implemented
	Status Details The Dominican Republic uses air space planning to evaluate the current constraints, plan the strategy, model the impact, and make plans. Currently is part of a regional reroute plan to address the increase in traffic.		
2	**Element Description:** Flexible Use of Airspace (FUA)	**Date** **Planned/Implemented** December 2018	**Status** Planning
	Status Details The Dominican Republic, in coordination with the Dominican military authorities is reorienting its military areas to accommodate the increase in operations and improve the airspace capacity.		
3	**Element Description:** Flexible route systems	**Date** **Planned/Implemented** December 2015	**Status** Implemented
	Status Details The Dominican Republic in collaboration with the United States has established what we call ATC0, along with several matrixes, to use in bad weather conditions, large traffic loads or surveillance equipment failure in either side.		
4	**Element Description:** CPDLC used to request and receive ATC clearances	**Date** **Planned/Implemented** December 2018	**Status** Planning
	Status Details The Dominican Republic supports the use of Controller Pilot Data Link Communication (CPDLC) to enable the clearance delivery in congested airports, such as Punta Cana.		

Achieved Benefits

Access and Equity

No report.

Capacity

No report.

Efficiency	
No report.	
Environment	
No report.	
Safety	
No report.	
Implementation Challenges	
Ground system Implementation	
None	
Avionics Implementation	
None	
Procedures Availability	
None	
Operational Approvals	
None	
Notes	
None	

Dominican Republic ASBU Air Navigation Reporting Form (ANRF)						
PIA	3	**Block - Module**	B0 - NOPS	**Date**	March 2018	

Module Description: Air traffic flow management (ATFM) is used to manage the flow of traffic in a way that minimizes delays and maximizes the use of the entire airspace. ATFM can regulate traffic flows involving departure slots, smooth flows and manage rates of entry into airspace along traffic axes, manage arrival time at waypoints or flight information region (FIR)/sector boundaries and re-route traffic to avoid saturated areas. ATFM may also be used to address system disruptions including a crisis caused by human or natural phenomena.

Element Implementation Status

	Element Description:	**Date Planned/Implemented**	**Status**
1	ATFM	December 2018	Partially Implemented
	Status Details The Air Traffic Flow Management Unit (ATFMU) became partially operational in this year. The ATFMU manages the flow of air traffic on a national as well as a local level, but it's still pending the implementation of an advanced automation tools.		

Achieved Benefits

Access and Equity

No report.

Capacity

No report.

Efficiency

No report.

Environment

No report.

Safety

No report.

Implementation Challenges

Ground system Implementation

None

Avionics Implementation

None

Procedures Availability

None

Operational Approvals

None

Notes None

Dominican Republic ASBU Air Navigation Reporting Form (ANRF)					
PIA	3	**Block - Module**	B0 - FRTO	**Date**	March 2018

Module Description: Allow the use of airspace which would otherwise be segregated (i.e. Special Use Airspace) along with flexible routing adjusted for specific traffic patterns. This will allow greater routing possibilities, reducing potential congestion on trunk routes and busy crossing points, resulting in reduced flight lengths and fuel burn.

Element Implementation Status

1	**Element Description:** CDM incorporated into airspace planning	**Date** **Planned/Implemented** December 2004	**Status** Implemented
	Status Details The Dominican Republic uses air space planning to evaluate the current constraints, plan the strategy, model the impact, and make plans. Currently is part of a regional reroute plan to address the increase in traffic.		
2	**Element Description:** Flexible Use of Airspace (FUA)	**Date** **Planned/Implemented** December 2018	**Status** Planning
	Status Details The Dominican Republic, in coordination with the Dominican military authorities is reorienting its military areas to accommodate the increase in operations and improve the airspace capacity.		
3	**Element Description:** Flexible route systems	**Date** **Planned/Implemented** December 2015	**Status** Implemented
	Status Details The Dominican Republic in collaboration with the United States has established what we call ATC0, along with several matrixes, to use in bad weather conditions, large traffic loads or surveillance equipment failure in either side.		
4	**Element Description:** CPDLC used to request and receive ATC clearances	**Date** **Planned/Implemented** December 2018	**Status** Planning
	Status Details The Dominican Republic supports the use of Controller Pilot Data Link Communication (CPDLC) to enable the clearance delivery in congested airports, such as Punta Cana.		

Achieved Benefits

Access and Equity

No report.

Capacity

No report.

Efficiency	
No report.	
Environment	
No report.	
Safety	
No report.	
Implementation Challenges	
Ground system Implementation	
None	
Avionics Implementation	
None	
Procedures Availability	
None	
Operational Approvals	
None	
Notes	
None	

Dominican Republic ASBU Air Navigation Reporting Form (ANRF)					
PIA	3	**Block - Module**	B0 - SNET	**Date**	March 2018

Module Description: Monitors the operational environment during airborne phases of flight to provide timely alerts on the ground of an increased risk to flight safety. In this case, short-term conflict alert, area proximity warnings and minimum safe altitude warnings are proposed. Ground-based safety nets make an essential contribution to safety and remain required as long as the operational concept remains human centered.

Element Implementation Status

	Element Description: Short Term Conflict Alert (STCA)	**Date** **Planned/Implemented** December 2014	**Status** Implemented
1	**Status Details** Both Control Centers have STCA (MCI) algorithms monitoring the aircraft.		
	Element Description: Area Proximity Warning (APW)	**Date** **Planned/Implemented** December 2014	**Status** Implemented
2	**Status Details** Both facilities have Approach Funnel Deviation Alert (AFDA), monitoring the Approach Path, generating alerts to ATCOs if aircraft is not remaining on its approach envelope in vertical and or plan view.		
	Element Description: Minimum Safe Altitude Warning (MSAW)	**Date** **Planned/Implemented** December 2014	**Status** Implemented
3	**Status Details** Both facilities have visual and audible alarm for Minimum Safe Altitude Warning		
	Element Description: Medium Term Conflict Alert (MTCA)	**Date** **Planned/Implemented** December 2014	**Status** Implemented
4	**Status Details** Both Control Centers have MTCA (Lateral, Proximity, and Maneuvering) algorithms monitoring the aircraft.		

Achieved Benefits

Access and Equity
No report.
Capacity
No report.
Efficiency
No report.

Environment	
No report.	
Safety	
No report.	
Implementation Challenges	
Ground system Implementation	
None	
Avionics Implementation	
None	
Procedures Availability	
None	
Operational Approvals	
None	
Notes	
None	

Dominican Republic ASBU Air Navigation Reporting Form (ANRF)					
PIA	4	**Block - Module**	B0 - CCO	**Date**	March 2018

Module Description: Implements continuous climb operations (CCO) in conjunction with Performance-based Navigation (PBN) to provide opportunities to optimize throughput, improve flexibility, enable fuel-efficient climb profiles, and increase capacity at congested terminal areas.

Element Implementation Status

<table>
<tr><td rowspan="2">1</td><td>Element Description:
Procedure changes to facilitate CCO</td><td>Date
Planned/Implemented
2004</td><td>Status
Implemented</td></tr>
<tr><td colspan="3">Status Details
RNAV SIDs were developed with altitude and speed constrain placed only when necessary for ATC. This allows the operator to maximize aircraft performance as desired.</td></tr>
<tr><td rowspan="2">2</td><td>Element Description:
Route changes to facilitate CCO</td><td>Date
Planned/Implemented
2004</td><td>Status
Implemented</td></tr>
<tr><td colspan="3">Status Details
Route changes are performed parallel with procedure changes during SID development.</td></tr>
<tr><td rowspan="2">3</td><td>Element Description:
PBN SIDs</td><td>Date
Planned/Implemented
2004</td><td>Status
Implemented</td></tr>
<tr><td colspan="3">Status Details
PBN SIDs are implemented in 6 of 8 airports</td></tr>
</table>

Achieved Benefits

Access and Equity

Element 3: Only at locations where PBN SIDs can be published to deconflict traffic flows with additional/different routing options.

Capacity

Element 3: N/A

Efficiency

Element 3: Only at locations where PBN SIDs can be published to shorten typically flown terminal routing options, or to improve flow interaction, or improve vertical profiles.

Reduction in the number of required radio transmissions, and therefore controller and pilot workloads; however, we do not have empirical data to evaluate this particular benefit.

Environment

Element 1: Environmental benefits through reduced emissions (IFSET)

Element 3: Environmental benefits through reduced emissions (IFSET)

Safety

Element 3: N/A

Implementation Challenges
Ground system Implementation
None
Avionics Implementation
None
Procedures Availability
None
Operational Approvals
None
Notes
None

Dominican Republic ASBU Air Navigation Reporting Form (ANRF)					
PIA	4	**Block - Module**	B0 - CDO	**Date**	March 2018

Module Description: Performance-based airspace and arrival procedures allowing aircraft to fly their optimum profile using continuous descent operations (CDOs). This will optimize throughput, allow fuel efficient descent profiles, and increase capacity in terminal areas.

Element Implementation Status

	Element Description: Procedure changes to facilitate CDO	**Date Planned/Implemented** 2004	**Status** Implemented
1	**Status Details** RNAV STARs were developed with altitude and speed constrain placed only when necessary for ATC. This allows the operator to maximize aircraft performance as desired		
	Element Description Route changes to facilitate CDO	**Date Planned/Implemented** 2004	**Status** Implemented
2	**Status Details** Route and associated airspace changes are routinely made as part of PBN procedure design and implementation processes.		
	Element Description PBN STARs	**Date Planned/Implemented** 2004	**Status** Implemented
3	**Status Details** PBN STARs are implemented at 6 out of 8 airports.		

Achieved Benefits

Access and Equity

Element 3: Locations where PBN STARs can be published to deconflict traffic flows with additional/different routing options.

Capacity
N/A

Efficiency

Element 3: Locations where PBN STARs can be published to shorten typically flown terminal routing options, or to improve flow interaction, or improve vertical profiles.

Environment

Element 1: Reduced emissions as a result of reduced fuel burn (IFSET)

Element 3: Reduced emissions as a result of reduced fuel burn (IFSET)

Safety

Element 1: RNAV STARs facilitate executing stabilized approaches.

Element 3: More consistent flight paths and stabilized approach paths.

Implementation Challenges
Ground system Implementation
None
Avionics Implementation
None
Procedures Availability
None
Operational Approvals
None
Notes
None

[STATE] ASBU Air Navigation Reporting Form (ANRF)					
PIA	4	**Block - Module**	B0 - TBO	**Date**	August 9, 2018

Module Description: To implement a set of data link applications supporting surveillance and communications in air traffic services, which will lead to flexible routing, reduced separation and improved safety.

Element Implementation Status

1	**Element Description:** ADS-C over oceanic and remote areas	**Date Planned/Implemented** August 9, 2018	**Status** N/A
	Status Details Enter status details		
2	**Element Description:** CPDLC over continental areas	**Date Planned/Implemented** August 9, 2018	**Status** N/A
	Status Details Enter status details		
3	**Element Description:** CPDLC over oceanic and remote areas	**Date Planned/Implemented** August 9, 2018	**Status** N/A
	Status Details Enter status details		
4	**Element Description:** SATVOICE direct controller-pilot communication (DCPC)	**Date Planned/Implemented** August 9, 2018	**Status** N/A
	Status Details Enter status details		

Achieved Benefits

Access and Equity

Capacity

Efficiency

Environment

Safety

Implementation Challenges

Ground system Implementation

Avionics Implementation

Procedures Availability

Operational Approvals

Notes

Appendix E: Dominican Republic ASBU Block 1 ANRFs

Insert ASBU B1 ANRFs in the future.

Appendix F: Dominican Republic SBU Block 2 ANRFs

Insert ASBU B2 ANRFs in the future.

Appendix G: Dominican Republic ASBU Block 3 ANRFs

Insert ASBU B3 ANRFs in the future.

Appendix H: Dominican Republic RASI ANRFs

Replace with your RASI ANRF

My Organization RASI Air Navigation Reporting Form (ANRF)				
ICAO NACC Regional Initiatives			**Date**	September 1, 2017
Module Description: ICAO NACC RO has identified airport improvements.				
Element Implementation Status				
1	**Element Description:** Aerodrome certification		**Date Planned/Implemented** Dec 2019	**Status** Developing
	Status Details ICAO NACC region has a goal to have CAR aerodromes in its regional ANP Table AOP I-1 be certified. My Organization's two airports, TWOW and TBTF. They are both in the process.			
2	**Element Description:** Heliport operational approval		**Date Planned/Implemented** Sep 2017	**Status** Implemented
	Status Details ICAO NACC region has a goal to have CAR heliports in its regional ANP Table AOP I-1 certified. Currently in Saint Lucia, there is one approved heliport (servicing a hotel resort), and each airport has a designated landing area for helicopters. There is also a heliport in the need stage at a private hospital.			
3	**Element Description:** Visual aids for navigation		**Date Planned/Implemented** Sep 2017	**Status** Implemented
	Status Details ICAO NACC region has a goal to have CAR airports in its ANP Table AOP I-1 compliant with Annex 14 requirements. This capability is implemented at both TWOW and TBTF.			
4	**Element Description:** Aerodrome Bird/Wildlife Organization and Control Programme		**Date Planned/Implemented** Dec 2018	**Status** Developing
	Status Details ICAO NACC region has a goal to have CAR airports in its ANP Table AOP I-1 have an aerodrome bird/wildlife organization and control programme. Saint Lucia is developing the manual to address this issue.			
Achieved Benefits				
Access and Equity Element 1 - Aerodrome certification: International operators may not be permitted to operate to aerodromes that are not certified Element 2. Heliport operational approval: International operators may not be permitted to operate to heliports that are not approved Element 3. Visual aids for navigation: International operators may not be permitted to operate to aerodromes that are not compliant with Annex 14				
Capacity: No report				
Efficiency Element 3. Visual aids for navigation: Annex 14 compliant visual aids for navigation assist flights to more efficiently complete ground movements				
Environment: No report				
Safety Element 1 - Aerodrome certification: Certification should be contingent upon the airport complying with applicable ICAO SARPs. Certification and the associated regulatory oversight should increase the effectiveness of SSP and SMS processes to identify and correct safety issues at certified aerodromes. Element 2. Heliport operational approval: Certification should be contingent upon the heliport complying with applicable ICAO SARPs. Approval and the associated regulatory oversight should increase the effectiveness of SSP and SMS processes to identify and correct safety issues at approved heliports. Element 3. Visual aids for navigation: Annex 14 compliant visual aids for navigation reduce flight crew confusion and assist in avoiding runway incursions or other ground movement errors. Element 4. Aerodrome Bird/Wildlife Organization and Control Programme: An effective organization and control programme reduces the potential for aircraft to strike wildlife or ingest wildlife into engines or propellers.				
Implementation Challenges				

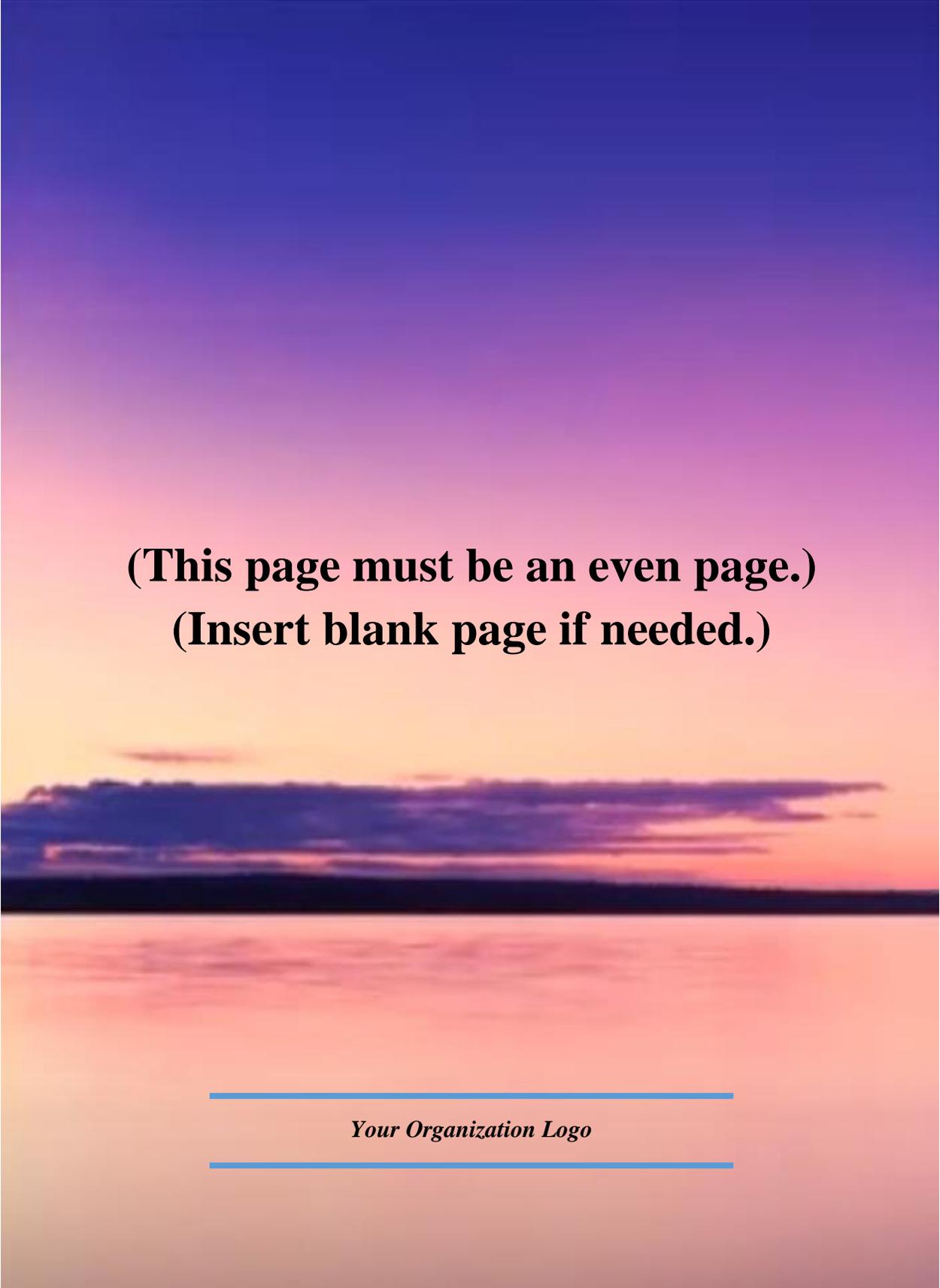| |
|---|
| *Ground system Implementation*: No report: No report |
| *Avionics Implementation*: No report |
| *Procedures Availability*: No report |
| *Operational Approvals*: No report |
| **Notes**
Element 1: Airport Terminal Development will also address the airport terminal security issues. |

Appendix I: Dominican Republic SASI ANRFs

Replace with your SASI ANRF.

Saint Lucia SASI Air Navigation Reporting Form (ANRF)			
Infrastructure Upgrades		**Date**	September 1, 2017
Module Description: Development of major components of the overall Airport/Aerodrome to meet the demands of the growing Aviation Industry. This will improve capacity and safety in the in terminal and allow seamless maneuvering of wide body Aircraft (example B777) at the turning bay. Such maneuvering will reduce runway occupancy time and reduce surface wear and tear. New ATC facility is required to meet the demands of increase staffing. Improving operational space is vital to meet the need of increased traffic. The benefits of such infrastructure upgrades will increase an overall traffic management efficiency and enhance safety.			
Element Implementation Status			
1	**Element Description:** Airport Terminal Development	**Date Planned/Implemented** TBD	**Status** Planning
	Status Details Current terminal building does not meeting the passenger demands during peak periods. With the current airport terminal situation, the security and safety are likely to be compromised.		
2	**Element Description:** Airport Runway Rehabilitation and Extension	**Date Planned/Implemented** TBD	**Status** Analysis in Progress
	Status Details Certain areas of the runway require improvement. For example, it is highly important to be fully compliance with ICAO Aerodrome 4E.		
3	**Element Description:** Control Tower and Technical Building Upgrades	**Date Planned/Implemented** TBD	**Status** Planning
	Status Details Control Cab was originally designed to house one ATCO per shift. However, the Control Cab currently operating with three ATCOs per shift to meet the traffic demands. In addition, significantly more equipment was installed in the already crowded Control Cab. The expected increase of workload due to the increased traffic will only make the work environment of the Control Cab worse and impact on safety and efficiency of the ATC operation.		
Achieved Benefits			
Access and Equity			
Capacity Element 1 - Airport Terminal Development: Increase the capacity to handle passengers smoothly at the peak arrival periods.			
Efficiency			
Environment			
Safety Element 2 - Airport Runway Rehabilitation and Extension: Improve operational safety of aircraft. Element 3 - Control Tower and Technical Building Upgrades: Improve operational safety of aircraft and ATCOs.			
Implementation Challenges			
Ground system Implementation			
Avionics Implementation			
Procedures Availability			
Operational Approvals			

| **Notes** |
| Element 1 - Airport Terminal Development: Address the airport terminal security issues. |

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Your Organization Logo