

Saint Vincent and Grenadines State Air Navigation Plan

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1. Introduction

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

1.2.1. Authority of Saint Vincent and the Grenadines

The Saint Vincent and the Grenadines Aviation Services Department is part of the Ministry of National Security. Its mission is to ensure safe and efficient operations of all aviation technical services, to facilitate improvements in air transport, and to make aviation a key contributor to the development of St. Vincent and the Grenadines.

The Aviation Services Department is responsible for managing the aerodrome and airspace. The organization is headed by the Director of Airports who reports to the Permanent Secretary in the Ministry of National Security. Its operation is performed by a highly trained and motivated work force contributing to the sustainable, social and economic development of Saint Vincent and the Grenadines. The organizational structure of the Aviation Services Department is shown in Figure 1.2.1.

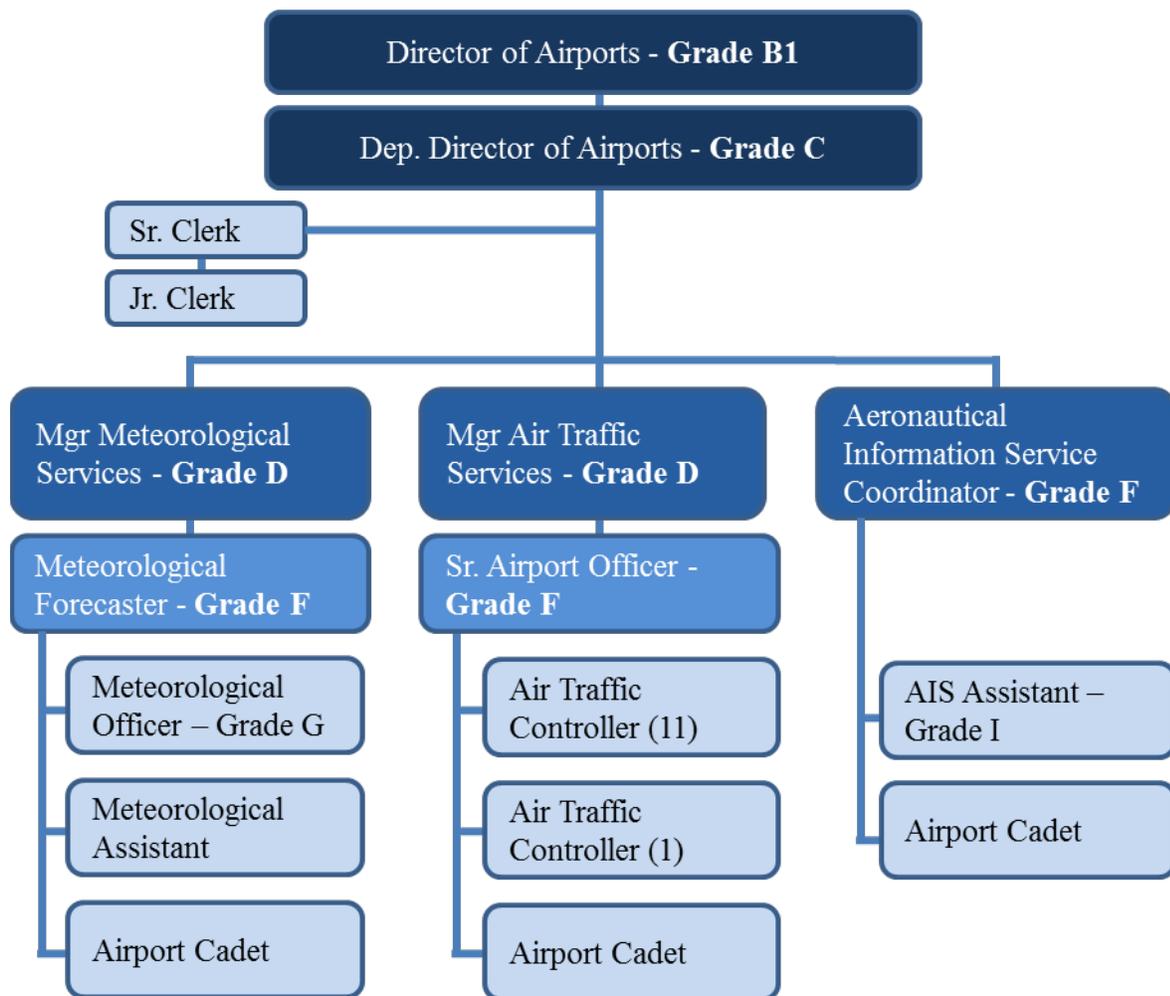


Figure 1.2.1. Organizational Structure of Saint Vincent and the Grenadines Aviation Services Department

1.2.2. Airspace

St. Vincent and the Grenadines is located within the Piarco Flight Information Region (FIR) which is managed by Trinidad and Tobago. The Argyle Terminal Control Area (TMA) is an irregular shaped area bounded by St. Lucia to the North, Barbados to the East, Grenada to the South and Trinidad to the West and above FL. 135.

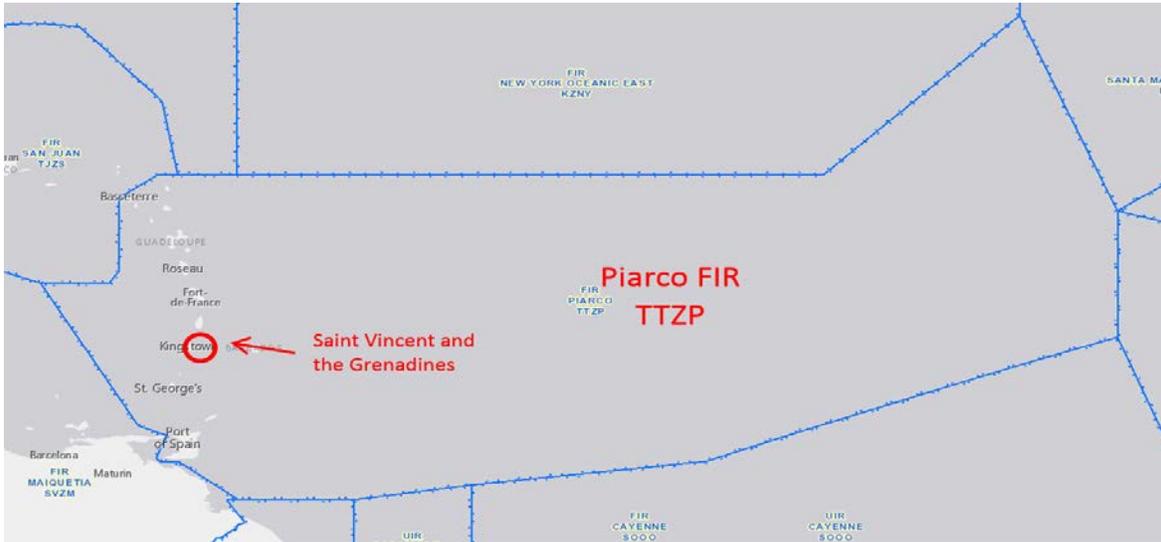


Figure 1.2.2a: PIARCO FIR

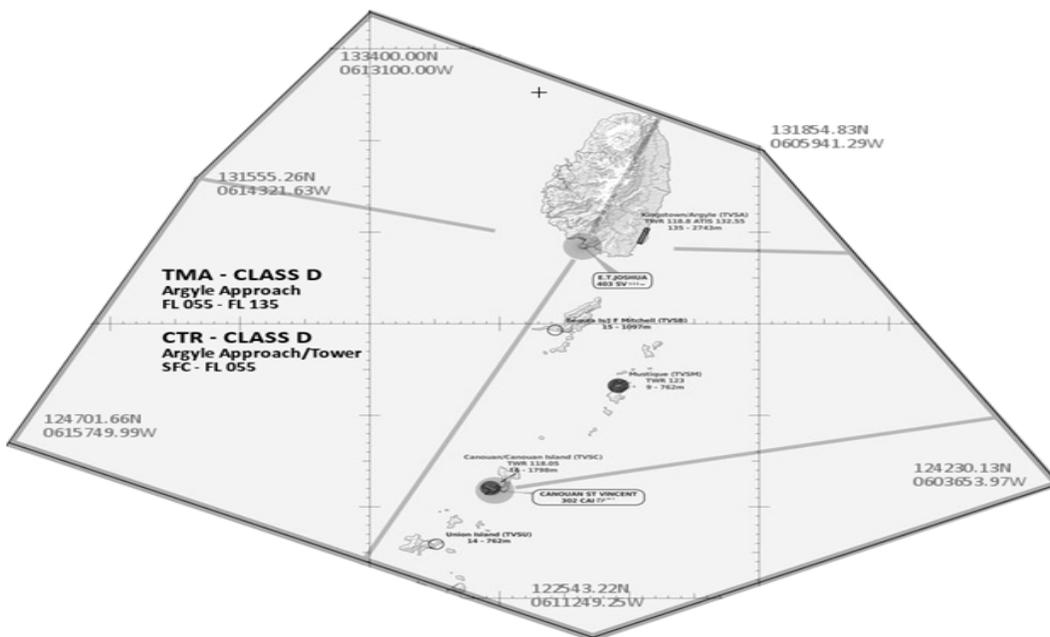


Figure 1.2.2b: ARGYLE (TVSA) TMA

1.2.3. Aerodromes

The Argyle International Airport (TVSA) is the major airport in Saint Vincent and the Grenadines. The aerodrome has the capacity of 12-14 air traffic movements per hour.

Runway Information on Argyle International Airport (TVSA)

	Runway 04	Runway 22
Length x Width	9000ft x 148 ft.	9000ft x 148 ft.
Surface Type	Asphalt	asphalt
TDZ-Elevation	136	52 ft.
Lighting	Edge	edge
Displace Threshold	N/A	985 ft.

1.2.4. Traffic Forecast

Number of typical daily operation (arrivals/departures) at Argyle International Airport (TVSA) are 30/30 (total of 60 movements). The RPBANIP forecasted that average annual growth of air traffic in the Caribbean region would increase 5.9% during 2011-2031. There has been an increase of 9.5% at the Argyle International airport during 2017 when compared to operations at TVSV during 2016. My Organization believes that this overall Caribbean regional forecast of annual increase of 5.9% and the initial increase at TVSA is too optimistic for My Organization and a more moderate number of 3.0% annual increase might realistic anticipation. Estimated daily operations at TVSA are shown in Tables 1.2.4a and 1.2.4b applying the increase forecasts to each year from 2017 to 2031.

Year	Rate of 9.5%	Rate of 5.9%	Rate of 3.0%
2017	60	60	60
2018	66	64	62
2019	72	67	64
2020	79	71	66
2021	86	75	68
2022	94	80	70
2023	103	85	72
2024	113	90	74
2025	124	95	76
2026	136	101	78
2027	149	106	81
2028	163	113	83
2029	178	119	86
2030	195	126	88
2031	214	134	91

Table 1.2.4: Air Traffic Forecasts at TVSA (number of daily operation) using annual increase rates of 9.5%, 5.9%, and 3.0%

1.3. Planning Methodology

Guided by the GANP and RPBANIP, the state's planning process starts by identifying the states responsible for 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 Vincent and the Grenadines 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 Vincent and the Grenadines 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. Saint Vincent and the Grenadines' 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

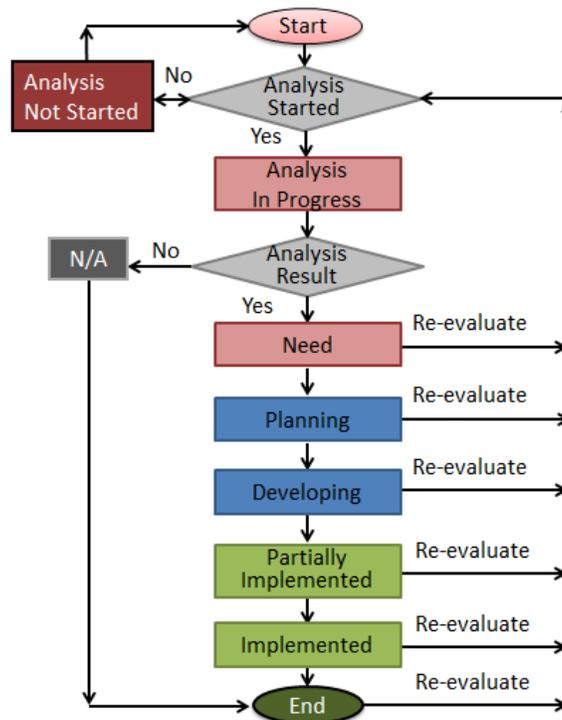


Figure 1.4.1: Analysis and Work Flow

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 Vincent and the Grenadines 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 Vincent and the Grenadines ASBU Air Navigation Reporting Form Template is provided in Appendix B. The Saint Vincent and the Grenadines 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 TVSA are only expected to increase in the future. The construction of a parallel taxiway would improve on the airport capacity, efficiency and overall management of traffic.

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 of critical concern is the availability of human resource to meet the wide-ranging needs of airport operations. The rapid changes in the aviation industry demands increase workload from our department. The acquisition of more staff along with the development of our current human resource is paramount if we are to function as a modern and competitive aviation sector.

1.5.2. Future Problems

Anticipating heavier demand at the TVSA airport, there is a need for an analysis into the introduction of a Ground Based Argumentation System (GBAS).

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 Vincent and the Grenadines 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. St. Vincent considers Argyle International Airport (TVSA) 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: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-ACDM-1 Target 1: Assess by Dec. 2019 a. No b. TBD B0-ACDM-1 Target 2: Implement in TBD c. None	Status – Analysis not started. Assessment to begin Jan. 2019
	2. Interconnection between aircraft operator & airport operator systems to share surface operations information	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-ACDM-2 Target 1: Assess by Dec. 2019 a. No b. TBD B0-ACDM-2 Target 2: Implement in TBD c. None	Status – Analysis not started. Assessment to begin Jan. 2019
	3. Interconnection between airport operator & ANSP systems to share surface operations information	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-ACDM-3 Target 1: Assess by Dec. 2019 a. No b. TBD B0-ACDM-3 Target 2: Implement by TBD c. None	Status – Analysis not started. Assessment to begin Jan. 2019
	4. Interconnection between airport operator, aircraft operator & ANSP systems to share surface operations information	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-ACDM-4 Target 1: Assessed Feb. 2017 a. Yes b. 1 (TVSA) B0-ACDM-4 Target 2: Partially implemented in Feb. 2017 c. 1	Status – Partially implemented. Full implementation by Dec.2019
	5. Collaborative departure queue management	Number of aerodromes to be considered: a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-ACDM-5 Target 1: Assess by Dec.2019 a. No b. TBD B0-ACDM-5 Target 2: Implemented by TBD c. None	Status – Analysis not started

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: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-APTA-1 Target 1: Assess by Dec.2119 a. No b. TBD B0-APTA-1 Target 2: Implemented in TBD c. None	Status – Analysis not started
	2. PBN approach procedures with vertical guidance to LPV minima	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-APTA-2 Target 1: Assess by Dec.2119 a. No b. TBD B0-APTA-2 Target 2: Implemented in TBD c. None	Status – Analysis not started
	3. PBN Approach Procedures without vertical guidance (LP, LNAV minima; using SBAS)	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-APTA-3. Target 1: Assessed in Feb 2017 a. Yes b. 1 B0-APTA-3 Target 2: Implemented in Feb 2017 c. 1	Status – Partially implemented
	4. GBAS Landing System (GLS) Approach procedures	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-APTA-4 Target 1: Assess by Dec.2119 a. No b. TBD B0-APTA-4 Target 2: Implemented in TBD c. None	Status – Analysis not started
RSEQ	1. AMAN via controlled time of arrival to a reference fix	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-RSEQ-1. Target 1: Assessed in Feb 2017 a. Yes b. None B0-RSEQ-1 Target 2: c. N/A	Status – N/A
	2. Departure management	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-RSEQ-2. Target 1: Assessed in Feb 2017 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: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-RSEQ-3. Target 1: Assessed in Feb 2017 a. Yes b. None B0-RSEQ-3. Target 2: c. N/A	Status – N/A
	4. Point merge	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-RSEQ-4. Target 1: Assessed in Feb 2017 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: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None, or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-SURF-1. Target 1: Assessed in Feb. 2017 a. Yes b. None B0-SURF-1. Target 2: c. none	Status – N/A
	2. Including ADS-B APT as an element of A-SMGCS	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-SURF-2. Target 1: Assessed in Feb. 2017 a. Yes b. None B0-SURF-2. Target 2: c. none	Status – N/A
	3. A-SMGCS alerting with flight identification information	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-SURF-3. Target 1: Assessed in Feb. 2017 a. Yes b. None B0-SURF-3. Target 2: c. none	Status – N/A
	4. EVS for taxi operations	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-SURF-4. Target 1: Assessed in Feb. 2017 a. Yes b. None B0-SURF-4. Target 2: c. none	Status – N/A
	5. Airport vehicles equipped with transponders	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-SURF-5. Target 1: Assessed in Feb. 2017 a. Yes b. None B0-SURF-5. Target 2: c. none	Status – N/A
WAKE	1. New PANS-ATM wake turbulence categories and separation minima	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-WAKE-1. Target 1: Assessed in Feb. 2017 a. Yes b. 1 B0-WAKE-1. Target 2: c. 1	Status – Implemented
	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: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-WAKE-2. Target 1: Assess in Feb 2017 a. Yes b. None B0-WAKE-2. Target 2: c. none	Status – N/A
	3. Wake independent departure and arrival procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-WAKE-3. Target 1: Assessed in Feb. 2017 a. Yes b. None B0-WAKE-3. Target 2: c. none	Status – N/A

Block 0 Modules	Elements	Metrics	Targets	Status & Remarks
	4. Wake turbulence mitigation for departures procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-WAKE-4. Target 1: Assessed in Feb. 2017 a. Yes b. None B0-WAKE-4. Target 2: c. none	Status – N/A
	5. 6 wake turbulence categories and separation minima	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-WAKE-5. Target 1: Assessed in Feb. 2017 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 by Dec 2019 a. no b. TBD B0-AMET-1.Target 2: Implemented by TBD c. No	Status – Analysis not started
	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 by Dec 2019 a. No b. TBD B0-AMET-2. Target 2: c. No	Status – Analysis not started
	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 by Dec 2019 a. Yes b. Yes B0-AMET-3.Target 2: Implemented in TBD c. No	Status – Analysis not started
	4. Aerodrome warnings	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-AMET-4. Target 1: Assessed by Dec 2019 a. No b. TBD B0-AMET-4.Target 2: Implement by TBD c. none	Status – Analysis not started
	5. Wind shear warnings and alerts	Number of aerodromes to be considered: 1 a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-AMET-5. Target 1: Assess by Dec. 2019 a. No b. TBD B0-AMET-5.Target 2: Implement by TBD c.none	Status – Analysis not started
	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 by Dec. 2019 a. NO b. TBD B0-AMET-6. Target 2: c. none	Status – Analysis not started
	7. Other OPMET information (METAR, SPECI and/or TAF)	Number of aerodromes to be considered: a. Have we assessed the need? <i>Yes or No</i> b. How many aerodromes need this capability? <i>None or 1</i> c. How many aerodromes implemented the capability? <i>None or 1</i>	B0-AMET-7. Target 1: a. Yes b. 1 B0-AMET-7.Target 2: Implemented in Feb. 2017 c. 1	Status – Implemented

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: a. Yes b. Yes</p> <p>B0-AMET-8. Target 2: Partially Implement Feb. 2017 c. Yes</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: a. Yes b. Yes</p> <p>B0-DATM-1. Target 2: Implement by March 2019 c. No</p>	Status - Planning
	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: a. Yes b. Yes</p> <p>B0-DATM-2. Target 2: Implemented in Feb. 2017 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: a. Yes b. Yes</p> <p>B0-DATM-3. Target 2: Implement by TBD c. No</p>	Status - Planning
	4. eTOD	<p>Number of aerodromes to be considered: 1</p> <p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. How many aerodromes need this capability? <i>None or 1</i></p> <p>c. How many aerodromes implemented the capability? <i>None or 1</i></p>	<p>B0-DATM-4. Target 1: Assess by Dec. 2019 a. No b. TBD</p> <p>B0-DATM-4. Target 2: Implement by TBD 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 Feb. 2017 a. Yes b. Yes</p> <p>B0-DATM-5. Target 2: Implemented in Feb. 2017 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 Feb. 2017 a. Yes b. Yes</p> <p>B0-DATM-6. Target 2: Implement by Dec 2019 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: Assess by Dec 2019 a. No b. TBD</p> <p>B0-FICE-1. Target 2: Implement by TBD c. No</p>	Status – Analysis in progress
	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: Assess by Dec 2019 a. No b. TBD</p> <p>B0-FICE-2. Target 2: Implement by TBD c. No</p>	Status – Analysis in progress

Block 0 Modules	Elements	Metrics	Targets	Status & Remarks
	3. AIDC for control transfer	<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-3. Target 1: Assess by Dec 2019</p> <p>a. No b. TBD</p> <p>B0-FICE-3. Target 2: Implement by TBD</p> <p>c. No</p>	Status – Analysis in progress
	4. AIDC to transfer CPDLC logon information to the Next Data Authority	<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-4. Target 1: Assess by Dec 2019</p> <p>a. No b. TBD</p> <p>B0-FICE-4. Target 2: Implement by TBD</p> <p>c. No</p>	Status – Analysis not started
Performance Improvement Area 3: Optimum Capacity and Flexible Flights				
ACAS	1. ACAS II (TCAS version 7.1)	<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-ACAS-1. Target 1: a. No b. TBD</p> <p>B0-ACAS-1. Target 2: Implement by TBD</p> <p>c. No</p>	Status - Analysis Not Started
	2. Auto Pilot/Flight Director (AP/FD) TCAS	<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-ACAS-2. Target 1: a. No b. TBD</p> <p>B0-ACAS-2. Target 2: Implement by TBD</p> <p>c. No</p>	Status - Analysis Not Started
	3. TCAS Alert Prevention (TCAP)	<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-ACAS-3. Target 1: a. No b. TBD</p> <p>B0-ACAS-3. Target 2: Implement by TBD</p> <p>c. No</p>	Status Analysis Not Started
ASEP	1. ATSA-AIRB	<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-ASEP-1. Target 1: a. No b. TBD</p> <p>B0-ASEP-1. Target 2: Implement by TBD</p> <p>c. No</p>	Status - Analysis Not Started
	2. ATSA-VSA	<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-ASEP-2. Target 1: a. No b. TBD</p> <p>B0-ASEP-2. Target 2: Implement by TBD</p> <p>c. No</p>	Status - Analysis Not Started
ASUR	1. 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-ASUR-1. Target 1: a. No b. TBD</p> <p>B0-ASUR-1. Target 2: Implement by TBD</p> <p>c. No</p>	Status – Analysis Not Started
	2. Multilateration (MLAT)	<p>Number of aerodromes to be considered: 1</p> <p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. How many aerodromes need this capability? <i>None or 1</i></p> <p>c. How many aerodromes implemented the capability? <i>None or 1</i></p>	<p>B0-ASUR-2. Target 1 a. No b. TBD</p> <p>B0-ASUR-2. Target 2: Implement by TBD</p> <p>c. None</p>	Status - Analysis Not Started
FRTO	1. CDM incorporated into airspace planning	<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-1. Target 1: a. Yes b. Yes</p> <p>B0-FRTO-1. Target 2: Implement by 2020</p> <p>c. partially implemented</p>	<p>Status – Partially implemented</p> <p>Dependent on the collaboration of T&T</p>

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 Feb. 2017</p> <p>a. Yes b. No</p> <p>B0-FRTO-2. Target 2: Implement by TBD</p> <p>c. No</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 Feb 2017:</p> <p>a. Yes b. No</p> <p>B0-FRTO-3. Target 2: Implement by TBD</p> <p>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 Feb 2017</p> <p>a. Yes b. No</p> <p>B0-FRTO-4. Target 2: Implement by TBD</p> <p>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 Feb 2017</p> <p>a. Yes b. Yes</p> <p>B0-NOPS-1. Target 2: Partially implemented in Feb 2017</p> <p>c. Yes</p>	Status – Partially implemented
	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 Feb. 2017</p> <p>a. Yes b. No</p> <p>B0-NOPS-2. Target 2: Implement by 2020</p> <p>c. Yes</p>	Status – Partially implemented Dependent on the collaboration with T&T
OPFL	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-OFIL-1. Target 1: Assessed in Feb 2017</p> <p>a. Yes b. No</p> <p>B0-OFIL-1. Target 2: Implement by N/A</p> <p>c. No</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 Feb 2017</p> <p>a. Yes b. No</p> <p>B0-SNET-1. Target 2: Implement by N/A</p> <p>c. No</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 Feb 2017</p> <p>a. Yes b. No</p> <p>B0-SNET-2. Target 2: Implement by N/A</p> <p>c. No</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 Feb 2017</p> <p>a. Yes b. No</p> <p>B0-SNET-3. Target 2: Implement by N/A</p> <p>c. No</p>	Status - N/A

Block 0 Modules	Elements	Metrics	Targets	Status & Remarks
	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 Feb 2017</p> <p>a. Yes b. No</p> <p>B0-SNET-4. Target 2: Implement by N/A</p> <p>c. No</p>	Status - N/A
Performance Improvement Area 4: Efficient Flight Paths				
CCO	1. Procedure changes to facilitate CCO	<p>Number of aerodromes to be considered: 1</p> <p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. How many aerodromes need this capability? <i>None or 1</i></p> <p>c. How many aerodromes implemented the capability? <i>None or 1</i></p>	<p>B0-CCO-1. Target 1: Assessed in Feb 2017</p> <p>a. Yes b. 1</p> <p>B0-CCO-1. Target 2: Implement by 2020</p> <p>c. 1</p>	Status – Partially implemented
	2. Route changes to facilitate CCO	<p>Number of aerodromes to be considered: 1</p> <p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. How many aerodromes need this capability? <i>None or 1</i></p> <p>c. How many aerodromes implemented the capability? <i>None or 1</i></p>	<p>B0-CCO-2. Target 1: Assessed in Feb 2017</p> <p>a. Yes b. 1</p> <p>B0-CCO-2. Target 2: Implement by 2020</p> <p>c. 1</p>	Status – Partially implemented
	3. PBN SIDs	<p>Number of aerodromes to be considered: 1</p> <p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. How many aerodromes need this capability? <i>None or 1</i></p> <p>c. How many aerodromes implemented the capability? <i>None or 1</i></p>	<p>B0-CCO-3. Target 1: Assessed in Feb 2017</p> <p>a. Yes b. 1</p> <p>B0-CCO-3. Target 2: Implement by 2020</p> <p>c. 1</p>	Status – Partially implemented (in Feb 2017)
CDO	1. Procedure changes to facilitate CDO	<p>Number of aerodromes to be considered: 1</p> <p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. How many aerodromes need this capability? <i>None or 1</i></p> <p>c. How many aerodromes implemented the capability? <i>None or 1</i></p>	<p>B0-CDO-1. Target 1: Assessed in Feb.2017</p> <p>a. Yes b. 1</p> <p>B0-CDO-1. Target 2: Implement by 2020</p> <p>c. 1</p>	Status – Partially implemented
	2. Route changes to facilitate CDO	<p>Number of aerodromes to be considered: 1</p> <p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. How many aerodromes need this capability? <i>None or 1</i></p> <p>c. Have we implemented the capability? <i>None or 1</i></p>	<p>B0-CDO-2. Target 1: Assessed in Feb 2017</p> <p>a. Yes b. 1</p> <p>B0-CDO-2. Target 2: Implement by 2020</p> <p>c. 1</p>	Status – Partially implemented
	3. PBN STARs	<p>Number of aerodromes to be considered: 1</p> <p>a. Have we assessed the need? <i>Yes or No</i></p> <p>b. How many aerodromes need this capability? <i>None or 1</i></p> <p>c. How many aerodromes implemented the capability? <i>None or 1</i></p>	<p>B0-CDO-3. Target 1: Assessed in Feb 2017</p> <p>a. Yes b. 1</p> <p>B0-CDO-3. Target 2: Implemented in Feb 2017</p> <p>c. 1</p>	Status – Implemented
TBO	1. ADS-C over oceanic and remote areas	<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-TBO-1. Target 1: a. Yes b. No</p> <p>B0-TBO-1. Target 2: c. No</p>	Status - N/A
	2. CPDLC over continental areas	<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-TBO-2. Target 1: a. Yes b. No</p> <p>B0-TBO-2. Target 2: c. No</p>	Status - N/A

Block 0 Modules	Elements	Metrics	Targets	Status & Remarks
	3. CPDLC over oceanic and remote areas	<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-TBO-3. Target 1: a. Yes b. No</p> <p>B0-TBO-3. Target 2: c. No</p>	Status - N/A
	4. SATVOICE direct controller-pilot communication (DCPC)	<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-TBO-4. Target 1: a. Yes b. No</p> <p>B0-TBO-4. Target 2: c. No</p>	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							
	2. Interconnection between aircraft operator & airport operator systems to share surface operations information	1							
	3. Interconnection between airport operator & ANSP systems to share surface operations information	1							
	4. Interconnection between airport operator, aircraft operator & ANSP systems to share surface operations information							1	
	5. Collaborative departure queue management	1							
APTA	1. PBN approach procedures with vertical guidance to LNAV/VNAV minima	1							
	2. PBN approach procedures with vertical guidance to LPV minima	1							
	3. PBN approach procedures without vertical guidance to LNAV minima							1	
	4. GBAS Landing System (GLS) procedures to CAT I minima	1							
RSEQ	1. AMAN via controlled time of arrival to a reference fix				1				
	2. Departure management				1				
	3. Departure flow management				1				
	4. Point merge				1				
SURF	1. A-SMGCS with at least one cooperative surface surveillance system				1				
	2. Including ADS-B APT as an element of A-SMGCS				1				
	3. A-SMGCS alerting with flight identification information				1				
	4. EVS for taxi operations				1				
	5. Airport vehicles equipped with transponders				1				
WAKE	1. New PANS-ATM wake turbulence categories and separation minima								1
	2. Dependent diagonal paired approach procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart				1				
	3. Wake independent departure and arrival operations (WIDAO) for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart				1				
	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				1				

Module	Elements	Need Analysis				Implementation Status (if Element is needed)			
		Not Started	In Progress	Need	N/A	Planning	Developing	Partially Implemented	Implemented
	5. 6 wake turbulence categories and separation minima				1				
Performance Improvement Area 2: Globally Interoperable Systems and Data									
AMET	1. WAFS	√							
	2. IAVW	√							
	3. TCAC forecasts	√							
	4. Aerodrome warnings	1							
	5. Wind shear warnings and alerts	1							
	6. SIGMET	√							
	7. Other OPMET information (METAR, SPECI and/or TAF)								1
	8. QMS for MET							√	
DATM	1. Standardized Aeronautical Information Exchange Model (AIXM)					√			
	2. eAIP								√
	3. Digital NOTAM					√			
	4. eTOD	1							
	5. WGS-84								√
	6. QMS for AIM						√		
FICE	1. AIDC to provide initial flight data to adjacent ATSUs		√						
	2. AIDC to update previously coordinated flight data		√						
	3. AIDC for control transfer		√						
	4. AIDC to transfer CPDLC logon information to the Next Data Authority		√						
Performance Improvement Area 3: Optimum Capacity and Flexible Flights									
ACAS	1. ACAS II (TCAS version 7.1)	√							
	2. AP.FD function	√							
	3. TCAP function	√							
ASEP	1. ATSA-AIRB	√							
	2. ATSA-VSA	√							
ASUR	1. ADS-B	√							
	2. Multilateration (MLAT)	1							
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							1	
	2. Airspace changes to facilitate CCO							1	
	3. PBN SIDs							1	
CDO	1. Procedure changes to facilitate CDO							1	
	2. Airspace changes to facilitate CDO							1	
	3. PBN STARs								1
TBO	1. ADS-C over oceanic and remote areas				√				
	2. CPDLC over continental areas				√				
	3. CPDLC over oceanic and remote areas				√				
	3. SATVOICE direct controller-pilot communication (DCPC)				√				

Table 2.1.2 ASBU B0 Implementation Status Summary

2.2 ASBU Block 1 Implementation Targets and Status

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

2.3 ASBU Block 2 Implementation Targets and Status

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

2.4 ASBU Block 3 Implementation Targets and Status

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

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

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

- Aerodrome certification – Status: Developing TVSA)
- Heliport operational approval – Status: Partially implemented
- Visual aids for navigation – Status: Implemented
- Aerodrome Bird/Wildlife Organization and Control Programme – Status: Developing

4. Saint Vincent and the Grenadines' State Aviation System Improvements (SASI) Status

Saint Vincent and the Grenadines' 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 is one infrastructure upgrade, shown below, which has been identified to address anticipated airport and airspace demand growth. SASI ANRF for Infrastructure Upgrades is prepared and provided in Appendix I.

- Airport Taxiway Development – Status: Analysis in progress

5. Saint Vincent and the Grenadines State ANP Next Review Schedule

The next review and revision of this document is scheduled in September 2019

Appendix A: ANRF Explained

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

PIA	The Performance Improvement Area (1, 2, 3 or 4) for the ASBU Module, as per the <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

Saint Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)			
PIA	4	Block - Module	B0 - CDO
		Date	November 9th, 2018
Module Description: To use performance-based airspace and arrival procedures allowing an aircraft to fly its optimum profile using continuous descent operations. This will optimize throughput, allow fuel efficient descent profiles, and increase capacity in terminal areas. The application of PBN enhances CDO.			
Element Implementation Status			
1	Element Description: Procedure changes to facilitate CDO	Date Planned/Implemented Feb. 2017	Status Partially Implemented
	Status Details Describe status.		
2	Element Description Route changes to facilitate CDO	Date Planned/Implemented Feb. 2017	Status Partially implemented
	Status Details Describe status.		
3	Element Description PBN STARS	Date Planned/Implemented Feb. 2017	Status Implemented
	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.)

Saint Vincent and the Grenadines RASI Air Navigation Reporting Form (ANRF)		
ICAO NACC Regional Initiatives	Date	November 9 th , 2018
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.)

Saint Vincent and the Grenadines SASI Air Navigation Reporting Form (ANRF)		
Infrastructure Upgrades	Date	November 9 th , 2018
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: Your Organization ASBU Block 0 ANRFs

St. Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)					
PIA	1	Block - Module	B0 - ACDM	Date	November 06, 2018
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 December 2019	Status analysis not started	
	Status Details Enter status details				
2	Element Description: Interconnection between aircraft operator and airport operator systems to share surface operations information		Date Planned/Implemented December 2019	Status analysis not started	
	Status Details Enter status details				
3	Element Description: Interconnection between airport operator and ANSP systems to share surface operations information		Date Planned/Implemented December 2019	Status analysis not started	
	Status Details Enter status details				
4	Element Description: Interconnection between airport operator, aircraft operator and ANSP systems to share surface operations information		Date Planned/Implemented December 2019	Status partially implemented	
	Status Details some collaboration				
5	Element Description: Collaborative departure queue management		Date Planned/Implemented December	Status analysis not started	
	Status Details Enter status details				
Achieved Benefits					
<i>Access and Equity</i>					
<i>Capacity</i>					
<i>Efficiency</i>					
<i>Environment</i>					
<i>Safety</i>					
Implementation Challenges					
<i>Ground system Implementation</i>					
<i>Avionics Implementation</i>					
<i>Procedures Availability</i>					
<i>Operational Approvals</i>					
Notes					

St. Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)				
PIA	1	Block - Module	B0 - APTA	Date November 06, 2018
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 December 2019	Status Analysis not started
	Status Details Conduct the analysis			
2	Element Description: PBN approach procedures with vertical guidance to LPV minima		Date Planned/Implemented December 2019	Status Analysis not started
	Status Details Conduct the analysis			
3	Element Description: PBN approach procedures without vertical guidance to LNAV minima		Date Planned/Implemented February 2017	Status Partially Implemented
	Status Details Full implementation expected in Dec 2019			
4	Element Description: GBAS Landing System (GLS) procedures to CAT I minima		Date Planned/Implemented December 2019	Status analysis not start
	Status Details Conduct the analysis			
Achieved Benefits				
<i>Access and Equity</i>				
<i>Capacity</i>				
<i>Efficiency</i>				
<i>Environment</i>				
<i>Safety</i>				
Implementation Challenges				
<i>Ground system Implementation</i>				
<i>Avionics Implementation</i>				
<i>Procedures Availability</i>				
<i>Operational Approvals</i>				
Notes				

St. Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)				
PIA	1	Block - Module	B0 - RSEQ	Date November 07, 2018
Module Description: To manage arrivals and departures (including time-based metering) to and from a multi-runway aerodrome or locations with multiple dependent runways at closely proximate aerodromes, to efficiently utilize the inherent runway capacity.				
Element Implementation Status				
1	Element Description: AMAN via controlled time of arrival to a reference fix		Date Planned/Implemented N/A	Status N/A
	Status Details N/A to St. Vincent and the Grenadines.			
2	Element Description: Departure management		Date Planned/Implemented N/A	Status N/A
	Status Details N/A to St. Vincent and the Grenadines.			
3	Element Description: Departure flow management		Date Planned/Implemented N/A	Status N/A
	Status Details N/A to St. Vincent and the Grenadines.			
4	Element Description: Point merge		Date Planned/Implemented N/A	Status N/A
	Status Details N/A to St. Vincent and the Grenadines.			
Achieved Benefits				
<i>Access and Equity</i>				
<i>Capacity</i>				
<i>Efficiency</i>				
<i>Environment</i>				
<i>Safety</i>				
Implementation Challenges				
<i>Ground system Implementation</i>				
<i>Avionics Implementation</i>				
<i>Procedures Availability</i>				
<i>Operational Approvals</i>				
Notes				

St. Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)					
PIA	1	Block - Module	B0 - SURF	Date	November 9, 2018
<p>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.</p> <p>Automatic dependent surveillance-broadcast (ADS-B) information is used when available (ADS-B APT). Enhanced vision systems (EVS) is used for low-visibility operations.</p>					
Element Implementation Status					
1	Element Description: A-SMGCS with at least one cooperative surface surveillance system		Date Planned/Implemented FEB 2017	Status N/A	
	Status Details N/A to St. Vincent and the Grenadines.				
2	Element Description: ADS-B APT		Date Planned/Implemented FEB 2017	Status N/A	
	Status Details N/A to St. Vincent and the Grenadines.				
3	Element Description: A-SMGCS alerting with flight identification information		Date Planned/Implemented FEB 2017	Status N/A	
	Status Details N/A to St. Vincent and the Grenadines.				
4	Element Description: EVS for taxi operations		Date Planned/Implemented FEB 2017	Status N/A	
	Status Details N/A to St. Vincent and the Grenadines.				
5	Element Description: Airport vehicles equipped with transponders		Date Planned/Implemented FEB 2017	Status N/A	
	Status Details N/A to St. Vincent and the Grenadines.				
Achieved Benefits					
<i>Access and Equity</i>					
<i>Capacity</i>					
<i>Efficiency</i>					
<i>Environment</i>					
<i>Safety</i>					
Implementation Challenges					
<i>Ground system Implementation</i>					
<i>Avionics Implementation</i>					
<i>Procedures Availability</i>					
<i>Operational Approvals</i>					
Notes					

St. Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)					
PIA	1	Block - Module	B0 - WAKE	Date	November 07, 2018
Module Description: Improved throughput on departure and arrival runways through optimized wake turbulence separation minima, revised aircraft wake turbulence categories and procedures.					
Element Implementation Status					
1	Element Description: New PANS-ATM wake turbulence categories and separation minima		Date Planned/Implemented FEBRUARY 2017	Status Implemented	
	Status Details This capability is implemented.				
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 FEBRUARY 2017	Status N/A	
	Status Details N/A to St. Vincent and the Grenadines.				
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 FEBRUARY 2017	Status N/A	
	Status Details N/A to St. Vincent and the Grenadines.				
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 FEBRUARY 2017	Status N/A	
	Status Details N/A to St. Vincent and the Grenadines.				
5	Element Description: 6 wake turbulence categories and separation minima		Date Planned/Implemented FEBRUARY 2017	Status N/A	
	Status Details N/A to St. Vincent and the Grenadines.				
Achieved Benefits					
<i>Access and Equity</i>					
<i>Capacity</i>					
<i>Efficiency</i>					
<i>Environment</i>					
<i>Safety</i>					
Implementation Challenges					
<i>Ground system Implementation</i>					
<i>Avionics Implementation</i>					
<i>Procedures Availability</i>					
<i>Operational Approvals</i>					
Notes					

St. Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)					
PIA	2	Block - Module	B0 - AMET	Date	November 9, 2018
<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 Dec 2019	Status analysis not started	
	Status Details Complete the needs analysis by Dec 2019.				
2	Element Description: IAVW		Date Planned/Implemented Dec 2019	Status analysis not started	
	Status Details Complete the needs analysis by Dec 2019.				
3	Element Description: TCAC forecasts		Date Planned/Implemented Dec 2019	Status analysis not started	
	Status Details Complete the needs analysis by Dec 2019.				
4	Element Description: Aerodrome warnings		Date Planned/Implemented Dec 2019	Status analysis not started	
	Status Details Complete the needs analysis by Dec 2019..				
5	Element Description: Wind shear warnings and alerts		Date Planned/Implemented Dec 2019	Status analysis not started	
	Status Details Complete the needs analysis by Dec 2019.				
6	Element Description: SIGMET		Date Planned/Implemented Dec 2019	Status analysis not started	
	Status Details Complete the needs analysis by Dec 2019.				
7	Element Description: Other OPMET information (METAR, SPECI and/or TAF)		Date Planned/Implemented Feb 2017	Status implemented	

	Status Details Implemented		
8	Element Description: QMS for MET	Date Planned/Implemented Feb 2017	Status partially implemented
	Status Details Plan to complete fully in June 2019.		
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i>			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i>			
Implementation Challenges			
<i>Ground system Implementation</i>			
<i>Avionics Implementation</i>			
<i>Procedures Availability</i>			
<i>Operational Approvals</i>			
Notes			

St. Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)					
PIA	2	Block - Module	B0 - DATM	Date	November 07, 2018
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 March 2019	Status planning	
	Status Details Planning to implement in Mar 2019.				
2	Element Description: eAIP		Date Planned/Implemented Feb 2017	Status Implemented	
	Status Details Implemented.				
3	Element Description: Digital NOTAM		Date Planned/Implemented March 2019	Status planning	
	Status Details Planning to implement in March 2019.				
4	Element Description: eTOD		Date Planned/Implemented Dec 2019	Status analysis not started	
	Status Details Complete needs analysis by Dec 2019.				
5	Element Description: WGS-84		Date Planned/Implemented February 2017	Status implemented	
	Status Details Implemented in Feb 2017.				
6	Element Description: QMS for AIM		Date Planned/Implemented Dec 2019	Status developing	
	Status Details Complete implementation in Dec 2019.				
Achieved Benefits					
Achieved Benefits					
<i>Access and Equity</i>					
<i>Capacity</i>					
<i>Efficiency</i>					
<i>Environment</i>					
<i>Safety</i>					
Implementation Challenges					
<i>Ground system Implementation</i>					
<i>Avionics Implementation</i>					
<i>Procedures Availability</i>					

Notes

St. Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)				
PIA	2	Block - Module	B0 - FICE	Date Month November, 2018
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 Dec 2019	Status analysis in progress
	Status Details Complete needs analysis by Dec 2019.			
2	Element Description: AIDC to update previously coordinated flight data		Date Planned/Implemented Dec 2019	Status analysis in progress
	Status Details Complete needs analysis by Dec 2019.			
3	Element Description: AIDC for control transfer		Date Planned/Implemented Dec 2019	Status analysis in progress
	Status Details Complete needs analysis by Dec 2019.			
4	Element Description: AIDC to transfer CPDLC logon information to the Next Data Authority		Date Planned/Implemented Dec 2019	Status analysis in progress
	Status Details Complete needs analysis by Dec 2019.			
Achieved Benefits				
<i>Access and Equity</i>				
<i>Capacity</i>				
<i>Efficiency</i>				
<i>Environment</i>				
<i>Safety</i>				
Implementation Challenges				
<i>Ground system Implementation</i>				
<i>Avionics Implementation</i>				
<i>Procedures Availability</i>				
<i>Operational Approvals</i>				
Notes				

St. Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)				
PIA	3	Block - Module	B0 - ACAS	Date November 07 2018
Module Description: To provide short-term improvements to existing airborne collision avoidance systems (ACAS) to reduce nuisance alerts while maintaining existing levels of safety. This will reduce trajectory deviations and increase safety in cases where there is a breakdown of separation.				
Element Implementation Status				
1	Element Description: ACAS II (TCAS version 7.1)		Date Planned/Implemented Dec 2019	Status analysis not started
	Status Details Complete needs analysis by Dec 2019.			
2	Element Description: AP/FD function		Date Planned/Implemented Dec 2019	Status analysis not started
	Status Details Complete needs analysis by Dec 2019.			
3	Element Description: TCAP function		Date Planned/Implemented Dec 2019	Status analysis not started
	Status Details Complete needs analysis by Dec 2019.			
Achieved Benefits				
<i>Access and Equity</i>				
<i>Capacity</i>				
<i>Efficiency</i>				
<i>Environment</i>				
<i>Safety</i>				
Implementation Challenges				
<i>Ground system Implementation</i>				
<i>Avionics Implementation</i>				
<i>Procedures Availability</i>				
<i>Operational Approvals</i>				
Notes				

St. Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)				
PIA	3	Block - Module	B0 - ASEP	Date November 07, 2018
Module Description: Two air traffic situational awareness (ATSA) applications which will enhance safety and efficiency by providing pilots with the means to enhance traffic situational awareness and achieve quicker visual acquisition of targets: a) AIRB (basic airborne situational awareness during flight operations). b) VSA (visual separation on approach).				
Element Implementation Status				
1	Element Description: ATSA-AIRB		Date Planned/Implemented Dec 2019	Status analysis not started
	Status Details Complete needs analysis by Dec 2019.			
2	Element Description: ATSA-VSA		Date Planned/Implemented Dec 2019	Status analysis not started
	Status Details Complete needs analysis by Dec 2019.			
Achieved Benefits				
<i>Access and Equity</i>				
<i>Capacity</i>				
<i>Efficiency</i>				
<i>Environment</i>				
<i>Safety</i>				
Implementation Challenges				
<i>Ground system Implementation</i>				
<i>Avionics Implementation</i>				
<i>Procedures Availability</i>				
<i>Operational Approvals</i>				
Notes				

St. Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)					
PIA	3	Block - Module	B0 - ASUR	Date	November 07, 2018
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 Dec 2019	Status analysis not started	
	Status Details Complete needs analysis by Dec 2019.				
2	Element Description: MLAT		Date Planned/Implemented Dec 2019	Status analysis not started	
	Status Details Complete needs analysis by Dec 2019.				
Achieved Benefits					
<i>Access and Equity</i>					
<i>Capacity</i>					
<i>Efficiency</i>					
<i>Environment</i>					
<i>Safety</i>					
Implementation Challenges					
<i>Ground system Implementation</i>					
<i>Avionics Implementation</i>					
<i>Procedures Availability</i>					
<i>Operational Approvals</i>					
Notes					

St. Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)			
PIA	3	Block - Module	B0 - FRT0
		Date	November 07, 2018
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 2020	Status partially implemented
	Status Details Dependent on collaboration with T&T.		
2	Element Description: Flexible Use of Airspace (FUA)	Date Planned/Implemented Feb 2017	Status N/A
	Status Details N/A		
3	Element Description: Flexible routing	Date Planned/Implemented Feb 2017	Status N/A
	Status Details N/A		
4	Element Description: CPDLC used to request and receive re-route clearances	Date Planned/Implemented Feb 2017	Status N/A
	Status Details N/A		
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i>			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i>			
Implementation Challenges			
<i>Ground system Implementation</i>			
<i>Avionics Implementation</i>			
<i>Procedures Availability</i>			
<i>Operational Approvals</i>			
Notes			

St. Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)					
PIA	3	Block - Module	B0 - NOPS	Date	November 9, 2018
<p>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.</p>					
Element Implementation Status					
1	Element Description: Sharing prediction of traffic load for next day		Date Planned/Implemented Feb 2017		Status partially implemented
	Status Details Requires coordination with T&T. Expected to be fully implemented in 2020.				
2	Element Description: Proposing alternative routings to avoid or minimize ATFM delays		Date Planned/Implemented Feb 2017		Status partially implemented
	Status Details Requires coordination with T&T. Expected to be fully implemented in 2020.				
Achieved Benefits					
<i>Access and Equity</i>					
<i>Capacity</i>					
<i>Efficiency</i>					
<i>Environment</i>					
<i>Safety</i>					
Implementation Challenges					
<i>Ground system Implementation</i>					
<i>Avionics Implementation</i>					
<i>Procedures Availability</i>					
<i>Operational Approvals</i>					
Notes					

St. Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)			
PIA	3	Block - Module	B0 - OPFL
Date	November 9, 2018		
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: ITP using ADS-B	Date Planned/Implemented Feb 2017	Status N/A
	Status Details N/A		
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i>			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i>			
Implementation Challenges			
<i>Ground system Implementation</i>			
<i>Avionics Implementation</i>			
<i>Procedures Availability</i>			
<i>Operational Approvals</i>			
Notes			

St. Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)				
PIA	3	Block - Module	B0 - SNET	Date November 9, 2018
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 Feb 2017	Status N/A
	Status Details N/A			
2	Element Description: Area Proximity Warning (APW)		Date Planned/Implemented Feb 2017	Status N/A
	Status Details N/A			
3	Element Description: Minimum Safe Altitude Warning (MSAW)		Date Planned/Implemented Feb 2017	Status N/A
	Status Details N/A			
4	Element Description: Medium Term Conflict Alert (MTCA)		Date Planned/Implemented Feb 2017	Status N/A
	Status Details N/A			
Achieved Benefits				
<i>Access and Equity</i>				
<i>Capacity</i>				
<i>Efficiency</i>				
<i>Environment</i>				
<i>Safety</i>				
Implementation Challenges				
<i>Ground system Implementation</i>				
<i>Avionics Implementation</i>				
<i>Procedures Availability</i>				
<i>Operational Approvals</i>				
Notes				

St. Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)				
PIA	4	Block - Module	B0 - CCO	Date November 07, 2018
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 Feb 2017	Status partially implemented
	Status Details Fully implement by 2020.			
2	Element Description: Airspace changes to facilitate CCO		Date Planned/Implemented Feb 2017	Status partially implemented
	Status Details Fully implement by 2020.			
3	Element Description: PBN SIDs		Date Planned/Implemented Feb 2017	Status partially implemented
	Status Details Fully implement by 2020.			
Achieved Benefits				
<i>Access and Equity</i>				
<i>Capacity</i>				
<i>Efficiency</i>				
<i>Environment</i>				
<i>Safety</i>				
Implementation Challenges				
<i>Ground system Implementation</i>				
<i>Avionics Implementation</i>				
<i>Procedures Availability</i>				
<i>Operational Approvals</i>				
Notes				

St. Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)				
PIA	4	Block - Module	B0 - CDO	Date November 9, 2018
Module Description: To use performance-based airspace and arrival procedures allowing an aircraft to fly its optimum profile using continuous descent operations. This will optimize throughput, allow fuel efficient descent profiles, and increase capacity in terminal areas. The application of PBN enhances CDO.				
Element Implementation Status				
1	Element Description: Procedure changes to facilitate CDO		Date Planned/Implemented Feb 2017	Status partially implemented
	Status Details Fully implement by 2020.			
2	Element Description: Airspace changes to facilitate CDO		Date Planned/Implemented Feb 2017	Status partially implemented
	Status Details Fully implement by 2020.			
3	Element Description: PBN STARs		Date Planned/Implemented Feb 2017	Status implemented
	Status Details Implemented.			
Achieved Benefits				
<i>Access and Equity</i>				
<i>Capacity</i>				
<i>Efficiency</i>				
<i>Environment</i>				
<i>Safety</i>				
Implementation Challenges				
<i>Ground system Implementation</i>				
<i>Avionics Implementation</i>				
<i>Procedures Availability</i>				
<i>Operational Approvals</i>				

St. Vincent and the Grenadines ASBU Air Navigation Reporting Form (ANRF)				
PIA	4	Block - Module	B0 - TBO	Date November 9 2018
Module Description: To implement a set of data link applications supporting surveillance and communications in air traffic services, which will lead to flexible routing, reduced separation and improved safety.				
Element Implementation Status				
1	Element Description: ADS-C over oceanic and remote areas		Date Planned/Implemented Feb 2017	Status N/A
	Status Details N/A			
2	Element Description: CPDLC over continental areas		Date Planned/Implemented Feb 2017	Status N/A
	Status Details N/A			
3	Element Description: CPDLC over oceanic and remote areas		Date Planned/Implemented Feb 2017	Status N/A
	Status Details N/A			
4	Element Description: SATVOICE direct controller-pilot communication (DCPC)		Date Planned/Implemented Feb 2017	Status N/A
	Status Details N/A			
Achieved Benefits				
<i>Access and Equity</i>				
<i>Capacity</i>				
<i>Efficiency</i>				
<i>Environment</i>				
<i>Safety</i>				
Implementation Challenges				
<i>Ground system Implementation</i>				
<i>Avionics Implementation</i>				
<i>Procedures Availability</i>				
<i>Operational Approvals</i>				
Notes				

Appendix E: Saint Vincent and the Grenadines ASBU Block 1 ANRFs

Insert ASBU B1 ANRFs in the future.

Appendix F: Saint Vincent and the Grenadines SBU Block 2 ANRFs

Insert ASBU B2 ANRFs in the future.

Appendix G: Saint Vincent and the Grenadines ASBU Block 3 ANRFs

Insert ASBU B3 ANRFs in the future.

Appendix H: Saint Vincent and the Grenadines RASI ANRFs

Saint Vincent and the Grenadines RASI Air Navigation Reporting Form (ANRF)			
ICAO NACC Regional Initiatives		Date	November 9th, 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. TVSA. is in the process.		
2	Element Description: Heliport operational approval	Date Planned/Implemented Feb.2017	Status Partially 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 Vincent, there is no approved heliport The airport has a designated landing area for helicopters.		
3	Element Description: Visual aids for navigation	Date Planned/Implemented Feb.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 TVSA.		
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 Vincent 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 Vincent and the Grenadines SASI ANRFs

Saint Vincent and the Grenadines SASI Air Navigation Reporting Form (ANRF)			
Equipment Upgrades		Date	November 9 th , 2018
Module Description:			
Element Implementation Status			
1	Element Description:	Date Planned/Implemented	Status
	Status Details		
2	Element Description:	Date Planned/Implemented	Status
	Status Details		
3	Element Description:	Date Planned/Implemented	Status
	Status Details		
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i>			
Element 1			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i>			
Element 2			
Element 3 -			
Implementation Challenges			
<i>Ground system Implementation</i>			
<i>Avionics Implementation</i>			
<i>Procedures Availability</i>			
<i>Operational Approvals</i>			
Notes			
Element 1 -			

Procedure Upgrades		Date	November 9 th , 2018
Module Description:			
Element Implementation Status			
1	Element Description:	Date Planned/Implemented	Status
	Status Details		
2	Element Description:	Date Planned/Implemented	Status
	Status Details		
3	Element Description:	Date Planned/Implemented	Status
	Status Details		
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i>			
Element 1			
<i>Efficiency</i>			
<i>Environment</i>			
<i>Safety</i>			
Element 2			
Element 3 -			
Implementation Challenges			
<i>Ground system Implementation</i>			
<i>Avionics Implementation</i>			
<i>Procedures Availability</i>			
<i>Operational Approvals</i>			
Notes			
Element 1 -			

Saint Vincent and the Grenadines SASI Air Navigation Reporting Form (ANRF)			
Infrastructure Upgrades		Date	November 9 th , 2018
Module Description: Development of a parallel taxiway to increase efficiency by reducing runway occupancy times, this takes into account projected increases in air traffic.			
Element Implementation Status			
1	Element Description: Airport taxiway Development	Date Planned/Implemented TBD	Status Analysis in progress
	Status Details The cost-benefit- analysis of a parallel taxiway is being analysed.		
2	Element Description:	Date Planned/Implemented	Status
	Status Details .		
3	Element Description:	Date Planned/Implemented	Status
	Status Details		
Achieved Benefits			
<i>Access and Equity</i>			
<i>Capacity</i> Element 1 – Airport Taxiway Development increase operational capacity. AAR and ADR			
<i>Efficiency:</i> _ Increase efficiency in Air Traffic Management			
<i>Environment</i>			
<i>Safety</i> Element 1			
Implementation Challenges			
<i>Ground system Implementation</i>			
<i>Avionics Implementation</i>			
<i>Procedures Availability</i>			
<i>Operational Approvals</i>			
Notes Element.			

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