

EL SALVADOR

State Air Navigation Plan



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1. Introduction

This document is El Salvador/Civil Aviation Authority CAA 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 El Salvador/Civil Aviation Authority CAA aligning activities and strategies to the GANP and RPBANIP. The information contained in the El Salvador/Civil Aviation Authority CAA 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 El Salvador/Civil Aviation Authority CAA 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 El Salvador/Civil Aviation Authority CAA, such as authority, airspace and airports, and air traffic are described in this section.

1.2.1 Authority of El Salvador/Civil Aviation Authority CAA
Air Navigation Plan

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STRUCTURE organizing the Civil Aviation Authority, which in the future will be called by its acronym AAC, with autonomous institution of public service and nonprofit. The highest authority of the AAC will be the Board of Directors of Civil Aviation (CDAC) and headed by a Director appointed by the President and the Republic, who shall exercise the functions of President. The Executive Director of the AAC will be elected by the CDAC, who shall exercise the functions attributed to it by the organic law of Civil Aviation, as well as all those delegated by the President of the CDAC. In addition to the Executive Director for the performance of their duties have managements in administrative and technically, line and support area.

ORGNIGRAMA OF THE AUTHORITY OF CIVIL AVIATION

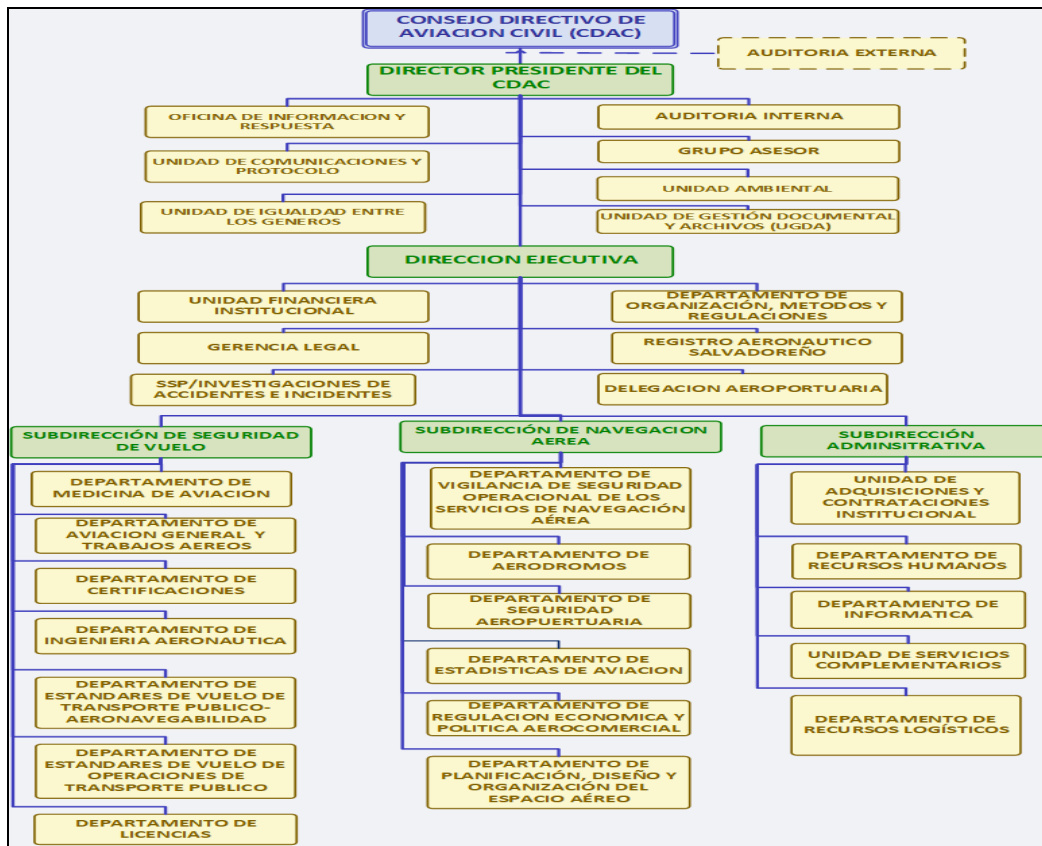


Figure 1.2.1: Organizational Structure of El Salvador

1.2.2 Airspace

El Salvador is located within the CENAMER Flight Information Region (FIR) Circle of 40 NM of radius with center in VOR/DME/EL SALVADOR (132629.0262N 0890251.9311W) that is managed by EL SALVADOR CONTROL between 19500FT AMSL 2500FT AMSL. This air space includes Ilopango Airport. Refer to Figure 1.2.2 for the airspace around El Salvador

EL SALVADOR TMA CLASS D

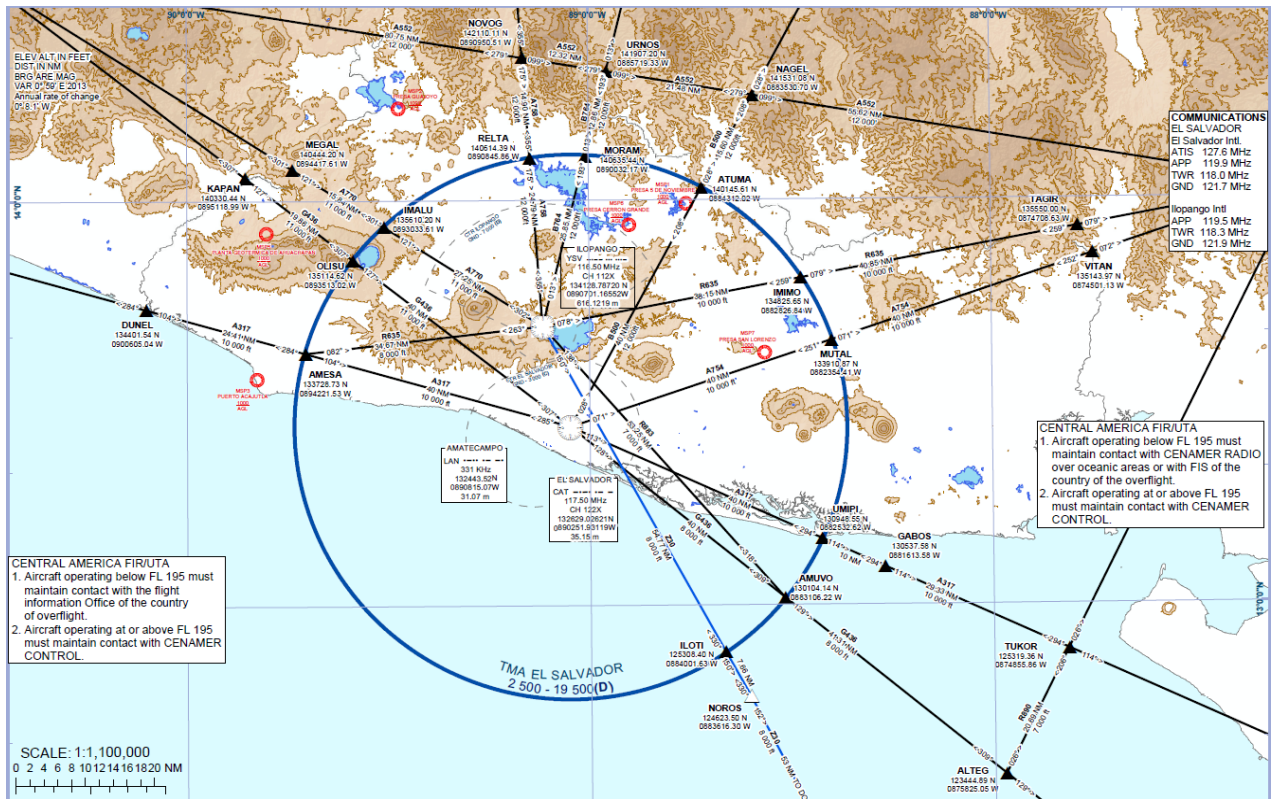


Figure 1.2.2: TMA, CTR and ROUTES within FIR and El Salvador

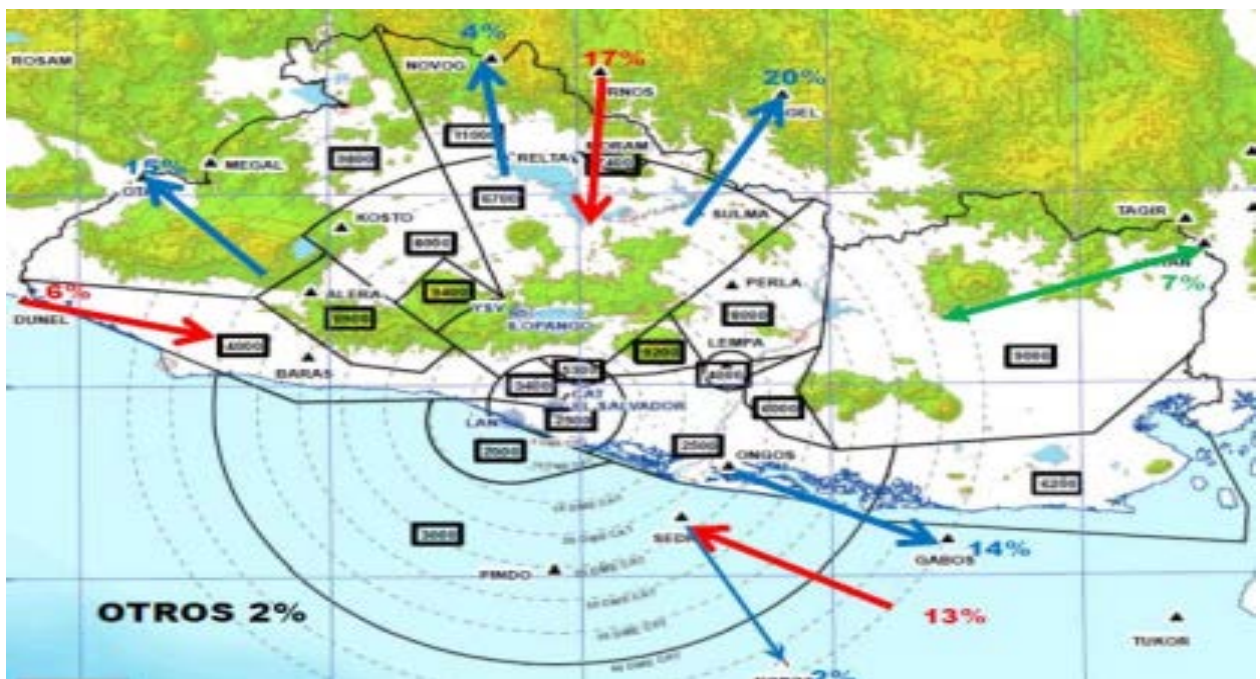


Figure 1.2.1 Flow Arrivals and Dapartures

1.2.3 Aerodromes

One major aerodrome in El Salvador is: El Salvador International Airport. This aerodrome is 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 MSLP has the capacity of 8-10 air traffic movements per hour

Runway Information on El Salvador International Airport (MSLP)

| | Runway 07 | Runway 25 |
|----------------|-----------------|---------------|
| Length x Width | 3200 M X 45 M | 3200 M 45 M |
| Surface Type | asphalt | asphalt |
| TDZ-Elev | 20.88 M / 69 FT | 30 M / 101 FT |
| Lighting | edge | edge |

1.2.4 Traffic Forecast

Number of typical daily operation (arrivals/departures) at El Salvador International Airport (MSLP) is 25/25 (total of 50 movements) respectively. The RPBANIP forecasted that average annual growth of air traffic in the Central America region would increase 3.0% during 2018-2032. The Civil Aviation Authority believes that this overall Central American regional forecast of annual increase of 3.0% is too optimistic for Civil Aviation Authority and more moderate number of 3.0% annual increase might realistic anticipation. Estimated daily operations at MSLP are shown in Tables 1.2.4a and 1.2.4b applying the increase forecasts to each year from 2018 to 2032.

| Year | MSLP |
|------|------|
| 2018 | 139 |
| 2019 | 143 |
| 2020 | 147 |
| 2021 | 152 |
| 2022 | 156 |
| 2023 | 161 |
| 2024 | 166 |
| 2025 | 171 |
| 2026 | 176 |
| 2027 | 181 |
| 2028 | 187 |
| 2029 | 192 |
| 2030 | 198 |
| 2031 | 204 |
| 2032 | 210 |

Table 1.2.4: Air Traffic Forecasts at MSLP (200 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 **Authority of El Salvador/Civil Aviation Authority CAA 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. **Authority of El Salvador/Civil Aviation Authority CAA** 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 **Authority of El Salvador/Civil Aviation Authority CAA 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

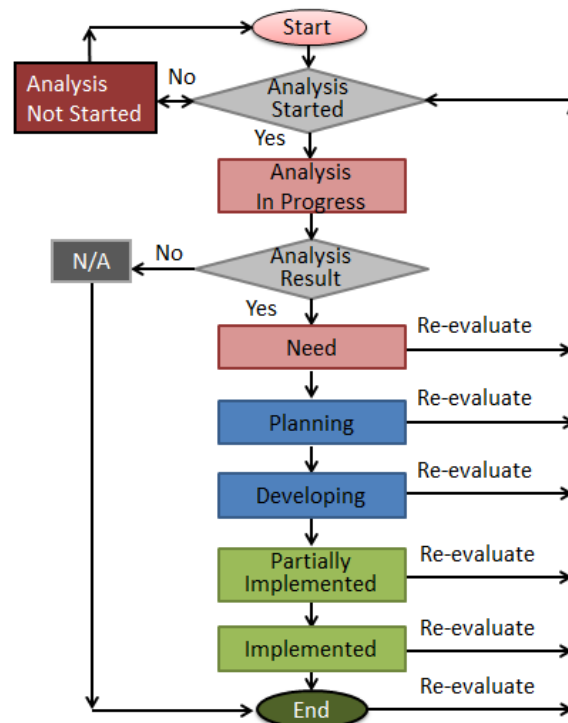


Figure 1.4.1: Analysis and Work Flow

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 **Authority of El Salvador/Civil Aviation Authority CAA** 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 **Authority of El Salvador/Civil Aviation Authority CAA**ASBU Air Navigation Reporting Form Template is provided in Appendix B. The **Authority of El Salvador/Civil Aviation Authority CAA** 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 (MSLP) are only expected to increase in the future. The current infrastructure at one airport, 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, construction of de new terminal with five gates and taxiway construction design 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.

Inconsistency in the database of the Radar System of INDRA, currently the AMHS database used by the AIS office of MSLP, is not compatible with the ATS routes database of the radar control center, this generates delays, load of work, poor coordination between control centers, rejection of flight plans etc. The database update will be managed in the CCR Control Center of MSLP.

1.5.2 Future Problems

Anticipating heavier demand at the MSLP airport, the introduction of a ILS/DME for Runway 25 landing system procedure would be effective.

In addition, to date there is no technological equipment for the preparation of warnings of wind shear, so it will be managed the installation or a meteorological radar Doppler band C.

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. Authority of El Salvador/Civil Aviation Authority CAA’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. **Authority of El Salvador/Civil Aviation Authority CAA** considers one airport, El Salvador International Airport (MSLP) “Monseñor Oscar Arnulfo Romero y Galdámez” 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>None, or 1</i> c. How many aerodromes implemented the capability? <i>None, or 1</i> | B0-ACDM-1 Target 1: Assessed in August 2018 a. Yes b. 1 B0-ACDM-1 Target 2: Implement by Dec 2020 c. None | Status – Need |
| | 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: Assessed in Aug 2018 a. Yes b. 1 B0-ACDM-2 Target 2: Implement by Dec 2020 c. None | Status – Need |
| | 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: Assessed in Aug 2018 a. Yes b. 1 B0-ACDM-3 Target 2: Implement by Dec 2020 c. None | Status – Need |
| | 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 in Aug 2018 a. Yes b. 1 B0-ACDM-4 Target 2: Implement by Dec 2020 c. None | Status – Need |
| | 5. Collaborative departure queue 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-ACDM-5 Target 1: Assessed in Aug 2018 a. No b. None B0-ACDM-5 Target 2: Implement by: N/A c. None | Status –N/A |

| | | | | |
|-------------|---|--|---|--------------|
| 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: Assessed in Aug 2018 a. Yes b. None B0-APTA-1 Target 2: Implemented in date: N/A c. None | Status – N/A |
| | 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: Assessed in Aug 2018 a. Yes b. None Implemented in date: N/A c. None | Status – N/A |
| | 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 Aug 2018 a. Yes b. None B0-APTA-3 Target 2: Implemented in date: N/A c. None | Status – N/A |
| | 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: Assessed in Aug 2018 a. Yes b. None B0-APTA-4. Target 2: Implemented in date: N/A c. None | Status – N/A |
| 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 Aug 2018 a. No b. None B0-RSEQ-1 Target 2: c. None | 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 Aug 2018 a. No b. None B0-RSEQ-2. Target 2: c. None | 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 Aug 2018 a. No b. None B0-RSEQ-3. Target 2: c. None | 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 Aug 2018 a. No b. None B0-RSEQ-4. Target 2: Implemented in date: N/A c. None | Status – N/A |

| | | | | |
|-------------|---|---|---|--------------|
| 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 Aug 2018 a. No b. None B0-SURF-1. Target 2: Implemented in date: N/A 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 Aug 2018 a. No b. None B0-SURF-2. Target 2: Implemented in date: N/A 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 Aug 2018 a. No b. None B0-SURF-3. Target 2: Implemented in date: N/A 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 Aug 2018 a. No b. None B0-SURF-4. Target 2: Implemented in date: N/A 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 Aug 2018 a. No b. None B0-SURF-5. Target 2: Implemented in date: N/A c. None | 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: 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: Assessed in Aug 2018 a. No b. None B0-WAKE-2. Target 2: Implemented in date: N/A 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 Aug 2018 a. No b. None B0-WAKE-3. Target 2: Implemented in date: N/A c. None | Status – N/A |

| | | | | |
|--|--|---|---|--------------------------------|
| | 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 Aug 2018 a. No b. None B0-WAKE-4. Target 2: Implemented in date: N/A 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 Aug 2018 a. No b. None B0-WAKE-5. Target 2: Implemented in date: N/A c. None | 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 2012 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. Yes B0-AMET-2. Target 2: Implemented in Jan 2004 c. Yes | Status – Implemented |
| | 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 Dec 2013 c. Yes | Status – Partially Implemented |
| | 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 in Dec 2004 a. Yes b. 1 B0-AMET-4. Target 2: Implement by Dec 2004 c. 1 | Status – Implemented |
| | 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: Assessed in Dec 2004 a. Yes b. 1 B0-AMET-5. Target 2: Implement by Dec 2004 c. 1 | Status - Partially Implemented |
| | 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 2004 a. Yes b. Yes B0-AMET-6. Target 2: Implement by Dec 2004 c. Yes | Status – Implemented |

| | | | | |
|-------------|--|---|---|-------------------------------|
| | 7. Other OPMET information (METAR, SPECI and/or TAF) | 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-7. Target 1: Assessed in Dec 2000 a. Yes b. Yes B0-AMET-7.Target 2: Implement by Dec 2000 c. Yes | Status – Implemented |
| | 8. QMS for MET | 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-8. Target 1: Assessed in Aug 2018 a. Yes b. Yes B0-AMET-8.Target 2: Implement by Aug 2018 c. Yes | Status - Implemented |
| DATM | 1. Aeronautical Information Exchange Model (AIXM) | 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-DATM-1. Target 1: Assessed in Feb 2017 a. Yes b. Yes B0-DATM-1. Target 2: Implement by Feb 2017 c. Yes | Status - Implemented |
| | 2. eAIP | 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-DATM-2. Target 1: Assessed in Sep 2018 a. Yes b. Yes B0-DATM-2. Target 2: Implemented in Sep 2018 c. Yes | Status – Implemented |
| | 3. Digital NOTAM | 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-DATM-3. Target 1: Assess by Feb 2017 a. Yes b. Yes B0-DATM-3. Target 2: Implement by Feb 2017 c. Yes | Status – Implemented |
| | 4. eTOD | 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-DATM-4. Target 1: Assess by Agu 2018 a. Yes b. 1 B0-DATM-4. Target 2: Implement by Dec 2024 c. 1 | Status - Analysis Not Started |
| | 5. WGS-84 | 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-DATM-5. Target 1: Assessed in Jan 2001 a. Yes b. Yes B0-DATM-5. Target 2: Implemented in Jan 1993 c. Yes | Status – Implemented |
| | 6. QMS for AIM | 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-DATM-6. Target 1: Assessed in Aug 2018 a. Yes b. Yes B0-DATM-6. Target 2: Implement by Aug 2018 a. No | Status – Implemented |
| FICE | 1. AIDC to provide initial flight data to adjacent ATSUs | 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-1. Target 1: Assessed in Dec 2016 a. Yes b. Yes B0-FICE-1. Target 2: c. Yes | Status – Implemented |

| | | | | |
|--|--|---|---|----------------------|
| | 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. Yes</p> <p>B0-FICE-2. Target 2: c. Yes</p> | Status - Implemented |
| | 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: Assessed in Dec 2016</p> <p>a. Yes b. Yes</p> <p>B0-FICE-3. Target 2: c. Yes</p> | Status - Implemented |
| | 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: Assessed in Dec 2016</p> <p>a. No b. No</p> <p>B0-FICE-4. Target 2: c. N/A</p> | Status - N/A |
| 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: Assessed in Aug 2018</p> <p>a. Yes b. Yes</p> <p>B0-ACAS-1. Target 2: Implement by Dec 2020</p> <p>c. Yes</p> | Status - Developing |
| | 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: Assessed in Aug 2018</p> <p>a. Yes b. Yes</p> <p>B0-ACAS-2. Target 2: Implement by Dec 2020</p> <p>c. Yes</p> | Status - Developing |
| | 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: Assessed in Aug</p> <p>a. No b. No</p> <p>B0-ACAS-3. Target 2: c. N/A</p> | Status - N/A |
| 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: Assessed in Aug 2018</p> <p>a. Yes b. No</p> <p>B0-ASEP-1. Target 2: c. N/A</p> | Status - N/A |
| | 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: Assessed in Aug 2018</p> <p>a. Yes b. No</p> <p>B0-ASEP-2. Target 2: c. N/A</p> | Status - N/A |
| 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: Assessed in Aug 2018</p> <p>a. Yes b. Yes</p> <p>B0-ASUR-1. Target 2: Implement by Dec 2019</p> <p>c. Yes</p> | Status - Developing |
| | 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: Assessed in Aug 2018</p> <p>a. No b. No</p> <p>B0-ASUR-2. Target 2: c. N/A</p> | Status - N/A |

| | | | | |
|---|--|---|--|----------------------|
| 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: Assessed in Aug 2018</p> <p>a. Yes b. No</p> <p>B0-FRTO-1. Target 2: c. N/A</p> | Status - N/A |
| | 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 Aug 2018</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 Aug 2018:</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 Aug 2018</p> <p>a. No 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 Aug 2018</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 Aug 2018</p> <p>a. Yes b. No</p> <p>B0-NOPS-2. Target 2: c. N/A</p> | Status - N/A |
| 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-OFTL-1. Target 1: Assessed in Aug 2018</p> <p>a. No 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 Sep 2014</p> <p>a. Yes b. Yes</p> <p>B0-SNET-1. Target 2: c. Yes</p> | Status – Implemented |
| | 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 Sep 2014</p> <p>a. Yes b. No</p> <p>B0-SNET-2. Target 2: c. Yes</p> | Status – Implemented |
| | 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 Sep 2014</p> <p>a. Yes b. No</p> <p>B0-SNET-3. Target 2: c. Yes</p> | Status – Implemented |
| | 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 Sep 2014</p> <p>a. Yes b. No</p> <p>B0-SNET-4. Target 2: c. Yes</p> | Status – Implemented |
| Performance Improvement Area 4: Efficient Flight Paths | | | | |

| | | | | |
|-----|--|---|---|----------------------|
| CCO | 1. Procedure changes to facilitate CCO | 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-CCO-1. Target 1: Assessed in Jan 2016 a. Yes b. 1 B0-CCO-1. Target 2: c. 1 | Status – Implemented |
| | 2. Route changes to facilitate CCO | 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-CCO-2. Target 1: Assessed in Jan 2016 a. Yes b. 1 B0-CCO-2. Target 2: c. 1 | Status – Implemented |
| | 3. PBN SIDs | 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-CCO-3. Target 1: Assessed in Sep 2014 a. Yes b. 1 B0-CCO-3. Target 2: Implement by Sep 2014 c. 1 | Status – Implemented |
| CDO | 1. Procedure changes to facilitate CDO | 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-CDO-1. Target 1: Assessed in Jan 2016 a. Yes b. 1 B0-CDO-1. Target 2: c. 1 | Status – Implemented |
| | 2. Route changes to facilitate CDO | 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-CDO-2. Target 1: Assessed in Jan 2016 a. Yes b. 1 B0-CDO-2. Target 2: c. 1 | Status – Implemented |
| | 3. PBN STARs | 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-CDO-3. Target 1: Assessed in Sep 2014 a. Yes b. 1 B0-CDO-3. Target 2: Implemented in Sep 2014 c. 1 | Status – Implemented |
| TBO | 1. ADS-C over oceanic and remote areas | 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-TBO-1. Target 1: Assessed in Aug 2018 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. Do we 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 Aug 2018 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. Do we 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 Aug 2018 a. Yes b. None B0-TBO-3. Target 2: c. N/A | Status - N/A |

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|--|---|---|--------------|
| 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: Assessed in Aug 2018</p> <p>a. Yes b. None</p> <p>B0-TBO-4. Target 2: c. N/A</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 | | | | |
| | 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 | | | | | | | √ | |

| Module | Elements | Need Analysis | | | | Implementation Status (if Element is needed) | | | |
|--|--|---------------|-------------|------|-----|---|------------|-----------------------|-------------|
| | | Not Started | In Progress | Need | N/A | Planning | Developing | Partially Implemented | Implemented |
| | 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: El Salvador International Airport (MSLP) “Monseñor Oscar Arnulfo Romero y Galdámez” Implemented
- Heliport operational approval – Status: N/A
- Visual aids for navigation – Status: Implemented
- Aerodrome Bird/Wildlife Organization and Control Programme – Status: Implemented

4. Authority of El Salvador/Civil Aviation Authority CAA’s State Aviation System Improvements (SASI) Status

Authority of El Salvador/Civil Aviation Authority CAA’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: Analysis in Progress
- Airport Rwy Rehabilitation and extension – Status: Analysis in Progress
- Control Tower and Technical Building upgrade – Status: Analysis in Progress

5. Authority of El Salvador/Civil Aviation Authority CAA 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 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

| Authority of El Salvador/Civil Aviation Authority CAA ASBU Air Navigation Reporting Form (ANRF) | | | |
|--|--|---|------------------------------|
| PIA | 4 | Block - Module | B0 - CDO |
| | | Date | August 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 September 2014 | Status Implemented |
| | Status Details | | |
| 2 | Element Description Route changes to facilitate CDO | Date Planned/Implemented September 2014 | Status Implemented |
| | Status Details | | |
| 3 | Element Description PBN STARs | Date Planned/Implemented September 2014 | Status Implemented |
| | Status Details | | |
| 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 Civil Aviation Authority CAA ANRF Templates

RASI and Civil Aviation Authority CAA 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.)

| Authority of El Salvador/Civil Aviation Authority CAA 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.)

| Authority of El Salvador/Civil Aviation Authority CAA 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: Authority of El Salvador/Civil Aviation Authority CAA ASBU Block 0 ANRFs

| EL SALVADOR ASBU Air Navigation Reporting Form (ANRF) | | | | | |
|---|---|----------------|--|-----------------------|-------------------|
| PIA | 1 | Block - Module | B0 - ACDM | Date | August - 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 2020 | Status Need | |
| | Status Details Coordinations have been made between the aircraft operator and the ANSP, to implement an ordering of the aircraft on the ground according to their scheduled departure time. | | | | |
| 2 | Element Description: Interconnection between aircraft operator and airport operator systems to share surface operations information | | Date Planned/Implemented December 2020 | Status Need | |
| | Status Details Interconnection monitoring is carried out between the aircraft operator and airport operator, to guarantee an effective implementation. | | | | |
| 3 | Element Description: Interconnection between airport operator and ANSP systems to share surface operations information | | Date Planned/Implemented December 2020 | Status Need | |
| | Status Details Interconnection monitoring is carried out between the aircraft operator and airport operator, to guarantee an effective implementation | | | | |
| 4 | Element Description: Interconnection between airport operator, aircraft operator and ANSP systems to share surface operations information | | Date Planned/Implemented December 2020 | Status Need | |
| | Status Details Interconnection monitoring is carried out between the aircraft operator and airport operator and ANSP, to guarantee an effective implementation | | | | |
| 5 | Element Description: Collaborative departure queue management | | Date Planned/Implemented No applicable | 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 |

| EL SALVADOR ASBU Air Navigation Reporting Form (ANRF) | | | | | |
|--|---|-----------------------|-----------|--|----------------------|
| PIA | 1 | Block - Module | B0 - APTA | Date | August - 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 No applicable | Status N/A |
| | Status Details We have RNAV RNP AR procedures | | | | |
| 2 | Element Description: PBN approach procedures with vertical guidance to LPV minima | | | Date Planned/Implemented No applicable | Status N/A |
| | Status Details We have RNAV RNP AR procedures | | | | |
| 3 | Element Description: PBN approach procedures without vertical guidance to LNAV minima | | | Date Planned/Implemented No applicable | Status N/A |
| | Status Details We have RNAV RNP AR procedures | | | | |
| 4 | Element Description: GBAS Landing System (GLS) procedures to CAT I minima | | | Date Planned/Implemented No applicable | Status N/A |
| | Status Details We have RNAV RNP AR procedures | | | | |
| 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 | | | | | |

| EL SALVADOR ASBU Air Navigation Reporting Form (ANRF) | | | | | |
|--|---|-----------------------|-----------|---------------------------------|-------------------|
| PIA | 1 | Block - Module | B0 - RSEQ | Date | August - 06, 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 | Status |
| | | | | No Applicable | N/A |
| Status Details | | | | | |
| 2 | Element Description: Departure management | | | Date Planned/Implemented | Status |
| | | | | No Applicable | N/A |
| Status Details | | | | | |
| N/A | | | | | |
| 3 | Element Description: Departure flow management | | | Date Planned/Implemented | Status |
| | | | | No Applicable | N/A |
| Status Details | | | | | |
| N/A | | | | | |
| 4 | Element Description: Point merge | | | Date Planned/Implemented | Status |
| | | | | No applicable | 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 | | | | | |

| EL SALVADOR ASBU Air Navigation Reporting Form (ANRF) | | | |
|---|--|--|----------------------|
| PIA | 1 | Block - Module | B0 - SURF |
| | | Date | August - 06, 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 No applicable | Status N/A |
| | Status Details El Salvador International Airport do not need A-SMGCS | | |
| 2 | Element Description: ADS-B APT | Date Planned/Implemented No applicable | Status N/A |
| | Status Details El Salvador International Airport do not need ADS-BAPT | | |
| 3 | Element Description: A-SMGCS alerting with flight identification information | Date Planned/Implemented No applicable | Status N/A |
| | Status Details El Salvador International Airport do not need A-SMGCS | | |
| 4 | Element Description: EVS for taxi operations | Date Planned/Implemented No applicable | Status N/A |
| | Status Details El Salvador International Airport do not need EVS | | |
| 5 | Element Description: Airport vehicles equipped with transponders | Date Planned/Implemented No applicable | Status N/A |
| | Status Details It is not necessary that type of transponders | | |
| 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 | | | |

| EL SALVADOR ASBU Air Navigation Reporting Form (ANRF) | | | | | |
|--|--|----------------|-----------|--|----------------------|
| PIA | 1 | Block - Module | B0 - WAKE | Date | August - 06, 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 No applicable | Status N/A |
| | Status Details Wait for the ICAO document to be published | | | | |
| 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 No applicable | 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 No applicable | 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 No applicable | Status N/A |
| | Status Details N/A | | | | |
| 5 | Element Description: 6 wake turbulence categories and separation minima | | | Date Planned/Implemented No applicable | 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 | | | | | |

| EL SALVADOR ASBU Air Navigation Reporting Form (ANRF) | | | | | |
|--|--|----------------|--|------------------------------|-------------------|
| PIA | 1 | Block - Module | B0 - AMET | Date | August - 06, 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 (WAFS), 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 2012 | Status Implemented | |
| | Status Details | | | | |
| 2 | Element Description: IAVW | | Date Planned/Implemented January 2004 | Status Implemented | |
| | Status Details | | | | |
| 3 | Element Description: TCAC forecasts | | Date Planned/Implemented December 2013 | Status Implemented | |
| | Status Details | | | | |
| 4 | Element Description: Aerodrome warnings | | Date Planned/Implemented December 2004 | Status Implemented | |
| | Status Details | | | | |
| 5 | Element Description: Wind shear warnings and alerts | | Date Planned/Implemented December 2004 | Status Implemented | |
| | Status Details | | | | |
| 6 | Element Description: SIGMET | | Date Planned/Implemented December 2004 | Status Implemented | |
| | Status Details | | | | |
| 7 | Element Description: Other OPMET information (METAR, SPECI and/or TAF) | | Date Planned/Implemented December 2000 | Status Implemented | |
| | Status Details | | | | |
| 8 | Element Description: QMS for MET | | Date Planned/Implemented August 2018 | Status Implemented | |

| | |
|--|-------------------------------------|
| | 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 |

| EL SALVADOR ASBU Air Navigation Reporting Form (ANRF) | | | | | |
|---|--|----------------|---|---------------------------------------|-------------------|
| PIA | 2 | Block - Module | B0 - DATM | Date | August - 06, 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 February 2017 | Status Implemented | |
| | Status Details | | | | |
| 2 | Element Description: eAIP | | Date Planned/Implemented September 2018 | Status Implemented | |
| | Status Details | | | | |
| 3 | Element Description: Digital NOTAM | | Date Planned/Implemented February 2017 | Status Implemented | |
| | Status Details | | | | |
| 4 | Element Description: eTOD | | Date Planned/Implemented December 2024 | Status Analysis Not Started | |
| | Status Details there is not technological equipment | | | | |
| 5 | Element Description: WGS-84 | | Date Planned/Implemented January 2001 | Status Implemented | |
| | Status Details | | | | |
| 6 | Element Description: QMS for AIM | | Date Planned/Implemented August 2018 | Status Implemented | |
| | Status Details | | | | |
| 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 | | | | | |

| EL SALVADOR ASBU Air Navigation Reporting Form (ANRF) | | | | |
|---|--|-----------------------|--|-------------------------------|
| PIA | 2 | Block - Module | B0 - FICE | Date August - 06, 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 December 2016 | Status Implemented |
| | Status Details | | | |
| 2 | Element Description: AIDC to update previously coordinated flight data | | Date Planned/Implemented December 2016 | Status Implemented |
| | Status Details . | | | |
| 3 | Element Description: AIDC for control transfer | | Date Planned/Implemented December 2016 | Status Implemented |
| | Status Details . | | | |
| 4 | Element Description: AIDC to transfer CPDLC logon information to the Next Data Authority | | Date Planned/Implemented No Applicable | 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 | | | | |

| EL SALVADOR ASBU Air Navigation Reporting Form (ANRF) | | | | | |
|--|--|-----------------------|-----------|--|-----------------------------|
| PIA | 3 | Block - Module | B0 - ACAS | Date | August - 06, 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 December 2020 | Status Developing |
| | Status Details It has ACAS and TCAS applicable regulations, but not in version 7.1 | | | | |
| 2 | Element Description: AP/FD function | | | Date Planned/Implemented December 2020 | Status Developing |
| | Status Details The regulations for its implementation are being developed | | | | |
| 3 | Element Description: TCAP function | | | Date Planned/Implemented No Applicable | 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 | | | | | |

| EL SALVADOR ASBU Air Navigation Reporting Form (ANRF) | | | | | |
|---|--|-----------------------|--|----------------------|-------------------|
| PIA | 3 | Block - Module | B0 - ASEP | Date | August - 06, 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 No Applicable | Status N/A | |
| | Status Details N/A | | | | |
| 2 | Element Description: ATSA-VSA | | Date Planned/Implemented No Applicable | 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 | | | | | |

| EL SALVADOR ASBU Air Navigation Reporting Form (ANRF) | | | | | |
|--|---|-----------------------|-----------|--|-----------------------------|
| PIA | 3 | Block - Module | B0 - ASUR | Date | August - 06, 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 December 2019 | Status Developing |
| | Status Details The total implementation of the COCESNA ADS-B is waiting | | | | |
| 2 | Element Description: MLAT | | | Date Planned/Implemented No Applicable | 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 | | | | | |

| EL SALVADOR ASBU Air Navigation Reporting Form (ANRF) | | | | | |
|---|--|----------------|-----------|--|----------------------|
| PIA | 3 | Block - Module | B0 - FRTO | Date | August - 09, 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 No Applicable | Status N/A |
| | Status Details N/A | | | | |
| 2 | Element Description: Flexible Use of Airspace (FUA) | | | Date Planned/Implemented No Applicable | Status N/A |
| | Status Details N/A | | | | |
| 3 | Element Description: Flexible routing | | | Date Planned/Implemented No Applicable | Status N/A |
| | Status Details N/A. | | | | |
| 4 | Element Description: CPDLC used to request and receive re-route clearances | | | Date Planned/Implemented No Applicable | 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 | | | | | |

| EL SALVADOR ASBU Air Navigation Reporting Form (ANRF) | | | | | |
|--|--|-----------------------|--|-----------------------------|-------------------|
| PIA | 3 | Block - Module | B0 - NOPS | Date | August - 06, 2018 |
| Module Description: Air traffic flow management (ATFM) is used to manage the flow of traffic in a way that minimizes delays and maximizes the use of the entire airspace. 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 You have the ATFM Platform, lack of personnel training | | | | |
| 2 | Element Description: Proposing alternative routings to avoid or minimize ATFM delays | | Date Planned/Implemented No Applicable | 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 | | | | | |

| EL SALVADOR ASBU Air Navigation Reporting Form (ANRF) | | | | |
|--|-----------------------------|-----------------------|---------------------------------|-------------------------------|
| PIA | 3 | Block - Module | B0 - OPFL | Date August - 06, 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: | | Date Planned/Implemented | Status |
| | ITP using ADS-B | | No Applicable | 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 | | | | |

| EL SALVADOR ASBU Air Navigation Reporting Form (ANRF) | | | | | |
|--|---|----------------|--|------------------------------|-------------------|
| PIA | 3 | Block - Module | B0 - SNET | Date | August - 06, 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 December 2014 | Status Implemented | |
| | Status Details | | | | |
| 2 | Element Description: Area Proximity Warning (APW) | | Date Planned/Implemented December 2014 | Status Implemented | |
| | Status Details | | | | |
| 3 | Element Description: Minimum Safe Altitude Warning (MSAW) | | Date Planned/Implemented December 2014 | Status Implemented | |
| | Status Details | | | | |
| 4 | Element Description: Medium Term Conflict Alert (MTCA) | | Date Planned/Implemented December 2014 | Status Implemented | |
| | 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 | | | | | |

| EL SALVADOR ASBU Air Navigation Reporting Form (ANRF) | | | | | |
|--|--|-----------------------|----------|---|------------------------------|
| PIA | 4 | Block - Module | B0 - CCO | Date | August - 06, 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 January 2016 | Status Implemented |
| | Status Details | | | | |
| 2 | Element Description: Airspace changes to facilitate CCO | | | Date Planned/Implemented January 2016 | Status Implemented |
| | Status Details | | | | |
| 3 | Element Description: PBN SIDs | | | Date Planned/Implemented September 2014 | Status Implemented |
| | 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 | | | | | |

| EL SALVADOR ASBU Air Navigation Reporting Form (ANRF) | | | | | |
|--|--|-----------------------|----------|---|------------------------------|
| PIA | 4 | Block - Module | B0 - CDO | Date | August 06, 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 January 2016 | Status Implemented |
| | Status Details | | | | |
| 2 | Element Description: Airspace changes to facilitate CDO | | | Date Planned/Implemented January 2016 | Status Implemented |
| | Status Details | | | | |
| 3 | Element Description: PBN STARS | | | Date Planned/Implemented September 2014 | Status Implemented |
| | 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 | | | | | |

| EL SALVADOR ASBU Air Navigation Reporting Form (ANRF) | | | | | |
|--|--|----------------|--|----------------------|--|
| PIA | 4 | Block - Module | B0 - TBO | Date | |
| 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 No Applicable | Status N/A | |
| | Status Details N/A | | | | |
| 2 | Element Description: CPDLC over continental areas | | Date Planned/Implemented No Applicable | Status N/A | |
| | Status Details N/A | | | | |
| 3 | Element Description: CPDLC over oceanic and remote areas | | Date Planned/Implemented No Applicable | Status N/A | |
| | Status Details N/A | | | | |
| 4 | Element Description: SATVOICE direct controller-pilot communication (DCPC) | | Date Planned/Implemented No Applicable | 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: Authority of El Salvador/Civil Aviation Authority CAA ASBU Block 1 ANRFs

Insert ASBU B1 ANRFs in the future.

Appendix F: Authority of El Salvador/Civil Aviation Authority CAA SBU Block 2 ANRFs

Insert ASBU B2 ANRFs in the future.

Appendix G: Authority of El Salvador/Civil Aviation Authority CAA ASBU Block 3 ANRFs

Insert ASBU B3 ANRFs in the future.

Appendix H: Authority of El Salvador/Civil Aviation Authority CAA ANRFs

Civil Aviation Authority CAA ANRF

| Authority of El Salvador/Civil Aviation Authority CAA Air Navigation Reporting Form (ANRF) | | | |
|--|---|--|------------------------------|
| ICAO NACC Regional Initiatives | | Date | August – 07, 2018 |
| Module Description: ICAO NACC RO has identified airport improvements. | | | |
| Element Implementation Status | | | |
| 1 | Element Description: Aerodrome certification | Date Planned/Implemented Dec 2019 | Status Developing |
| Status Details ICAO NACC region has a goal to have CAR aerodromes in its regional ANP Table AOP I-1 be certified. My Organization's one airport, MSLP. They is in the process. | | | |
| 2 | Element Description: Heliport operational approval | Date Planned/Implemented No Applicable | Status N/A |
| Status Details N/A | | | |
| 3 | Element Description: Visual aids for navigation | Date Planned/Implemented Sep 1981 | 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 MSLP. | | | |
| 4 | Element Description: Aerodrome Bird/Wildlife Organization and Control Programme | Date Planned/Implemented Dec 2009 | Status Implemented |
| 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. MSLP 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: Authority of El Salvador/Civil Aviation Authority CAA ANRFs

Replace with your **Civil Aviation Authority CAA ANRF**.

| Civil Aviation Authority CAA 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 December 2019 | Status Developing |
| | 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 No Applicable | Status N/A |
| | Status Details N/A | | |
| 3 | Element Description: Control Tower and Technical Building Upgrades | Date Planned/Implemented No Applicable | Status N/A |
| | Status Details N/A | | |
| 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. | | | |

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