Kenya Civil Aviation Authority

Directorate of Aviation Safety & Security Regulation

NATIONAL AVIATION SAFETY PLAN

OCTOBER 2022

KENYA NATIONAL AVIATION SAFETY PLAN

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

The NASP of Kenya is in alignment with the ICAO *Global Aviation Safety Plan* (GASP, Doc 10004)

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1.0 Overview of the National Aviation Safety Plan (NASP)

1.1 The National Aviation Safety Plan (NASP) sets out the objectives, challenges, strategic priorities, and the safety actions to be taken by, or driven by the Kenya Civil Aviation Authority and the Aircraft Accident and Incident Investigation Department at the State Department for Transport, in collaboration with the aviation industry and agencies with safety critical responsibilities in Kenya.

1.2 The NASP is drawn as an action plan for the consideration and addressing of key aviation safety risks and challenges by the aviation industry to and also complements the State Safety Programme (SSP) Document, which articulates Kenya's aviation policy and regulatory perspective, values and commitments to achieve our safety objectives.

1.3 Kenya has a dedicated desire to contribute to safe and efficient air travel. The International Civil Aviation Organization (ICAO), through the Global Aviation Safety Plan (GASP) and other initiatives, advocates for a proactive approach to manage safety and has identified global safety objectives, high risk categories of events and desired outcomes. In this regard, the NASP is aligned to and supports the implementation of the ICAO GASP and the initiatives of the Regional Aviation Safety Group for Africa-Indian Ocean (RASG-AFI).

2.0 Structure of the NASP

2.1 This NASP presents the strategy for enhancing aviation safety for a period of three years. It is comprised of six sections. In addition to the introduction, sections include: the purpose of the NASP, Kenya's strategic approach to managing aviation safety, the national operational safety risks identified for the 2023-2025 NASP, other safety issues addressed in the NASP, and a description of how the implementation of the safety enhancement initiatives (SEIs) listed in the NASP is going to be monitored.

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

3.1 Through an effective SSP, Kenya identifies and mitigates national operational safety risks. The SSP provides safety information to the NASP. The SSP allows Kenya to manage its aviation activities in a coherent and proactive manner, measure the safety performance of its civil aviation system, monitor the implementation of the NASP's SEIs and address any identified hazards and deficiencies.

3.2 The NASP is one of the key documents produced as part of Kenya's SSP documentation. It is the means by which Kenya defines, and drives the implementation of SEIs generated by the SSP process and drawn from the ICAO GASP and the RASG-AFI. It also allows Kenya to determine initiatives to strengthen the SSP or otherwise needed to achieve its safety objectives. Safety intelligence gathered through the SSP also contributes to other national plans, such as the air navigation plan.

3.3 The NASP contributes to the State Safety objectives as outlined below:

3.3.1 Improve the safety of aviation operations in Kenya;

3.3.2 Strengthen Kenya's safety oversight capabilities;

3.3.3 Mitigate aviation safety risks, with the aim of reducing accidents and incidents involving entities under its safety oversight;

3.3.4 Enhance safety management capabilities of the aviation industry in Kenya to continuously improve safety performance and risk mitigation;

3.3.5 Contribute and collaborate effectively in international and regional fora to enhance the safety of international civil aviation.

3.4 Further information on Kenya's SSP can be found at https://www.kcaa.or.ke/safety-security-oversight/aviation-safety

4.0 Responsibility for the NASP development, implementation and monitoring

4.1 The Kenya Civil Aviation Authority is responsible for the development, implementation and monitoring of the NASP, in collaboration with relevant State authorities, and with the national aviation industry. The NASP was developed in consultation with national operators and other stakeholders, and in alignment with the 2022 edition of the GASP.

5.0 National safety issues, goals and targets

5.1 The NASP addresses the following national safety issues:

5.1.1 **High-Risk Categories (HRCs) of Occurrences:**

5.1.1.1 These types of occurrences in no particular order are in line with the GASP and are deemed global HRCs (previously referred to as "global safety priorities") were selected based on actual fatalities, high fatality risk per accident or the number of accidents and incidents. Based on results from the analysis of safety data collected in the last five years, as well as from ICAO and other aviation bodies, they are as follows:

(a) Controlled flight into terrain (CFIT)
(b) Loss of control in-flight (LOC-I)
(c) Mid-air collision (MAC)
(d) Runway excursion (RE)
(e) Runway incursion (RI)
(f) Bird Strikes (BWI)

5.1.2 **Other National Safety Issues**

5.1.2.1 The other national safety issues were identified through a data-driven approach based on USOAP data. These issues are typically organizational in nature and relate to challenges associated with the conduct of the State safety oversight functions, implementation of SSP and the level of SMS implementation by industry.

5.1.2.2 The safety deficiencies are listed as follows:

(a) Lack of effective oversight of General Aviation (GA) operations
(b) Lack of oversight on ground handlers
(c) Certification of international aerodromes
(d) Certification of foreign operators
(e) Non implementation of risk-based surveillance
(f) Inconsistent approach to oversight i.e. training, knowledge gap, lack of sufficient technical guidance materials
(g) Lack of sufficient safety oversight capacity (personnel)
(h) Manual documentation, tracking inefficiencies in oversight system
(i) Lack of effective implementation of the SSP
(j) Lack of a national safety strategy document
(k) Lack of a standardized structured assistance programme for other foreign states based on a policy document.
(l) Sharing and exchange of safety data – both internal within the State and external with other states /Regional ICAO & other international organizations
(m) Use of harmonized SPIs for service providers
(n) Low participation in industry assessment programs e.g IOSA, APEX etc
(o) Lack of effective implementation of aerodrome maintenance program
(p) Frequent failure of air navigation equipment e.g Radar, Voice-comms
(q) Capacity of ANS and aerodrome personnel
(r) Inability to implement aerodrome masterplan to align with growing air traffic
(s) Inadequate capacity in aircraft accident and incident investigation

5.1.2.3 In order to address the issues listed above and enhance safety at the national level, the [2023-2025] NASP contains the following goals and targets:

Table I-1. NASP goals, targets and indicators

KENYA ASPIRATIONAL SAFETY GOAL "ZERO FATALITIES BY 2030 AND BEYOND"			
GOAL	TARGET		INDICATOR
Goal 1: Achieve a continuous reduction of operational safety risks	1.1	Maintain a decreasing trend of national accident rate	• TCAS/RA incidents per year • EGPWS trigger reports per year • Number of Loss of Control–In Flight (LOC-I) accidents per year • UPRT per year • Pilot incapacitation incidents per year • Go around due to unstable approach per 100 movements • Rejected take-off per 100 movements

			• Runway incursion incidents per year • BWI incidents per quarter/per aerodrome
Goal 2: Strengthen safety oversight capabilities	2.1	Kenya intends to improve its score of 75% 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 2026 – 85 per cent By 2030 – 95 per cent	• Kenya's *Overall EI score.* • • Percentage *of priority PQs implemented* • Percentage *of completed corrective action plans (CAPs) completed.*
	2.2	Kenya to maintain a safety oversight index greater than 1, in all categories	• safety oversight index greater than 1 in all categories
Goal 3: Implement effective State safety programme (SSP)	3.1	By 2023, Kenya to fully implement the foundation of an SSP	• Percentage of satisfactory SSP foundational PQs • Percentage of each subject area implemented • Percentage of required CAPs related to the SSP foundational PQs submitted
	3.2	By 2025, Kenya to implement an effective SSP and achieve "present" maturity level	• Level of maturity achieved in SSP implementation assessment (SSPIA) questions PQs • percentage of SMS implementation score > 75% for all service providers required to implement an SMS • percentage of achieved NASP targets per year
Goal 4: Increase collaboration at the regional and international level	4.1	Increase collaboration activities and provide support to States seeking assistance to strengthen their safety oversight capabilities	• Number of States seeking assistance • Number of States that have received assistance
	4.2	By 2025, Kenya to actively contribute information on safety risks, including SSP safety performance indicators (SPIs), to the AFI regional aviation safety group (RASG-AFI)	• Participation in RASG-AFI Safety information initiatives
	4.3	By 2025, Kenya to actively lead RASGs' safety risk management activities	• Number of RASG safety risk management activities led by Kenya • Participation in development of the regional aviation safety plan
Goal 5: Expand the use of industry programmes	5.1	By 2025, all service providers to use globally harmonized SPIs as part of their safety management system (SMS)	• Number of service providers using globally harmonized metrics for their SPIs
	5.2	By 2025, increase the number of service providers participating in	• Number of service providers participating in the corresponding

		the corresponding ICAO-recognized industry assessment programmes	ICAO-recognized industry assessment programmes
Goal 6: Ensure the appropriate infrastructure is available to support safe operations	6.1	By 2025, Kenya to implement the air navigation and airport core infrastructure	• Percentage of Navigation masterplan implementation • Percentage of airport masterplans implementation

6.0 Operational Context

6.1 There are 521 aerodromes and 21 heliports in Kenya, including 3 certified international aerodromes. The airspace of Kenya is classified into Class A, C, D, E & G. There were 1,563,456 of movements in Kenya over the period of 2017 to 2021. There are currently 77 air operator certificates (AOCs) issued by Kenya, and of those there are 59 issued to operators conducting international commercial air transport operations.

6.2 Kenya also has 5 operators, which operate domestic air taxi services, primarily on turboprop aircraft, as well as 6 helicopter operators and 7 Balloon operators.

6.3 There are 88 local Approved Maintenance Organisation (AMO) and 183 Foreign Approved Maintenance Organisations.

OPERATORS	International Flights Aeroplane	International Flights Helicopter	International Flights Aeroplane and Helicopters	Domestic Flights Aeroplane	Domestic Flights Helicopters	Other (Balloon)	TOTAL
	51	4	4	5	6	7	77

APPROVED TRAINING ORGANIZATIONS			
FLIGHT CREW TRAINING	AIRCRAFT MAINTENANCE ENGINEER TRAINING	AIR TRAFFIC CONTROL TRAINING	FLIGHT OPERATIONS OFFICERS TRAINING
13	1	1	9
Total number of ATOs is 17 N/B Some ATOs train more than 1 approved course.			

7.0 PURPOSE OF KENYA'S NATIONAL AVIATION SAFETY PLAN

7.1 The NASP is the master planning document containing the strategic direction of Kenya for the management of aviation safety for a period of three years (2023 to 2025). This plan lists national safety issues, sets national aviation safety goals and targets, and presents a series of safety enhancement initiatives (SEIs) to address identified safety deficiencies and achieve the national safety goals and targets.

7.2 The [name of the civil aviation master plan, where one is established (include link to website, if available)] 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 [name of the civil aviation master plan, where one is established].

7.3 The NASP has been developed using international safety goals and targets and HRCs from the GASP. The SEIs listed in the NASP support the improvement of safety at the wider regional and international levels and include several actions to address specific safety risks and recommended SEIs. Kenya has adopted these SEIs and has included them in this plan.

8.0 KENYA'S STRATEGIC APPROACH TO MANAGING AVIATION SAFETY

8.1 The NASP presents the SEIs derived from the SSP, including Kenya's safety risk management process and safety data collection and processing systems, as well as the work undertaken by service providers in the development and implementation of their safety management systems (SMS). This plan is developed and maintained by Kenya Civil Aviation Authority, in coordination with all stakeholders and is updated at least every three years.

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

8.3 The SEIs in this plan are implemented through Kenya'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 safety globally. The full list of the SEIs is presented in the appendix to the NASP.

8.4 The NASP also addresses emerging issues. Emerging issues include concepts of operations, technologies, public policies, business models or ideas that might impact safety in the future, for which insufficient data exists to complete typical data-driven analysis. It is important that Kenya remains vigilant on emerging issues to identify potential safety risks, collect relevant data and proactively develop mitigations to address them. The NASP addresses the following identified emerging issues:

8.4.1 Health emergency/pandemic

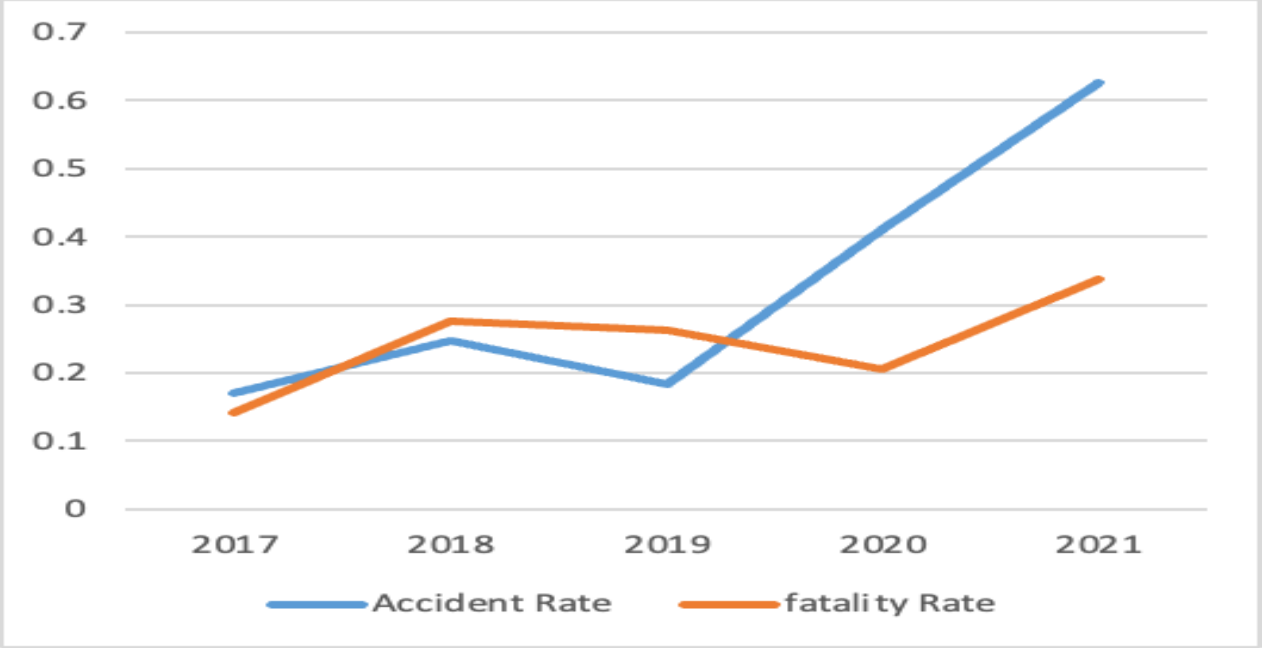
8.4.2 Unmanned aircraft systems (UAS) operations
8.4.3 Cyber threats
8.4.4 Advancements in technology

9.0 NATIONAL OPERATIONAL SAFETY RISKS

9.1 The NASP includes SEIs that address national operational safety risks, derived from lessons learned from operational occurrences and from a data-driven approach. These SEI include actions such as: rule-making; policy development; targeted safety oversight activities; safety data analysis; and safety promotion.

9.2 Kenya publishes an Annual Safety Report, that provides data on safety occurrences including accidents and incidents. The summary of accidents and serious incidents in the last five years for aircraft registered in Kenya is shown in the table below.

Year	accidents	serious incidents	fatalities	Total aircraft movements	Accident Rate	fatality Rate
2017	6	6	5	351825	0.170539	0.14211611
2018	9	8	10	363230	0.247777	0.27530766
2019	7	8	10	381434	0.183518	0.26216855
2020	12	4	6	292051	0.410887	0.20544357
2021	13	5	7	207924	0.625228	0.33666147



9.3 The following five global High-Risk Categories (HRCs) of occurrences were considered of the utmost priority because of the number of fatalities and risk of fatalities associated with such events and have been incorporated as the national operational safety risks.

9.4 They were identified based on operational safety risks described in the GASP, and are aligned with those listed in the [2020 – 2022 edition] of the GASP:

9.4.1 Controlled flight into terrain (CFIT)
9.4.2 Loss of Control in flight (LOC-I)
9.4.3 Mid-Air Collision (MAC)
9.4.4 Runway Excursion (RE)
9.4.5 Runway Incursion (RI)

9.5 In addition to the national operational safety risks listed above, the following additional categories of operational safety risks have been identified based on analyses from mandatory and voluntary reporting systems, accident and incident investigation reports, and safety oversight activities:

9.5.1 Bird strikes (BWI)

9.6 In order to address the national operational safety risks listed above, Kenya identified the following contributing factors leading to HRCs and will implement a series of SEIs, some of which are derived from the ICAO OPS roadmap, contained in the GASP:

A. HRC 1: Controlled flight into terrain (CFIT)

1. Loss of situational awareness particularly in the vertical plane
2. Lack of familiarity with the approach or misreading of the approach plate
3. Weather - rain, turbulence, and icing and poor visibility particularly at night can contribute to disorientation and loss of situational awareness
4. Approach Design and documentation - The depiction of an approach, and particularly step-down fixes, on Terminal Approach Procedure (TAP) plates may not be clear.
5. Failure to use Standard Phraseology leading to confusion and misunderstanding.
6. Pilot fatigue and disorientation
7. Unsafe clearances issued by a controller
8. Aircraft equipment failure
9. Inflight contingencies

B. HRC 2: Loss of control in flight (LOC-I)

1. Pilot/human induced: improper procedure, spatial disorientation, poor energy management, distraction, improper training, poor design
2. Environmentally induced: weather, icing, wake vortex.
3. Systems induced: aircraft systems failures, poor design.

C. HRC 3: Mid-air Collision (MAC)

1. Controller deficiencies e.g., competence, proficiency and currency
2. Traffic conditions - traffic density, complexity, mixture of aircraft types and capabilities, etc.
3. ATC performance related to workload, teamwork, procedures and commitment, as well as the influence of ANSPs' safety management.
4. Flight crew training and corporate culture related to workload, competence, team-work, procedures and commitment and the influence of aircraft operator's safety management
5. ATC systems - flight data processing, communication, STCA, etc., as well as the interaction related to the human operator and the aircraft systems, and the procurement policy of the ANSP. Aircraft equipment - autopilots, transponders and ACAS, but also aircraft performance (e.g., rate-of-climb) and their physical size.
6. Inadequate Navigation infrastructure - both coverage and quality
7. Unreliable communication infrastructure/equipment
8. Surveillance – lack of adequate coverage and quality
9. Flight plan processing - efficiency and reliability of flight plan submission, approval and distribution
10. Airspace - complexity of airspace design, route layout, extent of controlled or uncontrolled airspace, proximity of military operational or training areas, etc.
11. Flight in adverse environmental conditions that may influence conflict management and collision avoidance"
12. Weather - This includes the occurrence of IMC conditions, storm activity and other turbulence that may influence conflict management and collision avoidance.
13. The lack of, inadequate or non-implementation of coordination procedures (LOPs)
14. Use of non-standard phraseology
15. Lack of the English language proficiency for pilots and air traffic controllers/communicators
16. Non-adherence to procedures and ATC clearances and instructions
17. Unreliable flight procedures
18. Failure of aircraft equipment
19. Flight crew inappropriate response to an ACAS RA, or mishandling of a response to an ACAS RA.

D. HRC 4: Runway Excursion (RE)

1. Ineffective SOPs
2. Failure to adhere to the appropriate SOPs
3. Long/floated/bounced/firm/off-centre/crabbed landing
4. Inadequate approach procedures design
5. Inadequate regulatory oversight
6. Wind velocity headwind or crosswind components exceptionally variable and/or in the vicinity permitted aircraft maxima.
7. Poor and fluctuating forward visibility.
8. Runway contaminated by water, ice, snow or slush, whether or not this status correctly advised in advance
9. Crew incompatibility
10. Poor crew management
11. Spatial disorientation
12. Inadequate flight crew training
13. Aircraft system failure

E. HRC 5: Runway Incursion (RI)

1. Weather - Low visibility may increase the chance of flight crew becoming disorientated and unsure of their position whilst taxying.
2. Complex or inadequate aerodrome design.
3. Multiple Simultaneous Line-ups.
4. Conditional Clearances when the condition in the clearance is not followed
5. Simultaneous Use of Intersecting Runways.
6. Late Issue of or late changes to Departure Clearances.
7. Use of Non-Standard Phraseology, non-adherence to Standard Phraseology or call sign confusion/mix-up
8. Concurrent Use of More than One Language for ATC communications.
9. Lack of English Language proficiency
10. Pilot and/or controller workload
11. Inadequate manoeuvring area driver training and assessment programme
12. Distractions

F. HRC 6: Bird Strikes (BWI)

1. Human settlements in the close proximity of the aerodromes
2. Garbage dumpsites and landfills in close proximity to the aerodromes
3. Migration of Birds across the runways of aerodromes
4. Location of waterbodies in close proximity to aerodromes
5. Presence of bird attractants within the airports like insects, food waste, water in abandoned projects.

6. Abattoirs and fish drying activities in close proximity of the aerodromes

Note.

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

10.0 OTHER SAFETY ISSUES

10.1 In addition to the national operational safety risks listed in the NASP, Kenya has identified other safety issues and initiatives selected for the NASP. These are given priority in the NASP since they are aimed at enhancing and strengthening Kenya's safety oversight capabilities and the management of aviation safety at the national level.

10.2 The eight critical elements (CEs) of a safety oversight system are defined by ICAO. Kenya is committed to the effective implementation of these eight CEs, as part of its overall safety oversight responsibilities, which emphasize Kenya's commitment to safety in respect of its aviation activities. The eight CEs are presented in the figure below.

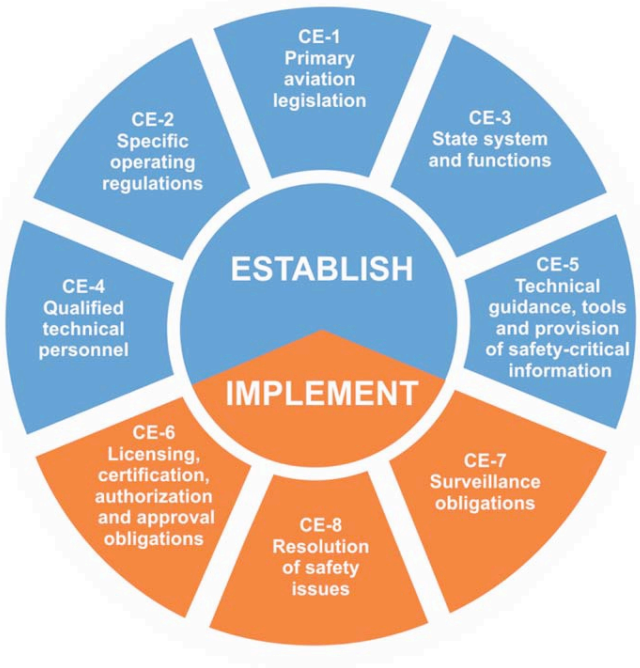


Figure 1. Critical elements of a Kenya's safety oversight system

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

Overall EI score							
75.41%							
EI score by CE							
CE-1	CE-2	CE-3	CE-4	CE-5	CE-6	CE-7	CE-8
75.86%	81.82%	75.44%	79.49%	70.09%	86.21%	64.84%	50%
EI score by audit area[1]							
LEG	ORG	PEL	OPS	AIR	AIG	ANS	AGA
85.71%	60%	81.16%	74.36%	81.19%	42.68%	80%	87.16%

10.3 The safety oversight index (SOI) of a State is an ICAO indicator of its safety oversight capabilities. Every State audited by ICAO has an SOI. It is a number greater than zero where "1" represents a level at which the safety oversight capabilities of a State would indicate the minimum expected capabilities considering the number of departures as an indication of the size of that State's aviation system. The calculations conducted by ICAO of Kenya's SOI have resulted in the following scores:

Overall SOI score	**Score in the area of Operations**	**Score in the area of Air Navigation**	**Score in the area of Support Functions**
1.21	1.12	1.44	1.06

10.4 The following three other safety issues in the Kenya context were considered of the utmost priority because they are systemic issues, which 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 [number] years, the SSP, as well as on the basis of regional analysis conducted by CASSOA, AFCAC and RASG-AFI.

10.5 These issues are typically organizational in nature and relate to challenges associated with the conduct of States' safety oversight functions, implementation of SSP at the national level and the level of SMS implementation by service providers. They take into consideration organizational culture, policies and procedures within the Kenya Civil Aviation Authority and the Aircraft Accident and Incident Investigation Department and those of service providers. These safety

[1] 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).

issues are in line with those listed in the current edition of the GASP, as well as the AFI RASP:

10.5.1 Enhancement of the State Safety Oversight (SSO) system
10.5.2 Establishment of an effective State Safety Programme (SSP)
10.5.3 Establishment of an efficient aircraft accident and incident investigation entity

10.6 In order to address the issues listed above, Kenya 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.

11.0 MONITORING IMPLEMENTATION

11.1 Kenya 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.

11.2 Additionally, Kenya will review the NASP every three years or earlier, if required, to keep the identified operational safety risks, safety issues and selected SEIs updated and relevant. The Kenya Civil Aviation Authority will periodically review the safety performance of the initiatives listed in the NASP to ensure the achievement of national safety goals and targets.

11.3 If required, Kenya will seek the support of the Africa-Indian Ocean Regional Aviation Safety Group (RASG-AFI), the ICAO Eastern and Southern African (ESAF) Office, Air Operators, Air Navigation Service Providers (ANSPs), Aerodrome Operators etc. to ensure the timely implementation of SEIs to address safety deficiencies and mitigate risks. Through close monitoring of the SEIs, Kenya will make adjustments to the NASP and its initiatives, if needed, and update the NASP accordingly.

11.4 Kenya 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 and targets, as well as the implementation status of the SEIs.

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

11.6 Kenya will adopt a standardized approach to provide information at the regional level, for reporting to the RASGs. This will be done through the designated focal point (the designated State Safety Programme Coordinator) using the applicable forms and report templates. This allows the region to receive information and assess safety risks using common methodologies.

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

Kenya Civil Aviation Authority
P. O. Box 30163 – 00100 Nairobi,
+254728 606 570, +254728 606 586, +254 700 925 000
+25420822300
safety@kcaa.or.ke, info@kcaa.or.ke
www.kcaa.or.ke

HRC 1: CONTROLLED FLIGHT INTO TERRAIN (CFIT)

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 national accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI - 1: Mitigate contributing factors to the risk of CFIT	1. Implement the following CFIT safety actions: a) Ensure aircraft are equipped with enhanced ground proximity warning system (EGPWS) in accordance with Civil Aviation (Instruments & equipment) Regulations		KCAA	Aircraft operators, ATOs	No. of CFIT accidents per year EGPWS triggers per year	High	surveillance of AOCs and ANSP activities
	b) Promote the wider use of EGPWS beyond the requirements of Civil Aviation		KCAA	Aircraft operators, ATOs			

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 national accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	(Instruments & equipment) Regulations						
	c) Review of the AIC to increase adherence to TAWS warning procedures		KCAA	Aircraft Operators, ATOs			
	d) Promote greater awareness of approach risks e.g. offset procedures, poor visibility, etc.		KCAA	Aircraft Operators, ATOs			
	e) Consider the implementation of continuous descent final approaches (CDFA) and CDO implementation.		KCAA	ANSP, Aircraft Operators, ATOs			

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 national accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	f) Consider the implementation of minimum safe altitude warning (MSAW) systems.		KCAA	ANSP, CAA			
	g) Ensure the timeliness of updates and accuracy of Terrain and Obstacle Data (TOD).		KCAA	ANSP,CAA			
			KCAA, AAID				

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 national accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	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 (VRS) and accident/incident investigations.	Annual Review		AAID, ANSP, Aerodrome operators, Aircraft operators, ATOs	No. of CFIT accidents per year EGPWS triggers per year		safety trend analysis
	3. Identify additional contributing factors, for example:	Continuous Process	AAID, ANSP, Aerodrome Operators, Aircraft	AAID, ANSP, Aerodrome operators, Aircraft operators, ATOs			

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 national accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	a) Flight in adverse environmental conditions b) Approach design and documentation (e.g. approaches with vertical guidance (APV) or localizer performance with verticall guidance (LPV) approaches) c) Phraseology used (standard vs. non-standard) d) Pilot fatigue and disorientation		Operators, ATOs				

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 national accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	4. Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for CFIT	Continuous Process	KCAA, Industry	AAID, ANSP, Aerodrome operators, Aircraft operators, ATOs			
	5. Conduct continuous evaluations of the performance of the SEIs	Annual Evaluations	KCAA Industry	AAID, ANSP, Aerodrome operators, Aircraft operators, ATOs			
	6. Implement the following CFIT safety actions: a) Equip aircraft with EGPWS	Continuous Process	Aircraft operators, ATOs	KCAA, Aircraft operators, ATOs			
	b) Increase adherence to EGPWS warning procedures	Continuous Process	Aircraft operators, ATOs	KCAA, Aircraft operators, ATOs			

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 national accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	c) Develop greater awareness of approach risks	Continuous Process	Aircraft operators, ATOs	KCAA, Aircraft operators, ATOs			
	d) Promote CDFA	Continuous Process	Aircraft operators, ATOs	KCAA, Aircraft operators, ATOs			
	e) Utilize MSAW systems	Continuous Process	ANSP	KCAA, ANSP			
	f) Utilize up-to-date TOD	Continuous Process	Aircraft operators, ATOs	KCAA, ANSP, Aircraft operators, ATOs			
	7. Validate the effectiveness of the SEIs presented in this roadmap through the analysis of flight data monitoring (FDM) and pilot reports	Annual Review	SSPICE/NASP committee	KCAA, ANSP, Aircraft operators, ATOs			

HRC 2: LOSS OF CONTROL IN-FLIGHT (LOC-I)

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 global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI - 2:Mitigate contributing factors to LOC-I accidents and incidents	1. Implement the following LOC-I safety actions: a) Require upset prevention and recovery training in all full flight simulator type conversion and recurrent training programmes	Continuous Process	KCAA	Air Operators		High	Surveillance of AOCs Training programmes
	b) Require more time devoted to training for the pilot monitoring role	Dec-23	KCAA	Air Operators	Approved Technical Guidance Material to the industry	High	Surveillance of AOCs Training programmes
	2. Validate the effectiveness of the SEIs in the industry through MORs and VRS	Continuous	KCAA	Air Operators	Number of LOC-I incidents per year	High	annual reviews

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 global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	systems and accident/incident investigations						
	3. Identify additional contributing factors, for example: a) Distraction b) Adverse weather c) Complacency d) Inadequate standard operating procedures (SOPs) for	Continuous	KCAA, Industry	Air Operators		High	Surveillance of AOCs Training programmes, conducting en-route inspections

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 global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	effective flight management e) Insufficient height above terrain for recovery f) Lack of awareness of or competence in procedures for recovery from unusual aircraft attitudes g) Inappropriate flight control inputs in response to a sudden awareness of an abnormal bank angle				Number of LOC-I incidents per year		

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 global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	4. Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for LOC-I, for example: a) Increase the effectiveness of regulatory oversight	Annual	KCAA, industry	Air Operators	Number of LOC-I incidents per year	High	Surveillance
	b) Review regulations						
	5. Implement the following LOC-I safety actions: a) Aircraft upset prevention recovery training in all full flight simulator type conversion and recurrent training programmes	Continuous	Industry	Air Operators	Number of LOC-I incidents per year	High	internal audit of Operator training programmes

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 global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	b) More time devoted to training multi-crew pilots for the monitoring role	Continuous	Industry	Air Operators			
	c) Training on manual aircraft handling of approach to stall and stall recovery (including at high altitude)	Continuous	Industry		Number of LOC-I incidents per year	high	Certification and Surveillance of AOCs Training programmes
	d) Recurrent training on principles of flight	Continuous	Industry				
	e) Simulator fidelity	Continuous	KCAA, Industry				Inspections and surveillance of FSTDs

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 global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	6. Conduct continuous evaluations of the performance of the SEI	Continuous	SSPICE/NASP Committee	CAA, Industry	Number of LOC-I incidents per year	High	annual NASP review

HRC 3: MID-AIR COLLISION (MAC)

HRC 3: MID-AIR COLLISION (MAC)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI - 3: Mitigate contributing factors to MAC accidents and incidents	1. Implement the following MAC safety actions: a) Establish guidance and regulations to ensure aircraft are equipped with airborne collision avoidance system (ACAS), in accordance with Civil Aviation (Instrument & Equipment) Regulations	Implemented	KCAA	Air Operators	Regulations and guidance promulgated	High	surveillance during C o f A inspections
	b) Ensure adherence to ACAS warning procedures	Implemented	KCAA	Air Operators	Number of TCAS RA reported	High	Analysis of TCAS-RA reports
	c) Promote the improvement of air traffic control	2024	KCAA	ANSP & CAA	Number of TCAS RA reported	High	Surveillance, Review of MORs

HRC 3: MID-AIR COLLISION (MAC)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	(ATC) systems, procedures and tools to enhance conflict management						
	d) d) Promote the improvement of communications systems and procedures	2024	KCAA	ANSP	Existence of a current ANS Masterplan, percentage of the masterplan implemented	Medium	Surveillance of the ANSP
	2. Validate the effectiveness of the SEIs in the industry through MORs and VRS systems and accident/incident investigations	Continuous	KCAA	ANSP, Aircraft operators, AAID	Number of accidents and serious incidents reported per year	High	Surveillance of ANSP and AOC activities, Investigation of aircraft accidents and incidents

HRC 3: MID-AIR COLLISION (MAC)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	3. Identify additional contributing factors: a) Ensure controller competence, currency and proficiency are maintained	Continuous	KCAA	ANSP	Number of controller proficiency checks done in a year	High	Surveillance of ANSP
	b) Promote regular scanning for Traffic conditions - traffic density, complexity, mixture of aircraft types and capabilities, etc.	Continuous	KCAA	ANSP	Number of refresher trainings done	Medium	Surveillance of ANSP
	c) Promote ATC training to enhance performance related to workload, teamwork, procedures and commitment, as well as the	Continuous	KCAA	ANSP	Number of officers trained and sensitized on the ANSPs SMS within a year	Medium	Surveillance of ANSP

HRC 3: MID-AIR COLLISION (MAC)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	influence of ANSPs' safety management						
	d) Promote Flight crew training and corporate culture related to workload, competence, team-work, procedures and commitment and the influence of aircraft operator's safety management	Continuous	KCAA	Air Operators, ATOs	CRM, SMS trainings conducted	high	surveillance of air operators and ATOs
	e) Ensure ATC systems - flight data processing, communication, STCA, etc., as well as the interaction related to the human operator and the aircraft	Continuous	KCAA	ANSP	Number of flight processing equipment failure and STCAs reported in a year	Medium	Surveillance of ANSP

HRC 3: MID-AIR COLLISION (MAC)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	systems, and the procurement policy of the ANSP work efficiently						
	f) Aircraft equipment - autopilots, transponders and ACAS, but also aircraft performance (e.g., rate-of-climb) and their physical size.						
	g) Ensure the Navigation, communication and surveillance infrastructure is adequate - both coverage and quality	Continuous	KCAA & ANSP	ANSP	Percentage of the airspace covered with CNS infrastructure and percentage of time the CNS infrastructure is available and reliable	High	surveillance of the ANSP

HRC 3: MID-AIR COLLISION (MAC)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	h) Promote effective Flight plan processing - efficiency and reliability of flight plan submission, approval and distribution	Continuous	KCAA, ANSP, ATOs & Air Operators	ANSP, Aircraft operators	Number of flight plan errors reported	Medium	Surveillance of ANSP and AOC
	i) Ensure that the Airspace structure is promulgated documenting the complexity of airspace design, route layout, extent of controlled or uncontrolled airspace, proximity of military operational or training areas, etc.	Continuous	KCAA, ANSP	ANSP, Military, Air Operators, ATOs	promulgation of airspace structure/charts , currency of charts	Medium	Surveillance of ANSP

HRC 3: MID-AIR COLLISION (MAC)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	j) Ensure prevailing Weather conditions are shared with operators in a timely manner - This includes the occurrence of IMC conditions, storm activity and other turbulence that may influence conflict management and collision avoidance	Continuous	KCAA, ANSP, ATOs & Air Operators	ANSP	timely issuance of weather information	Medium	Surveillance of ANSP
	k) Ensure Flight crew respond to an TCAS RA, as per established procedure.	Continuous	Air operators	ANSP, Aircraft operators, AAID	Number of TCAS-RA reports	High	Surveillance of ANSP, Air operators and investigation of TCAS-RA incidents

HRC 3: MID-AIR COLLISION (MAC)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	l) Ensure establishment of LOPs and implementation of coordination procedures	Continuous	KCAA, ANSP	ANSP	Number of LOPs established and implemented	High	Surveillance of ANSP
	m) Ensure air traffic controllers and pilots use standard phraseology	Continuous	KCAA, air operators, ATOs	ANSP, air operators, ATOs	Number of incidences/accidents attributed to lack of use of non-standard phraseology	High	Surveillance of ANSP and AOC activities, Investigation of aircraft accidents and incidents
	n) Promote adherence to procedures and ATC clearances and instructions	Continuous	KCAA, air operators, ATOs	ANSP, AOC, ATOs	Number of incidents caused by non-adherence to procedures and ATC clearances	Medium	Surveillance of ANSP and AOC
	o) Ensure flight procedures developed and published are reliable	Continuous	KCAA, ANSP	KCAA, ANSP, air operators, ATOs	Number incidents attributed to unreliable flight procedures	Medium	Surveillance of ANSP

HRC 3: MID-AIR COLLISION (MAC)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	p) Ensure aircraft equipment are reliable	Continuous	KCAA, Air Operators, ATOs	CAA, air operators, ATOs	Number of inflight equipment failure reported in a year	High	surveillance of air operators
	4. Implement the following MAC safety actions: a) Equip aircraft with ACAS	Continuous	Air Operators, ATOs	Air operators, ATOs	compliance to C of A requirements	High	surveillance during C of A inspections
	b) Increase adherence to ACAS warning procedures	Continuous	Air operators, ATOs	Air operators, ATOs	Number of TCAS-RA reports Viz adherence	High	Internal audit of flight procedures
	c) Consider the implementation of STCA, including STCA suitable for terminal areas	Continuous	ANSP	KCAA, ANSP	Number of terminal areas served with STCA	Medium	Surveillance of the ANSP

HRC 3: MID-AIR COLLISION (MAC)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	d) Improve aircraft systems to alert pilots to any non-availability of transponders and ACAS where applicable	Continuous	KCAA, Air Operators, ATOs	KCAA, Air Operators, ATOs	Number of TCAS-RA reports	Medium	surveillance during C of A inspections
	e) Improve ATC systems, procedures and tools to enhance conflict management - this can include predictability of aircraft trajectories, so that conflicts can be predicted and resolved at an earlier stage, using medium-term conflict detection (MTCD) and similar systems	Continuous	ANSP	CAA, ANSP	Number of TCAS-RA reports	Medium	Surveillance of ANSP

HRC 3: MID-AIR COLLISION (MAC)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	5. Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for MAC	annual review	KCAA, Air Operators, ATOs	CAA, Air Operators, ATOs	Number of TCAS-RA reports	Medium	annual review of NASP
	6. Validate the effectiveness of the SEIs through the analysis of FDM, pilot and ATC reports	annual review	ANSP, air operators, ATOs	CAA, Air Operators, ATOs	Number of TCAS-RA reports	Medium	Annual data analysis
	7. Conduct continuous evaluations of the performance of the SEIs	annual review	SSPICE/NASP committee	CAA, Air Operators, ATOs	Number of TCAS-RA reports	Medium	annual review of NASP

HRC 4: RUNWAY EXCURSION (RE)

HRC 4: RUNWAY EXCURSION (RE)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI - 4: Mitigate contributing factors to RE accidents and incidents	1. Implement the following RE safety actions: a) Ensure the establishment and implementation of a State runway safety programme and runway safety teams at 9 airports (international and domestic)	a) Develop and implement the State Runway Safety Programme by 30th June 2023. b) All airports to establish and operationalize RSTs by 30th December 2022	KCAA	KAA, ANSP, Air Operators, Ground Handlers, Security agencies	a) Number of airports that have implemented and operationalized RSTs b) Approved State Runway Safety Programme	High	Continuous surveillance activities on ANSPs and Aerodrome Operators

HRC 4: RUNWAY EXCURSION (RE)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	b) Promote the establishment of policy and training on rejected landings, go-arounds, crosswind and tailwind landings (up to the maximum manufacturer demonstrated winds)	Continuous	KCAA	Air Operators, ATOs	Number of reported rejected landings, go-arounds, crosswind and tailwind landings	High	Surveillance of AOC Training Programmes & SOPs
	c) 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)	Continuous	KCAA & Aerodrome Operators	Aerodrome Operators, ANSPs, CAA, MET Service Providers and Air Operators	Number of reports and data that are submitted in a timely manner;	High	Continuous surveillance activities on ANSPs and Aerodrome Operators

HRC 4: RUNWAY EXCURSION (RE)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	d) Certify aerodromes in accordance with the Civil Aviation (Certification, Licensing and Registration of Aerodromes) Regulations	Undertake the certification of all international airports by 30th December 2024;	KCAA	Aerodrome Operators, ANSPs, CAA, MET Service Providers and Air Operators	Number of aerodromes certified	High	Continuous surveillance activities on Aerodrome Operators
	e) Promote the installation of arresting systems if runway end safety area (RESA) requirements cannot be met	Continuous	KCAA & Aerodrome Operators	Aerodrome Operators, ANSPs, CAA and Air Operators	Number of sensitization activities conducted	High	Continuous surveillance activities on Aerodrome Operators
	f) Ensure that procedures to systematically reduce the rate of un-stabilized approaches to runways are developed and used	Continuous	KCAA	ANSP	Number of RE	High	Continuous surveillance activities on air operators

HRC 4: RUNWAY EXCURSION (RE)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	2. Validate the effectiveness of the SEIs in the industry through MORs and VRS systems and accident/incident investigations	Continuous	KCAA	Aerodrome Operators, ANSPs, CAA and Air Operators	Number of RE incidents	High	Continuous surveillance activities on Aerodrome Operators, ANSPS, Air operators and Inspectors
	3. Identify additional contributing factors, for example: a) Ineffective SOPs b) Failure to adhere to the appropriate SOPs c) Long/floated/bounced/firm/off-center/crabbed landing d) Inadequate approach procedures design e) Inadequate regulatory oversight	Continuous	KCAA, industry	Aerodrome Operators, ANSPs, and Air Operators	No of RE as a result of the additional contributory factors	High	Surveillance of AOC Training Programmes, Conducting en-route inspections
	4. Implement the following RE safety actions:	Continuous	CAA, Aerodrome Operators, air	KAA, ANSP, Air Operators,	a) Number of airports that have	High	Continuous surveillance activities on

HRC 4: RUNWAY EXCURSION (RE)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	a) Active participation in runway safety programmes and runway safety teams		operators, ATOs	Ground Handlers, Security.	implemented and operationalized RSTs b) No of RE		ANSPs and Aerodrome Operators
	b) Policy and training on rejected landings, go-arounds, crosswind and tailwind landings (up to the maximum manufacturer-demonstrated winds)	Continuous	Air Operators, ATOs	CAA, Aerodrome Operators, ANSPs, and Air Operators	Number of reported rejected landings, go-arounds, crosswind and tailwind landings	Moderate	Continuous Surveillance

HRC 4: RUNWAY EXCURSION (RE)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	c) Effective and timely reporting of meteorological and aerodrome conditions (e.g. runway surface condition in accordance with the ICAO global reporting format in Annex 14, Volume I, braking action and revised declared distances)	Continuous	Aerodrome Operators	Aerodrome Operators, ANSPs, and Air Operators	Number of reports and data that are submitted in a timely manner;	High	Continuous surveillance activities on ANSPs and Aerodrome Operators
	d) Comply with runway-related provisions in Civil Aviation (Certification, Licensing and Registration of Aerodromes) Regulations	Continuous	Aerodrome Operators	Aerodrome Operators, ANSPs, CAA, MET Service Providers and Air Operators	Number of certified aerodromes	High	Continuous surveillance activities on Aerodrome Operators
	e) Consider an arresting system if RESA requirements cannot be met	Continuous	Aerodrome Operators	Aerodrome Operators, ANSPs, CAA and	Number of arresting systems installed	High	Continuous surveillance activities on Aerodrome Operators

HRC 4: RUNWAY EXCURSION (RE)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
				Air Operators			
	f) Procedures to systematically reduce the rate of un-stabilized approaches to runways	Continuous	Air operators, ANSP, ATOs	ANSP, air operators, ATOs	Number of RE incidents	High	Continuous surveillance activities on ANSPs
	5. Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for RE	Annual Review	KCAA, Industry	Aerodrome Operators, ANSPs, CAA, MET Service Providers and Air Operators	a) Number of reviews undertaken on the effectiveness of the SEIs b) Number of new SEIs developed and implemented c) Number of RE	Moderate	Annual review of NASP document
	6. Validate the effectiveness of the SEIs through the analysis of FDM and pilot reports	Annual Review	KCAA, Industry				
	7. Conduct continuous evaluations of the performance of the SEIs	Annual Review	SSPICE/NASP committee				

HRC 5: RUNWAY INCURSION (RI)

HRC 5: RUNWAY INCURSION (RI)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI - 5: Mitigate contributing factors to RI accidents and incidents	1. Implement the following RI safety actions: a) Ensure the establishment and implementation of a State runway safety programme and runway safety teams	a) Develop and implement the State Runway Safety Programme by 30th June 2023. b) All airports to establish and operationalize RSTs by 30th December 2022	KCAA	KAA, ANSP, Aircraft Operators	a) Number of airports that have implemented and operationalized RSTs b) Approved State Runway Safety Programme	High	Surveillance audits and inspections

HRC 5: RUNWAY INCURSION (RI)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	b) Promote the establishment of policy, procedures and training that supports situational awareness for controllers, pilots and airside vehicle drivers	2024	KCAA	KAA, ANSP, ATOs, Aircraft Operators	Number of Runway safety policies, Awareness seminars and training for airside operators	Medium	Surveillance audits and inspections
	c) Promote use of suitable technologies to assist the improvement of situational awareness, such as improved resolution airport moving maps (AMM), electronic flight bags (EFBs),	2025	KCAA	KAA, ANSP, Aircraft Operators	Number of awareness activities	Medium	tracking of promotion activities

HRC 5: RUNWAY INCURSION (RI)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	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)						
	d) Certify aerodrome in accordance with the Civil Aviation (Certification, Licensing, and Registration of	Undertake the certification of all international airports by 30th December 2024;	KCAA	Aerodrome Operators, ANSPs, CAA, MET Service Providers	Number of aerodromes certified	High	Continuous surveillance activities on Aerodrome Operators

HRC 5: RUNWAY INCURSION (RI)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	Aerodromes) Regulations						
	e) Ensure the use of standard phraseologies in accordance with Civil Aviation (Communication Procedures) Regulations	Continuous	KCAA	ANSP, Aerodrome operators, Aircraft operators, ATOs	Number of RIs	Medium	Surveillance of ANSP
	f) Ensure the identification and publication in the aeronautical information publication (AIP) of hot spots at aerodromes	By December 2024	KCAA	ANSP, Aerodrome operators, operators	Number of aerodrome hotspots published in the AIP	Medium	Surveillance of ANSPs and Aerodrome Operators
	g) Ensure that suitable strategies to remove hazards or mitigate	By December 2024	KCAA	ANSP, Aerodrome operators, ATOs, AOCs	Number of RI	Medium	Surveillance of ANSPs and Aerodrome Operators

HRC 5: RUNWAY INCURSION (RI)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	risks associated with identified hot spots are developed and executed						
	2. Validate the effectiveness of the SEIs in the industry through MORs and VRS systems and accident/incident investigations	Annual	KCAA	ANSP, Aerodrome Operators, ATOs, AOCs	Number of RI	High	annual review of MOR/VRS data
	3. Identify additional contributing factors, for example: h) Operations in low visibility conditions	Continuous	KCAA, industry	Aerodrome Operators, ANSPs, ATOs and Air Operators	Number of RI attributable to additional contributing factors	High	Surveillance of ANSP's training: basic, specialized and recurrence

HRC 5: RUNWAY INCURSION (RI)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	i) Complex or inadequate aerodrome design j) Complexity of traffic (multiple simultaneous line-ups) k) Conditional clearances l) Simultaneous use of intersecting runways m) Late issue of or late changes to departure clearances Phraseology use (e.g. non-standard vs. standard, call-sign confusion) n) Concurrent use of more than one language						

HRC 5: RUNWAY INCURSION (RI)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	for ATC communications o) English language Proficiency p) Inadequate maneuvering area driver training and assessment programme						
	4. Implement the following RI safety actions: a) Active participation in a runway safety programme and runway safety teams	Continuous	Industry	Aerodrome Operators, ANSPs, ATOs and Air Operators	Number of RST meetings held per aerodrome in a year and the diversity of attendance	Medium	

HRC 5: RUNWAY INCURSION (RI)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	b) Policy, procedures and training that support situational awareness for controllers, pilots and airside vehicle drivers	Continuous	Aerodrome Operator, ANSP, ATOs and AOCs	Aerodrome Operators, ANSP, ATOs and Air Operators	Number of RI	Medium	Surveillance of ANSP, Aerodrome operators and air operators
	c) Effective use of suitable technologies to assist the improvement of situation awareness, such as improved resolution AMM, EFB, EVS and HUD, A-SMGCS, stop bars and ARIWS	Continuous	Aerodrome Operator, ANSP, ATOs and AOCs	Aerodrome Operators, ANSP, ATOs and Air Operators	Number of RI	medium	

HRC 5: RUNWAY INCURSION (RI)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	d) Comply with runway-related provisions in Civil Aviation (Aerodrome Design and Operations) Regulations	Continuous	Aerodrome Operator	Aerodrome operator	Number of findings identified by Regulator	High	
	e) Use of standard phraseologies or plain English language as applicable	Continuous	Aerodrome Operator, ANSP, ATOs and AOCs	Aerodrome Operators, ANSP,ATOs and Air Operators	number of RI	medium	
	f) Identification and publication in the AIP of hot spots at aerodromes	2024	Aerodrome operator and ANSP	Aerodrome Operator	Number of RI	Medium	
	g) Suitable strategies to remove or mitigate hazards associated with identified hot spots	Continuous	aerodrome operator, ANSP, ATOs and AOCs	aerodrome operator, ANSP, ATOs and AOCs	number of RI	Medium	closure of hazard log action items

HRC 5: RUNWAY INCURSION (RI)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	5. Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for RI	Annual	aerodrome operator, ANSP, ATOs and AOCs	aerodrome operator, ANSP, ATOs and AOCs	number of RI	high	annual review of NASP
	6. Validate the effectiveness of the SEIs through the analysis of ATC data, and reports from stakeholders	Annual	aerodrome operator, ANSP, ATOs and AOCs	aerodrome operator, ANSP, ATOs and AOCs	number of RI	High	annual review of NASP
	7. Conduct continuous evaluations of the performance of the SEI	Annual	SSPICE/NASP committee	aerodrome operator, ANSP, ATOs and AOCs	number of RI	Medium	annual review of NASP

HRC 6: BIRD/WILDLIFE INCIDENTS (BWI)

HRC 6: BIRD/WILDLIFE INCIDENTS (BWI)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI - 6: Mitigate contributing factors to bird/wildlife strikes	1. Implement the following BWI safety actions: a) Ensure the establishment and implementation of a National Wildlife Hazard management committee and programme	By December 2023	KCAA	KAA, ANSP, Aircraft Operators, KWS, County Governments , Military , NEMA, National Museum, Bird/wildlife Organizations e.g. Nature Kenya	Approved National Wildlife Hazard Management Plan letters of appointment to the National Wildlife Hazard Committee	High	Surveillance audits and inspections

HRC 6: BIRD/WILDLIFE INCIDENTS (BWI)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	b) Ensure the establishment and implementation of Local Wildlife Hazard management committees at all Certified aerodromes	31-Dec-23	KCAA	Aerodrome operators, ANSPS, Air operators, Security agencies, KWS, Bird Specialists	Number of meetings held	high	Surveillance audits and inspections of the Aerodromes
	2. Development and implementation of wildlife hazard management plan at certified aerodromes	31st March 2023	Aerodrome Operator	Aerodrome operators, ANSPS, Air operators, Security agencies, KWS, Bird Specialists	number of airports that have developed wildlife hazard management plans percentage of wildlife plan implemented	High	Surveillance audits and inspections of the Aerodromes
		Continuous				High	

HRC 6: BIRD/WILDLIFE INCIDENTS (BWI)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	3. Ensure the collection, analysis and reporting of bird hazard and bird strikes data is undertaken.		KCAA, Industry	Aerodrome operators, ANSPS, Air operators, Bird Specialists	Number of bird strikes per aerodrome per year		Surveillance audits and inspections of the Aerodromes Data analysis of bird/wildlife incident reports
	4. Effective use of suitable technologies to assist the deterrent of presence of birds on the critical areas	Continuous	Aerodrome Operator	Aerodrome operators, ANSPS, Air operators, Bird Specialists	Number of birdstrikes per aerodrome per year	High	Surveillance audits and inspections
	5. Ensure better management of vegetation and land use around airports	Continuous	KCAA, Industry	Aerodrome Operators, County Governments, Military, NEMA, Government agencies	Number of birdstrikes per aerodrome per year	High	Surveillance audits and inspections of the Aerodromes

HRC 6: BIRD/WILDLIFE INCIDENTS (BWI)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of global accident rate.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
	6. Validate the effectiveness of the SEIs through the analysis of Birdstrike data and reports from stakeholders	Continuous	KCAA, Industry	Aerodrome operators, ANSPS, Air operators, Bird Specialists	Number of birdstrikes per aerodrome per year	High	annual data analysis
	7. Conduct continuous evaluations of the performance of the SEI	Continuous	SSPICE/NASP Committee	Aerodrome operators, ANSPS, Air operators, Bird Specialists	Number of birdstrikes per aerodrome per year	High	annual review of NASP

Appendix II

Goal 2: Strengthen Kenya's safety oversight capabilities							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI-7: Consistent implementation of ICAO Standards and Recommended Practices (SARPs)	Address all priority protocol questions (PQs) of the USOAP CMA	continous	KCAA, AAID	KCAA, AAID, air operators, ATOs, Aerodrome operators, ANSP, AMOs,	percentage of priority PQs EI	high	update on ICAO USOAP-CMA online reporting framework
	Enhance primary aviation law and regulations, to empower the competent authority to conduct regulatory oversight, this includes separation of oversight functions and	continous	KCAA, AAID	KCAA, AAID, air operators, ATOs, Aerodrome operators, ANSP, AMOs,	percentage of CE1 &CE2	high	Continous review of the Civil Aviation Act & Civil aviation regulations

	service provision functions (CE-1 and CE-2)						
	Increase the level of compliance with ICAO SARPs and increase the EI of CE-1 to CE-5	continous	KCAA, AAID	KCAA, AAID, air operators, ATOs, Aerodrome operators, ANSP, AMOs,	E.I percentage of CE1 - CE5	high	update on ICAO USOAP-CMA online reporting framework
	Implement the process for the identification of differences with ICAO SARPs (CE-2)	continous	KCAA, AAID	KCAA, AAID, air operators, ATOs, Aerodrome operators, ANSP, AMOs,	differences filed with ICAO	high	Continous review of the Civil Aviation Act & Civil aviation regulations
SEI-8: Development a comprehensive regulatory oversight framework	Enhance 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)	continous	KCAA, AAID	KCAA, AAID, air operators, ATOs, Aerodrome operators, ANSP, AMOs,	Oversight activitites conducted on service providers within the Authority	high	surveillance activitites conducted on service providers within the Authority i.e ANSP & EASA

	Enhance the documentation 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)	2025	KCAA, AAID	KCAA, AAID, air operators, ATOs, Aerodrome operators, ANSP, AMOs,	Percentage of uploaded TGMs on docushare/ TGMs approved	high	continous upload of TGMs on Docushare and KCAA website
	Establish an effective system to attract, recruit, train and retain qualified and sufficient technical personnel to support regulatory oversight (CE-3 and CE-4)	2025	KCAA, AAID	KCAA, AAID, air operators, ATOs, Aerodrome operators, ANSP, AMOs,	Percentage of in-post inspectors /establised KCAA structure	high	Difference between in-post and the established KCAA structure
SEI-9: Establish ment of an independe	Establish an independent accident and incident	2023	AAID, MOTIHUD	AAID, KCAA,MOTIHUD, Attorney General	E.I percentage of CE1 & CE3	high	

nt accident and incident investigation authority, consistent with Annex 13 — Aircraft Accident and Incident Investigation	investigation authority, as per Annex 13 requirements (CE-1 and CE-3)						
	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)	2025	AAID, MOTIHUD	AAID, MOTIHUD	E.I percentage of CE5, number of approved TGMs Vs number uploaded on AAID website	high	
	Establish an effective system to attract, recruit, train and retain qualified and sufficient technical personnel to support accident and incident investigations	2025	AAID, MOTIHUD	AAID, MOTIHUD	E.I percentage of AIG	high	

	(see SEI-5) (CE-3 and CE-4)						
SEI-10: Strategic allocation of resources to enable effective safety oversight	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)	2025	KCAA, AAID	KCAA, AAID, MoT, TREASURY,	percentage of oversight activities conducted /planned	high	number of oversight activities conducted against planned
	Obtain a sustainable and stable source of financing through commitments from the national and agency leadership and other stakeholders (CE-1 to CE-3).	2025	KCAA, AAID	KCAA, AAID, MoT, TREASURY, KRA	percentage of approved budget/proposed	high	difference of approved budget against proposed budget

	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)	2025	KCAA, AAID	KCAA, AAID, MoT, TREASURY	Development of the Resource assessment process implementation of the Resource assessment process	high	Sufficient resources allocated when changes occur
SEI-11: Qualified technical personnel to support effective safety oversight	Establish an effective system to identify and track qualifications and training of existing technical personnel (CE-4)	2024	KCAA, AAID	KCAA, AAID, MoT,	E.I percentage of CE4	high	Development & implementation of Training System
	Identify the gaps in qualified technical personnel and training requirements necessary to implement the	2024	KCAA, AAID	KCAA, AAID, MoT,	development of training programme	high	progress of development of training programme

	oversight mandate (CE-4)						
	Establish a compensation scheme for the attraction and retention of qualified technical personnel (CE-4)	established	KCAA, AAID	KCAA, AAID, MoT,	percentage of inspectorate/investigator staff turnover	medium	number of staff turnover in Oversight Departments and AAID
	Establish human resource plans to support hiring and retention of the appropriate number of qualified technical personnel required (CE-4)	established	KCAA, AAID	KCAA, AAID, MoT,	percentage of inspectorate/investigator staff turnover	medium	number of staff turnover in Oversight Departments and AAID
	Implement training policies and programmes for technical personnel and verify that the type and frequency of training successfully completed (i.e. initial, recurrent, specialized and	continous	KCAA, AAID	KCAA, AAID, MoT,	percentage of implementation of training programme	high	progress in implementation of training programme

	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)						
	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)	2025	KCAA, AAID	KCAA, AAID, MoT,	developme nt of a process for managing changes of qualified technical personnel	high	implementati on of training change mangement

SEI-12: Strategic collaboration with key aviation stakeholders to enhance safety in a coordinated manner	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)	2024	KCAA	KCAA, AAID, MoT, air operators, ATOs, Aerodrome operators, ANSP, AMOs,	Establishment of a NASP review Taskforce Issuance of appointment letters to members serving in the Taskforce	medium	number of NASP Taskforce meetings held
	Provide assistance to other States for primary aviation legislation development	continous	KCAA	CASSOA, AFCAC, States	number of assistance activities conducted	medium	number of assistance activities conducted
	Provide assistance to other States for the development of national regulations (CE-2)	continous	KCAA	CASSOA, AFCAC, States	number of assistance activities conducted	medium	number of assistance activities conducted
	Establish a process for a collaboration system, including providing industry assistance as well as sharing of best	2025	KCAA	KCAA, AAID, MoT, air operators, ATOs, Aerodrome operators, ANSP, AMOs,	number of assistance activities conducted	medium	number of assistance activities conducted

	practices and internal follow-up actions						
	Establish and implement a process for the development and promulgation of technical guidance, tools and the provision of safety-critical information, in collaboration with industry and/or other stakeholders, with the understanding that these materials need to be aligned to the Civil Aviation Act	2025	KCAA, AAID	KCAA, AAID, air operators, ATOs, Aerodrome operators, ANSP, AMOs,	Development of a TGM collaboration process number of TGMs developed by the collaboration process	medium	Number of collaboration meetings held
	While working to improve safety oversight, work with industry and stakeholders to address high-risk categories of occurrences (see OPS roadmap)	continous	KCAA, AAID	KCAA, AAID, MoT, air operators, ATOs, Aerodrome operators, ANSP, AMOs,	State SPIs	high	review of State SPIs

	Collaborate in resolving safety concerns identified via accident and incident investigations, safety reports and other means (CE-8)	continous	KCAA, AAID	KCAA, AAID, MoT, air operators, ATOs, Aerodrome operators, ANSP, AMOs,	number of safety concerns meetings held	high	number of safety concerns meetings held
SEI-13: Provision of the primary source of safety information to ICAO by completing, submitting and updating all relevant documents and records	Update USOAP corrective action plan items	continous	KCAA, AAID	KCAA, AAID, MoT,	E.I score	high	Quarterly review of OLF
	Complete and submit the self-assessment checklist based on USOAP CMA priority PQs	continous	KCAA, AAID	KCAA, AAID, MoT,	E.I score	high	Quarterly review of OLF
	Complete and submit the State aviation activity questionnaire	continous	KCAA, AAID	KCAA, AAID, MoT,	E.I score	high	Quarterly review of OLF
	Complete and submit the compliance checklists on electronic filing of differences system	continous	KCAA, AAID	KCAA, AAID, MoT,	E.I score	high	Quarterly review of OLF

	Update documents and records, as required, in a timely manner	continous	KCAA, AAID	KCAA, AAID, MoT,	E.I score	high	Quarterly review of OLF
SEI-14: Improvement of industry compliance with applicable regulations	Work together within industry to ensure compliance with applicable regulations	continous	Industry	KCAA, AAID, air operators, ATOs, Aerodrome operators, ANSP, AMOs,			
	Encourage service providers to participate in the corresponding recognized industry assessment programmes (IOSA,ISAGO,APEX,CANSO,ISBAO, BARS, etc)	continous	Industry	KCAA, AAID, air operators, ATOs, Aerodrome operators, ANSP, AMOs,			
	Encourage the active participation of industry in State Safety Initiatives to assist with the implementation of safety	continous	Industry	KCAA, AAID, air operators, ATOs, Aerodrome operators, ANSP, AMOs,			

	enhancement initiatives						
SEI-15: Allocation of industry resources to enable effective safety oversight	Identify resources that are available to support roadmap safety enhancement initiatives for the State		Industry				
	Participate in regional and international government/industry collaborative safety enhancement initiatives		Industry				

Goal 3: — Implement an effective State safety programme (SSP)							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI-16: Strategic allocation of resources to SSP implementation	Review of SSP implementation plan	continous	KCAA	KCAA,AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency,	percentage of SSP plan implemented	high	implementation plan activities conducted
	Identify and share safety management best practices	continous	KCAA	KCAA, AAID, air operators, ATOs, Aerodrome operators, ANSP, AMOs,	identification of best practices Best practices sharing activities	high	implementation of best practices by the industry

	Establish a process for planning and allocation of resources to enable SSP implementation and identify areas where resources are needed	2024	KCAA	KCAA, AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency, air operators, ATOs, Aerodrome operators, ANSP, AMOs,	established resource allocation & planning process	high	implementation of the planning& allocation process
	Obtain resources from national and appropriate authorities' leadership and stakeholders within the State to support SSP implementation	2024	KCAA	KCAA,AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency,	level of contribution by appropriate authorities	high	level of contribution by appropriate authorities
	Work with the ICAO ESAF Regional Office to make use of available means (e.g. SSP Peer Review Mechanism) to	continous	KCAA	KCAA, AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency,	number of SSP assistance activities conducted	high	number of SSP assistance activities conducted

	acquire assistance needed for SSP implementation						
	Work with RSOO, other States and other organizations, as appropriate to train qualified technical personnel to fulfil their duties and responsibilities regarding SSP implementation	continous	KCAA	KCAA, AAID, air operators, ATOs, Aerodrome operators, ANSP, AMOs,	number of tranings conducted	high	number of tranings conducted

SEI-17: Strategic collaboration with key aviation stakeholders for SSP implementation	Identify areas where collaboration/support is needed as part of the SSP implementation plan	continous	KCAA	KCAA, AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency, air operators, ATOs, Aerodrome operators, ANSP, AMOs,UAS operators, UTOs,	list of collaboration areas	high	review of the list of collaboration areas
	Identify relevant collaborators from key aviation stakeholders, including other States that are implementing or have implemented an SSP	continous	KCAA	KCAA, AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency, air operators, ATOs, Aerodrome operators, ANSP, AMOs,UAS operators, UTOs,	list of key stakeholders	high	review list of key stakeholders

	Review action plan to address the elements identified as missing or deficient during the SSP gap analysis	continous	KCAA	KCAA, AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency, air operators, ATOs, Aerodrome operators, ANSP, AMOs,UAS operators, UTOs,	reviewed SSP plan	high	annual SSP plan review
	Establish a process for providing assistance to industry, as well as sharing of best practices to support SSP implementation	2024	KCAA	KCAA, AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency, air operators, ATOs, Aerodrome operators, ANSP, AMOs,UAS operators, UTOs,	established process	high	process implementation evaluation

	Develop a process to provide training on SSP to relevant staff, (e.g. initial, recurrent and advanced)	2025	KCAA	KCAA, AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency,	SSP training programme SSP trainings conducted	high	review of SSP training programme
	Work with collaborators to ensure all elements of the SSP are present, suitable, operational and effective	continous	KCAA	CAA, AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency, air operators, ATOs, Aerodrome operators, ANSP, AMOs,UAS operators, UTOs,	SSP implementation level	high	SSP implementation level

SEI-18: Establishment of safety risk management	Maintain a process to identify hazards from collected safety data	continous	KCAA	CAA, AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency, air operators, ATOs, Aerodrome operators, ANSP, AMOs,UAS operators, UTOs,	State hazard log	high	review of Sate hazard log
	Establish and utilize a process to ensure the assessment of safety risks associated with identified hazards	2023	KCAA		State safety risk assessment report	high	review of State safety risk assessment report
SEI-18: Establishment of safety risk management	Develop safety performance indicators using the established safety risk management process	2023	KCAA		State SPIs	high	review of State SPIs

	Develop safety performance measurement methodologies, aligned with the regional safety metrics, using the established safety risk management process	2024	KCAA		Established SPM methodology	high	level of implementation of SPM methodology
	Establish the acceptable level of safety performance to be achieved through the SSP	2023	KCAA		State AloSP	high	review of SPIs and SPTs
	Ensure the establishment of mandatory safety reporting systems by service providers	continous	KCAA	air operators, ATOs, Aerodrome operators, ANSP, AMOs,UAS operators, UTOs,	percentage of service providers submitting MORs	high	review of MORs submitted against total number of service providers
	Encourage establishment of voluntary safety reporting systems as part of service providers' SMS	continous	KCAA		percentage of service providers submitting VRs	medium	review of percentage of service providers submitting VRs

	Promote safety awareness and the two-way communication, sharing and exchange of safety-relevant information within the State's aviation organizations and encourage sharing of safety information within industry	continous	KCAA	CAA, AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency, air operators, ATOs, Aerodrome operators, ANSP, AMOs,UAS operators, UTOs,	number of safety promotion activites conducted	medi um	
	Contribute information on safety risks and SSP safety performance indicators to the RASG	continous	KCAA	CAA, AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency,	SSP safety data shared with RASG	medi um	review number of shared reports with RASG
SEI-19: Acquisition of resources to increase the proactive use of risk	Identify resources needed to support safety intelligence collection and processing, advanced data analysis, risk modelling and	2023	KCAA	CAA, AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency,	list of data analysis resources	high	review list of data analysis resources required

modelling capabilities	information-sharing capabilities						
	Attract, recruit, train, and retain qualified technical personnel to specialize in risk modelling	2025	KCAA	CAA, AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency,	number of qualified personnel recruited	high	review of number of qualified personnel required against recruited
	Ensure that the Civil Aviation Safety Inspector workforce is trained to perform safety oversight of service providers that have implemented SMS	2024	KCAA	KCAA (FOPS, AIR, AGA, ANS, ATO)	percentage of safety oversight inspectors trained	high	analysis of number of safety oversight inspectors trained against total number

Strategic collaboration with key aviation stakeholders to support the proactive use of risk modelling capabilities	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	2023	KCAA	CAA, AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency, air operators, ATOs, Aerodrome operators, ANSP, AMOs,UAS operators, UTOs,	number of safety culture activities conducted	high	safety culture survey
	Establish an assistance system for sharing of best practices, to support safety culture development and the proactive use of risk modelling with industry	2025	KCAA	CAA, AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency, air operators, ATOs, Aerodrome operators, ANSP, AMOs,UAS operators, UTOs,	assistance system established	medium	level of implementation of the assistance system

	Foster and participate in public-private partnerships to identify and implement system safety enhancements	continous	KCAA	CAA, AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency, air operators, ATOs, Aerodrome operators, ANSP, AMOs,UAS operators, UTOs,	number of PPP activities conducted	medi um	level of participation in PPP activities
	Collaborate with industry stakeholders to establish a mechanism for the regular sharing and exchange of safety information, analyses, safety risk discoveries/lesson s learned and best practices within a confidential and	continous	KCAA		data sharing & exchange mechanism established	high	level of participation in data sharing & exchange activities

	non-punitive environment						
Advancement of safety risk management (part of SEI-18)	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.)	2025	KCAA	CAA, AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency,	data sharing integration established	medi um	level of data sharing integration
	Develop risk modelling capabilities to support monitoring system safety issues and accident/incident prevention	2025	KCAA	CAA, AAID, MoT, NASD (KWS, KDF, KFS, KPAW, KETRACO, KPC) Kenya Space Agency,			

Improvement of industry compliance with applicable SMS requirements **(SEI-14)**	Implement a safety management system (SMS) commensurate to the size and complexity of the service provider, as required by Safety Management regulations	continous	service providers	Industry			
	Utilize available guidance material (e.g. from KCAA, Industry organizations, etc) to assist with SMS implementation	continous	service providers	Industry			
Resources for service providers to effectively implement SMS **(SEI-16)**	Work in collaboration with KCAA and industry associations to advance SMS implementation and identify expectations that cannot be efficiently resourced	continous	service providers	Industry			
	Identify areas where resources	2023	service providers	Industry			

	are needed as part of the SMS implementation plan developed following the SMS gap analysis						
	Establish a process for resource planning and allocation to enable SMS implementation, including resources which may be obtained from industry organizations	2023	service providers	Industry			
	Obtain commitment from the accountable executive within the service provider for the necessary resources to enable SMS implementation	continous	service providers	Industry			
	Encourage other service providers (e.g. ground handlers, fuellers, etc) to implement	2025	service providers	Industry			

	SMS within their operation by providing resources, such as qualified technical personnel to assist them						
Strategic collaboration with key aviation stakeholders for SSP implementation **(SEI-17)**	Help identify relevant collaborators from the key aviation stakeholders involved in implementing SSP	continous	service providers	Industry			
	Work with collaborators to support an action plan for SSP implementation: Support SSP through sharing and supporting harmonization of SMS within industry	continous	service providers	Industry			
	Support establishment of an assitance system, including sharing of best practices to	2025	service providers	Industry			

	support SSP implementation						
	Provide input to the process for sharing technical guidance, tools and safety-critical information related to SSP and SMS (e.g. advisory circulars, safety performance indicators), in collaboration with other stakeholders	continous	service providers	Industry			
	Support continuous improvement of SSP, in collaboration with other stakeholders	continous	service providers	Industry			
Establishment of safety risk management at the service provider level **(SEI-18)**	Establish and maintain mandatory safety reporting systems	continous	service providers	Industry			
	Provide information from the service provider to the State mandatory safety reporting	continous	service providers	Industry			

	system, as required						
	Establish internal mechanisms related to the protection of safety data, safety information and related sources for the purpose of safety improvement	2025	service providers	Industry			
	Establish and maintain voluntary and confidential hazard/occurrence reporting systems as part of the SMS	continous	service providers	Industry			
	Establish and maintain a safety database for technical personnel to monitor system safety issues within the service provider	2025	service providers	Industry			
	Establish and utilize a safety risk management process	continous	service providers	Industry			

Establishment of safety risk management at the service provider level **(SEI-18)**	Develop safety performance measurement methodologies, aligned with harmonized safety metrics within industry, via the established safety risk management process — Develop safety performance indicators and associated targets/alert settings, via the established safety risk management process	2024	service providers	Industry			
	Encourage the use of globally harmonized metrics for the development and monitoring of safety performance indicators, as part of the service providers' SMS	2023	service providers	Industry			

	Encourage sharing and use of information from within industry to identify hazards and mitigate safety risks	2024		Industry			
SEI-20: Allocation of industry resources to support continuous improvement of SSP and SMS	Ensure competent technical personnel are allocated, at the service provider level, to support the requirements of the SSP infrastructure	2025		Industry			
	Provide safety analysis results from service providers to support the SSP	2025		Industry			
Strategic collaboration with key aviation stakeholders to support the proactive use of risk modelling capabilities	Work with industry stakeholders to leverage best practices with safety information analysis	2025		Industry			
	Share safety risk identification with stakeholders for mitigation and	2025		Industry			

	monitoring strategies						
	Actively participate with KCAA and organizations engaged in risk modelling	2025		Industry			
Advancement of safety risk management at the service provider level							
	Develop risk modelling capabilities to support the monitoring of system safety issues and accident/incident prevention	2025		Industry			
	Monitor safety information exchange networks for continuous improvements	2025		Industry			