FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA (FDRE)

NATIONAL AVIATION SAFETY PLAN (NASP)

2023-2025

Addis Ababa, Ethiopia

RECORD OF AMENDMENTS

Revision Number	Date	Entered By
00	May 2022	Original

ABBREVIATIONS and ACRONYMS

ACAS	Airborne Collision Avoidance System
AGA	Aerodrome and Ground Aid
AAIB	Aircraft Accident Investigation Bureau
AIP	Aeronautical Information Publication
AMO	Approved Maintenance Organization
ANR	Air Navigation Regulation
ANS	Air Navigation Service
ANSP	ANS Provider
AOC	Air Operators Certificate
ARC	Abnormal Runway Contact
ATC	Air Traffic Control
ATO	Approved Training Organizations
CAP	Corrective Action plan
CEs	Critical Elements
CFIT	Controlled Flight Into Terrain
CICTT	CAST/ICAO Common Taxonomy Team
CMA	Continuous Monitoring Approach
CRM	Crew Resource Management
DGCA	Director General Civil Aviation
ECAA	Ethiopian Civil Aviation Authority
EI	Effective Implementation
FH	Flying Hours
FM	Flight Movement
GASP	Global Aviation Safety Plan
GPWS	Ground Proximity Warning System
HRCs	High Risks Categories
IOSA	IATA Operational Safety Audit
ISAGO	IATA-Safety Audit for Ground Operations
LOC-I	Loss of Control In flight
MAC	Mid Air Collision
MORs	Mandatory Occurrence Reports
MSAW	Minimum Safety Altitude Warning
NASP	National Aviation Safety Plan
OLF	On Line Framework
OPS	Operations
ORG	Organization
PQs	Protocol Questions
QMS	Quality Management System
RAIO	Regional Accident and Incident Investigation Organization
RASG	Regional Aviation Safety Group
RE	Runway Excursion
RI	Runway Incursion

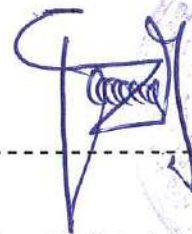| RSOO	Regional Safety Oversight Organization
RSP	Runway Safety Programme
RST	Runway Safety Team
SEIs	Safety Enhancement Initiatives
SMS	Safety Management System
SOI	Safety Oversight Index
SPI	Safety performance Indicator
SPT	Safety Performance Target
SRM	Safety Risk Management
SSCs	Significant Safety Concerns
SSP	State Safety Programme
TAWS	Terrain Awareness Warning System
USOAP	Universal Safety Oversight Audit Programme
VORs	Voluntary Occurrence Reports
WS	Wildlife Strike

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FOREWARD

It gives me an immense pleasure to communicate that ECAA has come up with a three-year National Aviation Safety Plan (2023-2025) which promotes and supports prioritization and continuous improvement of aviation safety in Ethiopia. ECAA prepared a State Safety Plan in the year 2022 by conducting an array of meetings and discussions with stakeholders and assessing the worldwide safety priorities.

The National Aviation Safety Plan (NASP) incorporates the safety enhancement initiatives (SEI) contained in RASG-AFI and is in line with ICAO's GASP.It sets out a continuous improvement strategy, which helps to achieve objectives of the State through implementation of effective safety oversight and State Safety Programme.

Ethiopia Civil Aviation Authority (ECAA) recognizes that it is important for everyone in aviation to work closely and in a collaborative manner to identify safety risks and ensure that the most appropriate practices and technologies are adopted to address and reduce these risks.

Getachew Mengistie
Alemayehu
Director General

Director General,Ethiopian Civil Aviation Authority

1.   INTRODUCTION

1.1 Over view of the NASP

Ethiopia is committed to enhancing aviation safety and to the resourcing of supporting activities. The purpose of this national aviation safety plan (NASP), is to continuously reduce fatalities, and the risk of fatalities, through the development and implementation of the national aviation safety strategy. A safe, resilient and sustainable aviation system contributes to the economic development of Ethiopia and industries. The NASP promotes the effective implementation of Ethiopia's safety oversight system, a risk based approach to managing safety, as well as a coordinated approach to collaboration between Ethiopia and other states, region 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 Ethiopia in alignment with the International Civil Aviation Organization (ICAO) Global Aviation Safety plan (GASP **2023- 2025**) Doc.10004.

1.2   Structure of the NASP

This NASP presents the strategic direction for the management of aviation safety at the national level of a period of three years .It comprises six section .In addition, the introductions sections include : the purpose of the NASP, Ethiopia's strategic direction for the management of aviation safety, the national operational safety risks identified for the 2023 to 2025,for the organizational challenges addressed in the NASP, and a description of how the implementation of the safety enhancement initiatives (SEI's) in the NASP is to be monitored.

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

This NASP addresses operational safety risks identified in the ICAO GASP and the RASG-AFI in the absence of mature safety data analysis (SDA) aspects ,as described in the ICAO State Safety Programme Implementation Assessment (SSPIA) in Ethiopia. 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 Ethiopian Civil Aviation Authority (ECAA) is responsible for the development, implementation and monitoring of the NASP, in collaboration with RASG-AFI and with the national aviation industry. The NASP was developed in consultation with national operators and other stakeholders, and in alignment with the Doc.10004 of the GASP 2023 to 2025 and RASGI-AFI.
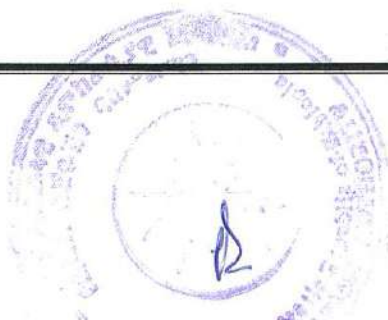
1.5 National Safety Issues, Goals and Targets

The NASP addresses the following national safety issues:

A. Operational Safety Risks

1. Controlled Flight into Terrain (CFIT)
2. Loss of Control-In Flight (LOC-I)
3. Mid-Air Collision (MAC)
4. Runway Excursion (RE)
5. Runway Incursion (RI)
6. Wildlife Strike (WS) on and in the vicinity of Aerodrome

B. Deficient critical elements and areas

Critical Elements (CEs)

a. CE-7: Surveillance obligations
b. CE-8: Resolution of Safety Issues

Audit areas

LEG:-Legal

ORG:-Organization

OPS:-Operation

In order to address the issues listed above and enhance safety at the national level, the (2023 to 2025) NASP contains the following goals and targets:

1) **Goal 1**: Achieve a continuous reduction of operational safety risks

   Target 1.1: Ethiopia to achieve continuous reduction of accident rate.

2) **Goal 2: Strengthen safety oversight capabilities of Ethiopia.**

   Target 2. 1: Ethiopia to achieve at least 85 % EI in ORG of USOAP CMA by 2025.
   Target 2. 2: Ethiopia to achieve at least 85% EI in LEG of USOAP CMA by 2025.
   Target 2. 3: Ethiopia to achieve at least 87 % EI in OPS of USOAP CMA by 2025.
   Target 2.4: Improve its score for the effective implementation (EI) of the critical elements (CEs) of the State's safety oversight system (with focus on priority PQs) as follows:

   By 2023 – 89 per cent
   By 2024 – 90 per cent
   By 2025 – 91 per cent.

Target 2.5 :Conduct workshops and seminars relating to all audit area for all aviation regulatory department inspectors at least yearly from 2024 to 2025.

Target 2.6: Endeavour to have no significant safety concerns (SSCs) under the USOAP continuous monitoring approach (CMA),and to resolve any SSCs promptly

3) **Goal 3: Implement effective SMS and SSP.**

Target 3.1: Ethiopia to implement the foundation of its SSP by 2023.

Target 3.2: Ethiopia to implement an effective SSP (Level 4), as appropriate to its aviation system complexity by 2025.

Target 3.3: Ethiopia work towards an effective SSP as follows:

a) By 2023- present   (There is evidence that the relevant indicators is documented)

b) By 2024 –Present and effective (There is evidence that the relivant indicators achiveng the desired out come)

Goal 4: Increase collaboration at the regional level

Target 4.1: Ethiopia to participate a regional safety oversight collaboration with ESAF by 2025.

Target 4.2: Ethiopia to contribute information on safety risks, including SSP safety performance indicators (SPIs),to regional aviation safety group (RASG- AFI) by 2025.

Target 4.3: Ethiopia to actively lead RASGs' safety risk management activities with effective safety oversight capabilities and an effective SSP by 2025.

Target 4.4: Ethiopia to actively participate in the regional mechanism for data collection, analysis and sharing by 2025.

Target 4.5: Encourage increasing the participation in flight data sharing initiatives by Ethiopian air operators, with aircraft of mass 27,000kg or above by 2025.

5) **Goal 5: Expand the use of industry programmes.**

Target 5.1: All service providers in Ethiopia to use globally harmonized SPIs as part of their safety management system (SMS) by 2025.

Target 5.2: Encourage to increase the number of service providers participating in the corresponding ICAO-recognized industry assessment programmes by 2025 .

6) **Goal 6: Ensure the appropriate infrastructure is available to support safe operations.**

Target 6.1: Ethiopia to implement air navigation and airport core infrastructure by 2024-2025.

1.6 Operational Context

There are four certified international aerodromes in Ethiopia . The airspace of Ethiopia is classified into Class A, C, D, and G.There were 544,495 A/C movements in Ethiopia over the period of three years (2017/18 to 2020/21). There are currently 11 air operator certificates (AOCs) issued by Ethiopia, and out of which 10 are issued to operators conducting international commercial air transport operations. common features that need to be given attention include:

- Topography;

- Climate (Meteorology) ;

- Infrastructure;

2. PURPOSE OF ETHIOPIAN NATIONAL AVIATION SAFETY PLAN (NASP)

The NASP is the master planning document containing the strategic direction of ECAA 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 addresses all aspects of air transport at the state level, with the objective of providing a clear and comprehensive planning and implementation strategy for the future development of the entire civil aviation sector. The NASP contains in-depth information specific to aviation safety aspects that are referenced in ECAA's master plan.

The NASP has been developed using the safety goals and targets and high-risk catagories of occurrences (HRCs) from both the GASP (www.icao.int/gasp) .These are highlighted in the text, where applicable. The SEIs listed in the NASP support the improvement of safety at the wider regional and international levels .The NASP includes several actions to address specific safety issue and recommended SEIs for individual states set out in the RASG-AFI. Ethiopia has adopted these SEIs and has included them in this plan. cross-reference are provided to the RASG-AFI for individual SEIs where relevent.
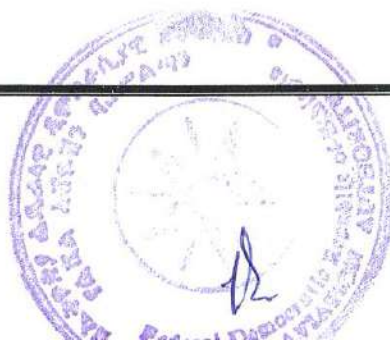
3. ETHIOPIA'S STRATEGIC DIRECTION FOR THE MANAGEMENT OF AVIATION SAFETY

The NASP presents the SEIs that were developed based on the organizational challenges (ORG) and operational safety Risks (OPS) road maps , as presented in the ICAO global aviation safety roadmap, (Doc.10161) as well as State-specific issues identified by responsible legislation rules & standards . This plan is developed and maintained by ECAA, in coordination with key aviation stakeholders and is updated at least every three year.

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 the RASG-AFI and include additional national safety goals, targets and indicators.

Goal	Targets	Indicators	Link to GASP
Goal.1 Achieve a continuous reduction of operational safety risks	1.1 maintain a decreasing trend of the national accident rate	• Number of accidents • Rate of accident per1000,000 departures • Number of fatal accidents • Rate of fatal accident per 1000,000 departures • Number of fatalities per passengers carried(fatality rate) • Percentage of occurrences related to high risk categories(HRCs)	This goal is directly linked to Goal 1 and Target 1.1 of the GASP
Goal.2 strength Ethiopia safety oversight capablities	2.1 Ethiopia to achieve at least 85% EI in audit area ORG of USOAP CMA by 2025.	Ethiopia's EI score in ORG	This goal is directly linked to Goal 2 and Target 2.1 the GASP
	2.2: Ethiopia to achieve at least 85% EI in audit area LEG of USOAP CMA by 2025.	Ethiopia's EI score in LEG	This goal is directly linked to Goal 2 and Target 2.2 the GASP
	2.3: Ethiopia to achieve at least 87% EI in audit area OPS of USOAP CMA by 2025	Ethiopia's EI score in OPS	This goal is directly linked to Goal 2 and Target 2.3 the GASP

	2.4	Ethiopia to improve its score for the effective implementation (EI) of the critical elements(CEs) of the State's safety oversight system(with focus on priority PQs) as follows: by 2023 – 89 per cent by 2024 – 90 per cent by 2025– 91 per cent	• Ooverall EI score • % of priority PQs related to a safety over sight system implemented by Ethiopia • % of required CAPs submitted by Ethiopia (using OLF) • % of CAP submitted by Ethiopia (using OLF).	This goal is directly linked to Goal 2 and Target 2.4 of the GASP
	2.5:	Conduct workshops and seminars relating to all audit area for all aviation regulatory departments inspectors at least yearly [from 2024 to 2025]	• Number of workshops and seminars conducted annually	This goal is directly linked to GASP Goal 2 and Target 2.5 of the GASP
	2.6:	Endeavour to have no Significant Safety Concerns (SSCs) under the USOAP Continuous Monitoring Approach (CMA), and to resolve any SSCs promptly.	• SSC and time taken to resolve it. • Time taken to resolve the findings of QMS of civil aviation safety regulation functions • Number of reduced finding on SSC	This goal is directly linked to GASP Goal 2 and Target 2.6 of the GASP

Goal	Targets	Indicators	Link to GASP
Goal 3: Implement effective State safety programme s (SSPs)	3.1 Ethiopia to implement the foundation of its SSP by 2023 -By 2023 Ethiopia to publish a national aviation safety plan (NASP) 3.2 Ethiopia to attain Level 4 SSP implementation by 2025	• having implemented the SSP foundational PQs • Percentage of each Audit area implemented • Percentage of satisfactory SSP foundational PQs • Percentage of required CAPs related to the SSP foundational PQs submitted by ECAA(using OLF) submitted approved NASP to ESAF&ICAO. • Percentage of required CAPs related to the SSP foundation PQs completed by Ethiopia (usingOLF) • Number/percentage of completed actions as mentioned in SSP implementation plan	This goal is directly linked to Goal 3 and Target 3.1 of the GASP This goal is directly linked to Goal 3 and Target 3.2 of the GASP
	3.3 ECAA to work towards an effective SSP as follows: a) By 2023- present b) By 2024 –Present and effective .	• ECAA having an SSP that is present. • No. of maturity checks having an SSP that is present and effective. • All applicable service providers under ECAA's authority to implement an effective SMS	This goal is directly linked to Goal 3 and Target 3.3 of the GASP
GOAL 4: Increase collaboration at regional level	4.1: Ethiopia to participate a regional safety oversight collaboration with ESAF by 2025.	• Number of cooperation made at regional level	This goal is directly linked to Goal 4 and Target 4.1 of the GASP

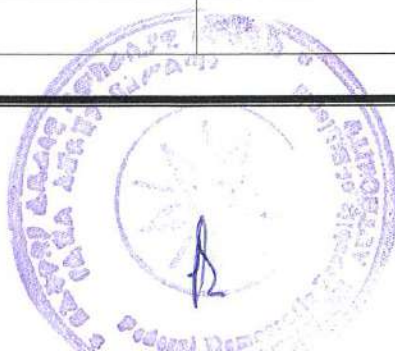| Goal	Targets	Indicators	Link to GASP
	4.2 ECAA to contribute information on operational safety risks, including SSP Safety Performance Indicators (SPIs)and emerging issues, to Africa Indian aviation safety group (RASG-AFI) by 2025	• contributing information on safety risks to RASGs • Number of SSP SPIs shared with RASGs	This goal is directly linked to Goal 4and Target 4.2 of the GASP
	4.3. ECAA to actively participate in the regional mechanism for data collection, analysis and sharing by 2025.	Number of participated in RASG-AFI region for data collection, analysis and sharing	This goal is directly linked to Goal 4and Target 4.3 of the GASP
	4.4: ECAA to encourage the increased participation in flight data sharing initiatives by air operators, with aircraft of mass27,000kg above by2025	Level of participation in flight data sharing initiatives of ECAA air operators, with aircraft of mass 27,000kg or above	This goal is directly linked to Goal 4and Target 4.4 of the GASP
GOAL 5: Expand the use of industry programmes and safety information sharing networks by service providers.	5.1: All service providers of ECAA to use globally harmonized SPIs as part of their safety management system (SMS) by 2025	Number of service providers using globally harmonized metrics for their SPIs	This goal is directly linked to Goal 5 and Target 5.1 of the GASP
	5.2: Encourage to increase the number of service providers participating in the corresponding ICAO-recognized industry assessment programmes by 2025.	Number of service providers participating in the corresponding ICAO-recognized industry assessment	This goal is directly linked to Goal 5 and Target 5.2 of the GASP
GOAL 6: Ensure the appropriate Infrastructure is available to support safe operations.	6.1: Ethiopia to implement the air navigation and airport core infrastructure By 2024-2025	Implementation status of ANS and airport core infrastructure . -Number or percentage of infrastructure related air navigation deficiencies in ECAA against the regional air navigation plan. -Number or percentage in ECAA having implemented infrastructure-related PQs linked to the basic building block.	This goal is directly linked to Goal 6 and Target 6 .1 the GASP

The SEIs in this plan are implemented through Ethiopia's existing safety oversight capabilities and the service providers' SMS. SEIs derived from the ICAO global aviation safety roadmap were identified to achieve the national safety goals and targets 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 appendix A to the NASP.

The NASP also addresses emerging issues, which 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 of data emerging issue cannot automatically be considered as operational safety risks It is important that Ethiopia remains vigilant on emerging issues to identify hazards and safety deficiencies , collect relevant data and proactively develop mitigations to address any associated risks .

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. The summary of accidents and serious incidents that occurred in Ethiopia, and those for aircraft registered involved in commercial air transport and aircraft involved in general aviation, is shown in the table below.

Year	Fatal accidents	Non-fatal accidents	Serious incidents
Commercial air transport occurrences in Ethiopia			
2011-2021	2	14	3
General aviation aircraft occurrences in Ethiopia			
2011-2021	1	12	------
Year	Fatal accidents	Non-fatal accidents	Serious incidents
Occurrences involving commercial air transport aircraft registered in Ethiopia			
2011-2021	1	11	2
Occurrences involving general aviation aircraft registered other countries			
2011-2021	1	3	----

HRC 3: Mid-Air Collision (MAC)

1. High Traffic Volume and pattern.
2. Inadequate trainings to ATCOs and Pilots.
3. Lack of SOPs/MOUs for effective coordination.
4. Violations of existing MOUs/SOPs and agreements.
5 Lack of effective air navigation equipment

HRC 4: Runway Excursion (RE)

1. Loss of situational awareness.
2. Violation of SOP by pilots.
3. Lack of training (before landing in contaminated runway, and CRM)
4. Lack of procedure (to operate in contaminated runway and experience of pilot for night flying).
5. Runway surface condition (rubber deposit and water on the runway).

HRC5: Runway Incursion (RI)

1. Loss of situational awareness of ATCs and pilots.
2. Violation of SOP by ATCs and pilots.
3. Lack of training (communication and CRM).
4. Insufficient wildlife control programme.
5. Insufficient implementation of RST.

HRC 6: Wildlife Strike (WS) on and in the vicinity of an Aerodrome

1. Lack of systematic wildlife hazard management programme in the airport.
2. Violation of land use regulations (butchers/illegal slaughtering house, waste disposal)
3. Lack of ecological study on wildlife abundance in and around the airport.
4. Lack of contemporary wildlife active management approaches.
5. Lack of secured and well-constructed security fence.

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

5. ORGANIZATIONAL CHALLENGES

In addition to the national operational safety risks listed in the NASP, ECAA has identified organizational challenges and series of SEIs selected for the NASP, in order to address these risks. These are given priority in the NASP since they are aimed at enhancing and strengthening Ethiopia'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. Ethiopia is committed to realizing the effective implementation of these eight CEs, as part of its overall safety oversight responsibilities, which emphasizes Ethiopia's commitment to safety in respect of its aviation activities. The eight CEs are presented in Figure 1 below:
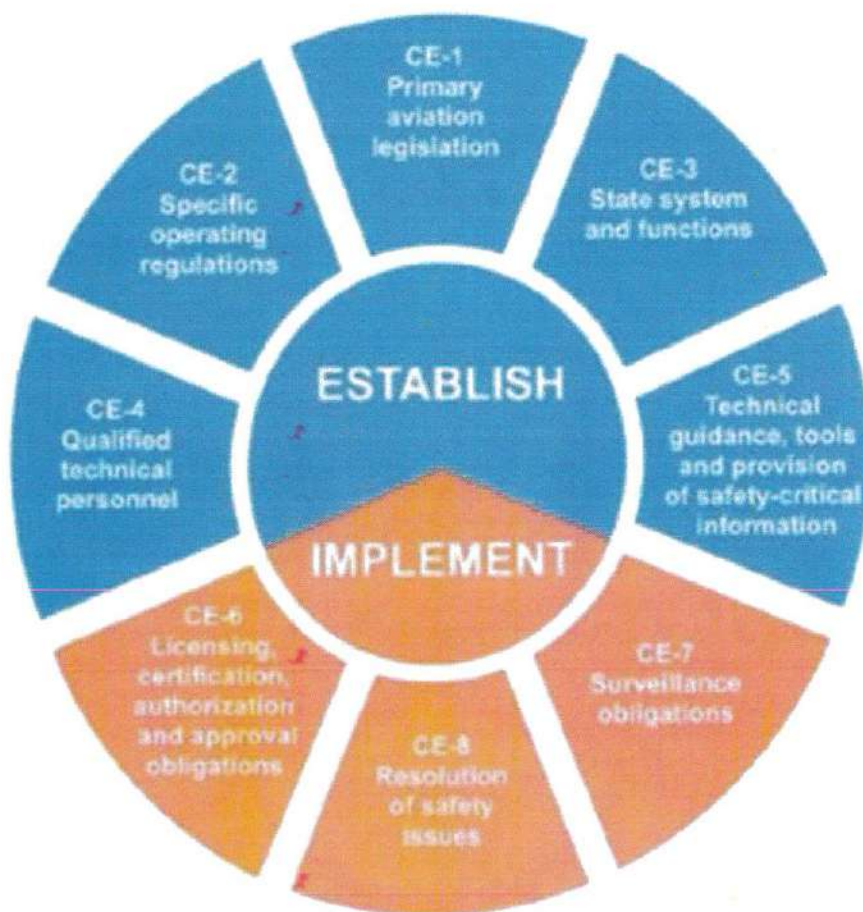
Figure1.Critical elements of a State's safety oversight system

The latest ICAO activities, which aim to measure the effective implementation of the eight CEs of Ethiopia's Safety oversight system, as part of the ICAO Universal Safety Oversight Audit Programme (USOAP), has resulted in the following scores:

Over all EI score							
88.6%							
EI score by CE							
CE-1	CE-2	CE-3	CE-4	CE-5	CE-6	CE-7	CE-8
92.86%	86.05%	94.92%	86.05%	89.91%	92.18%	83.16%	78.05%
EI score by audit area							
LEG	ORG	PEL	OPS	AIR	AIG	ANS	AGA
76.19%	77.78%	88.89%	84.03%	98.08%	86.08%	86.11%	91.6%

The following five other organizational challenges in Ethiopia's 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 ten years, the SSP, as well as on the basis of regional analysis conducted by RASG-AFI . These issues are typically systematic in nature and related 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 ECAA and those of service providers. These organizational challenges are in line with those listed in the GASP 2023-2025 Doc.10004 .

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).

Areas

1) **LEG**: This was one to improve in areas of Ethiopia identified during the most recent ICAO USOAP audit and was therefore placed as a high priority issue to resolve

2) **ORG**: This was one to improve areas of Ethiopia identified during the most recent ICAO USOAP audit and was therefore placed as a high priority issue to resolve

3) **OPS**: This was one to improve areas of Ethiopia identified during the most recent ICAO USOAP audit. Therefore this area was placed as a high priority issue to resolve

Critical Elements

4) Surveillance Obligations (CE -7): This was one to improve CE of Ethiopia identified during the most recent ICAO USOAP audit and was therefore placed as a high priority issue to resolve.

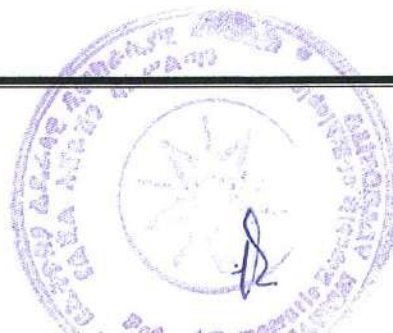5) Resolution of Safety Issues (CE -8): This was one to improve CE of Ethiopia identified during the most recent ICAO USOAP audit and was therefore placed as a high priority issue to resolve.

To address the issues listed above, Ethiopia will implement a series of SEIs, some of which are derived from the ICAO ORG roadmap, contained in the GASP. The full list of the SEIs is presented in the appendix to the NASP.

6. MONITORING OF THE IMPLEMENTATION

ECAA 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, ECAA 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 ECAA will periodically review the safety performance of the initiatives listed in the NASP to ensure the achievement of national safety goals . If required ,ECAA will seek the support of RASG and RSOO to ensure the timely implementation of SEIs to address national safety issue and mitigate risks. Through close monitoring of the SEIs, ECAA will also make adjustment to the NASP and its initiatives ,if needed and up date the NASP accordingly.

ECAA will use the indicators listed in Section 3 of this plan to measure safety performance of the 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 Ethiopia 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.

Ethiopia has adopted a standardized approach to provide information at the regional level, for reporting to the RASGs. (Ethiopia's safety information is shared with RASG-AFI through the designated focal point) 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 :

Ethiopian Civil Aviation Authority(ECAA)
Addis Ababa, Ethiopia
Telephone: 251116650228/0116650200
Fax: 251116650281
Email: caa.airnav@ethionet.et
Websitehttp://172.16.15.13/ecaanew/
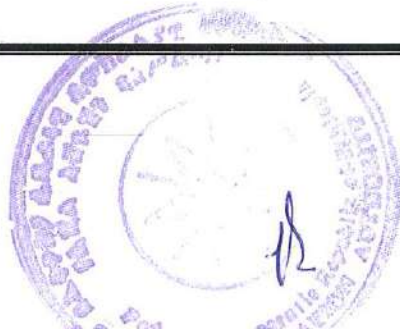
NATIONAL AVIATION SAFETY PLAN (NASP)

APPENDIX A

DETAILED SEIs: NATIONAL OPERATIONAL SAFETY RISKS

Issue No. 1: 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	Responsible Entity	Time line	Stakeholders	Metrics	Priority	Monitoring Activity
GASP OPS SEI on CFIT (state)_ 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.	OPS	2023	Air Operators	Number of CFIT Accident/Incident per 10,000 flight movement s.	High	Surveillance e of operator activities
	b. Promote the wider use of TAWS beyond the requirements of Annex 6.	OPS	2023	Air Operators	>>	>>	>>
	c. Issue a Safety Advisory to increase adherence to TAWS warning procedures.	OPS	2024	Air Operators	>>	>>	>>
	d. Promote the use of GPS-derived position data to feed TAWS	OPS	2023	Air Operators	>>	>>	>>
	e. Promote greater awareness of approach risks.	OPS	2023	Air Operators	>>	>>	>>
	f. Consider the implementation of Continuous Descent Final Approach (CDFA).	OPS/ANR	2023	Air Operators/ANS providers	>>	>>	>>
	g. Consider the minimum safe altitude warning (MSAW) systems.	OPS/ANR	2023	Air Operators	>>	>>	>>

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Safety Enhancement Initiative	Action	Responsible Entity	Time line	Stakeholders	Metrics	Priority	Monitoring Activity
	h. Ensure the timeliness of updates and accuracy of Electronic Terrain and Obstacle Data (ETOD) .	OPS .	continuously implementing	-Air Operators ANS providers	Number of CFIT Accident/ incident per 10,000 flight movement s	High	Surveillance e of operator, activities
	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 investigations (apply safety management methodologies).	OPS	2024	Air Operators	>>	>>	>>
	3. Identify additional contributing factors:	OPS	2024	Air operators	>>	>>	>>
	a. Flight in adverse environmental conditions .	OPS	2023	Air operators	>>	>>	>>
	b. Approach design and documentation (e.g. approaches with vertical guidance (APV) or localizer performance with vertical guidance (LPV) approaches).	ANR/ OPS	2023	-Air Operators ANS provider	>>	>>	>>
	c. Phraseology used (standard vs. non-standard) .	ANR/PEL/OPS	2023	Air operator	>>	>>	>>
	d. Pilot fatigue and disorientation.	OPS	2023	Air operators	>>	>>	>>
	4. Conduct continuous evaluations of the performance of the SEIs.	OPS/ANR/PEL	Continuously implementing	Air operators	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

HRC 2: Loss of Control – In flight (LOC-I)

Goal 1: Achieve a continuous reduction of operational safety risks

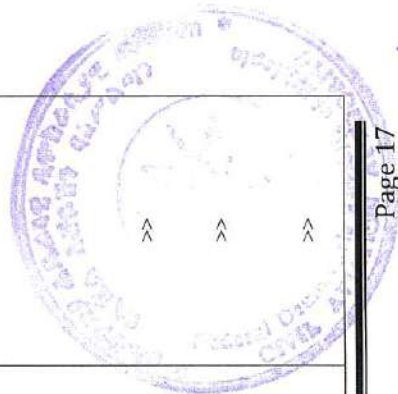**Target 1.1:** Maintain a decreasing trend of the national accident rate

Safety Enhancement Activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP OPS SEI on LOC-I (State) — Mitigate contributing factors to the risk of 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.	OPS	Continuously implementing	-Air Operators -Flight simulator product and service providers	Number of LOC-I Accident/Incident per 10,000 flying hours.	High	Surveillance of operator and ATO training activities
	b. Require more time devoted to training for the pilot monitoring role.	OPS	Continuously implementing	-Air Operators			
	2. Validate the effectiveness of the SEIs in the industry through MORs and VORs systems and accident /incident investigations (apply safety management methodologies.	OPS	2024	>>	LOC-I occurrence rates in MOR, VOR and AIG reports	>>	MOR, VOR and AIG reports
	3. Identify additional contributing factors:				Stick-shaker activation events in FDA data	High	Surveillance of operator and ATO training activities
	a. Distraction	OPS	Continuously implementing			>>	
	b. Adverse weather	OPS/ANR	Continuously implementing	>>		>>	
	c. Complacency	OPS	Continuously implementing	-Air operator/aviation metrology Air operator		>>	

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety Enhancement Activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	d. Inadequate standard operating procedures (SOPs) for effective flight management.	OPS/ANR	Continuously implementing	-Flight simulator product and service provider	Loc-I occurrence rate	High	Surveillance of operator and ATOtraining activities
	e. Insufficient height above terrain for recovery.	OPS/ANR	Continuously implementing			˃˃	
	f. Lack of awareness of or competence in procedures for recovery from unusual aircraft attitudes.	OPS	Continuously implementing	Aerodrome operators ANS providers	Number of LOC-I occurrence per 10,000 FHs	˃˃	˃˃
	g. Inappropriate flight control inputs in response to a sudden awareness of an abnormal bank angle.	OPS	Continuously implementing			˃˃	˃˃
	4. Develop and implement further SEIs to mitigate the risk of identified contributing factors if any for LOC-1 for example	OPS	Continuously implementing	˃˃	˃˃	˃˃	˃˃
	a. Increase the effectiveness of regulatory oversight	OPS	Continuously implementing	˃˃	˃˃	˃˃	˃˃
	b. improve regulations	OPS	Continuously implementing	˃˃	˃˃	˃˃	˃˃
	5. Conduct continuous evaluations of the Performance of the SEIs.	OPS	Continuously implementing	˃˃	˃˃	˃˃	˃˃

NATIONAL AVIATION SAFETY PLAN (NASP)

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 activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP OPS SEI on MAC(State) — Mitigate contributing factors to risk of 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.	OPS/ANR	2024	-ANS providers -Air Operators	Number of MAC Accident/ incident per10,000 flying hours	High	Surveillance e of operator , ANSP activities
	b. Ensure adherence to ACAS warning procedures	ANR	Continuously implementing	>>	>>	>>	Safety reporting (MOR/VO R >>
	c. Promote the improvement of air traffic control (ATC) systems, procedures and tools to enhance conflict management.	ANR	Continuously implementing	>>	>>	>>	
	d. Promote the improvement of communications systems and procedures, such as controller-pilot data link.	ANR	2024	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	2. Validate the effectiveness of the SEIs through the analysis of MORs and VORs and accident/incident investigations (apply safety management methodologies)	Regulators	2024	-Air Operators -ANS provider	Number of MAC Accident/ incident per 10,000 flying hours	High	Surveillance e of ANSP, air operator andATO training activities
	3. Identify additional contributing factors: a. Traffic conditions – traffic density, complexity, mixture of aircraft types and capabilities, etc.	ANR	2024	>>	Number of MAC Accident/ incident per 10,000 flying hours	>>	Surveillance e of ANSP, air operator and ATO training activities
	b. ATC performance related to workload, competence, teamwork, procedures, commitment etc., as well as the influence of air navigation services providers' (ANSP) safety management.	ANR	2024	>>	>>	>>	
	c. Flight crew training and corporate culture with workload, competence, teamwork, procedures, commitment etc., and the influence of aircraft operator's safety management.	OPS	2024	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	d. 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.	ANR/OPS	2024	-Air operators -ANS providers	Number of MAC Accident/incident per 10,000 flying hours	High	Surveillance e of ANSP, air operatorand ATO training activities
	e. Aircraft equipment - autopilots, transponders and ACAS, but also aircraft performance (e.g. rate-of-climb) and their physical size.	ANR/OPS	2024	>	>	>	>
	f. Navigation infrastructure - both coverage and quality.	ANR	2024	>	>	>	>
	g. Surveillance - both coverage and quality.	ANR	2024	>	>	>	>
	h. Flight plan processing - efficiency and reliability of flight plan submission, approval and distribution.	ANR	continuously implementing	>	>	>	>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	i. Airspace - complexity of airspace design, route layout, extent of controlled or uncontrolled airspace, proximity of military operational or training areas, etc.	ANR	Continuously Implementing	Air operators -ANS providers	Number of MAC Accident/incident per 10,000 flying hours	High	Surveillance e of ANSP, air operatorand ATO training activities
	j. Flight in adverse environmental conditions that may influence conflict management and collision avoidance.	ANS/OPS	Continuously Implementing	>>	>>	>>	>>
	4) Conduct continuous evaluations of the performance of the SEI						

NATIONAL AVIATION SAFETY PLAN (NASP)

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 activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP OPS SEI on RE (State) — Mitigate contributing factors to risk of RE accidents and incidents	1. Implement the following RE safety actions:						
	a. Ensure the establishment and implementation of a State runway safety Program me (RSP) and runway safety teams (RST) in all certified aerodromes.	OPS/ANR/AGA	2023	-Air Operators - ANS providers - Aerodrome Service providers	Number of RE Accident/ incident per10,000 flying hours	High	Surveillance of Aerodromes, ANSP, air operator and ATO training activities Safety Reporting (MOR/VO R)
	b. Promote the establishment of policy and training on rejected landings, go-around, crosswind and tailwind landings (up to the maximum manufacturer-demonstrated winds).	OPS/ANR	Continuously Implementing	>>	>>	>>	>>
	c. Promote equipage of runway overrun awareness and alerting systems on aircraft.	OPS/AGA	2023	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	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).	AGA/ANR	Continuous Implementing	-Aerodrome Service providers -ANS providers -Air operators -Aviation metrology	Number of RE Accident/ incident per10,000 flying hours	High	Surveillance of Aerodromes, ANSP, air operator and ATO training activities Safety Reporting (MOR/VO R)
	e. Certify aerodrome in accordance with ICAO Annex 14, Volume I as well as Doc 9981,PANS-Aerodrome.	AGA	Implemented	>>	>>	>>	>>
	f. Promote the installation of arresting systems if runway end safety area (RESA) requirements cannot be met.	AGA	2024	-Aerodrome service providers -ANS providers -Air operators	>>	>>	>>
	g. Ensure that procedures to systematically reduce the rate of unsterilized approaches to runways are developed and used.	ANR/AGA	2024	>>	>>	>>	>>
	h. Runway Safety Maturity Checklist.	AGA	2023	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

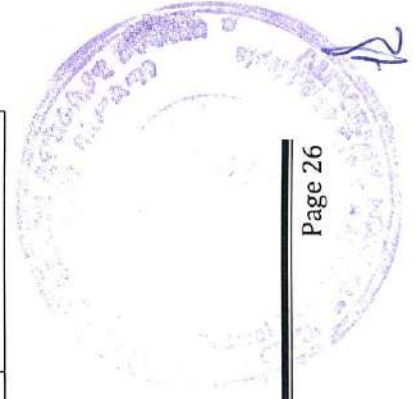| Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	i. Guidance material and training program for runway pavement, maintenance and operations from aerodrome operator's perspective.	AGA/OPS	2023	-Aerodrome service providers -ANS providers -Air operators	Number of RE Accident/ incident per 10,000 flying hours	High	Surveillance of Aerodromes, ANSP, air operator and ATO training activities Safety Reporting (MOR/VO R)
	2. Validate the effectiveness of the SEI through the analysis of MORs, VORs and accident/incident investigations (apply safety management methodologies).	AGA	2024	>>	>>	>>	>>
	3 Identify additional contributing factors:						
	a. Ineffective SOPs	AGA/OPS/ANR	2023	>>	>>	>>	>>
	b. Failure to adhere to the appropriate SOPs.	AGA/OPS/ANR	2023	>>	>>	>>	>>
	c. Long/floated/bounced/firm/off-centre/crabbed landing.	AGA/OPS/ANR	2023	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	d. Inadequate approach procedures design	AGA/OPS/ANR	2023	-Aerodrome service providers -ANS providers -Air operators	Number of RE Accident/ incident per10,000 flying hours	High	Surveillance of Aerodromes, ANSP, air operator and ATO training activities
	e. Inadequate regulatory oversight.	AGA/OPS/ANR	2023			>>	Safety Reporting (MOR/VO R) >>
	4. Conduct continuous evaluations of the performance of the SEI	AGA/OPS/ANR	2023	>>	>>	>>	

NATIONAL AVIATION SAFETY PLAN (NASP)

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

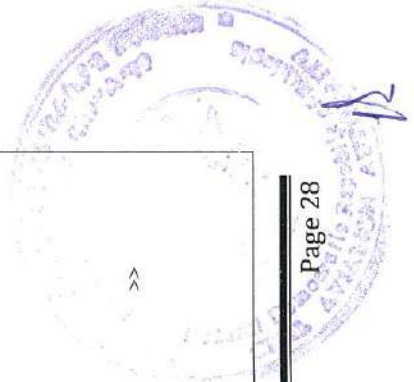| Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP OPS SEI on RI (State) — Mitigate contributing factors to the risk of RI accidents and incidents	1. Implement the following RI safety actions:	AGA/ANS/OPS		-Aerodrome service providers -ANS providers -Air operators	Number of RI Accident/ incident per 10,000 flying hours	High	Surveillance of Aerodromes, ANSP, air operator and ATO training activities Safety reporting (MOR/VOR)
	a. Ensure the establishment and implementation of a State runway safety program me (RSP) and runway safety teams (RST).	AGA/ANR /OPS	2023				
	b. Promote the establishment of policy, procedures and training that supports situational awareness for controllers, pilots and airside vehicle drivers	AGA/ANR /OPS	2023	>>	>>	>>	>>
	c. Ensure effective use of suitable technologies to assist the improvement of situational awareness, such as improved resolution airport moving maps (AMM), electronic flight bags (EFBs), enhanced vision systems (EVS) and head-up displays (HUD), advanced-surface movement guidance and control systems (A-SMGCS), stop bars, and runway incursion warning systems (ARIWS).	AGA/ANR OPS	2023	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

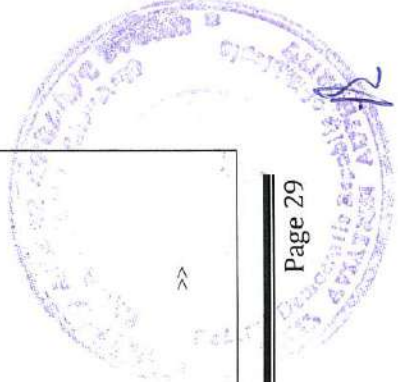| Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	d. Certify aerodrome in accordance with ICAO Annex 14, Volume I as well as Doc 9981, PANS-Aerodrome.	AGA	2025	-Air Operators -ANS providers -Aerodrome service providers	Number of RI Accident/ incident per 10,000 flying hours	High	Surveillance of Aerodromes, ANSP, air operator and ATO training activities Safety reporting (MOR/VOR)
	e. Ensure the use of standard phraseologies in accordance with applicable State regulations and ICAO provisions (e.g. Doc 9432, Manual of Radiotelephony)	AGA/ANS/OPS	Implemented	>>	>>		
	f. Ensure the identification and publication in the aeronautical information publication (AIP) of hot spots at aerodromes.	AGA/OPS/ANR	2023	>>	>>	>>	>>
	g. Ensure that suitable strategies to remove hazards or mitigate risks associated with identified hot spots are developed and executed.	AGA/OPS/ANR	2023	>>	>>	>>	>>
	h. Runway Safety Maturity Checklist.	AGA/OPS/ANR	2023	>>	>>	>>	>>
	2. Validate the effectiveness of the SEIs through the analysis of MORs, VORs and accident/incident investigations (apply safety management methodologies).	AGA/OPS/ANR	2023	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

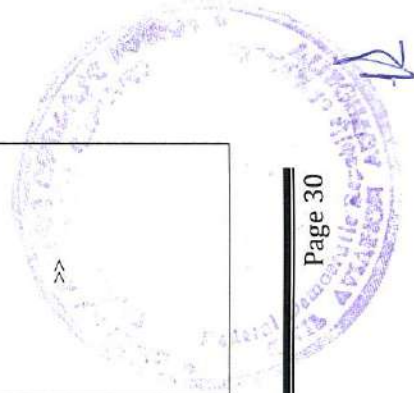| Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	3. Identify additional contributing factors:	AGA/ANR/OPS	2023	-Aerodrome service providers -ANS providers -Air operator	Number of RI Accident/ incident per 10,000 flying hours	High	Surveillance of Aerodromes, ANSP, air operator and ATO training activities; Safety reporting (MOR/VOR)
	a. Operations in low visibility conditions.	AGA/ANR/OPS	>>	>>	>>	>>	>>
	b. Complex or inadequate aerodrome design.	AGA/ANR/OPS	>>	>>	>>	>>	>>
	c. Complexity of traffic (multiple simultaneous line-ups).	AGA/ANR/OPS	>>	>>	>>	>>	>>
	d. Conditional clearances.	AGA/ANR/OPS	>>				
	e. Simultaneous use of intersecting runways.	Not applicable					
	f. Late issue of or late changes to departure clearances.	OPS/ANR	Implemented	>>	>>	>>	>>
	g. Phraseology use (e.g. non-standard vs. standard, call-sign confusion).	AGA/ANR/OPS	2023				
	h. Concurrent use of more than one language for ATC communications	ANR/PEL	Implemented	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	i. English language competence despite the introduction by ICAO of a system of validating competence in aviation English.	OPS/ANR/PEL	Implemented	-Aerodrome service provider -ANS providers -Air operator	Number of RI Accident/ incident per 10,000 flying hours	High	Surveillance of Aerodromes, ANSP, air operator and ATO training activities Safety reporting (MOR/VOR)
	j. Inadequate maneuvering area driver training and assessment programme.	AGA	continuously implementing	>>	>>	>>	>>
	4. Conduct continuous evaluations of the performance of the SEIs.	ANR/AGA/OPS	continuously implementing	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

HRC 7: Wildlife Strike (WS) on and in the vicinity of Aerodrome

Goal 1: Achieve a continuous reduction of operational safety risks

Target 1.1: Maintain a decreasing trend of the national accident rate

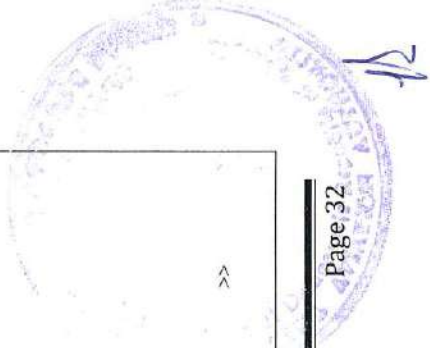| Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
Mitigate contributing factors to the risk of WS accidents and incidents	1. Implement the following WS safety actions: a. Observe bird activities and bird strikes at the airports and promote collecting, recording and analysis of data through various means.	AGA		- Air Operators -ANS providers -Aerodrome service providers	Number of WS Accident/ incident per 10,000 flying Hours	High	Surveillance of Aerodromes, ANSP, air operator activities Safety reporting (MOR/VOR)
	b. Ensure the better management of vegetation and land use at the airports.	AGA	2023	>>	>>	>>	>>
	c. Ensure the implementation of effective bird distracting mechanisms at the airports.	AGA	2023	>>	>>	>>	>>
	d. Ensure the implementation of Off-airport bird management activities in collaboration with local communities and other government agencies through National Airport Bird Control and Reduction Committee.	AGA	2023	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Time line	Stakeholders	Metrics	Priority	Monitoring Activity
	e. Encourage to use environment friendly chemical bird repellent technique at airports apart from the existing audio and visual repellent techniques.	AGA	2024	-Air Operators -ANS providers -Aerodrome service providers	Number of WS Accident/ incident per 10,000 flying Hours	High	Surveillance of Aerodromes, ANSP, air operator activities Safety reporting (MOR/VOR)
	f. Introduce Runway sweep-in vehicles to control the activity of birds and other wildlife due to presence of attractants on the surface of runway.	AGA	Implemented	>>	>>	>>	>>
	2. Validate the effectiveness of the SEI through the analysis of MORs, VORs methodologies)	AGA	Continuously Implementing	>>	>>	>>	>>
	3. Identify additional contributing factors:	AGA	>>	>>	>>	>>	>>
	a. unreliable security fence	AGA	>>	>>	>>	>>	>>
	b. lack of awareness on animal slaughtering.						
	4. Conduct continuous evaluations of the performance of the SEIs and accident/incident investigations (apply safety management).	AGA	>>	>>	>>	>>	>>

APPENDIX - B

DETAILED SEIs: STATE SAFETY OVERSIGHT CAPABILITIES

Issue no. 2: Establishment of a safety oversight framework

Focus on below 85% of EI scores for categories namely

- CE-8: Resolution of safety Issues,
- CE-7: Surveillance
- Organization (ORG)
- Legal (LEG)
- Operation (OPS)

Goal 2: Strengthen State safety oversight capabilities

Target 2.1 : Target 2.2: Target 2.3: Ethiopia to achieve at least 85% EI in ORG , 85% EI in LEG, 87% EI in OPS of USOAP CMA by 2025 respectively.

Target 2.4: Ethiopia to progressively enhance safety oversight capability to achieve at least 89% EI by 2023, 90% EI by 2024 and 91% EI by 2025 in USOAP CMA.

Target 2.5: Conduct workshops and seminars relating to all audit area for all regulatory department inspectors at least yearly [from 2024 to 2025].

Target 2.6: Endeavor to have no Significant Safety Concerns (SSCs) under the USOAP Continuous Monitoring Approach (CMA), and to resolve any SSCs promptly

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP ORG SEI 1 (State) — Consistent implementation of ICAO SARPs at the national level and improve the EI percentage	1A- Work at the national level to address significant safety concerns as a priority.	All Regulators	Continuous implementing	-Air Operators -ANS providers -Aerodrome service providers -AMO	EI percentage, State Safety index, Rate of improvement in compliance	High	Quality assurance of safety oversight functions; Surveillance of Aerodromes, ANSP, air operator activities
	1B- Address all priority protocol questions (PQs) of the USOAP CMA.	All Regulators	Continuously implementing	>>	Percentage of priority PQs addressed	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	1C- Establish primary aviation law and regulations, to empower the competent authority to conduct regulatory oversight, this includes separation of oversight functions and service provision functions (CE-1 and CE-2).	All Regulators	Implemented	-Air Operators -ANS providers -Aerodrome service providers -AMO	EI percentage Percentage of priority PQs addressed	High	Surveillance of Aerodromes, ANSP, air operator activities
	1D- Increase the level of compliance with ICAO SARPs and the EI of CEs at the national level (CE-1 to CE-5).	All Regulators	2023	>>	>>	>>	>>
	1E- Establish a process for the identification of differences with ICAO SARPs (CE-2).	All Regulators	implemented	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP ORG SEI 2 (State) — Development of a comprehensive regulatory oversight framework	2A- Establish and maintain an independent regulatory oversight authority, which includes separation of oversight functions from service provision functions where these exist within the authority (CE-3).	All Regulators	Implemented	-AMO -Air Operators -ANS providers -Aerodrome service providers	Independent regulatory oversight authority	High	Surveillance of Aerodromes, ANSP, air operator activities
	2B- Develop an effective system to promulgate technical guidance and tools, and provide safety-critical information needed for technical personnel to effectively perform their safety oversight functions (CE-5).	All Regulators.	Continuously implementing	>>	Safety oversight functions	>>	>>
	2C- Establish an effective system to attract, recruit, train and retain qualified and sufficient technical personnel to support regulatory oversight (see SEI-5) (CE-3 and CE-4).	ORG/Aviation Academy	2023	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

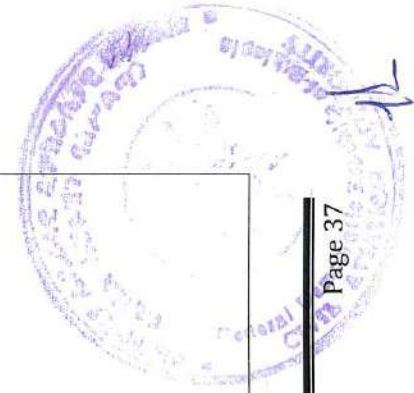| Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP ORG SEI-3 (State) — Establishment of an independent accident and incident investigation authority, consistent with Annex 13	3A- Establish an independent accident and incident investigation authority, as per Annex 13 requirements (CE-1 and CE-3)	AAIB	Implemented	-Air Operators -ANS providers -Aerodrome service providers -AMO	Independent accident and incident investigation authority	High	AIG reports Quality assurance regarding the AIG functions
	3B- Develop an effective system to promulgate technical guidance and tools, and provide safety-critical information needed for technical personnel to effectively conduct accident and incident investigations (CE-5).	AAIB	Implemented	>>	The required technical guidance and tools	>>	>>
	3C- Establish an effective system to attract, recruit, train and retain qualified and sufficient technical personnel to support accident and incident investigations (see SEI-5) (CE-3 and CE-4) .	AAIB	2023-2025	>>	Qualified and sufficient technical personnel	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP ORG SEI-4 (State) — Strategic allocation of resources to enable effective safety oversight	4-A Confirm executive or legislative mandate to receive financial resources from government or other external sources and expend them (CE-1).	ECAA	Implemented	-Air Operators -ANS providers -Aerodrome service providers -AMO	ECAA acts and regulations	High	Provision of &implementationECAA acts and regulations
	4B- Establish a process for the resource planning and allocation in alignment with a competent authority's organizational structure, which is required to conduct effective safety oversight (CE-2 and CE-3) SEI-1 and SEI-5 could be used to identify resource requirements (CE-1 to CE-5).	ECAA/DGCA	Continuously implementing	>>	Established organizational structure	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

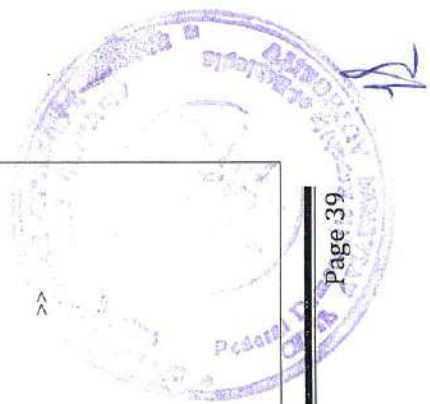| Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	4C- Obtain a sustainable and stable source of financing through commitments from the national and agency leadership and other stakeholders (CE-1 to CE-3). For small scope short-term improvements:	ECAA/DGCA	Continuously implementing	-Air Operators -ANS providers -Aerodrome service providers -AMO	Obtained a sustainable and stable source of financing	Medium	Provision of &implementationECAA acts and regulations
	a. Utilize the ICAO Safety Fund (SAFE),Technical Co-operation Bureau, or other means to acquire technical and financial assistance in coordination with RASG /RSOO /ICAO Regional Office.	ECAA/DGCA	2024	>>	>>	>>	>>
	b. Seek assistance from more experienced states and other stakeholders in coordination with RASG/RSOO/ICAO Regional Office.	ECAA/DGCA	2024	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

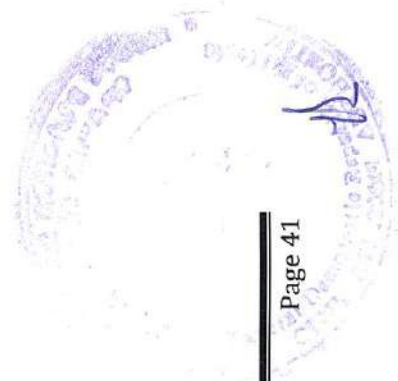| Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	c. Seek assistance from sources of financing (World Bank, African Development Bank etc.) in coordination with RASG/RSOO /ICAO Regional Office	ECAA/DGCA	2024	-Air Operators -ANS providers -Aerodrome service providers -AMO	Finance obtained	Medium	Evaluation of planning
	4D- Develop a process for assessing changing resource requirements and sustain necessary coordination with resource stakeholders for safety oversight improvements, as outlined in Component 1 of this roadmap (CE-1 to CE-3).	ECAA/DGCA	2024	>>	>>	>>	>>
		ORG/Regulators	2024	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP ORG SEI-5 (State) — Qualified Technical personnel to Support effective safety oversight	5A- Establish an effective system to identify and track qualifications and training of existing technical personnel (CE-4).	ECAA/ Aviation Academy /ORG	2024	-Air Operators -ANS providers -Aerodrome service providers -AMO	Established effective system	Medium	Quality assurance of oversight functions
	5B- Identify the gaps in qualified technical personnel and training requirements necessary to implement the oversight mandate (CE-4).	ECAA/ Aviation Academy /ORG	2024	>>	Qualified technical manpower	>>	>>
	5C- Establish a compensation scheme for the attraction and retention of qualified technical personnel (CE-4).	ECAA /ORG	2024	>>	Qualified technical manpower	>>	>>

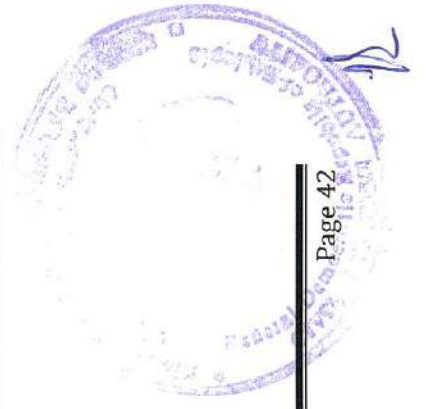| Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	5D- Make use of RSOOs, RAIOs, or equivalent means, to secure qualified technical personnel to perform those functions which cannot be performed by the State acting on its own (CE-4).	ECAA/DGCA	2024	-Air Operators -ANS providers -Aerodrome service providers -AMO	Qualified technical manpower	Medium	Quality assurance of oversight functions
	5E- Establish human resource plans to support hiring and retention of the appropriate number of qualified technical personnel required (CE-4).	ECAA/ORG Aviation Academy	Continuously implementing	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Time line	Stakeholders	Metrics	Priority	Monitoring Activity
	5F- Implement training policies and programmes for technical personnel and verify that the type and frequency of qualified technical manpower training successfully completed (i.e. initial, recurrent, specialized and on-the-job training) are sufficient to acquire/maintain the required qualifications and level of competence corresponding to the assigned duties and responsibilities of technical personnel (CE-4).	ECAA/ORG/ Aviation Academy/ORG	Continuously implementing	-Air Operators -ANS providers -Aerodrome service providers -AMO	Qualified technical manpower	Medium	Quality assurance of oversight functions
	5G- Develop a process for assessing changing needs for qualified technical personnel requirements and develop procedures to update hiring, retention and training of personnel needs, in coordination with SEI-4B (CE-4).	Aviation Academy/ORG	2024	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Time line	Stakeholders	Metrics	Priority	Monitoring Activity
SEI-7 (State) Provision of safety information to ICAO by completing .submitting and updating all relevant documents and records	7A- Update USOAP corrective action plan items .	Regulators/SSP	Continuously implementing	-Air Operators -ANS providers -Aerodrome service providers -AMO	**Percentage of required** corrective action plan(CAPs) submitted by state using (OLF)	High	USOAP CMA OLF
	7B- Complete and submit the self-assessment check list based up on USOAPCMA priority PQs.	Regulators/SSP	Continuously implementing	>>	**Percentage of** .Complete and submit the state aviation activity questionnaire.		>>
	7C. Complete and submit the state aviation activity questionnaire.	Regulators/SSP	Continuously implementing	>>	**Percentage of** Complete and submit the compliance check list on electronic filling of differences system		>>
	7D- Complete and submit the compliance check list on electronic filling of differences system	Regulators/SSP	Continuously implementing	>>	**Percentage of** .Update documents and records as required in timely manner	>>	>>
	7E- Update documents and records as required in timely manner.	All Regulators ORG/LEG	>>	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Time line	Stakeholders	Metrics	Priority	Monitoring Activity
SEI-8 (state) consistent implementation of ICAO SARPs at the national level	8A. Work at the national level to address significant safety concerns as priority	Regulators/SSP	Continuously implementing	-Air Operators -ANS providers -Aerodrome service providers -AMO	**Percentage of** compliance with ICAO SARPs	High	USOAP CMA OLF
	8B. Increase the level of compliance with ICAO SARPs and the EI of CEs at the national level (ALL CEs emphasis on CE-6 to CE-8) .	Regulators/SSP	Continuously implementing	>>	>>	>>	>>
SEI-9 (state) continued implementation and compliance with ICAOSARPs at the national level	9A. Implement licensing certification authorization and approval process (CE-6).	Regulators/SSP	Continuously implementing	-Air Operators -ANS providers -Aerodrome service providers -AMO	Implemented enforcement	High	USOAP CMA OLF
	9B. Implement regulatory oversight and enforcement process CE-7and CE-8 .	Regulators/SSP	Continuously implementing	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Time line	Stakeholders	Metrics	Priority	Monitoring Activity
	9C. Establish a system to resolve safety concerns identified via accident and incident investigation ,surveillance activities safety reports and other means (CE-8).	All Regulators	2024	-Aerodrome service providers -Air Operators -AMO -ANS providers	Implemented enforcement	High	USOAP CMA OLF
SEI-10 (state) Strategic allocation of recourses to enable effective over sight	10A. Use SEI-1and SEI-5to identify resources requirements CE-6 toCE-8).	ORG/Regulators/SSP	Continuously implementing	>>	>>	>>	>>
	10B. leverage regional groups such as the RASG to identify additional resources.	ECAA/SSP	2024	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Issue No. 3: Slow pace of SSP implementation, as well as understanding of newer safety management and performance-based concepts

Goal 3: Implement effective SSP

Target 3. 1: Ethiopia to implement the foundation of its SSP by 2023.

Target 3. 2: Ethiopia to implement an effective SSP (Level 4), as appropriate to its aviation system complexity, by 2025.

Target 3. 3: Ethiopia to work towards an effective SSP as follows:

   a.   By 2023- present

   b.   By 2024 –Present and effective

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP ORG SEI-13 (State) — Start of SSP implementation at the national level	**13A-** Secure State-level commitment to improving safety.	DGCA	Continuously implementing	-Air Operators ANS provider Aerodrome service providers -AMO	Level of SSP implementation	High	ICAO iSTARS Quality assurance Oversight functions and SSP implementation
	13B- Conduct initial SSP gap analysis (checklist) then the detailed SSP self -assessment.	SSP Team	2023				
	13C- Establish an SSP implementation team.		Implemented	>>	>>	>>	>>
	13D- Develop an implementation plan for the SSP.	DGCA/SSP	on going	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

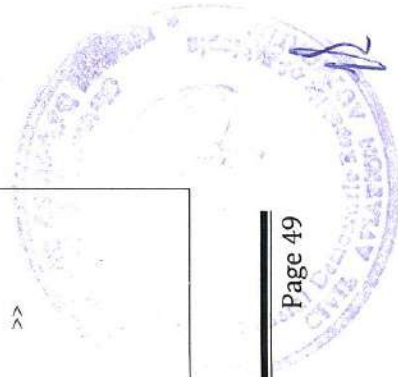| Safety enhancement activity	Action	Responsible Entity	Time line	Stakeholders	Metrics	Priority	Monitoring Activity
	13E- Issue SMS regulations for service providers and verify SMS implementation.		Implemented	-Air Operators -ANS provider -Aerodrome service providers -AMO	Level of SMS implementation in service providers	High	Provision and implementation of ECAA act & regulations
	13F-. Identify and share safety management best Practices .	SSP/ Regulators	2024				
GASP ORG SE1-14 (State) — Strategic allocation of resources to start SSP implementation	14A- Establish a process for planning and allocation of resources to enable SSP implementation and identify areas where resources are needed.	DGCA/SSP	2024	-Air Operators -ANS provider -Aerodrome service providers -AMO	ECAA acts & regulations	High	Provision and implementation of ECAA act & regulations
	14B- Obtain resources from national and appropriate authorities' leadership and stakeholders within the State to support SSP implementation.	DGCA/SSP	Continuously implementing	>>	>>	>>	>>
	14C- Work with the ICAO Regional Office to make use of available means (e.g. Technical Co-operation Bureau) to acquire assistance needed for SSP implementation.	DGCA/SSP	2024	>>	>>	Medium	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

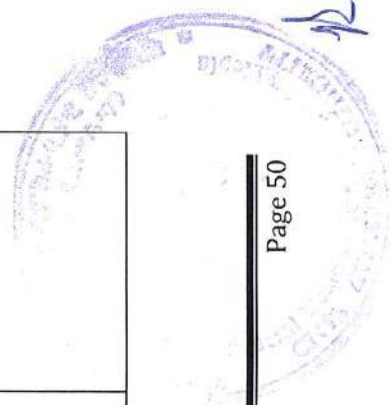| Safety enhancement activity	Action	Responsible Entity	Time line	Stakeholders	Metrics	Priority	Monitoring Activity
	14D Work with RSOO, other States and other organizations, as appropriate to train qualified technical personnel to fulfill their duties and responsibilities regarding SSP implementation.	DGCA/SSP/ORG	2024	-Air Operators -ANS provider -Aerodrome service providers -AMO	Qualified technical manpower	Medium	
GASP ORG SEI-15 (State)— Strategic collaboration with key aviation stakeholders to start SSP implementation	15A-Identify areas where collaboration/support is needed as part of the SSP implementation plan (see SEI-14).	DGCA/SSP	2024	-Air Operators - AMO -ANS provider -Aerodrome service providers	Number of collaboration identified	medium	Monitoring & evaluating collaborative activities through steering committees & regional forums
	15B-Identify relevant collaborators from key aviation stakeholders, including other States that are implementing or have implemented an SSP.	DGCA/SSP	2024	>>	>>	>>	ICAO iSTARS
	15C- Develop an action plan to address the elements identified as missing or deficient during the SSP gap analysis (see SEI-13B)	All regulators & AIB	2023	>>	Number of activities collaborated with identified collaborators	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	15D- Establish a process via RASG and/or RSOO for a mentoring system, including providing assistance to States/industry, as well as sharing of best practices to support SSP implementation.	DGCA/SSP	2024	ICAO, RASG-AFI & ESAF	Shared of best practices to support SSP implementation	medium	Monitoring & evaluating collaborative activities through steering committees& regional forums
	15E- Develop a process to provide training on SSP to relevant staff, in collaboration with RSOO and/or other States (e.g. initial, recurrent and advanced).	DGCA/SSP/ Aviation Academy	2024	>>	Number of activities collaborated with identified collaborators	>>	>>
	15F- Establish and implement a process for sharing technical guidance, tools and safety-critical information related to SSP (e.g. advisory circulars, staff instructions, safety performance indicators), in collaboration with other States, RASG, RSOO, ICAO and/or other stakeholders.	SSP,All Regulators & AIB	2024	>>	Technical guidance, toolsand safety-critical information related to SSP	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP ORG SEI-16 (State) — Strategic collaboration with key aviation stakeholders to complete SSP implementation	16A- Work with collaborators (identified in SEI-15) to execute the action plan for implementation.	SSP	2025	ICAO,RASG-AFI & ESAF	Number of activities collaborated with identified collaborators	Medium	Monitoring & evaluating collaborative activities through steering committees & regional forums
	16B- Work with collaborators to ensure all elements of the SSP are present, suitable, operational and effective.	SSP/ Regulators	2024	>>			
	16C- Establish a system for the continuous improvement of the SSP, in collaboration with all relevant stakeholders.	SSP/ Regulators	2025	>>	Level of SSP implementation	>>	ICAO iSTARS
	16D- Serve as a champion State to promote best practices among other States.	SSP /Regulators	2025	>>	Number of best practices shared with other state	>>	>>
	16 E- Improve the sharing of best practices in safety management, safety data and analyses among regional platforms including RASG-AFI.	SSP/Regulators	2025	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

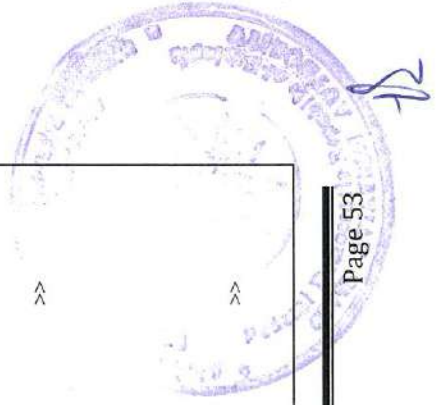| Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP ORG SEI-17 (State) — Establishment of safety risk management at the national level (step 1)	17A-Establish a legal framework related to the protection of safety data, safety information and other related sources.	LEG/SSP	2025	-Air Operators -AMO -ATO ANS providers Aerodrome service providers	Number of mandatory and voluntary reports	High	Quality assurance of SRMs conducted
	17B-Establish a State mandatory occurrence reporting system.	SSP	2025	>>	Legal frame work regarding to hazard identification and SRM	>>	Effectiveness of reporting system
	17C- Develop a safety database for monitoring system safety issues and hazards, in line with the principles of Doc 9859 — Safety Management Manual.	SSP	2025		Number of SRM conducted	>>	>>
	17D- Establish and maintain a process to identify hazards from collected safety data.	SSP/ Regulators	2025	>>	>>	>>	>>
	17E- Establish and utilize a process to ensure the assessment of safety risks associated with identified hazards.	SSP/ Regulators	2025	>>	>>	>>	>>
	17F- Establish a State confidential voluntary safety reporting system providing data to the safety database (see SEI-17C).	SSP/Regulators	2024	>>	>>	>>	>>

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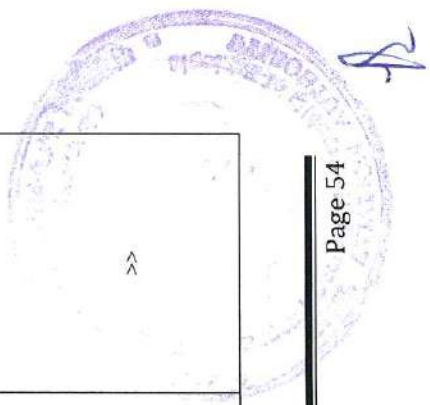| Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP ORG SEI-18 (State) — Establishment of safety risk management at the national level (step 2)	18A- Develop safety performance indicators using the established safety risk management process.	SSP / Regulators	2023	-Air Operators -ANS providers -Aerodrome service providers - AMO	established safety risk management process	High	Quality assurance of SRMs conducted
	18-B Develop safety performance measurement methodologies, aligned with the regional safety metrics, using the established safety risk management process (see SEI-17E).	SSP / Regulators	2023	>>	>>	>>	Effectiveness of reporting system
	18C- Establish the acceptable level of safety performance to be achieved through the SSP.	SSP/Regulators	2023	>>	- Established acceptablelevel of safety performance	>>	Quality of SPIs and SPTs defined Contribution of SPI T to RASG-AFI
	18D- Ensure the establishment of mandatory safety reporting systems by service providers.	SSP/Regulators	2023	>>	-Established mandatory safety reporting systems	>>	>>
	18E- Encourage establishment of voluntary safety reporting systems as part of service providers' SMS.	SSP/Regulators	2023	>>	-Established mandatory safety reporting systems	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

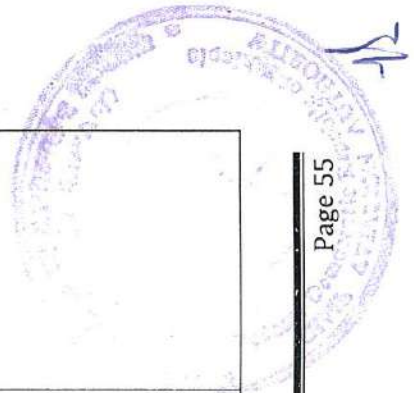| Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	18F- Promote safety awareness and the two-way communication, sharing and exchange of safety-relevant information within the aviation organizations and encourage sharing of safety information with industry within the State.	SSP/ Regulators	2023	-AMO Air Operators -ANS providers -Aerodrome service providers	Shared safety information within industry	High	Quality of SPIs and SPTs defined Contribution of SPI Tto RASG-AFI
	18G- Contribute information on safety risks and SSP safety performance indicators to the RASG.	SSP/ Regulators	2024	>>	Contributed safety risks and SSPsafety performance indicators to the RASG	>>	>>
GASP ORG SEI-19 (State) — Acquisition of resources to increase the proactive use of risk modeling capabilities	19A- Identify resources needed to support safety intelligence collection and processing, advanced data analysis, risk modeling and information- sharing capabilities.	SSP/ Regulators	2024	-AMO -Air Operators -ANS providers -Aerodrome service providers	Number of qualified technical personnel for SMS & SSP Implementation	High	Quality assurance of SSP implementation
	19B- Attract, recruit, train, and retain qualified technical personnel to specialize in risk modeling.	SSP/ORG	2024	>>	Resource Allocation to SSP implementation	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	19C- Ensure that the Civil Aviation Safety Inspector workforce is trained to perform safety oversight of service providers that have implemented SMS.	SSP/Regulators	2023	-AMO -Aerodrome service providers -ATO -Air Operators -ANS providers	Qualified technical manpower	High	Quality assurance of SSP implementation
GASP ORG SEI-20 (State) — Strategic collaboration with key aviation stakeholders to proactive use of risk modeling capabilities	20A.Identify areas where collaboration/support is needed to ensure that stakeholders understand and implement safety culture concepts to fully embrace an open, just culture and non-punitive safety reporting.	SSP Regulators	2024	-AMO -ANS providers -Air Operators -Aerodrome service providers	Number of areas identified for collaboration	High	Surveillance state risk modeling capabilities
	20B.Establish a process via RASG and/or RSOO (or other regional bodies) for a mentoring system, including providing assistance to States/industry, as well as the sharing of best practices, to support safety culture development and the proactive use of risk modeling.	DGCA/SSP	2024	>>	Number of assistance received and best practices shared	Medium	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	20C. Foster and participate in public-private partnerships similar to the commercial/general aviation safety teams concept to identify and implement system safety enhancements.	SSP/Regulators	2024	-AMO -Aerodrome service providers -ANS provider -Air Operators	Identified and implemented system safety enhancements	medium	Surveillance state risk modeling capabilities
	20D. Collaborate with national and industry stakeholders to establish a mechanism for the regular sharing and exchange of safety information, analyses, safety risk discoveries/lessons learned and best practices within a confidential and non-punitive environment.	SSP/ Regulators	2024	>>	Number of areas identified for collaboration	>>	Surveillance state risk modeling capabilities

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP ORG SEI-21 (State) — Advancement of safety risk management at the national level	21A. Establish data sharing connectivity and integration among the State's aviation safety databases, including the mandatory occurrences reporting system, voluntary safety reporting systems, safety audit reports and aviation system statistics (traffic counts, weather information, EI scores, etc.)	SSP/ Regulators	2025	- AMO -Air Operators -ANS providers -Aerodrome service providers	Number of information shared among state regulatory body and industry(Service Providers)	High	Surveillance of state safety risk management
	21B. Develop risk modeling capabilities to support monitoring system safety issues and accident/incident prevention.	SSP/Regulators	2024	˃˃	Developed risk modeling	˃˃	˃˃
	21C. Encourage information-sharing with industry.	SSP/Regulators	2024	˃˃	Number of information shared among state regulatory body and industry (service provider)	˃˃	˃˃
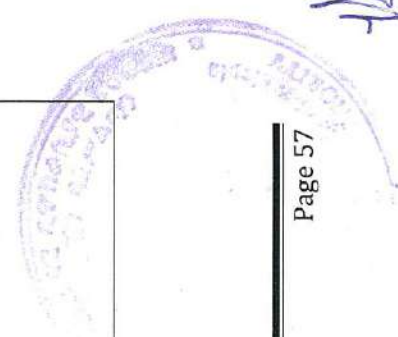
NATIONAL AVIATION SAFETY PLAN (NASP)

Issue no. 4: Lack of resources and expertise to manage and collect data on a State level, and no formal mechanisms in place that allow for the sharing and benchmarking of information at the regional level.

Goal 4: Increase collaboration at the regional level

Target 4.1: Ethiopia to use a regional safety oversight mechanism, another state or other safety oversight organization's ICAO recognized functions in seeking assistance to strengthen their safety oversight capabilities by 2025.

Target 4.2: Ethiopia to contribute information on safety risks, including SSP Safety Performance Indicators (SPIs), to (RASG-AFI) by 2025.

Target 4.3: Ethiopia to lead RASGs' safety risk management activities actively with effective safety oversight capabilities and an effective SSP by 2025.

Target 4.4: Ethiopia to actively participate in the regional mechanism for data collection, analysis and sharing by 2025.

Target 4.5: Ethiopia to encourage the increased participation in flight data sharing initiatives by air operators, with aircraft of mass 27,000kg above by 2025.

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP ORG SEI-6 (State)— Strategic collaboration with key aviation stakeholders to enhance safety in a coordinated manner	1. Based on the identified safety deficiencies (Implement), establish a mechanism to identify collaborators and develop an action plan for the resolution of those deficiencies (CE-6 to CE-8).	SSP/Regulators	2024	ICAO, RASG-AFI & ESAF	Number of collaborators identified for assistance	Medium	State safety oversight Capability and effectiveness by State Quality assurance.

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	2. Based on the identified safety deficiencies , establish a mechanism to identify collaborators and develop an action plan for the resolution of those deficiencies (CE-1 to CE-5).	SSP/Regulators	2024	RSOOs	Number of assistance received to strengthen oversight of state from regional bodies or/and States.	Medium	State safety oversight capability and effectiveness by State Quality assurance.
	3. Use a regional safety oversight mechanism, or the services of another competent State or organization.	SSP/ Regulators	2025	ICAO,RASG-AFI, &ESAF	>>	>>	>>
	4. Establish a process via RASG and/or RSOO for a mentoring/collaboration system, including providing State/industry assistance as well as sharing of best practices and internal follow-up actions (CE-1 to CE-5, emphasis on CE-3).	SSP/ Regulators	2025	>>	Established a process via RASG and/or RSOO for a mentoring/collaborat ion system,	>>	

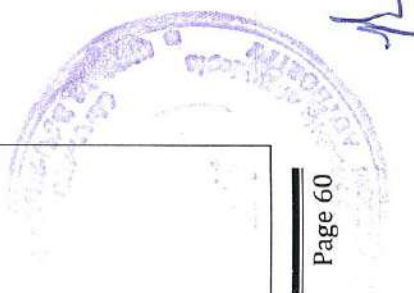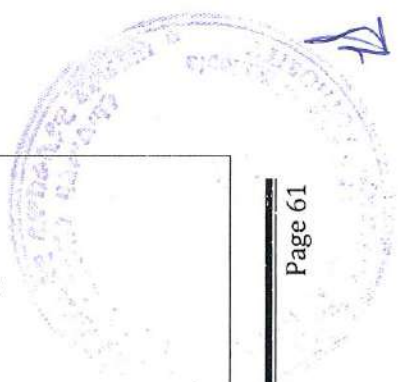| Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	5. Collaborate with RASG and/or RSOO, other States, ICAO, industry joint programmes and/or technical school partnerships to attract, recruit and train qualified and sufficient technical personnel and develop a strategy for their retention (CE-4).	SSP/ Regulators	2025	ICAO, RASG-AFI &ESAF	Number of areas identified for collaboration	medium	State safety oversight capability and effectiveness by State
	6. Establish and implement a process for the development and promulgation of technical guidance, tools and the provision of safety critical information, in collaboration with other States, RSOO, ICAO and/or other stakeholders, with the understanding that these materials need to be tailored to each State's national regulations and operational environments (CE-5).	SSP/ Regulators	2025	>>	Established process for development promulgation technical guidance	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	7. While working to improve safety oversight, work with RASG and/or RSOO to address high risk categories of occurrences (see OPS roadmap).	SSP/ Regulators	2025	ICAO.RASG-AFI & ESAF	Improved safety oversight work	Medium	State safety oversight capability and effectiveness by State
	8. Leverage regional groups such as the RASG to identify additional resources.	SSP/ Regulator	2025	>>	Identified additional resources	>>	>>
	9. Use technical guidance, tools and safety-critical information, developed in collaboration with other States, RSOO, ICAO and/or other stakeholders, to enable technical personnel to perform their safety oversight functions effectively(CE-6 to CE-8).	SSP/ Regulators	2025	>>	Qualified technical personnel	>>	>>
	10. While working to improve safety oversight, continue to work with RASG and/or RSOO to address high-risk categories of occurrences (see OPS roadmap.	SSP/ Regulators	2025	>>	Number of addressed high risk category	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

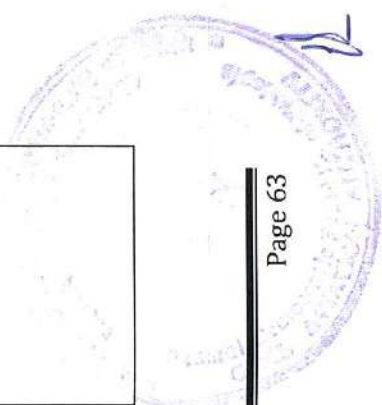| Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	11. Work with the ICAO Regional Office to make use of available means (e.g. Technical Cooperation Bureau) to acquire assistance needed for SSP Implementation.	SSP/ Regulators	2025	ICAO,RASG-AFI &ESAF	Number of collaborators identified	medium	State safety oversight capability and effectiveness by state
	12. Work with RSOO, other states and other organizations, as appropriate to train qualified technical personnel to fulfill their duties and responsibilities regarding SSP implementation.	SSP/ Regulators	2025	>>	>>	medium	>>
GASP ORG SEI-15 (State)— Strategic collaboration with key aviation stakeholders to start SSP implementation	1.Identify areas where collaboration/support is needed as part of the SSP implementation plan (see SEI-14).	SSP/Regulators	2025	ICAO,RASG-AFI &ESAF	Number of collaborators identified	medium	Monitoring SSP implementation
	2.Identify relevant collaborators from key aviation stakeholders, including other states that are implementing or have implemented an SSP.	SSP/Regulators	2025	>>	Number of assistance received to implementthe SSP from regionalbodies or/and other States	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	3. Develop an action plan to address the elements identified as missing or deficient during the SSP gap analysis (see SEI-13B).	SSP/Regulators	2025	ICAO,RASG-AFI &ESAF	Developed action plan	Medium	Monitoring SSP implementation
	4. Establish a process via RASG and/or RSOO for a mentoring system, including providing assistance to states/industry, as well as sharing of best practices to support SSP implementation.	SSP/Regulators	2025	>>	Established process best practices to support SSP implementation	>>	>>
	5. Develop a process to provide training on SSP to relevant staff, in collaboration with RSOO and/or other states (e.g. initial, recurrent and advanced) (see SEI-14D).	SSP/Regulators	2025	>>	Number of collaborators identified	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

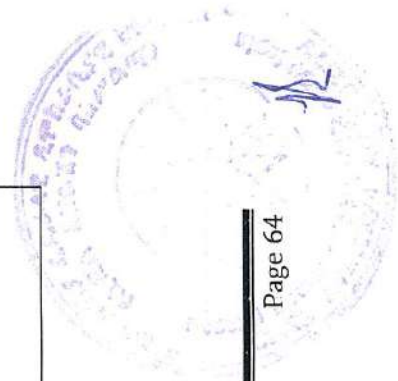| Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	6. Establish and implement a process for sharing safety-critical information related to SSP (e.g. advisory circulars, staff instructions, safety performance indicators), in collaboration with other States, RASG, RSOO, ICAO and/or other stakeholders.	SSP/Regulators	2025	ICAO,RASG-AFI & ESAF	Established process for sharing safety critical information related to SSP	Medium	Monitoring SSP implementation
	7. Work with collaborators (identified in SEI-15) to execute the action plan for implementation.	SSP/Regulators	2025	>>	Number of collaborators identified	>>	>>
	8. Work with collaborators to ensure all elements of the SSP are present, suitable, operational and effective .	SSP/Regulators	2025	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	9. Establish a system for the continuous improvement of the SSP, in collaboration with all relevant stakeholders.	SSP/Regulators	2025	ICAO,RASG-AFI &ESAF	Established system for continuous improvement of the SSP	High	Monitoring SSP implementation
	10. Contribute information on safety risks and SSP safety performance indicators to the RASG.	SSP/Regulators	2025	>>	Identified safety performance indicators	High	>>
	11. Establish a process via RASG and/or RSOO (or other regional bodies) for a mentoring system, including providing assistance to states/industry, as well as the sharing of best practices, to support safety culture development and the proactive use of risk modeling.	SSP/Regulators	2025	>>	Established process for risk modeling proactively	Medium	>>
	12. Support the robust implementation and continuous improvement of SMS and SSP.	SSP/Regulators	2025	>>	Improved SSP/SMS	High	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Issue No. 5: Slow pace of SMS implementation and low number of participation of Service providers in the ICAO-recognized industry assessment programmes.

Goal 5: Expand the use of industry programmes

Target 5.1: All service providers of ECAA to use globally harmonized SPIs as part of their safety management system (SMS) by 2025.

Target 5.2: Encourage to increase the number of service providers participating in the corresponding ICAO-recognized industry assessment programmes by 2025.

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP SMS SEI-5 Improvement of industry compliance with applicable SMS Requirements	1. Ensure implementation of a safety Management system (SMS) commensurate to the size and complexity of the service provider, as required by national regulations and Annex 19.	Regulators/SSP	Continuous implementing	-Air Operators -ANS providers -Aerodrome service providers -AMO	-Level of SMS Implementation - Number of guidance materials available	High	Surveillance Service provider's SMS implementation
	2. Ensure utilization of available guidance material to assist with SMS implementation.	SSP/Regulators	Continuous implementing	>>	- Number of discrepancies reported to authority	>>	>>
GASP SMS SEI-6 — Resources for service providers to effectively implement SMS	1. Ensure working in collaboration with the State and industry associations to advance SMS implementation and identify expectations that cannot be efficiently resourced.	SSP/Regulators	Continuous implementing	>>	Number of areas identified for support	High	Surveillance Service provider's SMS implementation

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	2 Ensure identification of areas where resources are needed as part of the SMS implementation plan developed following the SMS gap analysis.	SSP/Regulators	Continuous implementing	Air operators -ANS service provider -Aerodrome service providers -AMO	Level of Commitment from accountable manager	>>	Surveillance Service provider's SMS implementation
	3. Ensure establishing a process for resource planning and allocation to enable SMS implementation, including resources which may be obtained from industry organizations.	SSP /Regulators	Continuous implementing	>>	Established Process for resource Planning	>>	>>
	4. Ensure obtaining commitment from the accountable executive within the service provider for the necessary resources to enable SMS implementation.	SSP/Regulators	Continuous implementing	>>	Commitment obtained from accountable executive	>>	>>

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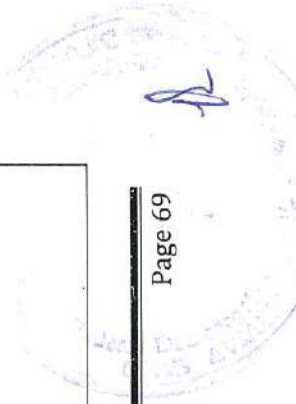| Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP SMS SEI-7 — Strategic collaboration with key aviation stakeholders to complete SSP Implementation	1. Ensure working with the action plan of SSP implementation through sharing and supporting harmonization of SMS within industry.	SSP/ Regulators	Continuous implementing	-Air Operators -ANS providers -Aerodrome service providers -AMO	Identified action plan	High	Surveillance Service provider's SMS implementation
	2. Ensure support for continuous improvement of SSP.	SSP/Regulators	2023	>>	Improved SSP		>>
GASP SMS SEI-8 — Establishment of safety risk management at the service provider level	1. Ensure establishment of mandatory safety reporting systems.	SSP/Regulators	2023	-Air Operators -ANS providers -Aerodrome service providers -AMO	established mandatory safety reporting systems	High	Surveillance Service provider's SMS implementation
	2. Ensure providing information from the service provider to the State mandatory safety reporting system, as required.	SSP/ Regulators	2023	>>	>>	>>	>>

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Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	3. Ensure establishment of internal mechanisms related to the protection of safety data, safety information and related sources for the purpose of safety improvement .	SSP/ Regulators	2023	-Air operators -ANS providers -Aerodrome operators - AMO	Number of MOR and VOR received	High	Surveillance of service providers' SMS implementation
	4. Ensure establishment of voluntary and confidential hazard/occurrence reporting systems as part of the SMS .	SSP/ Regulators	2023	>>	>>	>>	>>
	5. Ensure establishment and maintenance of a safety database for technical personnel to monitor system safety issues within the service provider.	SSP/ Regulators	2023	>>	Established safety data base	>>	>>
	6. Ensure establishment and utilization of a safety risk management process.	SSP/Regulators	2023	>>	established safety risk management process	>>	>>

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	7. Ensure development of safety performance measurement methodologies, aligned with harmonized safety metrics within industry, via the established safety risk management process.	SSP/Regulators	2023	-Air operators -Aerodrome service providers -ANS providers - AMO	Developed safety performance measurement methodologies	High	Surveillance of service providers' SMS implementation
	8. Ensure development of safety performance indicators and associated targets/alert settings, via the established safety risk management process.	SSP/Regulators	2023	>>	>>	>>	>>
	9. Encourage the use of globally harmonized metrics for the development and monitoring of safety performance indicators, as part of the service providers' SMS.	SSP/Regulators	2023	>>	>>	>>	>>
	10. Encourage sharing use of information from within the industry to identify hazards and mitigate safety risks.	SSP/Regulators	2023	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP SMS SEI-10 — Allocation of industry resources to support continuous improvement of SSP and SMS	1. Ensure competent technical personnel are allocated, at the service provider level, to support the requirements of the SSP infrastructure.	SSP/Regulators	2024	-Air Operators - ANS providers - Aerodrome service providers -AMO	Level of competence of staff allocated for SMS implementation	High	Surveillance of service providers' SMS implementation
	2. Ensure providing safety analysis results from service providers to support the SSP.	SSP /Regulators	2025	- AMO -Air Operators -ANS provider -Aerodrome service providers	>>	>>	>>
GASP SMS SEI-11 — Strategic collaboration with key aviation stakeholders to support the proactive use of risk modeling capabilities	1. Ensure working with industry stakeholders to leverage best practices with safety information analysis.	SSP /Regulators	2024	-AMO -Air Operators -Aerodrome service providers -ANS providers	Number of stakeholders identified and mechanism established to deal with them	High	Surveillance of service providers' SMS implementation
	2. Ensure sharing of safety risk identification with stakeholders for mitigation and monitoring strategies.	SSP/Regulators	2024	>>	>>	>>	>>
	3. Ensure active participation with State and organizations engaged in risk Modeling.	SSP/Regulators	2024	>>	>>	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
GASP SMS SEI-12 — Advancement of safety risk management at the service provider level	1. Ensure safety information and other related sources is implemented and effective.	SSP/Regulators	2024	-Air Operators -ANS providers -Aerodrome service providers -AMO	Number of Processes established and activities carried out for continuous improvement of SMS	High	Surveillance of service providers' SMS implementation
	2. Ensure developing risk modeling capabilities to support the monitoring of system safety issues and accident/incident prevention.	SSP/Regulators	2024	>>	>>	>>	>>
	3. Ensure monitoring safety information exchange networks for continuous improvements .	SSP/Regulators	2024	>>	>>	>>	>>

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Issue no. 6: Increasing risks associated with airspace congestion, and the lack of appropriate infrastructure to support safe operations

Goal 6: Ensure the appropriate infrastructure (physical and institutional) is available to support safe operation

Target 6.1: Ethiopia to implement the air navigation and airport core infrastructure by 2024-2025

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
Implement the air navigation and airport core infrastructure	1.Ensure appropriate Air Traffic Services and airspace infrastructure to support safe operations.	ANR/AGA	Continuous implementing	Air Navigation service providers Air operators Aerodrome service providers	-Number of operational safety issues shared and coordinated.	High	State safety oversight capability and effectiveness by State
					-Implemented the air navigation and airport core infrastructure elements.	>>	>>

NATIONAL AVIATION SAFETY PLAN (NASP)

Safety enhancement activity	Action	Responsible Entity	Timeline	Stakeholders	Metrics	Priority	Monitoring Activity
	2. Ensure appropriate aerodrome infrastructure to support safe operations.	ANR/AGA	continuous implementing	Air Navigation service provider Air operator Aerodrome operator	Percentage of AN infrastructure elements (ATS and airspace including ADS-B) implemented	High	Surveillance of ANS providers'
	3. Ensure Ethiopia has the appropriate other national infrastructure / Capabilities (for example meteorological infrastructure) to support safe operation.	ANR/AGA	continuous implementing		Percentage of aerodrome (including runway) infrastructure elements implemented	>>	>>
					Percentage of other national infrastructure / Capabilities		
					Implemented Number of air navigation deficiencies against the regional air navigation plans		

End of Ethiopian National Aviation Safety Plan (NASP)