AGÊNCIA DE AVIAÇÃO CIVIL

CABO VERDE NATIONAL AVIATION SAFETY PLAN 2023 – 2025

Revision 01

CONTENTS

RECORD OF REVISIONS

Revision Nº	Date	Reason Changes
Original issue	December 2022	
Revision 01	April 2024	- Alignment with 2023-2025 AFI-RASP, first edition.

ABBREVIATIONS

AAC	Agência de Aviação Civil (Civil Aviation Authority)
AFI-RASG	AFI regional aviation safety group
AMO	Approved Maintenance Organizations
ANS	Air Navigation Services
APIRG	AFI Planning and Implementation Regional Group
ATO	Approved Training Organizations
ATS	Air Traffic Service
BAGAIA	Banjul Accord Group Accident Investigation Agency
BAGASOO	Banjul Accord Group Aviation Safety Oversight Organization
CAP	Corrective Action Plan
CE	Critical element
CFIT	Controlled flight into terrain
CICTT	CAST/ICAO Common Taxonomy Team
CMA	Continuous monitoring approach
EI	Effective implementation
GASP	Global Aviation Safety Plan
G-HRC	Global High-risk categories of occurrences
ICAO	International Civil Aviation Organization
IPIAAM	Instituto de Prevenção e Investigação de Acidentes Aeronáuticos e Marítimos
Istars	integrated Safety Trend Analysis and Reporting System
LOC-I	Lost of Control In-flight
NASP	National Aviation Safety Plan
OLF	ICAO USOAP CMA Online Framework
PQ	ICAO Protocol Question
PPQ	Priority Protocol Question
RAIO	Regional accident and incident investigation organization
RASC	Regional Aviation Steering Committee
RASG	Regional Aviation Safety Group
AFI-RASP	Africa-Indian Ocean Regional Aviation Safety Plan
RPAS	Remotely Pilot Aircraft System
SDCPS	Safety Data Collection and Processing Systems
SEI	Safety enhancement initiatives
SOP	Standard Operating Procedures
SPI	Safety Performance Indicator
SSP	State Safety Programme
SSPIA	State safety programme Implementation Assessment
UAS	Unmanned Aircraft System
USOAP	Universal Safety Oversight Audit Programme
WACAF	ICAO Western and Central African Office

1. SECTION 1. INTRODUCTION

1.1 Overview of the NASP

Cabo Verde is committed to enhancing aviation safety and to the resourcing of supporting activities. The purpose of this National Aviation Safety Plan (NASP) is to continually reduce fatalities, and the risk of fatalities, through the development and implementation of a national aviation safety strategy. A safe, resilient and sustainable aviation system contributes to the economic development of Cabo Verde and its industries. The NASP promotes the effective implementation of Cabo Verde safety oversight system, a risk-based approach to managing safety, as well as a coordinated approach to collaboration between Cabo Verde and other States, regions and industry. All stakeholders are encouraged to support and implement the NASP as the strategy for the continuous improvement of aviation safety.

The NASP of Cabo Verde is in alignment with the International Civil Aviation Organization (ICAO) *Global Aviation Safety Plan* (GASP, Doc 10004) and with the Africa-Indian Ocean Regional Aviation Safety Plan (AFI-RASP).

Mário Margarito Gomes
President of the Board of Directors

1.2 Structure of the NASP

This NASP presents the strategic direction for the management of aviation safety at the national level, for a period of three years. It comprises six sections. In addition to the introduction, sections include: the purpose of the NASP, Cabo Verde strategic direction for the management of aviation safety, the national operational safety risks identified for the 2023-2025 NASP, organizational challenges addressed in the NASP, and a description of how the implementation of the Safety Enhancement Initiatives (SEIs) listed in the NASP is going to be monitored.

1.3 Relationship between the NASP and the State Safety Programme (SSP)

This NASP addresses operational safety risks presented in the ICAO GASP and AFI-RASP, in the absence of mature safety data analysis aspects, as described in the ICAO State Safety Programme Implementation Assessment (SSPIA), in Cabo Verde. Initiatives listed in this NASP address organizational challenges and aim to enhance organizational capabilities related to effective safety oversight.

1.4 Responsibility for the NASP development, implementation and monitoring

The Agência de Aviação Civil (AAC) is responsible for the development, implementation and monitoring of the NASP, in

collaboration with Instituto de Prevenção e Investigação de Acidentes Aeronáuticos e Marítimos (IPIAAM) and with the national aviation industry. The NASP was developed in consultation with national operators and other key aviation stakeholders, and in alignment with the 2023-2025 edition of the GASP and with the 2023-2025 edition of the AFI-RASP.

1.5 National safety issues, goals and targets

The NASP addresses the following national safety issues, which in line with the GASP focus on two aspects of safety planning that ICAO considers to be of concern to the international aviation community, identified on the basis of safety data collected from proactive and reactive activities: **Organizational challenges** and **Operational safety risks**.

Organizational challenges are systemic issues, which take into consideration the impact of organizational culture, and policies and procedures on the effectiveness of safety risk controls. Organizations include entities in a State, such as the Civil Aviation Authority (CAA) and service providers, such as aircraft operators, Air Traffic Service (ATS) providers, approved aviation training organizations, approved maintenance organizations, operators of aerodromes, etc. Organizations should identify hazards and mitigate the associated risks to manage safety. The NASP identifies two organizational challenges:

1) Continuous improvement and implementation of an effective safety oversight system;
2) Implementation of Cabo Verde State Safety Program (SSP);

Operational safety risks arise during the delivery of a service or the conduct of an activity (for example, operation of an aircraft, airports or provision of air traffic control). Operational interactions between people and technology, as well as the operational context in which aviation activities are carried out, are taken into consideration to identify performance limitations and hazards. The GASP identifies a series of Global High-Risk Categories of Occurrences (G-HRCs) that need to be addressed to mitigate the risk of fatalities. These G-HRCs were selected based on actual fatalities, high fatality risk per accident or the number of accidents and incidents. The NASP addresses the G-HRC[1] and other national safety risks:

1) Presence of wildlife (birds and animals) on and in the aerodrome vicinity
2) Seasonal Haze
3) Terrain infringing the Obstacle Limitation Surfaces (OLS);
4) Controlled flight into terrain (G-HRC)
5) Loss of control in-flight (G-HRC)
6) Mid-air collision (G-HRC);
7) Runway excursion (G-HRC); and
8) Runway incursion (G-HRC).

To address the issues listed above and enhance aviation safety at the national level, the 2023-2025 NASP contains the following goals and targets:

Goal	Target
1. Achieve a continuous reduction of operational safety risks	1.1 Maintain a decreasing trend of the national accident rate. 1.2 Decrease the number of safety occurrences associated with Presence of wildlife (birds and animals) on and in the aerodrome vicinity. 1.3 Increase the capability of aerodromes to operate under

[1] It should be noted that while the G-HRCs are not significant concerns in Cabo Verde, due to the state operational context and low probability of occurrence (in some cases they have never occurred, as for the case of mid-air collision), in line with the GASP and AFI-RASP and due to the high fatality risk per accident and statistics worldwide, they were included in the NASP.

	seasonal haze
2. Strengthen the safety oversight capabilities	2.1 By 2026, reach an Effective Implementation (EI) of the Critical Elements (CEs) of the Cabo Verde safety oversight system score of 85%.
3. Implement an effective State safety program.	3.1 By 2024 implement the foundation of an SSP 3.2 By 2023, publish a National Aviation Safety Plan (NASP). 3.3 Cabo Verde to work towards an effective SSP as follows: a) By 2025 – Present[2] b) By 2028 – Present and effective
4. Increase collaboration at the regional level to enhance safety.	4.1 By 2023, Cabo Verde to continue to offer assistance to States that do not expect to meet GASP and AFI-RASP Goals 2 and to play a major part in the regional safety oversight mechanism 4.2 By 2025, contribute information on operational safety risks, including SSP Safety Performance Indicators (SPIs), and emerging issues, to the AFI Regional Aviation Safety Group (AFI-RASG) and Banjul Accord Group Aviation Safety Oversight Organization (BAGASOO)
5.Promote the use of industry programmes and safety information sharing networks.	5.1 Increase trend in industry's contribution in safety information sharing networks to States and regions to assist in the development of NASPs and RASPs.
6. Ensure the appropriate infrastructure is available to support safe operations	6.1 By 2025, Cabo Verde to continue with the implementation of air navigation and aerodrome infrastructure that meet relevant ICAO Standards

Table 1: Cabo Verde goals and targets

1.6 Operational Context

There are seven aerodromes in Cabo Verde, including four certified international aerodromes, which one is CAT 4E and the other three CAT 4D. The airspace of Cabo Verde is classified into Class A, C and G. There were 96.725 movements[3] in Cabo Verde over the period of 2018 to 2021. There are currently two Air Operator Certificates (AOCs) issued by Cabo Verde, and of those there is one issued operator conducting international commercial air transport operations and one operator which operate domestic commercial air transport operations.

Common hazards and safety deficiencies in Cabo Verde include:

1) Meteorology: Seasonal Haze
2) Topography: Terrain infringing the Obstacle Limitation Surfaces (OLS);
3) Environmental: Presence of wildlife (birds and animals) on and in the aerodrome vicinity

[2] The terms "present" and "present and effective" are based on the maturity levels established in the ICAO SSP Implementation Assessment (SSPIA).

[3] Source: https://www.aac.cv/dash

2. SECTION 2. PURPOSE OF CABO VERDE'S NATIONAL AVIATION SAFETY PLAN

The NASP is the master planning document containing the strategic direction of Cabo Verde for the management of aviation safety for a period of three years (2023 to 2025). This plan lists national safety issues, sets national safety goals and targets, and presents a series of Safety Enhancement Initiatives (SEIs) to achieve those goals.

The NASP has been developed using the safety goals and targets and High-Risk Categories of Occurrences (HRCs) from the GASP (www.icao.int/gasp). The SEIs listed in the NASP support the improvement of safety at the wider regional and international levels

3. SECTION 3. CABO VERDE'S STRATEGIC DIRECTION FOR THE MANAGEMENT OF AVIATION SAFETY

The NASP presents the SEIs that were developed based on the Organizational Challenges (ORG) and Operational Safety Risks (OPS) Roadmaps, as presented in the ICAO *Global Aviation Safety Roadmap* (Doc 10161), as well as other specific issues. This plan is developed and maintained by the Civil Aviation Authority, in coordination with key aviation stakeholders and is updated at least every three years.

The NASP includes the following national safety goals and targets, for the management of aviation safety, as well as a series of indicators to monitor the progress made towards their achievement. They are tied to the goals, targets and indicators listed in the GASP and include additional national safety goals, targets and indicators.

Goal	Target	Indicators	Link to GASP and RASP
1. Achieve a continuous reduction of operational safety risks	1.1 Maintain a decreasing trend of the national accident rate. 1.2 Decrease the number of safety occurrences associated with Presence of wildlife (birds and animals) on and in the aerodrome vicinity. 1.3 Increase the capability of aerodromes to operate under seasonal haze	• Number of accidents • Number of fatal accidents • Percentage of occurrences related to High-Risk Categories (HRCs). • Number of safety occurrences associated with Presence of wildlife • Number of flights affected (cancelled, deviated, go-around etc) by the seasonal haze. • Percentage of International airports with established Runway Safety Teams (RSTs) • Number of AIRPROX Occurrences recorded.	This goal is directly linked to Goal 1 and Target 1.1 of the GASP.
2. Strengthen the safety oversight capabilities	2.1 By 2026, reach an Effective Implementation (EI) of the Critical Elements (CEs) of the Cabo Verde safety oversight system score of 85%.	• Percentage of EI • Percentage of PPQ implemented • Percentage of required Corrective Action Plans (CAPs) submitted to ICAO (using OLF) • Percentage of PQ State self-assessment completed (using OLF)	This goal is directly linked to Goal 2 and Target 2.1 of the GASP.
3. Implement an effective	3.1 By 2024 implement the	• Percentage of required CAPs related to the SSP	This goal is directly

State safety program.	foundation of an SSP 3.2 By 2023, publish a national aviation safety plan (NASP). 3.3 By 2025 implement a Present[4]SSP	foundation PQs submitted (using OLF) • Percentage of required CAPs related to the SSP foundation PQs completed (using OLF) • Percentage of applicable Service Providers who have fully implemented an SMS • Percentage of SSP PQ with Present level of maturity achieved • Percentage of SSP PQ with Present and effective level of maturity achieved	linked to Goal 3 and Target 3.1, 3.2 and 3.3 of the GASP.
4. Increase collaboration at the regional level to enhance safety.	4.1 By 2023, Cabo Verde to continue to offer assistance to States that do not expect to meet GASP Goal 2 and to play a major part in the regional safety oversight mechanism 4.2 By 2025, to contribute with information on operational safety risks, including SSP Safety Performance Indicators (SPIs), and emerging issues, to the AFI Regional Aviation Safety Group (AFI-RASG) and Banjul Accord Group Aviation Safety Oversight Organization (BAGASOO)	• NASP submitted to ICAO Western and Central African (WACAF) • Number of States requiring assistance • Number of States that received assistance • Register to the Secure Portal on Operational Safety Risks and Emerging Issues • Number of Reports/surveys on safety risks shared with RASG-AFI and BAGASOO • Number of SSP SPIs shared with RASG-AFI and BAGASOO	This goal is directly linked to Goal 4 and Target 4.1 and 4.3 of the GASP.
5.Promote the use of industry programmes and safety information sharing networks.	5.1 Increase trend in industry's contribution in safety information sharing networks to States and regions to assist in the development of NASPs and RASPs.	• Number of service providers using globally harmonized metrics for their SPIs • Percentage of service providers participating in the corresponding ICAO-recognized industry assessment programmes • Number of service providers contributing to an SDCPS or a safety information sharing network • Number of meetings and workshops conducted for sensitization on NASP and AFI-RASP	This goal is directly linked to Goal 5 and Target 5.1 of the GASP.
6. Ensure the appropriate infrastructure is available to support safe	6.1 By 2025, Cabo Verde to continue with the implementation of air navigation and aerodrome infrastructure that meet relevant	• Number or percentage of infrastructure-related air navigation deficiencies by State, against the regional air navigation plans • Number or percentage	This goal is directly linked to Goal 6 and Target 6.1 of the GASP.

[4] The terms "present" and "present and effective" are based on the maturity levels established in the ICAO SSP Implementation Assessment (SSPIA).

operations	ICAO Standards	implemented infrastructure-related PQs linked to the basic building blocks	

Table 2: Cabo Verde safety goals, targets and indicators

The SEIs in this plan are implemented through Cabo Verde's existing safety oversight capabilities and the service providers' SMS. SEIs derived from the ICAO *Global Aviation Safety Roadmap* (Doc 10161) were identified to achieve the national safety goals presented in the NASP. Some of the national SEIs are linked to overarching SEIs at the regional and international levels and help to enhance aviation safety globally. The full list of the SEIs is presented in the appendix to the NASP.

The NASP also addresses emerging issues. Emerging issues include concepts of operations, technologies, public policies, business models or ideas that might impact safety in the future, for which insufficient data exists to complete typical data-driven analysis. Due to the lack of data, emerging issues cannot automatically be considered as operational safety risks. It is important to remain vigilant on emerging issues to identify hazards and safety deficiencies, collect relevant data and proactively develop mitigations to address any associated risks. The NASP addresses the following emerging issues for further analysis:

1) Operation of RPAS within the vicinity of aerodromes;
2) Laser Strikes
3) Frequency interference, in particular the use of 5G telecommunication system, especially within the vicinity of aerodromes;
4) Cyber security;
5) Public health issues, e.g. Ebola, COVID19 etc
6) skilled workforce shortages
7) Ground handling operations
8) Aerodromes zoning management

4. SECTION 4. NATIONAL OPERATIONAL SAFETY RISKS

The NASP includes SEIs that address national operational safety risks, derived from lessons learned from occurrences and from a data-driven approach. These SEI may include actions such as: rule-making; policy development; targeted safety oversight activities; safety data analysis; and safety promotion. Separate sections are provided to address commercial air transport and general aviation to make the information more accessible to stakeholders.

Cabo Verde publishes an Annual Safety Report, available on the AAC website www.aac.cv. The summary of accidents and serious incidents that occurred in Cabo Verde, and those for aircraft registered in Cabo Verde involved in commercial air transport and aircraft involved in general aviation, is shown in the tables below.

Year	***Fatal accidents***	***Non-fatal accidents***	***Serious incidents***
Commercial air transport occurrences in Cabo Verde			
2018-2021	0	0	4
2022	0	0	0
2023	0	0	0
General aviation aircraft occurrences in Cabo Verde			
2018-2021	0	0	1
2022	0	0	0
2023	0	0	0
Year	*Fatal accidents*	*Non-fatal accidents*	*Serious incidents*
Occurrences involving commercial air transport aircraft registered in Cabo Verde			
2018-2021	0	0	2
2022	0	0	0
2023	0	0	0
Occurrences involving general aviation aircraft registered in Cabo Verde			
2018-2021	0	0	0
2022	0	0	0
2023	0	0	0

Table 3: summary of accidents and serious incidents

The following 10 high-risk categories of occurrences in the Cabo Verde context were considered of the utmost priority because of the number of fatalities and risk of fatalities associated with such occurrences at the global and regional level. They were identified based on analyses from mandatory and voluntary reporting systems, accident and incident investigation reports, safety oversight activities over the past 5 years, the SSP and on the operational safety risks described in the GASP and the AFI-RASP.

The following HRCs are identified in the 2023-2025 edition of the GASP as Global High-Risk Categories of Occurrences (G-HRCs) that need to be addressed to mitigate the risk of fatalities and were selected based on actual fatalities, high fatality risk per accident or the number of accidents and incidents information collected at the global level:

1) Controlled flight into terrain;
2) Loss of control in-flight
3) Mid-air collision;
4) Runway excursion; and
5) Runway incursion

In addition to the HRCs listed above, the following national operational safety risks have been identified:

6) **Presence of wildlife (birds and animals) on and in the aerodrome vicinity**: Air Operators reported occurrences involving Bird Strikes, Reject Take-off and Go-around due to the presence of wildlife (birds and animals) on and in the aerodrome vicinity;
Note: This HRC is also identified in the AFI-RASP as a R-HRC

7) **Seasonal Haze:** Air Operators reported occurrences resulting from the haze, such as flights cancellations, flight delay and flight diversion;
Note: This HRC is also identified in the AFI-RASP as a R-HRC

8) **Terrain infringing the Obstacle Limitation Surfaces (OLS):** operational restrictions in some aerodromes.

Also, the following Regional High-Risk Categories of Occurrences (R-HRCs) are identified in the 2023-2025 edition of the RASP that also need to be addressed to mitigate the risk of fatalities and were selected based on actual fatalities, high fatality risk per accident or the number of accidents and incidents information collected at the regional level:

9) System Component Failure/Malfunction – Non-Powerplant (SCF-NP);
10) Large Height Deviation (LHD).

The aviation occurrence categories from the Commercial Aviation Safety Team (CAST)/ICAO Common Taxonomy Team (CICTT) were used to assess risk categories in the process of determining national operational safety risks. The CICTT Taxonomy is found on the ICAO website at https://www.icao.int/safety/airnavigation/AIG/Pages/Taxonomy.aspx.

To address the national operational safety risks listed above, Cabo Verde identified the following contributing factors leading to HRCs and AAC, IPIAAM, service providers will implement a series of SEIs, some of which are derived from the ICAO OPS Roadmap, contained in the ICAO *Global Aviation Safety Roadmap* (Doc 10161):

HRC 1: *Controlled Flight Into Terrain (CFIT)*
CFIT is an in-flight collision with terrain, water or obstacle without indication of loss of control. Accidents categorized as CFIT involve all instances where an aircraft is flown into terrain in a controlled manner, regardless of the crew's situational awareness. The following factors, although not exhaustive, could contribute to CFIT occurrence:

1) Flight in adverse environmental conditions
2) Approach design and documentation
3) Phraseology used (standard vs non-standard)
4) Pilot fatigue and disorientation

HRC 2: *Loss of Control In-Flight (LOC-I)*

A loss of control in-flight (LOC-I) is an extreme manifestation of a deviation from intended flight path. Accidents categorized as LOC-I involve a loss of control in-flight that is not recoverable. LOC-I events involve many contributing factors that can be categorized as being either aeroplane systems-induced, environmentally induced, pilot/human-induced or any combination of these three. Of the three, pilot-induced accidents represent the most frequently identified cause of LOC-I accidents. The following factors, although not exhaustive, could contribute to LOC-I occurrence;

1) Distraction
2) Adverse weather
3) Complacency
4) Inadequate Standard Operating Procedures (SOPs) for effective flight management
5) Insufficient height above terrain for recovery
6) Lack of awareness of or competence in procedures for recovery from unusual aircraft attitudes
7) Inappropriate flight control inputs in response to a sudden awareness of an abnormal bank angle

HRC 3: *Mid-Air Collision (MAC)*

A mid-air collision refers to a collision between aircraft while both are airborne. Mid-air collisions can be the result of a level bust due to a loss of separation between aircraft. Mid-air collisions involve many contributing factors, including:

1) Traffic conditions - traffic density, complexity, mixture of aircraft types and capabilities, etc.
2) ATC performance related to workload, competence, teamwork, procedures, commitment, etc., as well as the influence of Air Navigation Services Providers' (ANSP) safety management
3) Flight crew training and corporate culture with workload, competence, teamwork, procedures, commitment etc., and the influence of aircraft operator's safety management
4) ATC systems - flight data processing, communication, Short Term Conflict Alert (STCA), etc., as well as the interaction with the human operators and the aircraft systems, and the procurement policy of the ANSP
5) Aircraft equipment - autopilots, transponders and Airborne Collision Avoidance System (ACAS), but also aircraft performance (e.g. rate-of-climb) and their physical size
6) Navigation infrastructure - both coverage and quality
7) Surveillance - both coverage and quality
8) Flight plan processing - efficiency and reliability of flight plan submission, approval and distribution
9) Airspace - complexity of airspace design, route layout, extent of controlled or uncontrolled airspace, proximity of military operational or training areas, etc.
10) Flight in adverse environmental conditions that may influence conflict management and collision avoidance

HRC 4: *Runway Excursion (RE)*

A runway excursion is a veer off or overrun off the runway surface. The term "runway excursion" is a categorization of an accident or incident which occurs during either the take-off or landing phase. The excursion may be intentional or unintentional, for example the deliberate veer off to avoid a collision brought about by a runway incursion. Runway excursions involve many contributing factors, including

1) Ineffective SOPs
2) Failure to adhere to the appropriate SOPs
3) Long/floated/bounced/firm/off-centre/crabbed landing
4) Inadequate approach procedures design
5) Inadequate regulatory oversight

HRC 5: *Runway Incursion (RI)*

A runway incursion is any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft. The following factors, although not exhaustive, could contribute to RI occurrence:

1) Operations in low visibility conditions
2) Complex or inadequate aerodrome design

3) Complexity of traffic (multiple simultaneous line-ups)
4) Conditional clearances
5) Simultaneous use of intersecting runways
6) Late issue of or late changes to departure clearances
7) Phraseology use (e.g. non-standard vs. standard, call-sign confusion)
8) Concurrent use of more than one language for ATC communications
9) English language competence despite the introduction by ICAO of a system of validating competence in aviation English
10) Inadequate manoeuvring area driver training and assessment programme

HRC 6: ***Presence of wildlife (birds and animals) on and in the aerodrome vicinity***

1) Aerodrome located close to habitational areas and birds natural habitat
2) Animals grazing (Cow, goat, dog) near the aerodromes
3) garbage around aerodromes
4) lack of equipment's and/or qualified personnel to manage wildlife

HRC 7: ***Seasonal Haze***

1) Natural event

HRC 8: ***Terrain infringing the Obstacle Limitation Surfaces (OLS)***

1) Natural condition

HRC 9: System Component Failure/Malfunction – Non-Powerplant (SCF-NP);

Failure or malfunction of an aircraft system or component other than the powerplant.
Refer to the Commercial Aviation Safety Team (CAST)/ICAO Common Taxonomy Team (CICTT) document for more information.

HRC 10: Large Height Deviation (LHD).

An RVSM Large Height Deviation (LHD) is defined as any vertical deviation of 300 feet (90 m.) or more from the flight level expected to be occupied by the flight. The deviation may be the result of any operational error or technical condition affecting the flight and includes any operational error that causes the aircraft to be at a location (position and/or time) that is unexpected by the controller. In other words, an LHD occurs when a controller expects an aircraft to be at one location, but the aircraft is actually at another location.

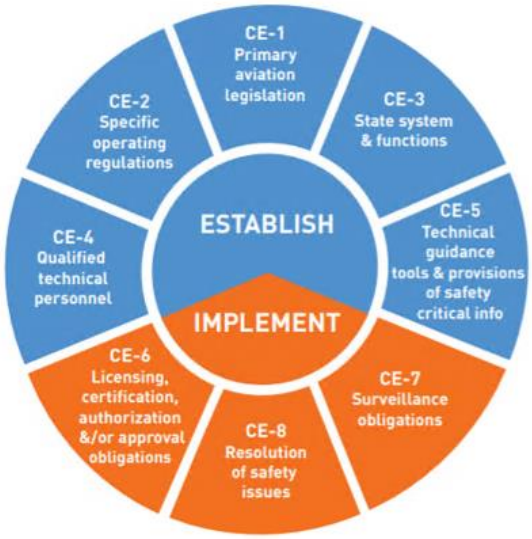
The full list of the SEIs is presented in the appendix to the NASP.

5. SECTION 5. ORGANIZATIONAL CHALLENGES

In addition to the national operational safety risks listed in the NASP, Cabo Verde has identified organizational challenges and a series of SEIs, selected for the NASP, to address them. These are given priority in the NASP since they are aimed at enhancing and strengthening Cabo Verde's safety oversight capabilities and the management of aviation safety at the national level.

The eight Critical Elements (CEs)of a safety oversight system are defined by ICAO. Cabo Verde is committed to the effective implementation of these eight CEs, as part of its overall safety oversight responsibilities, which emphasize Cabo Verde's commitment to safety in respect of its aviation activities. The eight CEs are presented in Figure 1 below.

Figure 1. Critical elements of a State's safety oversight system



The latest ICAO activities[5], which aim to measure the effective implementation of the eight CEs of Cabo Verde's safety oversight system, as part of the ICAO Universal Safety Oversight Audit Programme (USOAP), have resulted in the following scores:

Overall EI score							
82.43%							
EI score by CE							
CE-1	**CE-2**	**CE-3**	**CE-4**	**CE-5**	**CE-6**	**CE-7**	**CE-8**
89.29%	83.1%	85.19%	75%	84.69%	87.74%	74.73%	69.44%
EI score by audit area[6]							

[5] A safety oversight audit of the civil aviation system of Cabo Verde was conducted from 14 to 23 September 2009 under the USOAP CSA and an ICAO Coordinated Validation Mission (ICVM) was conducted from 5 to 12 June 2018.

[6]. Eight audit areas pertaining to USOAP, i.e. primary aviation legislation and civil aviation regulations (LEG), civil aviation organization (ORG); personnel licensing and training (PEL); aircraft operations (OPS); airworthiness of aircraft (AIR); aircraft accident and incident investigation (AIG); air navigation services (ANS); and aerodromes and ground aids (AGA). The safety audit results can be consulted in https://www.icao.int/safety/pages/usoap-results.aspx

LEG	ORG	PEL	OPS	AIR	AIG	ANS	AGA
95.24%	100%	82.61%	90.82%	96.59%	56.34%	67.92%	90.83%

Table 4: Cabo Verde EI Score 2018

The following organizational challenges in the Cabo Verde context were considered of the utmost priority because they impact the effectiveness of safety risk controls. They were identified based on analysis from USOAP data, accident and incident investigation reports, safety oversight activities over the past years, the SSP gap analysis, as well as on the basis of regional analysis conducted by RASG-AFI and APIRG. These issues are typically systemic in nature and relate to challenges associated with the conduct of States' safety oversight functions, implementation of SSP at the national level and the level of SMS implementation by national service providers. They take into consideration organizational culture, policies and procedures within AAC, IPIAAM and those of service providers. These organizational challenges are in line with those listed in the 2023-2025 edition of the GASP.

1) **Implementation of Cabo Verde SSP.** This organizational challenge results from ICAO Annex 19 and in line with the GASP it is defined as a priority for Cabo Verde.

2) **Continuous improvement and implementation of an effective safety oversight system.**
2.1 Since ICAO USOAP CMA 2009, Cabo Verde has actively work towards the resolution of all deficiencies and improvement of the safety oversight system. The score achieved in 2018 from the ICAO ICVM is a result of the State commitment to safety. Nevertheless, as a continuous process, there are still some aspects to improve since the 2018 ICVM and the following actions were identified in order to correct the pending safety deficiencies, with emphasis on ANS area which Cabo Verde received the lowest EI score:
   a) Increase the number of surveillance activities of air navigation services;
   b) Increase the capability AAC inspectorate to perform surveillance activities;
   c) Allocate the necessary resources to achieve the effective implementation of the safety oversight system;
   d) Effective implementation of the rulemaking process for timely amendment of regulations taking into consideration ICAO provisions and their amendments and notification to ICAO of all existing difference;
   e) Establishment and implementation of a National runway safety program;
   f) Improve the processes and procedures to resolve identified deficiencies impacting aviation safety (CE-8)
   g) **Effective implementation of an independent accident and incident investigation authority**. AIG was the area where Cabo Verde received the lowest EI score (56.34%) during the 2009 ICAO USOAP audit and was therefore placed as a high priority issue to resolve. Many initiatives were taken into account to resolve the deficiencies in this regards, i.e the establishment of IPIAAM, training and qualification of own Investigator, new regulations in line with Annex 13, agreement with BAGAIA, development of policies and procedures related to Accident and incident investigation etc. Nevertheless, the following actions are considered necessary to improve the implementation of an effective independent accident and incident investigation authority:
      i. Allocate the necessary resources to achieve the effective implementation of an independent Accident Safety Investigation Authority;
      ii. Establish an effective system to attract, recruit, train and retain qualified and sufficient technical personnel to support investigation activities;
      iii. Develop and implement technical training courses to qualify safety investigation staff, whether internal or external, within the scope of signed protocols;
      iv. Develop and conduct emergency drills to test the readiness of the investigating authority and aviation stakeholders,
      v. Develop and conduct investigation workshops at least once a year.

To address the organizational challenges listed above AAC, IPIAAM and service providers will implement a series of SEIs, some of which are derived from the ICAO ORG Roadmap, contained in the ICAO *Global Aviation Safety Roadmap* (Doc 10161). The full list of the SEIs is presented in the appendix to the NASP.

6. SECTION 6. MONITORING IMPLEMENTATION

Cabo Verde will continuously monitor the implementation of the SEIs listed in the NASP and measure safety performance of the national civil aviation system, to ensure the intended results are achieved, using the mechanisms presented in the appendix to this plan.

In addition to the above, Cabo Verde will review the NASP every three years or earlier, if required, to keep the identified operational safety risks, organizational challenges and selected SEIs updated and relevant. The Agência de Aviação Civil will periodically review the safety performance of the initiatives listed in the NASP to ensure the achievement of national safety goals. If required, Cabo Verde will seek the support of ICAO WACAF, BAGASOO, industry and other national stakeholders such as IPIAAM to ensure the timely implementation of SEIs to address national safety issues. Through close monitoring of the SEIs, Cabo Verde will make adjustments to the NASP and its initiatives, if needed, and update the NASP accordingly.

Cabo Verde will use the indicators listed in Section 3 of this plan to measure safety performance of the national civil aviation system and monitor each national safety target. A periodic annual safety report will be published to provide stakeholders with relevant up-to-date information on the progress made in achieving the national safety goals, as well as the implementation status of the SEIs.

In the event that the national safety goals are not met, the root causes will be presented. If Cabo Verde identifies critical operational safety risks, reasonable measures will be taken to mitigate them as soon as practicable, possibly leading to an unscheduled revision of the NASP.

Cabo Verde provides information at the regional level, by participating and reporting to the regional aviation safety group (RASG-AFI), using the RASC common monitoring tool. This allows the region to receive information and assess operational safety risks using common methodologies.

Any questions regarding the NASP and its initiatives, and further requests for information, may be addressed to the following:

Agência de Aviação Civil
Achada Grande Frente, C.P. 371, Praia Cabo Verde
+2382603430
dgeral@aac.cv
www.aac.cv

7. APPENDIX TO THE NASP

DETAILED SEIs: NATIONAL OPERATIONAL SAFETY RISKS

HRC 1: CONTROLLED FLIGHT INTO TERRAIN (CFIT)							
Goal 1: Achieve a continuous reduction of operational safety risks Target 1.1: Maintain a decreasing trend of the national accident rate							
Safety enhancement initiative	*Action*	*Timeline*	*Responsible entity*	*Stakeholders*	*Metrics*	*Priority*	*Monitoring Activity*
SEI-1: Mitigate contributing factors to the risk of CFIT	**1. Implement the following CFIT safety actions:** a) Ensure aircraft are equipped with terrain awareness and warning system (TAWS) in accordance with Annex 6 (b) Promote the wider use of TAWS beyond the requirements of Annex 6 (c) Issue a Safety advisory to increase adherence to TAWS warning procedures (d) Promote greater awareness of	Implemented Q2 to Q4 2024 Q2 to Q4 2024 Q2 to Q4	AAC AAC AAC AAC	AAC, Air operators, ASA AAC, Air operators AAC, Air operators AAC, Air operators, ASA	Percentage of occurrences related to CFIT Types of aircraft engaged in international air transport operations equipped with TAWS Number of Seminars/workshop held Number of TAWS related PQs satisfactory CAPs/Self-Assessment on TAWS related PQs completed Number of instrument	High	Surveillance of Air Operators, ANSP activities Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting Systems Review TAWS related PQs (4.151, 4.171, 4.301) using OLF Review PQs related to PBN-AR

	approach risks (e) Consider the implementation of Continuous Descent Final Approaches (CDFA) (f) Consider the implementation of Minimum Safe Altitude Warning (MSAW) systems (g) Ensure the timeliness of updates and accuracy of Electronic Terrain and Obstacle Data (eTOD) (h) Promote the use of GPS-derived position data to feed TAWS	2024 Q1 2025 Implemented Q4 2024 Q2 to Q4 2024	ASA AAC ASA AAC	AAC, Air operators, ASA AAC, Air operators, ASA AAC, ASA AAC, Air operators	runways with PBN-AR approved procedures ATC surveillance radar system with MSAW safety net		authorisation (4.434) using OLF Review PQs related to minimum safe altitude (MSAW) requirements (4.301; 4.151; 4.161; 4.171)
	2. Validate the effectiveness of the Safety Enhancement Initiatives (SEIs) presented in this roadmap through the analysis of Mandatory Occurrence Reporting (MORs) and Voluntary Occurrence Reporting systems (VORs) and accident/incident	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to CFIT	High	Annual analysis of the reports by the Safety Working Group (GSO)

	investigations (apply safety management methodologies)						
	3. Validate the effectiveness of the SEIs presented in this roadmap through the analysis of Flight Data Monitoring (FDM)* and pilot reports** (apply safety management methodologies)	Annually	Air Operators	AAC	Percentage of occurrences related to CFIT	High	Annual Safety Action Group Review PQs related to Flight Data Analysis Programme (FDAP) (4.203)
	4. Identify additional contributing factors	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to CFIT Number of contributing factors to CFIT occurrences	High	Surveillance of Air Operators, ANSP activities Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting Systems
	5.Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for CFIT	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to CFIT Number of additional SEIs implemented to mitigate the risk of the identified contributing factors for CFIT	medium	Surveillance of Air Operators, ANSP activities Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting Systems
	6. Conduct continuous evaluations of the performance of the SEIs	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to CFIT	medium	Surveillance of Air Operators ANSP activities Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting Systems

HRC 2: LOSS OF CONTROL IN-FLIGHT (LOC-I)							
Goal 1: Achieve a continuous reduction of operational safety risks **Target 1.1**: Maintain a decreasing trend of the national accident rate							
Safety enhancement initiative	Action	Timeline	Responsible entity	Stakeholders	Metrics	Priority	Monitoring Activity
SEI-2: Mitigate contributing factors to LOC-I accidents and incidents	**1. Implement the following LOC-I safety actions:** a) Require upset prevention and recovery training in all full flight simulator type conversion and recurrent training programmes b) Consider more time devoted to training for the pilot monitoring role	Q4 2024	AAC	AAC, Air Operators, (ATO), Pilots' associations	• Training programmes updated with upset prevention and recovery • Number/percentage of pilots completing upset prevention and recovery training • Upset occurrence rates in voluntary reporting • Stick-shaker activation events in FDA data • LOC-I occurrence rates	High	Surveillance of operator and ATO training activities
	2. Validate the effectiveness of the Safety Enhancement Initiatives (SEIs) presented in this roadmap through the analysis of	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to LOC-I	High	Annual analysis of the reports by the Safety Working Group (GSO)

	Mandatory Occurrence Reporting (MORs) and Voluntary Occurrence Reporting systems (VORs) and accident/incident investigations (apply safety management methodologies)						Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting Systems
	3. Validate the effectiveness of the SEIs presented in this roadmap through the analysis of Flight Data Monitoring (FDM)* and pilot reports** (apply safety management methodologies)	Annually	Air Operators	AAC	Percentage of occurrences related to LOC-I	High	Annual Safety Action Group
	4. Identify additional contributing factors	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to LOC-I Number of contributing factors to LOC-I occurrences	High	Surveillance of Air Operators, ANSP activities Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting Systems
	5.Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for LOC-I	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to LOC-I Number of additional SEIs implemented to mitigate the risk of the identified contributing factors for LOC-I	medium	Surveillance of Air Operators, ANSP activities Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting Systems

	6. Conduct continuous evaluations of the performance of the SEIs	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to LOC-I	medium	Surveillance of Air Operators, ANSP activities Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting Systems

HRC 3: MID-AIR COLLISION (MAC)							
Goal 1: Achieve a continuous reduction of operational safety risks **Target 1.1:** Maintain a decreasing trend of the national accident rate							
Safety enhancement initiative	*Action*	*Timeline*	*Responsible entity*	*Stakeholders*	*Metrics*	*Priority*	*Monitoring Activity*
SEI-3: Mitigate contributing factors to MAC accidents and incidents	1. Implement the following MAC safety actions:						
	a) Establish guidance and regulations to ensure aircraft are equipped with Airborne Collision Avoidance System (ACAS), in accordance with Annex 6	Implemented	AAC	AAC, Air Operators			
	b) Ensure adherence to ACAS warning procedures	Continuing process	AAC	AAC, Air Operators	Percentage of occurrences related to MAC	High	Surveillance of Air Operators, ANSP activities Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting Systems
	c) Promote the improvement of Air Traffic Control (ATC) systems, procedures and tools to enhance conflict management	Continuing process	AAC	AAC, Air Operators, ASA	Number of Seminars/workshop held		
	d) Promote the improvement of	Implemented	AAC	AAC, Air Operators, ASA			

	communications systems and procedures, such as controller-pilot datalink						
	e) Consider the implementation of STCA, including STCA suitable for terminal areas	Implemented	ASA	AAC, Air Operators,			
	f) Improve reliability and consistency of safety nets to provide early and dependable warning, and to reduce nuisance alerts	Q3 2024	ASA	AAC, Air Operators			
	g) Consider the improvement aircraft systems to alert pilots to any non-availability of transponders and ACAS	Q1 2025	Air Operators,	AAC, Air Operators, ASA			
	2. Validate the effectiveness of the safety enhancement initiatives (SEIs) presented in this roadmap through the analysis of mandatory occurrence reporting	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to MAC	High	Annual analysis of the reports by the Safety Working Group (GSO) Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting

	(MORs) and voluntary occurrence reporting systems (VORs) and accident/incident investigations (apply safety management methodologies)						Systems
	3. Validate the effectiveness of the SEIs presented in this roadmap through the analysis of flight data monitoring (FDM)* and pilot reports** (apply safety management methodologies)	Annually	Air Operators	AAC	Percentage of occurrences related to MAC	High	Annual Safety Action Group
	4. Identify additional contributing factors	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to MAC Number of contributing factors to MAC occurrences	High	Surveillance of Air Operators, ANSP activities
	5.Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for MAC	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to MAC Number of additional SEIs implemented to mitigate the risk of the identified contributing factors for MAC	medium	Surveillance of Air Operators, ANSP activities
	6. Conduct continuous evaluations of the performance of the SEIs	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to MAC	medium	Surveillance of Air Operators, ANSP activities

HRC 4: RUNWAY EXCURSION (RE)							
Goal 1: Achieve a continuous reduction of operational safety risks **Target 1.1:** Maintain a decreasing trend of the national accident rate							
Safety enhancement initiative	*Action*	*Timeline*	*Responsible entity*	*Stakeholders*	*Metrics*	*Priority*	*Monitoring Activity*
SEI-4: Mitigate contributing factors to RE accidents and incidents:	**1. Implement the following RE safety actions**: a) Ensure the establishment and implementation of a State runway safety programme and runway safety teams	Q2 2024	AAC	AAC, ASA, Air operators, Aerodromes	Percentage of occurrences related to RE	High	Surveillance of Air operator, Aerodromes, ANSP and ATO
	b) Promote the establishment of policy and training on rejected landings, go-arounds, crosswind and tailwind landings (up to the maximum manufacturer-demonstrated winds)	Q3 2024	AAC	AAC, ASA, Air operators, Aerodromes	Number of Seminars/workshop held		
	c) Promote equipage of runway overrun awareness and alerting systems on aircraft	Q4 2024	AAC	AAC, ASA, Air operators, Aerodromes			
	d) Ensure effective and timely reporting of meteorological and aerodrome conditions (e.g. runway surface condition in accordance to the ICAO global reporting format in Annex 14, Volume I, braking action and revised declared distances)	Continuing progress	AAC	AAC, ASA, Air operators, Aerodromes	Number of reports related to the runway surface condition		
	e) Promote the implementation of runway end safety area (RESA)	Q3 2024	AAC	AAC, ASA, Air operators, Aerodromes			

	f) Ensure that procedures to systematically reduce the rate of unstabilized approaches to runways are developed and used	Q4 2024	AAC	AAC, ASA, Air operators			
	2. Validate the effectiveness of the safety enhancement initiatives (SEIs) presented in this roadmap through the analysis of MORs and (VORs) and accident/incident investigations	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to RE	High	Annual analysis of the reports by the Safety Working Group (GSO) Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting
	3. Validate the effectiveness of the SEIs presented in this roadmap through the analysis of flight data monitoring (FDM)* and pilot reports** (apply safety management methodologies)	Annually	Air Operators	AAC	Percentage of occurrences related to RE	High	Annual Safety Action Group
	4. Identify additional contributing factors	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to RE Number of contributing factors to RE occurrences	High	Surveillance of Air operator, Aerodromes, ANSP and ATO Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting
	5.Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for RE	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to RE Number of additional SEIs implemented to mitigate the risk of the identified contributing factors for RE	medium	Surveillance of Air operator, Aerodromes, ANSP and ATO Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting
	6. Conduct continuous evaluations of the performance of the SEIs	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to RE	medium	Surveillance of Air operator, Aerodromes, ANSP and ATO

HRC 5: RUNWAY INCURSION (RI)							
Goal 1*:* Achieve a continuous reduction of operational safety risks **Target 1.1***:* Maintain a decreasing trend of the national accident rate							
Safety enhancement initiative	*Action*	*Timeline*	*Responsible entity*	*Stakeholders*	*Metrics*	*Priority*	*Monitoring Activity*
SEI-5: Mitigate contributing factors to RI accidents and incidents:	1. Implement the following RI safety actions: a) Ensure the establishment and implementation of a State runway safety programme and runway safety teams	Q2 2024	AAC	AAC, ASA, Air operators, Aerodromes	Percentage of occurrences related to RI Number of Seminars/workshop held	High	Surveillance of Air operator, Aerodromes, ANSP and ATO
	b) Promote the establishment of policy, procedures and training that supports situational awareness for controllers, pilots and airside vehicle drivers	Q3 2024	AAC	AAC, ASA, Air operators, Aerodromes			
	d) Ensure the use of standard phraseologies in accordance with applicable State	Continuing progress	ASA, Air Operators	AAC, ASA, Air operators, aerodromes			

	regulations and ICAO provisions (e.g. Doc 9432, Manual of Radiotelephony) e) Ensure the identification and publication in the aeronautical information publication (AIP) of hot spots at aerodromes f) Ensure that suitable strategies to remove hazards or mitigate risks associated with identified hot spots are developed and executed	Implemented Q4 2024	Aerodromes Aerodromes	AAC, ASA, Air operators, Aerodromes AAC, Aerodromes			
	2. Validate the effectiveness of the safety enhancement initiatives (SEIs) presented in this roadmap through the analysis of mandatory occurrence reporting (MORs) and voluntary occurrence reporting systems (VORs) and	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to RI	High	A*nnual analysis of the reports by the Safety Working Group (GSO)* *Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting*

	accident/incident investigations (apply safety management methodologies)						
	3. Validate the effectiveness of the SEIs presented in this roadmap through the analysis of flight data monitoring (FDM)* and pilot reports** (apply safety management methodologies)	Annually	Air Operators	AAC	Percentage of occurrences related to RI	High	Annual Safety Action Group
	4. Identify additional contributing factors	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to RI Number of contributing factors to RI occurrences	High	Surveillance of Air operator, Aerodromes, ANSP and ATO Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting
	5.Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for RI	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to RI Number of additional SEIs implemented to mitigate the risk of the identified contributing factors for RI	medium	Surveillance of Air operator, Aerodromes, ANSP and ATO Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting
	6. Conduct continuous evaluations of the performance of the SEIs	Annually	AAC	AAC, Air operators, ASA, IPIAAM	Percentage of occurrences related to RI	medium	Surveillance of Air operator, Aerodromes, ANSP and ATO

HRC 6: PRESENCE OF WILDLIFE (BIRDS AND ANIMALS) ON AND IN THE AERODROME VICINITY							
Goal 1: Achieve a continuous reduction of operational safety risks **Target 1.2:** Decrease the number of safety occurrences associated with Presence of wildlife (birds and animals) on and in the aerodrome vicinity.							
Safety enhancement initiative	*Action*	*Timeline*	*Responsible entity*	*Stakeholders*	*Metrics*	*Priority*	*Monitoring Activity*
SEI-6: Mitigate contributing factors to Presence of wildlife on and in the aerodrome vicinity	**1. Implement the following safety actions:** a) Ensure the amendment the of the aerodrome's procedures of wildlife management control b) Ensure training to all personnel involved in wildlife management control	Implemented Q3 2024	ASA Aerodromes	AAC, Aerodrome Operators AAC, Aerodromes	Percentage of personnel training	High	Surveillance of Aerodromes
	2. Conduct a wildlife hazard assessment in the aerodrome and vicinity of the airport.	Q3 2024	AAC	AAC, Aerodromes	Percentage of measures implement	High	Surveillance of Aerodromes
	3. Promote the mutual coordination and communication among aerodrome operator and other	Annually	Aerodromes	AAC, Aerodromes	Number of coordination meetings between aerodromes and other state entities	High	

	state departments regarding land-use planning and development in the vicinity of aerodrome						
	4. Implement effective control measures in the aerodrome	Annually	Aerodromes	AAC, Aerodromes	Number of occurrences related to presence of wildlife	High	Surveillance of Aerodromes
	5. Continuous assessment of the wildlife hazard.	Annually	Aerodromes	AAC, Aerodromes	Number of occurrences related to presence of wildlife	medium	Surveillance of Aerodromes activities Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting
	6. Promote awareness actions in the population surrounding the aerodromes	Implemented	IPIAAM	AAC, Aerodromes, IPIAAM	Number of occurrences related to presence of wildlife	medium	Surveillance of Aerodromes activities
	7. Validate the effectiveness of the safety enhancement initiatives (SEIs) presented in this roadmap through the analysis of mandatory occurrence reporting (MORs) and voluntary occurrence reporting systems (VORs) and accident/incident investigations (apply	Annually	AAC	AAC, Air operators, Aerodromes, ASA, IPIAAM	Number of occurrences related to presence of wildlife	High	Annual analysis of the reports by the Safety Working Group (GSO) Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting

	safety management methodologies)						
	8. Identify additional contributing factors	Annually	AAC	AAC, Air operators,Aerodromes, ASA, IPIAAM	Number of occurrences related to presence of wildlife Number of contributing factors to presence of wildlife	High	Surveillance of Air Operators, Aerodromes, ANSP activities Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting
	9.Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any	Annually	AAC	AAC, Air operators, Aerodromes, ASA, IPIAAM	Number of occurrences related to presence of wildlife Number of additional SEIs implemented to mitigate the risk of the identified contributing factors	medium	Surveillance of Air Operators, Aerodromes, ANSP activities Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting
	10. Conduct continuous evaluations of the performance of the SEIs	Annually	AAC	AAC, Air operators, Aerodromes, ASA, IPIAAM	Number of occurrences related to presence of wildlife	medium	Surveillance of Air Operators, Aerodromes, ANSP activities

HRC 7: SEASONAL HAZE							
Goal 1: Achieve a continuous reduction of operational safety risks **Target 1.3** increase the capability of aerodromes to operate under seasonal haze							
Safety enhancement initiative	*Action*	*Timeline*	*Responsible entity*	*Stakeholders*	*Metrics*	*Priority*	*Monitoring Activity*
SEI-7: Adopt measures to reduce the impact of Seasonal Haze in operations	1. Collect data of impact of Seasonal Haze in operations 2. Promote the implementation of adequate measures to mitigate the impact of seasonal haze, as applicable	Q2 2024 Q4 2025	AAC ASA	AAC, Aerodromes, ASA, Air Operators AAC, Aerodromes, ASA, Air Operators	Number of flights affected (cancelled, deviated, go-around etc) by the seasonal haze.	medium	SSP working group meetings Surveillance activities

HRC 8: TERRAIN INFRINGING THE OBSTACLE LIMITATION SURFACES (OLS)							
Goal 1: Achieve a continuous reduction of operational safety risks **Target 1.1:** Maintain a decreasing trend of the national accident rate							
Safety enhancement initiative	*Action*	*Timeline*	*Responsible entity*	*Stakeholders*	*Metrics*	*Priority*	*Monitoring Activity*
SEI-8: Adopt measures to reduce the impact of terrain in the obstacle limitation surfaces (OLS)	1) Ensure aircraft are equipped with terrain awareness and warning system (TAWS) in accordance with Annex 6	Implemented	AAC	AAC, Air operators, ASA	Percentage of occurrences related to terrain in the obstacle limitation surfaces (OLS)	medium	Surveillance of Air Operators, ANSP activities
	2) Issue a Safety advisory to increase adherence to TAWS warning procedures	Q2 to Q4 2024	AAC	AAC, Air operators	Number of Seminars/workshop/meetings held		
	3) Promote greater awareness of approach risks	Q2 to Q4 2024	AAC	AAC, Air operators			
	4) Consider the implementation of minimum safe altitude warning (MSAW) systems	Implemented	AAC	AAC, Air operators, ASA			
	5) Ensure the timeliness of updates and accuracy of Electronic Terrain and Obstacle Data	Q4 2024	ASA	AAC, Air operators, ASA			

	(eTOD)						
	5. Validate the effectiveness of the safety enhancement initiatives (SEIs) presented in this roadmap through the analysis (MORs) and (VORs) and accident/incident investigations (apply safety management methodologies)	Annually	AAC	AAC, Air operators, Aerodromes, ASA, IPIAAM	Percentage of occurrences related to terrain in the obstacle limitation surfaces (OLS)	medium	Annual analysis of the reports by the Safety Working Group (GSO) Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting
	6. Identify additional contributing factors	Annually	AAC	AAC, Air operators, Aerodromes, ASA, IPIAAM	Percentage of occurrences related to terrain in the obstacle limitation surfaces (OLS) Number of contributing factors to OLS	medium	Surveillance of Air Operators, Aerodromes, ANSP activities Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting
	7.Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any	Continuing process	AAC	AAC, Air operators, Aerodromes, ASA, IPIAAM	Percentage of occurrences related to terrain in the obstacle limitation surfaces (OLS) Number of additional SEIs implemented to mitigate the risk of the identified contributing factors	medium	Surveillance of Air Operators, Aerodromes, ANSP activities Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting
	8. Conduct continuous evaluations of the performance of the SEIs	Annually	AAC	AAC, Air operators, Aerodromes, ASA, IPIAAM	Percentage of occurrences related to terrain in the obstacle limitation surfaces (OLS)	medium	Surveillance of Air Operators, Aerodromes, ANSP activities

HRC 9: SYSTEM COMPONENT FAILURE/MALFUNCTION – NON-POWERPLANT (SCF-NP);							
Goal 1: *Achieve a continuous reduction of operational safety risks* **Target 1.1:** *Maintain a decreasing trend of the national accident rate*							
Safety enhancement initiative	*Action*	*Timeline*	*Responsible entity*	*Stakeholders*	*Metrics*	*Priority*	*Monitoring Activity*
SEI-SCF: Mitigate contributing factors to SCF-NP	1. Collect data related to SCF-NP Occurences	Q3 2025	AAC	AAC, Air Operators, AMO	Number of occurrences related to SCF-NP	Low	Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting Surveillance activities
	2. Promote the implementation of adequate measures to mitigate the impact of SCF-NP	Q4 2025	AAC	Air Operators, AMO	Number of promotion activities conducted with the stakeholders		NASP implementation team meetings

HRC 10: LARGE HEIGHT DEVIATION (LHD)							
Goal 1: Achieve a continuous reduction of operational safety risks **Target 1.1:** Maintain a decreasing trend of the national accident rate							
Safety enhancement initiative	*Action*	*Timeline*	*Responsible entity*	*Stakeholders*	*Metrics*	*Priority*	*Monitoring Activity*
SEI-LHD: Mitigate contributing factors to LHD	1. Collect data related to LHD Occurences	Q3 2025	AAC	AAC, ASA, Air Operators,	Number of occurrences related to LHD	Low	Data from Mandatory Occurrence Reporting Systems and Voluntary Occurrence Reporting Surveillance activities
	2. Promote the implementation of adequate measures to mitigate the impact of LHD	Q4 2025	AAC	Air Operators, ASA	Number of promotion activities conducted with the stakeholders		NASP implementation team meetings

DETAILED SEIs: ORGANIZATIONAL CHALLENGES

Organizational challenge 1: CONTINUOUS IMPROVEMENT AND IMPLEMENTATION OF AN EFFECTIVE SAFETY OVERSIGHT SYSTEM							
Goal 2: Strengthen the safety oversight capabilities **Target 2.1** By 2025, reach an effective implementation (EI) of the critical elements (CEs) of the Cabo Verde safety oversight system score of 85%.							
Safety enhancement initiative	*Action*	*Timeline*	*Responsible entity*	*Stakeholders*	*Metrics*	*Priority*	*Monitoring Activity*
SEI-9:Continuos improvement of the safety oversight system	**1) Increase the number of surveillance activities of air navigation services:** a) Update ANS Surveillance Program to Increase the number of surveillance activities of air navigation services; b) Allocate the necessary resources to implement the Surveillance plan c) Ensure implementation of the Surveillance plan	Implemented Implemented Implemented	AAC AAC AAC		• Percentage of EI • Percentage of PPQ implemented • Percentage of required corrective action plans (CAPs) submitted to ICAO (using OLF) • Percentage of surveillance plan accomplished	High	USOAP CMA ICAO OLF Quarterly review meetings
	2. Increase the capability AAC inspectorate to perform						

	a) Identify the gaps in qualified technical personnel and training requirements necessary to implement the oversight mandate b) Establish human resource plans to support hiring and retention of the appropriate number of qualified technical personnel required c) Ensure resources to implement hiring and training plans	Implemented Implemented Implemented	AAC AAC AAC		• Percentage of EI • Percentage of PPQ implemented • Percentage of required corrective action plans (CAPs) submitted to ICAO (using OLF) • Percentage of training plan accomplished • Number of technical personnel hired	High	USOAP CMA ICAO OLF
	3. Improve the processes and procedures to resolve identified deficiencies impacting aviation safety (CE-8) a) update processes and procedures related to resolution of safety deficiencies, including the enforcement policy b) train the	Q4 2024 Q1 2025	AAC	AAC, Air operators, Aerodromes, ASA, ATO, AMO		High	USOAP CMA ICAO OLF

	inspectors on the new processes and procedures						
	4. Address all protocol questions (PQs) of the USOAP Continuous Monitoring Approach (CMA)	Q2 2025	AAC	IPIAAM	• Percentage of EI • Percentage of PPQ implemented • Percentage of PQ implemented • Percentage of required corrective action plans (CAPs) submitted to ICAO (using OLF)	High	USOAP CMA ICAO OLF
SEI 10: Allocate the necessary resources to achieve the effective implementation of the safety oversight system	1) Review the process for the resource planning and allocation in alignment with the current authority's organizational structure and current challenges, which is required to conduct effective safety oversight 2) Obtain a sustainable and stable source of financing through commitments from the national and agency leadership and other stakeholders (CE-1 to CE-3). 3) Develop a	Q3 2024 Q3 2024 Q4 2024	AAC AAC AAC		• Percentage of surveillance plans accomplished	High	USOAP CMA ICAO OLF

	process for assessing changing resource requirements and sustain necessary coordination with resource stakeholders for safety oversight improvements						
SEI 11: Effective implementation of the rulemaking process for timely amendment of regulations taking into consideration ICAO provisions and their amendments and notification to ICAO of all existing difference;	1) Do the gap analysis of all ICAO amendments not incorporated in Cabo Verde regulations 2) Ensure implementation of the rulemaking process 3) Notification to ICAO of all differences and publication of differences in AIP	Q2 2024 2023-2025 2023-2025	AAC AAC AAC		• Percentage of EI • Percentage of PPQ implemented • Percentage of required corrective action plans (CAPs) submitted to ICAO (using OLF) • Percentage of ICAO ANNEXES compliance checklist/EFOD completed	High	*USOAP CMA* *ICAO OLF*
SEI 12: Effective implementation of an independent Accident and Incident Investigation Authority	1) Allocate the necessary resources to achieve the effective implementation of an independent Accident Safety Investigation Authority;	Q1 2023 to Q4 2025	*IPIAAM*	• IPIAAM • *CAA* • *Aviation Stakeholders.* • *BAGAIA*	• Percentage of EI • Percentage of PQ implemented • Percentage of required corrective action plans (CAPs) submitted to ICAO (using OLF)	High	*USOAP/CMA results following next audit* *ICAO OLF*

	2) Establish an effective system to attract, recruit, train and retain qualified and sufficient technical personnel to support investigation activities;	*Q1 2023 to Q4 2025*	*IPIAAM*	• IPIAAM • Aviation Stakeholders. • *BAGAIA*	• Number of qualified technical personnel recruited	High	*USOAP/CMA results following next audit ICAO OLF*
	3) Develop and implement technical training courses to qualify safety investigation staff, whether internal or external, within the scope of signed protocols;	*Q1 2023 to Q4 2025*	*IPIAAM*	• IPIAAM • Aviation Stakeholders. • BAGAIA	• Number of trainings provided	High	*USOAP/CMA results following next audit ICAO OLF*
	4) Develop and conduct emergency drills to test the readiness of the investigating authority and aviation stakeholders	*Q1 2023 to Q4 2025*	*IPIAAM*	• IPIAAM • Aviation Stakeholders. • BAGAIA	• Number of emergency drills conducted	High	*USOAP/CMA results following next audit ICAO OLF*
	5) Develop and conduct investigation workshops at least once a year.	*2023 to 2025*	*IPIAAM*	• IPIAAM • Aviation Stakeholders. • BAGAIA	•Number of Workshops held	High	*USOAP/CMA results following next audit ICAO OLF*

Organizational challenge 2: IMPLEMENTATION OF CABO VERDE SAFETY PROGRAM (SSP)							
Goal 3: Implement an effective State safety program. **Target 3.1** By 2023 implement the foundation of an SSP **Target 3.2** By 2023 publish a national aviation safety plan (NASP) **Target 3.3** Cabo Verde to work towards an effective SSP as follows: a) By 2025 – Have a SSP that is Present							
Safety enhancement initiative	*Action*	*Timeline*	*Responsible entity*	*Stakeholders*	*Metrics*	*Priority*	*Monitoring Activity*
SEI-13: SSP implementation at the national level	1) Update Conduct initial SSP gap analysis (checklist) then the detailed SSP self-assessment 2) Establish an SSP implementation team 3) Update the implementation plan for the SSP 4) Update SMS regulations and guidance for service providers and verify SMS implementation 5) Ensure the implementation of SSP	Implemented Implemented Implemented Q4 2024 2023-2025	SSP implementation Team	AAC, IPIAAM, MTT	• Percentage of required CAPs related to the SSP foundation PQs submitted (using OLF) • Percentage of required CAPs related to the SSP foundation PQs completed (using OLF) • Number of applicable Service Providers who have implemented an SMS. • Percentage of SSP PQ with Present level of maturity achieved	High	SSP Implementation team and SSP SSP foundation tool (I Stars

End