



Saint Lucia State Air Navigation Plan

**Date: October 3, 2017 –Draft
Prepared by: Saint Lucia Air and Sea Port Authority**



Document History Record

Release	Date	Author(s)/Comments
Draft	October 3, 2017	Amy Charles (SLASPA), Lynden Leonce (SLASPA), Midori Tanino (ANI/WG ASBU TF Rapporteur, FAA)
Version 1.0	October XX, 2017	Amy Charles (SLASPA), Lynden Leonce (SLASPA)

Table of Contents

1. Introduction.....	4
1.1 Background	4
1.2 Environment.....	4
1.2.1 Authority of Saint Lucia	5
1.2.2 Airspace	5
1.2.3 Aerodromes.....	6
1.2.4 Traffic Forecast.....	6
1.3 Planning Methodology	7
1.4 Air Navigation Planning Process	8
1.4.1 Analysis and Work Flow Process	8
1.4.2 Monitoring and Reporting Results	9
1.5 Problem Identification.....	10
1.5.1 Existing Problems	10
1.5.2 Future Problems	10
2. Saint Lucia’s Aviation System Block Upgrade (ASBU) Implementation Status	11
2.1 ASBU Block 0 Implementation Metrics, Targets, and Status	11
2.1.1 ASBU B0 Implementation Metrics and Targets	11
2.1.2 ASBU B0 Implementation Status Summary	19
2.2 ASBU Block 1 Implementation Targets and Status	20
2.3 ASBU Block 2 Implementation Targets and Status	20
2.4 ASBU Block 3 Implementation Targets and Status	20
3. ICAO NACC Regional Aviation System Improvements (RASI) Status	21
4. Saint Lucia’s State Aviation System Improvements (SASI) Status.....	21
4.1 Equipment Upgrades	21
4.2 Procedure Upgrades	21
4.3 Infrastructure Upgrades	21
5. Saint Lucia State ANP Next Review Schedule	21
Appendix A: ANRF Explained	22
Appendix B: ASBU ANRF Template	24
Appendix C: RASI and SASI ANRF Templates.....	25
Appendix D: Saint Lucia ASBU Block 0 ANRFs.....	26
Appendix E: Saint Lucia ASBU Block 1 ANRFs	45
Appendix F: Saint Lucia ASBU Block 2 ANRFs	45
Appendix G: Saint Lucia ASBU Block 3 ANRFs.....	45
Appendix H: Saint Lucia RASI ANRFs.....	46
Appendix I: Saint Lucia SASI ANRFs.....	48

1. Introduction

This document is Saint Lucia's 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 Saint Lucia aligning activities and strategies to the GANP and RPBANIP. The information contained in the Saint Lucia 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 Saint Lucia 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 Saint Lucia, such as authority, airspace and airports, and air traffic are described in this section.

1.2.1 Authority of Saint Lucia

The Saint Lucia Air and Sea Ports Authority (SLASPA) was established by an Act of Parliament in 1983. Its mission is to maximize air and sea-borne traffic and related services through safe and efficient operations. Its mandate is defined as the provision of coordinated and integrated systems of airports and seaports.

SLASPA is responsible for managing the island's two principal airports; the George FL Charles and Hewanorra International Airports as well as other smaller points of entries. The organization is managed by a well-qualified team headed by a General Manager who reports to a Council appointed by the Government. Its operation is performed by a highly motivated work force contributing to the sustainable, social and economic development of Saint Lucia. The organizational structure that governs the Saint Lucia Air Navigation System is shown in Figure 1.2.1.

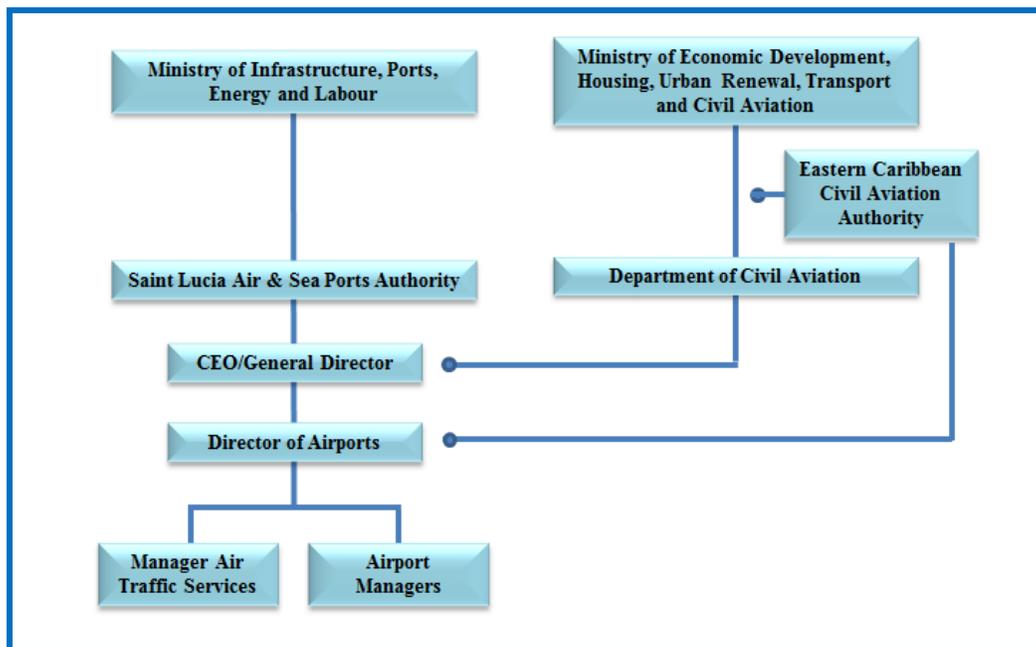


Figure 1.2.1: Organizational Structure of Saint Lucia Air Navigation System

1.2.2 Airspace

Saint Lucia is located within the Piarco Flight Information Region (FIR) that is managed by Trinidad and Tobago. Piarco FIR provides flight information and alerting services. Refer to Figure 1.2.2 for the airspace around the Saint Lucia.

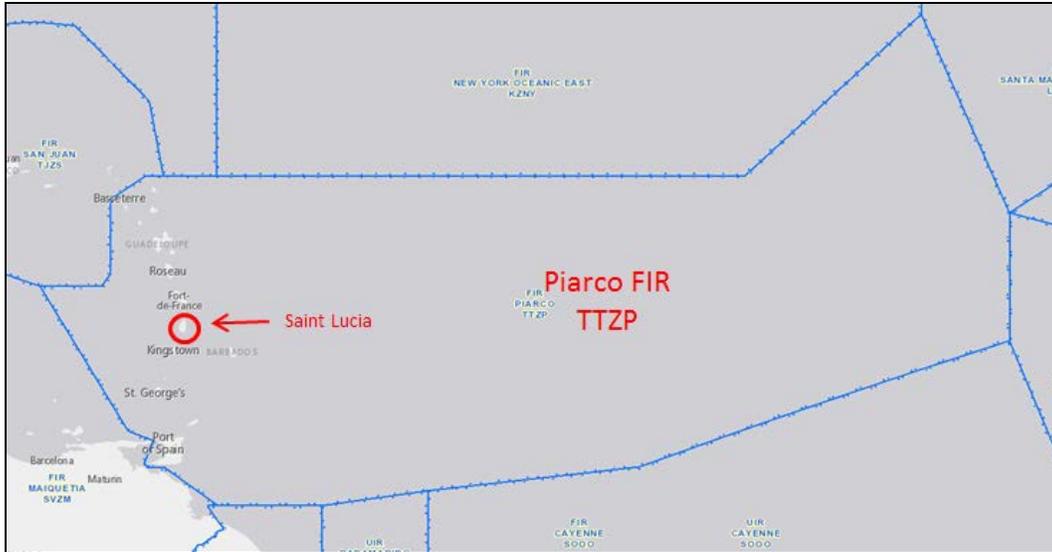


Figure 1.2.2: Piarco FIR and Saint Lucia

1.2.3 Aerodromes

Two major aerodromes in Saint Lucia are: George FL Charles Airport (TLPC) and Hewanorra International Airport (TLPL). 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 TLPC has the capacity of 8-10 air traffic movements per hour. The TLPL has the capacity of 12-14 air traffic movements per hour.

Runway Information on George FL Charles Airport (TLPC)

	Runway 09	Runway 27
Length x Width	6227 ft x 148 ft	6227 ft x 148 ft
Surface Type	asphalt	asphalt
TDZ-Elev	20 ft	10 ft
Lighting	edge	edge
Displace Threshold	430 ft	1011 ft

Runway Information on Hewanorra International Airport (TLPL)

	Runway 10	Runway 28
Length x Width	9003 ft x 151 ft	9003 ft x 151 ft
Surface Type	asphalt	asphalt
TDZ-Elev	11 ft	10 ft
Lighting	Edge, ALS	edge
Displace Threshold	-	492 ft
Stopway	-	200 ft

1.2.4 Traffic Forecast

Number of typical daily operation (arrivals/departures) at George FL Charles Airport (TLPC) and Hewanorra International Airport (TLPL) are 25/25 (total of 50 movements) and 30/30 (total of 60 movements), respectively. The RPBANIP forecasted that average annual growth of air traffic in the Caribbean region would increase 5.9% during 2011-2031. The SLASPA believes that this overall Caribbean regional forecast of annual increase of 5.9% is too optimistic for Saint Lucia and more

moderate number of 3.0% annual increase might realistic anticipation. Estimated daily operations at TLPC and TLPL are shown in Tables 1.2.4a and 1.2.4b applying the increase forecasts to each year from 2017 to 2031.

Year	TLPC	TLPL
2017	50	60
2018	53	64
2019	56	67
2020	59	71
2021	63	75
2022	67	80
2023	71	85
2024	75	90
2025	79	95
2026	84	101
2027	89	106
2028	94	113
2029	99	119
2030	105	126
2031	112	134

Table 1.2.4a: Air Traffic Forecasts at TLPC and TLPL (number of daily operation) using annual increase rate of 5.9%

Year	TLPC	TLPL
2017	50	60
2018	52	62
2019	53	64
2020	55	66
2021	56	68
2022	58	70
2023	60	72
2024	61	74
2025	63	76
2026	65	78
2027	67	81
2028	69	83
2029	71	86
2030	73	88
2031	76	91

Table 1.2.4b: Air Traffic Forecasts at TLPC and TLPL (number of daily operation) using annual increase rate of 3.0%

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 Saint Lucia 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. Saint Lucia 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 Saint Lucia 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

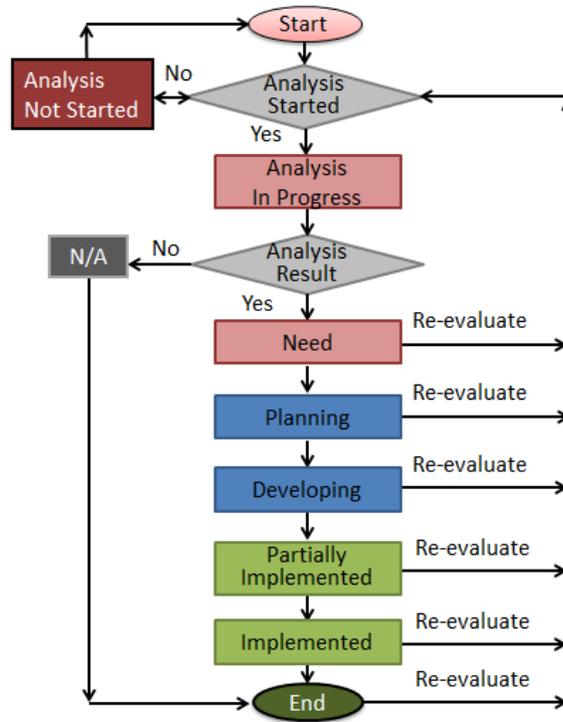


Figure 1.4.1: Analysis and Work Flow

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 Saint Lucia 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 Saint Lucia ASBU Air Navigation Reporting Form Template is provided in Appendix B. The Saint Lucia 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 for TLPC and TLPL are only expected to increase in the future. The current infrastructure at both airports, notwithstanding upgrades and expansions over the years, does not adequately meet peak capacity demand. The solution requires a huge investment in airport infrastructure. This includes airport terminal development, runway and turning bay reconstruction and rehabilitation, total drainage redevelopment, new control tower and technical block, and continuous modernization of communication, navigation, and surveillance equipment (e.g. Performance Based Navigation procedures (PBN). The formal implementation of Standard Instrument Departure procedures (SIDs) would improve on the safety, efficiency and management of airspace capacity.

In addition, airport operations need to be improved by introducing capabilities such as Airport Collaborative Decision Making (ACDM). To support airport operations, having accurate and timely weather and aeronautical information is essential. Information such as aerodrome warnings and wind shear warnings/alerts will increase safety of operations. Securing quality data should also be accomplished by introducing the Quality Management System (QMS) to both weather and aeronautical data.

A fundamental component which is critical concern, is the availability of human resource to meet the wide-ranging needs of airport operations. The provision of relevant training for that human resource is paramount.

1.5.2 Future Problems

Anticipating heavier demand at the TLPC and TLPL airports, the introduction of a Ground Based Argumentation System (GBAS) landing system procedure would be effective.

The human resource issues, if not addressed in tandem with the infrastructure and procedure development, could result in deficient service provision and delivery. Human resource acquisition and development must coincide with the infrastructure and procedure development.

2. Saint Lucia’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. Saint Lucia considers two airports, George FL Charles Airport (TLPC) and Hewanorra International Airport (TLPL) 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? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-ACDM-1 Target 1: Assessed in Sep 2017 a. Yes b. 1 (TLPL) B0-ACDM-1 Target 2: Implement by Dec 2019 c. None	Status – Planning Only TLPL 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? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-ACDM-2 Target 1: Assessed in Sep 2017 a. Yes b. 1 (TLPL) B0-ACDM-2 Target 2: Implement by Dec 2019 c. None	Status – Planning Only TLPL 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? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-ACDM-3 Target 1: Assessed in Sep 2017 a. Yes b. 1 (TLPL) B0-ACDM-3 Target 2: Implement by Dec 2019 c. None	Status – Planning Only TLPL 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? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-ACDM-4 Target 1: Assessed in Sep 2017 a. Yes b. 1 (TLPL) B0-ACDM-4 Target 2: Implement by Dec 2019 c. None	Status – Planning Only TLPL needs this capability.
	5. Collaborative departure queue management	Number of aerodromes to be considered: 2 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-ACDM-5 Target 1: Assessed in Dec 2016 a. Yes b. 1 (TLPL) B0-ACDM-5 Target 2: Implement by Dec 2019 c. None	Status – Planning Only TLPL 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? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-APTA-1 Target 1: Assessed in Sep 2017 a. Yes b. 1 (TLPL) B0-APTA-1 Target 2: Implemented in Aug 2010 c. 1	Status – Implemented Only TLPL 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? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-APTA-2 Target 1: Assessed in Sep 2017 a. Yes b. None B0-APTA-2 Target 2: c. N/A	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? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-APTA-3. Target 1: Assessed in Sep 2017 a. Yes b. 2 B0-APTA-3 Target 2: Implemented in Aug 2010 c. 1	Status – Implemented At both TLPC and TLPL.
	4. GBAS Landing System (GLS) Approach procedures	Number of aerodromes to be considered: 2 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-APTA-4. Target 1: Assessed in Sep 2017 a. Yes b. 2 (TLPC, TLPL) B0-APTA-4. Target 2: Implement by Dec 2019 c. None	Status – Need Both TLPC and TLPL need this capability.
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? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-RSEQ-1. Target 1: Assessed in Dec 2016 a. Yes b. None B0-RSEQ-1 Target 2: c. N/A	Status – N/A
	2. Departure management	Number of aerodromes to be considered: 2 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-RSEQ-2. Target 1: Assessed in Dec 2016 a. Yes b. None B0-RSEQ-2. Target 2: c. N/A	Status – N/A
	3. Departure flow management	Number of aerodromes to be considered: 2 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-RSEQ-3. Target 1: Assessed in Dec 2016 a. Yes b. None B0-RSEQ-3. Target 2: c. N/A	Status – N/A
	4. Point merge	Number of aerodromes to be considered: 2 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-RSEQ-4. Target 1: Assessed in Dec 2016 a. Yes b. None B0-RSEQ-4. Target 2: c. N/A	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? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-SURF-1. Target 1: Assessed in Dec 2016 a. Yes b. None B0-SURF-1. Target 2: c. N/A	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? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-SURF-2. Target 1: Assessed in Dec 2016 a. Yes b. None B0-SURF-2. Target 2: c. N/A	Status – N/A
	3. A-SMGCS alerting with flight identification information	Number of aerodromes to be considered: 2 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-SURF-3. Target 1: Assessed in Dec 2016 a. Yes b. None B0-SURF-3. Target 2: c. N/A	Status – N/A
	4. EVS for taxi operations	Number of aerodromes to be considered: 2 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-SURF-4. Target 1: Assessed in Dec 2016 a. Yes b. None B0-SURF-4. Target 2: c. N/A	Status – N/A
	5. Airport vehicles equipped with transponders	Number of aerodromes to be considered: 2 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-SURF-5. Target 1: Assessed in Dec 2016 a. Yes b. None B0-SURF-5. Target 2: c. N/A	Status – N/A
WAKE	1. New PANS-ATM wake turbulence categories and separation minima	<i>ICAO has not developed new minima.</i>	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? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-WAKE-2. Target 1: Assessed in Dec 2016 a. Yes b. None B0-WAKE-2. Target 2: c. N/A	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? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-WAKE-3. Target 1: Assessed in Dec 2016 a. Yes b. None B0-WAKE-3. Target 2: c. N/A	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? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-WAKE-4. Target 1: Assessed in Dec 2016 a. Yes b. None B0-WAKE-4. Target 2: c. N/A	Status – N/A
	5. 6 wake turbulence categories and separation minima	Number of aerodromes to be considered: 2 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-WAKE-5. Target 1: Assessed in Dec 2016 a. Yes b. None B0-WAKE-5. Target 2: c. N/A	Status – N/A
Performance Improvement Area 2: Globally Interoperable Systems and Data				
AMET	1. WAFS	a. Have we assessed the need? <i>Yes or No</i> b. Do we need this capability? <i>Yes or No</i> c. Have we implemented the capability? <i>Yes or No</i>	B0-AMET-1.Target 1: Assessed in Dec 2016 a. Yes b. Yes B0-AMET-1.Target 2: Implemented in Jan 2000 c. Yes	Status – Implemented
	2. IAVW	a. Have we assessed the need? <i>Yes or No</i> b. Do we need this capability? <i>Yes or No</i> c. Have we implemented the capability? <i>Yes or No</i>	B0-AMET-2. Target 1: Assessed in Dec 2016 a. Yes b. No B0-AMET-2. Target 2: c. N/A	Status – N/A
	3. TCAC forecasts	a. Have we assessed the need? <i>Yes or No</i> b. Do we need this capability? <i>Yes or No</i> c. Have we implemented the capability? <i>Yes or No</i>	B0-AMET-3. Target 1: Assessed in Dec 2016 a. Yes b. Yes B0-AMET-3.Target 2: Implemented in Jan 2000 c. Yes	Status – Implemented
	4. Aerodrome warnings	Number of aerodromes to be considered: 2 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-AMET-4. Target 1: Assessed in Dec 2016 a. Yes b. 2 (TLPC, TLPL) B0-AMET-4.Target 2: Implement by Dec 2019 c. 2	Status – Partially Implemented In the process of training and acquiring all equipment.
	5. Wind shear warnings and alerts	Number of aerodromes to be considered: 2 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-AMET-5. Target 1: Assessed in Dec 2016 a. Yes b. 2 (TLPC, TLPL) B0-AMET-5.Target 2: Implement by Dec 2019 c. 2	Status - Partially Implemented In the process of training and acquiring all equipment.
	6. SIGMET	a. Have we assessed the need? <i>Yes or No</i> b. Do we need this capability? <i>Yes or No</i> c. Have we implemented the capability? <i>Yes or No</i>	B0-AMET-6. Target 1: Assessed in Dec 2016 a. Yes b. No B0-AMET-6. Target 2: c. N/A	Status – N/A
	7. Other OPMET information (METAR, SPECI and/or TAF)	Number of aerodromes to be considered: 2 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-AMET-7. Target 1: Assessed in Dec 2016 a. Yes b. 2 B0-AMET-7.Target 2: Implemented in Jan 2000 c. 2	Status – Implemented At both TLPC and TLPL

Block 0 Modules	Elements	Metrics	Targets	Status & Remarks
	8. QMS for MET	<p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. Do we need this capability? <i>Yes or No</i></p> <p>c. Have we implemented the capability? <i>Yes or No</i></p>	<p>B0-AMET-8. Target 1: Assessed in Dec 2016</p> <p>a. Yes b. Yes</p> <p>B0-AMET-8. Target 2: Implement by Dec 2019</p> <p>c. No</p>	<p>Status - Partially Implemented</p> <p>In the process of preparing documents and trainings.</p>
DATM	1. Aeronautical Information Exchange Model (AIXM)	<p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. Do we need this capability? <i>Yes or No</i></p> <p>c. Have we implemented the capability? <i>Yes or No</i></p>	<p>B0-DATM-1. Target 1: Assess by Dec 2017</p> <p>a. No b. TBD</p> <p>B0-DATM-1. Target 2: Implement by TBD</p> <p>c. No</p>	Status - Analysis Not Started
	2. eAIP	<p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. Do we need this capability? <i>Yes or No</i></p> <p>c. Have we implemented the capability? <i>Yes or No</i></p>	<p>B0-DATM-2. Target 1: Assessed in Dec 2016</p> <p>a. Yes b. Yes</p> <p>B0-DATM-2. Target 2: Implemented in Jan 2012</p> <p>c. Yes</p>	Status – Implemented
	3. Digital NOTAM	<p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. Do we need this capability? <i>Yes or No</i></p> <p>c. Have we implemented the capability? <i>Yes or No</i></p>	<p>B0-DATM-3. Target 1: Assess by Dec 2017</p> <p>a. No b. TBD</p> <p>B0-DATM-3. Target 2: Implement by TBD</p> <p>c. No</p>	Status - Analysis Not Started
	4. eTOD	<p>Number of aerodromes to be considered: 2</p> <p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. How many aerodromes need this capability? <i>None, 1, or 2</i></p> <p>c. How many aerodromes implemented the capability? <i>None, 1, or 2</i></p>	<p>B0-DATM-4. Target 1: Assess by Dec 2017</p> <p>a. No b. TBD</p> <p>B0-DATM-4. Target 2: Implement by TBD</p> <p>c. No</p>	Status - Analysis Not Started
	5. WGS-84	<p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. Do we need this capability? <i>Yes or No</i></p> <p>c. Have we implemented the capability? <i>Yes or No</i></p>	<p>B0-DATM-5. Target 1: Assessed in Dec 2016</p> <p>a. Yes b. Yes</p> <p>B0-DATM-5. Target 2: Implemented in Jan 1993</p> <p>c. Yes</p>	Status – Implemented
	6. QMS for AIM	<p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. Do we need this capability? <i>Yes or No</i></p> <p>c. Have we implemented the capability? <i>Yes or No</i></p>	<p>B0-DATM-6. Target 1: Assessed in Dec 2016</p> <p>a. Yes b. Yes</p> <p>B0-DATM-6. Target 2: Implement by Dec 2019</p> <p>a. No</p>	Status – Developing
FICE	1. AIDC to provide initial flight data to adjacent ATSUs	<p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. Do we need this capability? <i>Yes or No</i></p> <p>c. Have we implemented the capability? <i>Yes or No</i></p>	<p>B0-FICE-1. Target 1: Assessed in Dec 2016</p> <p>a. Yes b. No</p> <p>B0-FICE-1. Target 2: c. N/A</p>	Status - N/A
	2. AIDC to update previously coordinated flight data	<p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. Do we need this capability? <i>Yes or No</i></p> <p>c. Have we implemented the capability? <i>Yes or No</i></p>	<p>B0-FICE-2. Target 1: Assessed in Dec 2016</p> <p>a. Yes b. No</p> <p>B0-FICE-2. Target 2: c. N/A</p>	Status - N/A

Block 0 Modules	Elements	Metrics	Targets	Status & Remarks
	3. AIDC for control transfer	a. Have we assessed the need? <i>Yes or No</i> b. Do we need this capability? <i>Yes or No</i> c. Have we implemented the capability? <i>Yes or No</i>	B0-FICE-3. Target 1: Assessed in Dec 2016 a. Yes b. No B0-FICE-3. Target 2: c. N/A	Status - N/A
	4. AIDC to transfer CPDLC logon information to the Next Data Authority	a. Have we assessed the need? <i>Yes or No</i> b. Do we need this capability? <i>Yes or No</i> c. Have we implemented the capability? <i>Yes or No</i>	B0-FICE-4. Target 1: Assessed in Dec 2016 a. Yes b. No B0-FICE-4. Target 2: c. N/A	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? <i>Yes or No</i> b. Do we need this capability? <i>Yes or No</i> c. Have we implemented the capability? <i>Yes or No</i>	B0-ACAS-1. Target 1: Assessed in Dec 2016 a. No b. TBD B0-ACAS-1. Target 2: Implement by TBD c. No	Status - Analysis Not Started
	2. Auto Pilot/Flight Director (AP/FD) TCAS	a. Have we assessed the need? <i>Yes or No</i> b. Do we need this capability? <i>Yes or No</i> c. Have we implemented the capability? <i>Yes or No</i>	B0-ACAS-2. Target 1: Assessed in Dec 2016 a. Yes b. No B0-ACAS-2. Target 2: c. N/A	Status - N/A
	3. TCAS Alert Prevention (TCAP)	a. Have we assessed the need? <i>Yes or No</i> b. Do we need this capability? <i>Yes or No</i> c. Have we implemented the capability? <i>Yes or No</i>	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? <i>Yes or No</i> b. Do we need this capability? <i>Yes or No</i> c. Have we implemented the capability? <i>Yes or No</i>	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? <i>Yes or No</i> b. Do we need this capability? <i>Yes or No</i> c. Have we implemented the capability? <i>Yes or No</i>	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? <i>Yes or No</i> b. Do we need this capability? <i>Yes or No</i> c. Have we implemented the capability? <i>Yes or No</i>	B0-ASUR-1. Target 1: Assessed in Dec 2016 a. Yes b. Yes B0-ASUR-1. Target 2: Implement by Dec 2019 c. No	Status – Planning
	2. Multilateration (MLAT)	Number of aerodromes to be considered: 2 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-ASUR-2. Target 1: Assessed in Dec 2016: a. Yes b. No B0-ASUR-2. Target 2: c. N/A	Status - N/A
FRTO	1. CDM incorporated into airspace planning	a. Have we assessed the need? <i>Yes or No</i> b. Do we need this capability? <i>Yes or No</i> c. Have we implemented the capability? <i>Yes or No</i>	B0-FRTO-1. Target 1: Assessed in Dec 2016 a. Yes b. No B0-FRTO-1. Target 2: c. N/A	Status - N/A

Block 0 Modules	Elements	Metrics	Targets	Status & Remarks
	2. Flexible Use of Airspace (FUA)	<p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. Do we need this capability? <i>Yes or No</i></p> <p>c. Have we implemented the capability? <i>Yes or No</i></p>	<p>B0-FRTO-2. Target 1: Assessed in Dec 2016</p> <p>a. Yes b. No</p> <p>B0-FRTO-2. Target 2: c. N/A</p>	Status - N/A
	3. Flexible route systems	<p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. Do we need this capability? <i>Yes or No</i></p> <p>c. Have we implemented the capability? <i>Yes or No</i></p>	<p>B0-FRTO-3. Target 1 Assessed in Dec 2016:</p> <p>a. Yes b. No</p> <p>B0-FRTO-3. Target 2: c. N/A</p>	Status - N/A
	4. CPDLC used to request and receive re-route clearances	<p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. Do we need this capability? <i>Yes or No</i></p> <p>c. Have we implemented the capability? <i>Yes or No</i></p>	<p>B0-FRTO-4. Target 1: Assessed in Dec 2016</p> <p>a. Yes b. No</p> <p>B0-FRTO-4. Target 2: c. N/A</p>	Status - N/A
NOPS	1. Sharing prediction of traffic load for next day	<p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. Do we need this capability? <i>Yes or No</i></p> <p>c. Have we implemented the capability? <i>Yes or No</i></p>	<p>B0-NOPS-1. Target 1: Assessed in Sep 2017</p> <p>a. Yes b. Yes</p> <p>B0-NOPS-1. Target 2: Implement by Dec 2019</p> <p>c. No</p>	Status – Developing
	2. Proposing alternative routings to avoid or minimize ATFM delays	<p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. Do we need this capability? <i>Yes or No</i></p> <p>c. Have we implemented the capability? <i>Yes or No</i></p>	<p>B0-NOPS-2. Target 1: Assessed in Sep 2017</p> <p>a. Yes b. No</p> <p>B0-NOPS-2. Target 2: c. N/A</p>	Status - N/A
OFTL	1. ITP using ADS-B	<p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. Do we need this capability? <i>Yes or No</i></p> <p>c. Have we implemented the capability? <i>Yes or No</i></p>	<p>B0-OFTL-1. Target 1: Assessed in Dec 2016</p> <p>a. Yes b. No</p> <p>B0-OFTL-1. Target 2: c. N/A</p>	Status - N/A
SNET	1. Short Term Conflict Alert (STCA)	<p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. Do we need this capability? <i>Yes or No</i></p> <p>c. Have we implemented the capability? <i>Yes or No</i></p>	<p>B0-SNET-1. Target 1: Assessed in Dec 2016</p> <p>a. Yes b. No</p> <p>B0-SNET-1. Target 2: c. N/A</p>	Status - N/A
	2. Area Proximity Warning (APW)	<p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. Do we need this capability? <i>Yes or No</i></p> <p>c. Have we implemented the capability? <i>Yes or No</i></p>	<p>B0-SNET-2. Target 1: Assessed in Dec 2016</p> <p>a. Yes b. No</p> <p>B0-SNET-2. Target 2: c. N/A</p>	Status - N/A
	3. Minimum Safe Altitude Warning (MSAW)	<p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. Do we need this capability? <i>Yes or No</i></p> <p>c. Have we implemented the capability? <i>Yes or No</i></p>	<p>B0-SNET-3. Target 1: Assessed in Dec 2016</p> <p>a. Yes b. No</p> <p>B0-SNET-3. Target 2: c. N/A</p>	Status - N/A
	4. Medium Term Conflict Alert (MTCA)	<p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. Do we need this capability? <i>Yes or No</i></p> <p>c. Have we implemented the capability? <i>Yes or No</i></p>	<p>B0-SNET-4. Target 1: Assessed in Dec 2016</p> <p>a. Yes b. No</p> <p>B0-SNET-4. Target 2: c. N/A</p>	Status - N/A

Block 0 Modules	Elements	Metrics	Targets	Status & Remarks
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? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-CCO-1. Target 1: Assessed in Dec 2016 a. Yes b. None B0-CCO-1. Target 2: c. N/A	Status - N/A
	2. Route changes to facilitate CCO	Number of aerodromes to be considered: 2 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-CCO-2. Target 1: Assessed in Dec 2016 a. Yes b. None B0-CCO-2. Target 2: c. N/A	Status - N/A
	3. PBN SIDs	Number of aerodromes to be considered: 2 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-CCO-3. Target 1: Assessed in Dec 2016 a. Yes b. 1 (TLPL) B0-CCO-3. Target 2: Implement by Dec 2019 c. None	Status – Developing Only TLPL needs this capability.
CDO	1. Procedure changes to facilitate CDO	Number of aerodromes to be considered: 2 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-CDO-1. Target 1: Assessed in Dec 2016 a. Yes b. None B0-CDO-1. Target 2: c. N/A	Status - N/A
	2. Route changes to facilitate CDO	Number of aerodromes to be considered: 2 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. Have we implemented the capability? <i>Yes or No</i>	B0-CDO-2. Target 1: Assessed in Dec 2016 a. Yes b. None B0-CDO-2. Target 2: c. N/A	Status - N/A
	3. PBN STARS	Number of aerodromes to be considered: 2 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, 1, or 2</i> c. How many aerodromes implemented the capability? <i>None, 1, or 2</i>	B0-CDO-3. Target 1: Assessed in Dec 2016 a. Yes b. 2 (TLPC, TLPL) B0-CDO-3. Target 2: Implemented in Aug 2020 c. 2	Status – Implemented At both TLPC and TLPL.
TBO	1. ADS-C over oceanic and remote areas	a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>Yes or No</i> c. Have we implemented the capability? <i>Yes or No</i>	B0-TBO-1. Target 1: Assessed in Dec 2016 a. Yes b. None B0-TBO-1. Target 2: c. N/A	Status - N/A
	2. CPDLC over continental areas	a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>Yes or No</i> c. Have we implemented the capability? <i>Yes or No</i>	B0-TBO-2. Target 1: Assessed in Sep 2017 a. Yes b. None B0-TBO-2. Target 2: c. N/A	Status - N/A
	3. CPDLC over oceanic and remote areas	a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>Yes or No</i> c. Have we implemented the capability? <i>Yes or No</i>	B0-TBO-3. Target 1: Assessed in Dec 2016 a. Yes b. None B0-TBO-3. Target 2: c. N/A	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				1	1			
	2. Interconnection between aircraft operator & airport operator systems to share surface operations information				1	1			
	3. Interconnection between airport operator & ANSP systems to share surface operations information				1	1			
	4. Interconnection between airport operator, aircraft operator & ANSP systems to share surface operations information				1	1			
	5. Collaborative departure queue management				1	1			
APTA	1. PBN approach procedures with vertical guidance to LNAV/VNAV minima				1				1
	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			2					
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				
	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								√

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
	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)				√				
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				
	2. Airspace changes to facilitate CCO				2				
	3. PBN SIDs				1		1		
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				√				

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: Developing (at both TLPC and TLPL)
- Heliport operational approval – Status: Implemented
- Visual aids for navigation – Status: Implemented
- Aerodrome Bird/Wildlife Organization and Control Programme – Status: Developing

4. Saint Lucia’s State Aviation System Improvements (SASI) Status

Saint Lucia’s 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

There are three infrastructure upgrades, shown below, which have been identified to address anticipated airport and airspace demand growth. SASI ANRF for Infrastructure Upgrades is prepared and provided in Appendix I.

- Airport Terminal Development – Status: Planning
- Airport Rwy Rehabilitation and extension – Status: Analysis in Progress
- Control Tower and Technical Building upgrade – Status: Planning

5. Saint Lucia State ANP Next Review Schedule

The next review and revision of this document is scheduled in September 2018.

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 <i>NAM ASBU Handbook</i> .
Block - Module	The Module Designation for the ASBU Module, as per the <i>NAM ASBU Handbook</i> .
Date	The date when the form was completed or updated.
Module Description	The Summary Description for the ASBU Module, as per the <i>NAM ASBU Handbook</i> .
Element	The descriptive text for each Element, as per the <i>NAM ASBU Handbook</i> . 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	<p>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:</p> <p>Not Started: if the Need Analysis has not been started for any of the States or aerodromes</p> <p>In Progress: if at least one Need Analysis has been started but none have yet been completed</p> <p>Need: if at least one Need Analysis has determined a requirement for the Element, but no implementation planning has yet been initiated</p> <p>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.</p> <p>Planning: if at least one implementation is in the Planning phase and no implementations have yet been completed.</p> <p>Developing: if at least one implementation is in the Developing phase but no implementations have yet been completed.</p> <p>Partially Implemented: if at least one, but not all, implementations have been completed.</p> <p>Implemented: if all of Needed implementations have been completed.</p>
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 (KPA) defined in the *Manual on Global Performance of the Air Navigation System* (Doc 9883):

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

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

State Name ASBU Air Navigation Reporting Form (ANRF)			
PIA	4	Block - Module	B0 - CDO
		Date	April 17, 2017
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			
<i>Access and Equity</i>			
Element 1: Describe if you can, else leave it blank.			
Element 3: Describe if you can, else leave it blank.			
<i>Capacity</i>			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i>			
Implementation Challenges			
<i>Ground system Implementation</i>			
<i>Avionics Implementation</i>			
<i>Procedures Availability</i>			
<i>Operational Approvals</i>			
Notes			
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.)

State Name 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.)

State Name 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: Saint Lucia ASBU Block 0 ANRFs

Saint Lucia ASBU Air Navigation Reporting Form (ANRF)					
PIA	1	Block - Module	B0 - ACDM	Date	September 7, 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 October 1, 2017	Status Planning
	Status Details We have determined that this capability is needed only at TLPL and not applicable to TLPC. Currently this is being done but in an ad hoc manner and very little automation. It is expected that as it develops there will be full automation of the process.				
2	Element Description: Interconnection between aircraft operator and airport operator systems to share surface operations information			Date Planned/Implemented October 1, 2017	Status Planning
	Status Details We have determined that this capability is needed only at TLPL and not applicable to TLPC. Currently this is being done but in an ad hoc manner and very little automation. It is expected that as it develops there will be full automation of the process.				
3	Element Description: Interconnection between airport operator and ANSP systems to share surface operations information			Date Planned/Implemented October 1, 2017	Status Planning
	Status Details We have determined that this capability is needed only at TLPL and not applicable to TLPC. Currently this is being done but in an ad hoc manner and very little automation. It is expected that as it develops there will be full automation of the process.				
4	Element Description: Interconnection between airport operator, aircraft operator and ANSP systems to share surface operations information			Date Planned/Implemented October 1, 2017	Status Planning
	Status Details We have determined that this capability is needed only at TLPL and not applicable to TLPC. Currently this is being done but in an ad hoc manner and very little automation. It is expected that as it develops there will be full automation of the process.				
5	Element Description: Collaborative departure queue management			Date Planned/Implemented October 1, 2017	Status Planning
	Status Details We have determined that this capability is needed only at TLPL and not applicable to TLPC. We will explore what works and what is best practice to improve processes				
Achieved Benefits					
<i>Access and Equity:</i> Elements 1 to 4: Customer Service and Airport stakeholder satisfaction levels will be enhanced.					
<i>Capacity:</i> Element 1 to 4: Will improve capacity.					
<i>Efficiency:</i> Elements 1 to 3: We have limited apron parking and airport terminal area space. With projected increase traffic, CDM will be useful in managing these constraints and collaborating with our stakeholders for smoother operations.					
<i>Environment:</i> No report.					
<i>Safety:</i> Elements 1 to 3: If we manage this well, it will improve overall safety.					
Implementation Challenges					
<i>Ground system Implementation:</i> None					
<i>Avionics Implementation:</i> None					
<i>Procedures Availability:</i> None					
<i>Operational Approvals:</i> None					
Notes: None					

Saint Lucia ASBU Air Navigation Reporting Form (ANRF)					
PIA	1	Block - Module	B0 - APTA	Date	September 7, 2017
Module Description: The use of Performance-based Navigation (PBN) and ground-based augmentation system (GBAS) landing system (GLS) procedures will 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 to LNAV/VNAV minima			Date Planned/Implemented August 2010	Status Implemented
	Status Details We have determined that this capability is needed only at TLPL and not applicable to TLPC. All approaches can be carried out with LNAV/VNAV.				
2	Element Description: PBN approach procedures with vertical guidance to LPV minima			Date Planned/Implemented N/A	Status N/A
	Status Details N/A				
3	Element Description: PBN approach procedures without vertical guidance to LNAV minima			Date Planned/Implemented August 2010	Status Implemented
	Status Details PBN Approaches are currently operational for both airports (TLPL and TLPC).				
4	Element Description: GBAS Landing System (GLS) procedures to CAT I minima			Date Planned/Implemented TBD	Status Need confirmed
	Status Details We have determined that this capability is needed at both TLPL and TLPC. Exploratory in collaboration with ECCAA and the wider region.				
Achieved Benefits					
<i>Access and Equity:</i> Elements 1 -3: The implementation of PBN Approaches has catered to and fulfilled the operational requirements of the modern (NextGen) aircraft operating into Saint Lucia.					
<i>Capacity:</i> Elements 1 -3: Airport arrival rate has increased.					
<i>Efficiency:</i> Elements 1 -3: Operational efficiency has improved.					
<i>Environment:</i> No report					
<i>Safety:</i> Elements 1 -3: Improved safety especially in marginal weather conditions.					
Implementation Challenges					
<i>Ground system Implementation:</i> Element 4: GBAS implementation is dependent on a collaborative and regional approach					
<i>Avionics Implementation:</i> None					
<i>Procedures Availability:</i> None					
<i>Operational Approvals:</i> None					
Notes					
None					

Saint Lucia ASBU Air Navigation Reporting Form (ANRF)				
PIA	1	Block - Module	B0 - RSEQ	Date December 5, 2016
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 N/A	Status N/A
	Status Details N/A			
2	Element Description: Departure management		Date Planned/Implemented N/A	Status N/A
	Status Details N/A			
3	Element Description: Departure flow management		Date Planned/Implemented N/A	Status N/A
	Status Details N/A			
4	Element Description: Point merge		Date Planned/Implemented N/A	Status N/A
	Status Details N/A			
Achieved Benefits				
<i>Access and Equity:</i> N/A				
<i>Capacity:</i> N/A				
<i>Efficiency:</i> N/A				
<i>Environment:</i> N/A				
<i>Safety:</i> N/A				
Implementation Challenges				
<i>Ground system Implementation:</i> N/A				
<i>Avionics Implementation:</i> N/A				
<i>Procedures Availability:</i> N/A				
<i>Operational Approvals:</i> N/A				
Notes				
None				

Saint Lucia ASBU Air Navigation Reporting Form (ANRF)					
PIA	1	Block - Module	B0 - SURF	Date	December 5, 2016
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					
1	Element Description: A-SMGCS with at least one cooperative surface surveillance system			Date Planned/Implemented	Status
	N/A			N/A	N/A
2	Element Description: ADS-B APT			Date Planned/Implemented	Status
	N/A			N/A	N/A
3	Element Description: A-SMGCS alerting with flight identification information			Date Planned/Implemented	Status
	N/A			N/A	N/A
4	Element Description: EVS for taxi operations			Date Planned/Implemented	Status
	N/A			N/A	N/A
5	Element Description: Airport vehicles equipped with transponders			Date Planned/Implemented	Status
	N/A			N/A	N/A
Achieved Benefits					
<i>Access and Equity: N/A</i>					
<i>Capacity: N/A</i>					
<i>Efficiency: N/A</i>					
<i>Environment: N/A</i>					
<i>Safety: N/A</i>					
Implementation Challenges					
<i>Ground system Implementation: N/A</i>					
<i>Avionics Implementation: N/A</i>					
<i>Procedures Availability: N/A</i>					
<i>Operational Approvals: N/A</i>					
Notes					
None					

Saint Lucia ASBU Air Navigation Reporting Form (ANRF)					
PIA	1	Block - Module	B0 - WAKE	Date	December 5, 2016
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 N/A	Status N/A
	Status Details N/A				
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 N/A	Status N/A
	Status Details N/A				
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 N/A	Status N/A
	Status Details N/A				
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 N/A	Status N/A
	Status Details N/A				
5	Element Description: 6 wake turbulence categories and separation minima			Date Planned/Implemented N/A	Status N/A
	Status Details N/A				
Achieved Benefits					
<i>Access and Equity:</i> N/A					
<i>Capacity:</i> N/A					
<i>Efficiency:</i> N/A					
<i>Environment:</i> N/A					
<i>Safety:</i> N/A					
Implementation Challenges					
<i>Ground system Implementation:</i> N/A					
<i>Avionics Implementation:</i> N/A					
<i>Procedures Availability:</i> N/A					
<i>Operational Approvals:</i> N/A					
Notes					
None					

Saint Lucia ASBU Air Navigation Reporting Form (ANRF)					
PIA	2	Block - Module	B0 - AMET	Date	September 7, 2017
<p>Module Description: Global, regional and local meteorological information:</p> <ul style="list-style-type: none"> 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. <p>This information supports flexible airspace management, improved situational awareness and collaborative decision making, and dynamically optimized flight trajectory planning.</p> <p>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.</p>					
Element Implementation Status					
1	Element Description: WAFS		Date Planned/Implemented January 2000	Status Implemented	
	Status Details Fully Operational.				
2	Element Description: IAVW		Date Planned/Implemented N/A	Status N/A	
	Status Details N/A				
3	Element Description: TCAC forecasts		Date Planned/Implemented January 2000	Status Implemented	
	Status Details Fully Operational.				
4	Element Description: Aerodrome warnings		Date Planned/Implemented July 2013	Status Partially Implemented	
	Status Details We have determined that this capability is needed at both TLPL and TLPC. We are partially implemented this capability and in the process of training and acquiring all of the equipment needed for the aerodrome warning capability.				
5	Element Description: Wind shear warnings and alerts		Date Planned/Implemented July 2013	Status Partially Implemented	
	Status Details We have determined that this capability is needed at both TLPL and TLPC. We are partially implemented this capability and in the process of training and acquiring all of the equipment needed for the Wind shear warnings and alerts capabilities.				
6	Element Description: SIGMET		Date Planned/Implemented N/A	Status N/A	
	Status Details N/A				
7	Element Description: Other OPMET information (METAR, SPECI and/or TAF)		Date Planned/Implemented January 2000	Status Implemented	
	Status Details We have determined that this capability is needed at both TLPL and TLPC. Fully Operational.				
8	Element Description: QMS for MET		Date Planned/Implemented July 2013	Status Partially Implemented	
	Status Details In the process of preparing documents and training. Full implementation expect in July of 2018.				

Achieved Benefits
<i>Access and Equity:</i> No report
<i>Capacity:</i> No report
<i>Efficiency</i> Elements 1, 3, 4, 5, and 7 have improved efficiency with timely information assisting in sound decision making where Airport operations are concerned. Elements 4 and 5 provide critical information available in a timely manner. Element 8 improved the overall service to ATC, flight crew, and airport community.
<i>Environment:</i> No report
<i>Safety:</i> Elements 1, 3, 4, 5 7 have improved the safety of aviation by having timely and more accurate analysis of weather information available.
Implementation Challenges
<i>Ground system Implementation:</i> No report
<i>Avionics Implementation:</i> No report
<i>Procedures Availability:</i> No report
<i>Operational Approvals:</i> No report
Notes
None

Saint Lucia ASBU Air Navigation Reporting Form (ANRF)					
PIA	2	Block - Module	B0 - DATM	Date	December 5, 2016
Module Description: The initial introduction of digital processing and management of information, from origination to publication, 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: Standardized Aeronautical Information Exchange Model (AIXM)			Date Planned/Implemented TBD	Status Analysis not started
	Status Details Saint Lucia intends to discuss this with regional partners on a regional approach.				
2	Element Description: eAIP			Date Planned/Implemented January 2012	Status Implemented
	Status Details AIPs are currently made available electronically.				
3	Element Description: Digital NOTAM			Date Planned/Implemented TBD	Status Analysis not started
	Status Details Implementation would be based on a regional approach through Piarco AIS/ NOTAM Office which is the International NOTAM Office for the ECAR Region.				
4	Element Description: eTOD			Date Planned/Implemented TBD	Status Analysis not started
	Status Details Still assessing need.				
5	Element Description: WGS-84			Date Planned/Implemented January 1993	Status Implemented
	Status Details Has been implemented for over twenty years.				
6	Element Description: QMS for AIM			Date Planned/Implemented March 31, 2017	Status Developing
	Status Details Working under the Piarco AIS QMS umbrella. LOAs and other docs have been completed and submitted.				
Achieved Benefits					
<i>Access and Equity:</i> No report					
<i>Capacity:</i> Element 6 (QMS): As part of the Piarco AIS QMS umbrella has and will allow us to operate and achieve even with limited staffing.					
<i>Efficiency:</i> Element 2 (eAIP): Alignment with ICAO standards will ensure operators can find necessary data in the same manner as they do other ICAO compliant AIPs					
<i>Environment:</i> Moving away from print across sections of the business, including eAIP.					
<i>Safety:</i> Element 6 (QMA): Improvements in safety and regularity are anticipated. QMS implementation ensures data changes are controlled and compliant with State requirements and regulations.					
Implementation Challenges					
<i>Ground system Implementation:</i> No report					
<i>Avionics Implementation:</i> No report					
<i>Procedures Availability:</i> No report					
<i>Operational Approval:</i> Challenges exist in coordinating with adjacent States to ensure operational viability during times of change.					
Notes: None					

Saint Lucia ASBU Air Navigation Reporting Form (ANRF)					
PIA	2	Block - Module	B0 - FICE	Date	December 5, 2016
Module Description: To improve coordination between air traffic service units (ATSUs) by using ATS interfacility data communication (AIDC) defined by ICAO's Manual of Air Traffic Services Data Link Applications (Doc 9694). An additional benefit is the improved efficiency of the transfer of communication in a data link environment.					
Element Implementation Status					
1	Element Description: AIDC to provide initial flight data to adjacent ATSUs			Date Planned/Implemented	Status
	Status Details N/A			N/A	N/A
2	Element Description: AIDC to update previously coordinated flight data			Date Planned/Implemented	Status
	Status Details N/A			N/A	N/A
3	Element Description: AIDC for control transfer			Date Planned/Implemented	Status
	Status Details N/A			N/A	N/A
4	Element Description: AIDC to transfer CPDLC logon information to the Next Data Authority			Date Planned/Implemented	Status
	Status Details N/A			N/A	N/A
Achieved Benefits					
<i>Access and Equity:</i> N/A					
<i>Capacity:</i> N/A					
<i>Efficiency:</i> N/A					
<i>Environment:</i> N/A					
<i>Safety:</i> N/A					
Implementation Challenges					
<i>Ground system Implementation:</i> N/A					
<i>Avionics Implementation:</i> N/A					
<i>Procedures Availability:</i> N/A					
<i>Operational Approvals:</i> N/A					
Notes					
None					

Saint Lucia ASBU Air Navigation Reporting Form (ANRF)				
PIA	3	Block - Module	B0 - ACAS	Date December 5, 2016
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 TBD	Status Analysis not started
	Status Details Awaiting decision by ECCAA for the states under its jurisdiction on this matter.			
2	Element Description: AP/FD function		Date Planned/Implemented N/A	Status N/A
	Status Details N/A			
3	Element Description: TCAP function		Date Planned/Implemented N/A	Status N/A
	Status Details N/A			
Achieved Benefits				
<i>Access and Equity:</i> Element 1: No report				
<i>Capacity:</i> Element 1: No report				
<i>Efficiency:</i> Element 1: No report				
<i>Environment:</i> Element 1: No report				
<i>Safety:</i> Element 1: No report				
Implementation Challenges				
<i>Ground system Implementation:</i> Element 1: No report				
<i>Avionics Implementation:</i> Element 1: No report				
<i>Procedures Availability:</i> Element 1: No report				
<i>Operational Approvals:</i> Element 1: No report				
Notes None				

Saint Lucia ASBU Air Navigation Reporting Form (ANRF)					
PIA	3	Block - Module	B0 - ASEP	Date	December 5, 2016
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 N/A	Status N/A	
	Status Details N/A				
2	Element Description: ATSA-VSA		Date Planned/Implemented N/A	Status N/A	
	Status Details N/A				
Achieved Benefits					
<i>Access and Equity:</i> N/A					
<i>Capacity:</i> N/A					
<i>Efficiency:</i> N/A					
<i>Environment:</i> N/A					
<i>Safety:</i> N/A					
Implementation Challenges					
<i>Ground system Implementation:</i> N/A					
<i>Avionics Implementation:</i> N/A					
<i>Procedures Availability:</i> N/A					
<i>Operational Approvals:</i> N/A					
Notes					
None					

Saint Lucia ASBU Air Navigation Reporting Form (ANRF)			
PIA	3	Block - Module	B0 - ASUR
Date	December 5, 2016		
Module Description: To provide 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			
1	Element Description: ADS-B	Date Planned/Implemented TBD	Status Planning
	Status Details Saint Lucia is working on implementation in conjunction with ECCAA, as a collaborative project with all states under the ECCAA jurisdiction.		
2	Element Description: MLAT	Date Planned/Implemented N/A	Status N/A
	Status Details N/A		
Achieved Benefits			
<i>Access and Equity:</i> Element 1: No report			
<i>Capacity:</i> Element 1: No report			
<i>Efficiency:</i> Element 1: No report			
<i>Environment:</i> Element 1: No report			
<i>Safety:</i> Element 1: No report			
Implementation Challenges			
<i>Ground system Implementation:</i> Element 1: No report			
<i>Avionics Implementation:</i> Element 1: No report			
<i>Procedures Availability:</i> Element 1: No report			
<i>Operational Approvals:</i> Element 1: No report			
Notes			
None			

Saint Lucia ASBU Air Navigation Reporting Form (ANRF)					
PIA	3	Block - Module	B0 - FRTO	Date	December 5, 2016
Module Description: To 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	Status	N/A N/A
	Status Details N/A				
2	Element Description: Flexible Use of Airspace (FUA)		Date Planned/Implemented	Status	N/A N/A
	Status Details N/A				
3	Element Description: Flexible routing		Date Planned/Implemented	Status	N/A N/A
	Status Details N/A				
4	Element Description: CPDLC used to request and receive re-route clearances		Date Planned/Implemented	Status	N/A N/A
	Status Details N/A				
Achieved Benefits					
<i>Access and Equity:</i> N/A					
<i>Capacity:</i> N/A					
<i>Efficiency:</i> N/A					
<i>Environment:</i> N/A					
<i>Safety:</i> N/A					
Implementation Challenges					
<i>Ground system Implementation:</i> N/A					
<i>Avionics Implementation:</i> N/A					
<i>Procedures Availability:</i> N/A					
<i>Operational Approvals:</i> N/A					
Notes					
None					

Saint Lucia ASBU Air Navigation Reporting Form (ANRF)				
PIA	3	Block - Module	B0 - NOPS	Date September 7, 2017
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. Collaborative 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				
1	Element Description: Sharing prediction of traffic load for next day		Date Planned/Implemented December 2019	Status Developing
	Status Details Saint Lucia is part of a regional phased approach on ATFM implementation in the PIARCO FIR, which is spearheaded by the ATM/ATFM Units. Saint Lucia hopes to share the traffic prediction of two airports, TLPL and TLPC, with PIARCO FIR.			
2	Element Description: Proposing alternative routings to avoid or minimize ATFM delays		Date Planned/Implemented N/A	Status N/A
	Status Details N/A			
Achieved Benefits				
<i>Access and Equity:</i> Element 1: Respective States will have access to shared information which will benefit the State and the region simultaneously.				
<i>Capacity:</i> Element 1: Airspace and Airport capacity management will be optimized.				
<i>Efficiency:</i> Element 1: Through a CDM process, ATFM implementation will improve traffic management and as a result improve efficiency.				
<i>Environment:</i> No report				
<i>Safety:</i> No report				
Implementation Challenges				
<i>Ground system Implementation:</i> No report				
<i>Avionics Implementation:</i> No report				
<i>Procedures Availability:</i> No report				
<i>Operational Approvals:</i> No report				
Notes				
None				

Saint Lucia ASBU Air Navigation Reporting Form (ANRF)					
PIA	3	Block - Module	B0 - OPFL	Date	December 5, 2016
Module Description: To enable aircraft to reach a more satisfactory flight level for flight efficiency or to avoid turbulence for safety. The main benefit of ITP is fuel/emissions savings and the uplift of greater payloads.					
Element Implementation Status					
1	Element Description:		Date Planned/Implemented	Status	
	ITP using ADS-B		N/A	N/A	
	Status Details				
	N/A				
Achieved Benefits					
<i>Access and Equity:</i> N/A					
<i>Capacity:</i> N/A					
<i>Efficiency:</i> N/A					
<i>Environment:</i> N/A					
<i>Safety:</i> N/A					
Implementation Challenges					
<i>Ground system Implementation:</i> N/A					
<i>Avionics Implementation:</i> N/A					
<i>Procedures Availability:</i> N/A					
<i>Operational Approvals:</i> N/A					
Notes					
None					

Saint Lucia ASBU Air Navigation Reporting Form (ANRF)				
PIA	3	Block - Module	B0 - SNET	Date December 5, 2016
Module Description: To enable monitoring of flights while airborne to provide timely alerts to air traffic controllers of potential risks to flight safety. Alerts from short-term conflict alert (STCA), area proximity warnings (APW) and minimum safe altitude warnings (MSAW) are proposed. Ground-based safety nets make an essential contribution to safety and remain required as long as the operational concept remains human centred.				
Element Implementation Status				
1	Element Description: Short Term Conflict Alert (STCA)		Date Planned/Implemented N/A	Status N/A
	Status Details N/A			
2	Element Description: Area Proximity Warning (APW)		Date Planned/Implemented N/A	Status N/A
	Status Details N/A			
3	Element Description: Minimum Safe Altitude Warning (MSAW)		Date Planned/Implemented N/A	Status N/A
	Status Details N/A			
4	Element Description: Medium Term Conflict Alert (MTCA)		Date Planned/Implemented N/A	Status N/A
	Status Details N/A			
Achieved Benefits				
<i>Access and Equity:</i> N/A				
<i>Capacity:</i> N/A				
<i>Efficiency:</i> N/A				
<i>Environment:</i> N/A				
<i>Safety:</i> N/A				
Implementation Challenges				
<i>Ground system Implementation:</i> N/A				
<i>Avionics Implementation:</i> N/A				
<i>Procedures Availability:</i> N/A				
<i>Operational Approvals:</i> N/A				
Notes				
None				

Saint Lucia ASBU Air Navigation Reporting Form (ANRF)					
PIA	4	Block - Module	B0 - CCO	Date	December 5, 2016
Module Description: To implement continuous climb operations 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. The application of PBN enhances CCO.					
Element Implementation Status					
1	Element Description: Procedure changes to facilitate CCO			Date Planned/Implemented	Status
	Status Details N/A			N/A	N/A
2	Element Description: Airspace changes to facilitate CCO			Date Planned/Implemented	Status
	Status Details N/A			N/A	N/A
3	Element Description: PBN SIDs			Date Planned/Implemented	Status
	Status Details We have determined that this capability is needed only at TLPL and not applicable to TLPC. Has been flight checked, awaiting publication.			October 2017	Developing
Achieved Benefits					
<i>Access and Equity:</i> Element 3: The implementation of PBN SIDS will cater to and fulfill the operational requirements of all aircraft operating into and out of Saint Lucia.					
<i>Capacity:</i> Element 3: Will aid in improving airspace capacity for departure rates.					
<i>Efficiency:</i> Element3: Will improve ATC Operational efficiency and likely compliment CCO Procedures in adjacent airspaces.					
<i>Environment:</i> Element 3: Will reduce Carbon Dioxide emissions.					
<i>Safety:</i> Element 3: Will improve safety, arrivals will be separated from departures.					
Implementation Challenges					
<i>Ground system Implementation:</i> No report.					
<i>Avionics Implementation:</i> No report.					
<i>Procedures Availability:</i> No report.					
<i>Operational Approvals:</i> No report.					
Notes					
None					

Saint Lucia ASBU Air Navigation Reporting Form (ANRF)			
PIA	4	Block - Module	B0 - CDO
Date	December 5, 2016		
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 N/A	Status N/A
	Status Details N/A		
2	Element Description: Airspace changes to facilitate CDO	Date Planned/Implemented N/A	Status N/A
	Status Details N/A		
3	Element Description: PBN STARs	Date Planned/Implemented August 2010	Status Implemented
	Status Details We have implemented this capability at both TLPL and TLPC.		
Achieved Benefits			
<i>Access and Equity:</i> Element 3: The implementation of PBN Approaches has catered to and fulfilled the operational requirements of the modern (Next Gen) aircraft operating into Saint Lucia.			
<i>Capacity:</i> Element 3: Has increased capacity on arrival rates.			
<i>Efficiency:</i> Element 3: Has increased efficiency and customer satisfaction.			
<i>Environment:</i> Element 3: Has reduced Carbon Dioxide emissions.			
<i>Safety:</i> Element 3: Has improved safety, arrivals and departures are separated.			
Implementation Challenges			
<i>Ground system Implementation:</i> No report			
<i>Avionics Implementation:</i> No report			
<i>Procedures Availability:</i> No report			
<i>Operational Approvals:</i> No report			
Notes None			

Saint Lucia ASBU Air Navigation Reporting Form (ANRF)				
PIA	4	Block - Module	B0 - TBO	Date September 7, 2017
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 N/A	Status N/A
	Status Details N/A			
2	Element Description: CPDLC over continental areas		Date Planned/Implemented N/A	Status N/A
	Status Details N/A			
3	Element Description: CPDLC over oceanic and remote areas		Date Planned/Implemented N/A	Status N/A
	Status Details N/A			
Achieved Benefits				
<i>Access and Equity:</i> N/A				
<i>Capacity:</i> N/A				
<i>Efficiency:</i> N/A				
<i>Environment:</i> N/A				
<i>Safety:</i> N/A				
Implementation Challenges				
<i>Ground system Implementation:</i> N/A				
<i>Avionics Implementation:</i> N/A				
<i>Procedures Availability:</i> N/A				
<i>Operational Approvals:</i> N/A				
Notes				
None				

Appendix E: Saint Lucia ASBU Block 1 ANRFs

Insert Saint Lucia's ASBU B1 ANRFs in the future.

Appendix F: A Saint Lucia SBU Block 2 ANRFs

Insert Saint Lucia's ASBU B2 ANRFs in the future.

Appendix G: Saint Lucia ASBU Block 3 ANRFs

Insert Saint Lucia's ASBU B3 ANRFs in the future.

Appendix H: Saint Lucia RASI ANRFs

Saint Lucia 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. Saint Lucia's two airports, TLPC and TLPL. 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 TLPC and TLPL.		
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			
<i>Access and Equity</i> 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			
<i>Capacity:</i> No report			
<i>Efficiency</i> Element 3. Visual aids for navigation: Annex 14 compliant visual aids for navigation assist flights to more efficiently complete ground movements			
<i>Environment:</i> No report			
<i>Safety</i> 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			
<i>Ground system Implementation:</i> No report: No report			
<i>Avionics Implementation:</i> No report			

<i>Procedures Availability:</i> No report
<i>Operational Approvals:</i> No report
Notes Element 1: Airport Terminal Development will also address the airport terminal security issues.

Appendix I: Saint Lucia SASI ANRFs

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			
<i>Access and Equity</i>			
<i>Capacity</i> Element 1 - Airport Terminal Development: Increase the capacity to handle passengers smoothly at the peak arrival periods.			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i> 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			
<i>Ground system Implementation</i>			
<i>Avionics Implementation</i>			
<i>Procedures Availability</i>			
<i>Operational Approvals</i>			
Notes Element 1 - Airport Terminal Development: Address the airport terminal security issues.			

This page is intentionally left blank.

