TCAA

# UNITED REPUBLIC OF TANZANIA

## MINISTRY RESPONSIBLE FOR CIVIL AVIATION

# NATIONAL AVIATION SAFETY PLAN FOR THE UNITED REPUBLIC OF TANZANIA

# (URT-NASP)

URT -NASP First Edition 2023-2025 - December, 2023

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## RECORD OF AMENDMENTS AND CORRIGENDA

| AMMENDMENTS | | | | | CORRIGENDA | | |
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## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| AFI-RASP | Africa-Indian Ocean Regional Aviation Safety Plan |
| AIB | Accident Investigation Board |
| APIRG | AFI Planning and Implementation Regional Group |
| ATO | Approved Training Organization |
| CAA | Civil Aviation Authority |
| CAST | Commercial Aviation Safety Team |
| CFIT | Controlled Flight Into Terrain |
| CICTT | Commercial Aviation Safety Team (CAST)/ICAO Common Taxonomy Team |
| FIR | Flight Information Region |
| GANP | Global Air Navigation Plan |
| GASP | Global Aviation Safety Plan |
| G-HRC | Global High-Risk Category of Occurrence |
| iSTARS | Integrated Safety Trend Analysis Reporting System |
| LOC-I | Loss of Control In-flight |
| NASC | National Aviation Steering Committee |
| NASP | National Aviation Safety Plan |
| NAST | National Aviation Safety Team |
| N-HRC | National High-Risk Category of Occurrence |
| PQ | Protocol Question |
| RAIO | Regional Accident and Incident Investigation Organization |
| RASC | RASG-AFI Steering Committee |
| RASG-AFI | Regional Aviation Safety Group for Africa-Indian Ocean |
| R-HRC | Regional High-Risk Category of Occurrence |
| RSOO | Regional Safety Oversight Organization |
| SARPs | Standards And Recommended Practices |
| SEI | Safety Enhancement Initiative |
| SMS | Safety Management System |

| | |
|---|---|
| SSC | Significant Safety Concern |
| SSP | State Safety Programme |
| SST | Safety Support Team |
| UPRT | Upset Prevention and Recovery Training |
| URT | United Republic of Tanzania |
| USOAP | Universal Safety Oversight Audit Programme |

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## DEFINITIONS

***Accident investigation authority.*** The authority designated by a State as responsible for aircraft accident and incident investigations within the context of Annex 13.

***Audit.*** A systematic, independent and documented process for obtaining evidence and evaluating it objectively to determine the extent to which requirements and audit criteria are fulfilled.

***Audit area.*** One of eight audit areas pertaining to the Universal Safety Oversight Audit Programme (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).

***Contributing factors.*** Actions, omissions, events, conditions, or a combination thereof, which, if eliminated, avoided or absent, would have reduced the probability of the accident or incident occurring, or mitigated the severity of the consequences of the accident or incident. The identification of contributing factors does not imply the assignment of fault or the determination of administrative, civil or criminal liability.

***Critical elements (CEs).*** The critical elements of a safety oversight system encompass the whole spectrum of civil aviation activities. They are the building blocks upon which an effective safety oversight system is based. The level of effective implementation of the CEs is an indication of a State's capability for safety oversight.

***Effective implementation (EI).*** A measure of the State's safety oversight capability, calculated for each critical element, each audit area or as an overall measure. The EI is expressed as a percentage.

***Gap analysis.*** An evaluation that compares an existing situation to the desired one, it identifies specific steps that can be taken to reach a desired goal.

***Hazard.*** A condition or an object with the potential to cause or contribute to an aircraft incident or accident.

***Incident.*** An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.

*Note. — The types of incidents which are of main interest to the International Civil Aviation Organization for accident prevention studies are listed in Annex 13, Attachment C.*

***Maximum mass.*** Maximum certificated take-off mass.

***Operator.*** The person, organization or enterprise engaged in or offering to engage in an aircraft operation.

***Safety.*** The state in which risks associated with aviation activities, related to, or in direct support of the operation of aircraft, are reduced and controlled to an acceptable level.

***Safety audit.*** A USOAP CMA audit that a State requests and pays for (on a cost-recovery basis). The State determines the scope and date of a safety audit. Also see definition of *audit*.

***Safety enhancement initiative (SEI).*** One or more actions to eliminate or mitigate risks associated with contributing factors to a safety occurrence or to address an identified safety deficiency.

***Safety management system (SMS).*** A systematic approach to managing safety, including the necessary organizational structures, accountability, responsibilities, policies and procedures.

***Safety oversight.*** A function performed by a State to ensure that individuals and organizations performing an aviation activity comply with safety-related national laws and regulations.

***Safety performance***. A State or a service provider's safety achievement as defined by its safety performance targets and safety performance indicators.

***Safety performance indicator.*** A data-based parameter used for monitoring and assessing safety performance.

***Safety performance target*.** The State or service provider's planned or intended target for a safety performance indicator over a given period that aligns with the safety objectives.

***Safety risk.*** The predicted probability and severity of the consequences or outcomes of a hazard.

***State safety programme (SSP).*** An integrated set of regulations and activities aimed at improving safety.

## EXECUTIVE SUMMARY

Safety is a top priority in aviation. The National Aviation Safety Plan (NASP) presents the national strategy for the continuous improvement of aviation safety. The purpose of the NASP is to continually reduce fatalities, and the risk of fatalities, by guiding the development of a harmonized aviation safety strategy. A safe, resilient and sustainable aviation system contributes to the economic development of the United Republic of Tanzania (URT) and its industries. The NASP promotes the effective implementation of a State Safety Programme, including a URT's safety oversight system, a risk-based approach to managing safety as well as a coordinated approach to collaboration with industry.

The United Republic of Tanzania National Aviation Safety Plan (URT-NASP) 2023 – 2025 Edition recognizes the 2023-2025 edition of the AFI-RASP and GASP by adopting the global and regional six goals and five high-risk categories of occurrences (G and R-HRCs). In addition, the NASP recognizes the goals and the high-risk categories of occurrences that are peculiar to the URT (N-HRCs).

The vision of the URT-NASP is to achieve and maintain the aspirational safety goal of zero fatalities in commercial operations by 2030 and beyond, which is consistent with the United Nations' 2030 Agenda for Sustainable Development. The plan's mission is to continually enhance national aviation safety performance (and in consequence the global and regional aviation safety performance) and resilience by providing a collaborative framework for URT and its industry. This is supported by a series of goals:

**Goal 1** is to achieve a continuous reduction of operational safety risks.

**Goal 2** is to strengthen URT safety oversight capabilities.

**Goal 3** is the implementation of effective State safety programmes.

**Goal 4** is to increase collaboration at the regional level to enhance safety.

**Goal 5** is to expand the use of industry programmes and safety information sharing networks.

**Goal 6** focuses on the appropriate infrastructure needed to support safe operations.

The URT-NASP 2023-2025 Edition includes the six (6) Goals in line with GASP and AFI-RASP 2023-2025 Editions. For each Goal established in the National Safety Strategy, identified SEI(s) will be mapped to it including their respective actions. Thus, to address organizational issues, national operational risks, and emerging risks; SEIs and related actions have been identified and developed.

In order to mitigate the risk of fatalities, URT and its industry need to address the N-HRCs. The selection of types of occurrences is based on actual fatalities from past accidents, high fatality risk per accident or the number of accidents and incidents. The following N-HRCs, in no particular order, have been identified for this edition of the URT-NASP: controlled flight into terrain; loss of control in-flight; mid-air collision; runway excursion; and runway incursion.

The URT national aviation safety plan (NASP) presents the strategic direction for the management of aviation safety at the national level for a three-year period and is developed in line with the GASP's and AFI-RASP goals, targets and HRCs.

To achieve the URT-NASP goals and targets, authorities within URT need to provide sufficient resources and qualified technical personnel for the maintenance and implementation of the URT- NASP.

The 2023-2025 edition of the URT-NASP outlines key safety enhancement initiatives (SEIs) at the national level (provided as Appendices 1, 2, 3 to this Plan), the roles and responsibilities for TCAA and industry, and provides a framework for the cooperation and collaboration of these to support the management of organizational challenges and operational safety risks.

The national aviation safety roadmap serves as an action plan to assist the national aviation community in achieving the URT-NASP goals. This roadmap is provided as Appendices 1, 2, 3 to this Plan.

Tanzania Civil Aviation Authority (TCAA) is the governing body responsible for the

development, implementation and monitoring of the URT-NASP, in collaboration with the ICAO Regional Offices for Eastern and Southern Africa (ESAF) and Western and Central Africa (WACAF), international and regional organizations and with the aviation industry. The URT-NASP is to be reviewed by the National Aviation Safety Teams (NASTs) annually mainly to review the effectiveness and relevance of the existing SEIs, include newly identified ones, as well as their respective actions; and report to the National Aviation Steering Committee (NASC).

The NASC would continuously monitor the implementation of the SEIs listed in the URT-NASP and measure safety performance of the national civil aviation system, to ensure the intended results are achieved, and report to the Accountable Executive (the Director General of TCAA) on annual basis.

The URT-NASP was developed with inputs from experts from civil aviation authority, industry, other aviation stakeholders as well as regional and international organizations, and thereafter submitted for extensive peer review, taking into account feedback from the expert community. The TCAA gratefully acknowledges the contributions of the RASG-AFI, ICAO ESAF and WACAF, EAC-Civil Aviation Safety and Security Safety Oversight Agency (CASSOA), Aircraft Accident Investigation Bureau (AAIB) and individual experts who provided support, advice and input for this plan.

# SECTION 1: INTRODUCTION

## 1.1 Overview of the NASP

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

The NASP Edition 2023-2025 covers the three-year period between 2023 and 2025 and will be updated on a yearly basis, as required, to cover subsequent three years' periods. It is a rolling 3-year plan.

The NASP of the URT is in alignment with the ICAO *Global Aviation Safety Plan* (GASP, Doc 10004) and the Africa-Indian Ocean Regional aviation safety plan (AFI-RASP).

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Tanzania Civil Aviation Authority

### 1.2 Structure of the NASP

This NASP presents the strategic direction for the management of aviation safety at the national level for a period of 3 years. It comprises of six sections. In addition to the introduction, sections include: the purpose of the NASP, United Republic of Tanzania'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.

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

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

### 1.4 Responsibility for the NASP development, implementation and monitoring

The Tanzania Civil Aviation Authority (TCAA) is responsible for the development, implementation and monitoring of the NASP, in collaboration with ICAO Regional Offices for Eastern and Southern Africa (ESAF); and Western and Central Africa (WACAF); African Civil Aviation Commission (AFCAC); international and regional organizations (CASSOA and SASO); and with the national aviation industry. The NASP was developed in consultation with national operators and other key aviation stakeholders, and in alignment with the 2023-2025 edition of the GASP and the 2023-2025 Edition of the AFI-RASP.

### 1.5 National safety issues, goals and targets

The NASP addresses the following national safety issues:

1) Controlled Flight Into Terrain (CFIT);
2) Loss Of Control In-Flight (LOC-I);

3) Mid-Air Collision (MAC);
4) Runway Excursion (RE);
5) Runway Incursion (RI).
6) Lack of aircraft accident and incident investigation capabilities
7) Lack of sufficient number of qualified and experienced technical personnel to carry out safety oversight functions at the national level.
8) Implementation of a Safety Oversight System (CE-6 TO CE-8)
9) Wildlife and bird strikes
10) Unmanned aircraft system (UAS)
11) Operation of aircraft in unmanned aerodromes.

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

| GOAL | TARGET | |
|---|---|---|
| **Goal 1:** Achieve a continuous reduction of operational safety risks | 1.1 | Maintain a decreasing trend of National accident rate |
| **Goal 2:** Strengthen States' safety oversight capabilities | 2.1 | To improve the score for the effective implementation (EI) of the critical elements (CEs) of the State's safety oversight system (with focus on priority PQs) as follows: by 2024 – 75 per cent EI score by 2026 – 85 per cent EI score by 2030 – 95 per cent EI score. |
| **Goal 3:** Implement effective State safety programmes (SSPs) | 3.1 | By 2023, to implement the foundation of an SSP. |
| | 3.2 | By 2024, to publish a national aviation safety plan (NASP). |
| | 3.3 | To work towards an effective SSP as follows:<br>a) by 2025 – Present<br>b) by 2028 – Present and effective<br><br>Note: The terms "present" and "present and |

| GOAL | TARGET | |
|---|---|---|
| | | effective" are based on the maturity levels established in the ICAO SSP Implementation Assessment (SSPIA). |
| **Goal 4:** Increase collaboration at the regional level | 4.1 | By 2024, to publish NASP in line with 2023-2025 Edition of GASP and AFI-RASP |
| | 4.2 | By 2025, to contribute information on safety risks, including SSP safety performance indicators (SPIs), to the regional aviation safety group (RASG-AFI) |
| | 4.3 | By 2025, to contribute information on operational safety risks, including SSP safety performance indicators (SPIs), and emerging issues, to the RASG-AFI. |
| **Goal 5:** Expand the use of industry programmes and safety information sharing networks by service providers | 5.1 | Maintain an increasing trend in industry's contribution in safety information sharing networks to States and regions to assist in the development of NASPs and RASPs. |
| **Goal 6:** Ensure the appropriate infrastructure is available to support safe operations | 6.1 | By 2025, maintain an increasing trend of ANSPs and Aerodromes Operators with air navigation and aerodrome infrastructure that meet relevant ICAO Standards. |

## 1.6 Operational Context

There are three (3) certified aerodromes in the United Republic of Tanzania (URT) all of which are international aerodromes. The airspace of the URT is classified into Class A, D and G. There were about 1.5 million movements in the URT over the period of 2013 to 2022. There are currently thirty-five (35) air operators' certificates (AOCs) issued by December 2022, and of those there are three (3) issued to operators conducting international commercial air transport operations. URT also has twenty-four (24) operators, which operate domestic air taxi services, primarily on turboprop aircraft, no helicopter operators. There are no heliports in the URT. Common hazards and safety deficiencies in the URT include:

a) Lack of aircraft accident and incident investigation capabilities.

b) Lack of sufficient number of qualified and experienced technical personnel to carry out safety oversight functions at the national level.

c) Implementation of a Safety Oversight System (CE-6 TO CE-8)

d) Wildlife and bird strikes.

e) Unmanned aircraft system (UAS); and

f) Operation of aircraft in unmanned aerodromes.

## SECTION 2: PURPOSE OF URT'S NATIONAL AVIATION SAFETY PLAN

The NASP is the master planning document containing the strategic direction of the URT for the management of aviation safety for a period of 3 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.

The NASP has been developed using international safety goals and targets and HRCs from the GASP (www.icao.int/gasp) and the AFI RASP. 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 operational safety risks and recommended SEIs for individual States set out in the AFI-RASP. The URT has adopted these SEIs and has included them in this plan. Cross-references are provided to the AFI-RASP for individual SEIs where relevant.

### 2.1 Disruptive Events

A disruption event is a rare yet very significant event at a global, regional or national level, which adversely impacts aviation activities. Disruption events affect States, including safety and security authorities, as well as aircraft operators, operators of aerodromes, ATS providers, and industries dependent on aviation.

Disruption events are not typically aviation-centric but have significant impact on aviation operations. Measures should be developed to respond effectively to disruption events to maintain a safe, resilient and sustainable level of operations. These include the management of change, communication and coordination plans with all relevant stakeholders at the national, regional and international levels.

The nature of disruption events, such as the recent COVID-19 pandemic, can vary in complexity, scope, and duration and may affect the identification of hazards and management of safety risks. Recovery from a disruption event may also affect the operational safety risks. To the extent practicable, aviation stakeholders should share and communicate hazards that may develop into disruption events. In addition, stakeholders may also consider applying changes to safety plans in accordance with risk analyses. The policies, processes and mechanisms implemented for the SSP should support the management of disruption events.

## SECTION 3. UNITED REPUBLIC OF TANZANIA'S STRATEGIC DIRECTION FOR THE MANAGEMENT OF AVIATION SAFETY

The NASP presents the SEIs that were developed based on the organizational challenges (ORG) and operational safety risks (OPS) roadmaps, as presented in the ICAO Global Aviation Safety Roadmap (Doc 10161), as well as State-specific issues identified by the Tanzania Civil Aviation Act (CAP 80) and the Civil Aviation Regulations. This plan is developed and maintained by Tanzania Civil Aviation Authority (TCAA), in coordination with key aviation stakeholders and is updated at least every three (3) years.

The NASP includes the following national safety goals and targets, for the management of aviation safety, as well as a series of indicators to monitor the progress made towards their achievement. They are tied to the goals, targets and indicators listed in the 2023-2025 Edition of the GASP, the 2023-2025 Edition of the AFI-RASP and include additional national safety goals, targets and indicators.

**Table 1: NASP Goals, Targets and Indicators**

| Indicators | Link to GASP and RASP |
|---|---|
| **Goal 1:** Achieve a continuous reduction of operational safety risks | |
| **Target 1.1:** Maintain a decreasing trend of national accident rate | |
| 1.1.1. Number of accidents per million departures (accident rate)<br>1.1.2. Number of fatal accidents per million departures (fatal accident rate)<br>1.1.3. Percentage of occurrences related to high-risk categories (HRCs)<br>1.1.4. Percentage of International airports with established Runway Safety Teams (RSTs)<br>1.1.5. Number of AIRPROX occurrences<br>1.1.6. Percentage of service providers participating in ICAO-recognized industry assessment programmes. | This goal is directly linked to Goal 1 and Target 1.1 of the GASP and the AFI-RASP. |

| Indicators | Link to GASP and RASP |
|---|---|
| **Goal 2:** Strengthen States' safety oversight capabilities | |
| **Target 2.1:** To improve the score for the effective implementation (EI) of the critical elements (CEs) of the State's safety oversight system (with focus on priority PQs) as follows: by 2024 – 75 per cent EI score by 2026 – 85 per cent EI score by 2030 – 95 per cent EI score. | |
| 2.2.1. Overall, EI score per timelines.<br>2.2.2. Percentage of completed CAPs using OLF | This goal is directly linked to Goal 2 and Targets 2.1 of the GASP and AFI-RASP. |
| **Goal 3:** Implement effective State Safety Programmes (SSPs) | |
| **Target 3.1:** By 2023, to implement the foundation of an SSP. | |
| 3.3.1. Percentage of satisfactory SSP foundational PQs<br>3.3.2. Percentage of required CAPs related to the SSP foundational PQs completed using OLF | This goal is directly linked to Goal 3 and Targets 3.1 of the GASP and RASP. |
| **Target 3.2:** By 2024, to publish National Aviation Safety Plan (NASP). | |
| 3.2.1. Published NASP | This goal is directly linked to Goal 3 and Targets 3.2 of the GASP and RASP. |
| **Target 3.3:** To work towards an effective SSP as follows:<br>a) by 2025 – Present<br>b) by 2028 – Present and effective | |
| 3.3.1. An SSP that is present<br>3.3.2. An SSP that is present and effective<br>3.3.3. Number of service providers under the authority required to implement an SMS | This goal is directly linked to Goal 3 and Targets 3.3 of the GASP and RASP. |
| **Goal 4:** Increase collaboration at the regional level | |
| **Target 4.1:** By 2024, to publish NASP in line with 2023-2025 Edition of GASP and AFI-RASP | |
| 4.1.1. Published NASP<br>4.1.2. Number of meetings and workshops conducted for sensitization on NASP | This goal is directly linked to Goal 4 and Targets 4.2 of the GASP and RASP. |

| Indicators | Link to GASP and RASP |
|---|---|
| **Target 4.3:** By 2025, to contribute information on operational safety risks, including SSP safety performance indicators (SPIs), and emerging issues to the regional aviation safety group (RASG-AFI) | |
| 4.2.1. To register to the Secure Portal on Operational Safety Risks and Emerging Issues<br>4.2.2. Sharing SSP SPIs with the RASG-AFI<br>4.2.3. Number of reports shared via the Secure Portal on Operational Safety Risks and Emerging Issues<br>4.2.4. Percentage of safety enhancement initiatives completed on safety risk management | This goal is directly linked to Goal 4 and Targets 4.3 of the GASP and the RASP. |
| **Goal 5:** Expand the use of industry programmes and safety information sharing networks by service providers | |
| **Target 5.1:** Maintain an increasing trend in industry's contribution in safety information sharing networks to States and regions to assist in the development of NASPs and RASPs | |
| 5.1.1. Percentage of service providers participating in the corresponding ICAO-recognized industry assessment programmes.<br>5.1.2. NASP developed and published in consultation with industry<br>5.1.3. Established safety data collection and processing systems (SDCPS) to facilitate participation in a safety information-sharing network<br>5.1.4. Number of service providers contributing to an SDCPS or a safety information sharing network | This goal is directly linked to Goal 5 and Targets 5.1 of the GASP and the RASP. |
| **Goal 6:** Ensure the appropriate infrastructure is available to support safe operations | |
| **Target 6.1:** By 2025, maintain an increasing trend of ANSPs and Aerodromes Operators with air navigation and aerodrome infrastructure that meet relevant ICAO Standards. | |
| 6.1.1. Number or percentage of infrastructure- related air navigation deficiencies, against the regional air navigation plans<br>6.1.2. Number or percentage of implemented infrastructure-related PQs linked to the basic building blocks | This goal is directly linked to Goal 6 and Target 6.1 of the GASP and the RASP. |

The SEIs in this plan are implemented through United Republic of Tanzania's existing safety oversight capabilities and the service providers' SMS. SEIs derived from the ICAO global aviation safety roadmap (Doc 10161) were identified to achieve the national safety goals and targets presented in the NASP. Some of the national SEIs are linked to overarching SEIs at the regional and international levels and help to enhance aviation safety globally. The full list of the SEIs is presented in appendix 1 and 2 to the NASP.

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

a) Unmanned aircraft system (drones) operating in the vicinity of aerodromes; and

b) The use of 5G telecommunication system within the vicinity of aerodromes

## SECTION 4: NATIONAL OPERATIONAL SAFETY RISKS

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 may include actions such as: rule-making; policy development; targeted safety oversight activities; safety data analysis; and safety promotion. Separate sections are provided to address commercial air transport and general aviation to make the information more accessible to stakeholders.

The URT publishes an Annual Safety Report, available on the website https://www.mwt.go.tz/documents/reports The summary of accidents and serious incidents that occurred in URT for aircraft registered in URT involved in commercial air transport and general aviation, is shown in the table 2 below.

**Table 2: Air Accident and Fatality Rates for the Years 2013-2022**

| Year | Accidents | Serious Incidents | Fatalities | Total Aircraft Movements | Accident Rate | Fatality Rate |
|---|---|---|---|---|---|---|
| **2013** | 6 | 11 | 1 | 230,458 | 2.60 | 0.43 |
| **2014** | 5 | 9 | 7 | 229,963 | 2.17 | 3.04 |
| **2015** | 2 | 1 | 4 | 225,103 | 0.89 | 1.78 |
| **2016** | 1 | 5 | 0 | 234,557 | 0.43 | 0 |
| **2017** | 6 | 5 | 12 | 234,879 | 2.35 | 5.11 |
| **2018** | 3 | 8 | 3 | 235,102 | 1.28 | 1.28 |
| **2019** | 5 | 11 | 2 | 234,235 | 2.13 | 0.85 |
| **2020** | 3 | 3 | 3 | 123,540 | 2.43 | 2.43 |
| **2021** | 4 | 5 | 1 | 157,802 | 2.53 | 0.63 |
| **2022** | 4 | 2 | 19 | 244,236 | 1.64 | 7.78 |

The following Five (5) national high-risk categories of occurrences (N-HRCs) in the URT context were considered of the utmost priority because of the number of fatalities and risk of fatalities associated with such events. They were identified based on analyses from mandatory and voluntary reporting systems, accident and incident investigation reports, safety oversight activities over the past Ten (10) years, as well as on the basis of regional analysis conducted by RASG-AFI and on the operational safety risks described in the GASP. These HRCs are in line with those listed in the 2023-2025 Edition of the GASP, as well as the 2023-2025 Edition of the AFI-RASP.

These N-HRCs are in line with those listed in the 2023-2025 edition of the GASP, as well as the AFI-RASP:

a) Controlled Flight into Terrain (CFIT);

b) Loss of Control In-Flight (LOC-I);

c) Mid-Air Collision (MAC);

d) Runway Excursion (RE); and

e) Runway Incursion (RI).

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

a) Lack of aircraft accident and incident investigation capabilities.

b) Lack of sufficient number of qualified and experienced technical personnel to carry out safety oversight functions at the national level.

c) Implementation of a Safety Oversight System (CE-6 to CE-8)

d) Wildlife and bird strikes.

e) Unmanned aircraft system (UAS); and

f) Operation of aircraft in unmanned aerodromes.

The aviation occurrence categories from the CAST/ICAO Common Taxonomy Team (CICTT) were used to assess risk categories in the process of determining national operational safety risks. The CICTT Taxonomy is found on the ICAO

website at https://www.icao.int/safety/airnavigation/AIG/Pages/Taxonomy.aspx.

To address the national operational safety risks listed above, URT identified the following

contributing factors leading to 5-HRCs and aviation stakeholders will implement a series of SEIs, some of which are derived from the ICAO OPS roadmap, contained in the ICAO Global Aviation Safety Roadmap (Doc 10161):

### 4.1 N-HRC 1: Controlled Flight into Terrain (CFIT);

Controlled Flight into Terrain is a situation where a properly functioning aircraft under the control of a fully qualified and certificated crew is flown into terrain with no apparent awareness on the part of the crew. Although no CFIT related accidents and fatalities were reported for the RASG-AFI region during the period 2017 – 2021, there should be any complacency in putting it under the safety radar, as it continues to be a global HRC. The following factors, although not exhaustive, could contribute to CFIT occurrence:

a) Non-stabilised approach.

b) Lack of situational awareness.

c) Inadequate or non-compliance to standard operating procedures (SOPs).

d) The choice of non-precision over precision approaches for landing.

e) Inadequate training programme, including crew resource management (CRM).

f) Weather and runway conditions (contaminated runway); and

g) Outdated Electronic Terrain and Obstacle Data (eTOD).

### 4.2 N-HRC 2: Loss of Control In-Flight (LOC-I);

Aircraft upset or loss of control in-flight has registered the highest number of fatalities in the RASG-AFI region during the period: 2017 - 2021. This is due to the high energy involved in such accidents. It includes uncontrolled collisions with terrain, but also occurrences where the aircraft deviated from the intended flight path or intended aircraft flight parameters, regardless of whether the flight crew realized the deviation and whether it was possible to recover or not. It also includes the triggering of stall warning and envelope protections. The following factors, although not exhaustive, could contribute to LOC-I occurrence:

a) Lack of proper training in UPRT

b) Adverse weather

c) Inappropriate flight control inputs in response to a sudden awareness of an abnormal blank angle

d) Aircraft malfunction

e) Flight crew errors (Inadequate use of SOPs)

### 4.3 N-HRC 3: Mid-Air Collision (MAC)

MAC refers to the potential collision of two aircraft in the air. It includes direct precursors such as separation minima infringements, genuine TCAS resolution advisories or airspace infringements. Although there have been no aeroplane mid-air collision accidents in recent years within the airspace of the RASG-AFI region, scenarios have been reported that constituted potential mid-air collision. This is one specific safety issue that is a main priority in this key risk area. However, additional data is needed for further analysis to identify the underlying safety issues. The following factors, although not exhaustive, could contribute to MAC occurrence:

a) Human Factors: Situational Awareness, Operational workload, Discipline, Stress, Communication etc;

b) Technology: Technical Equipment Failures, inadequate or non-availability of required technology, un-reliable systems.

c) Coordination Failures.

d) Airspace structure: capacity, weather, organisation of sectors, etc;

e) Procedures: Non-compliance, in-correct application of, none or inadequate procedures.

f) Organisational: staffing, training, policies, supervision etc

### 4.4 N-HRC 4: Runway Excursion (RE)

A runway excursion is a veer off or overrun off the runway surface. It is a categorization of an accident or incident which occurs during either the take-off or landing phase. The excursion may be intentional or unintentional, for example the deliberate veer off to avoid a collision brought about by a runway incursion. Thirty one percent (31.1%) of accidents in the RASG-AFI region during the period: 2013–2022, were related to Runway Safety (i.e. Runway Excursions and Incursions). The following factors, although not exhaustive, could contribute to RE occurrence:

a) Runway contaminated with water with no information on extent to pilots.

b) Non-implementation of a harmonized methodology for assessment and reporting of Runway Surface conditions.

c) Organizational issues such as training, procedures, etc.

### 4.5 N-HRC 5: Runway Incursion (RI)

A runway incursion is any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing

and take-off of aircraft. Incursions produce an increased risk of collision for aircraft occupying the runway. The risk of the reported occurrence of runway incursions in the region demonstrated to be real. The stakeholders should provide further data analysis regarding runway incursion to identify the root causes and associated safety issues. The following factors, although not exhaustive, could contribute to RI occurrence:

a) Insufficient information available to pilots on condition of runway surfaces.

b) Lack of awareness on Runway Safety.

c) Organizational issues such as training, Inactive Runway Safety teams, etc.

d) Use of non-standard phraseologies.

The full list of the SEIs is presented in the appendix 1 and 2 to the NASP.

### 4.6 Emerging Issues

Emerging issues include concepts of operations, technologies, public policies, business models or ideas that might impact safety in the future, for which insufficient data exists to complete typical data- driven analysis. Due to the lack of data, emerging issues cannot automatically be considered as operational safety risks. It is important that the national and international aviation community remain vigilant on emerging issues to identify hazards, collect relevant data and proactively develop mitigations to address any associated risks. The management of emerging issues, particularly by mitigating safety risks, can provide opportunities to foster innovation. The use of new technologies, procedures and operations should therefore be encouraged.

ICAO developed a dedicated site on its secure portal to collect information from States, regional and international organizations on emerging issues and operational safety risks, thereby contributing to the improvement of safety by facilitating the sharing and exchange of safety information. Stakeholders are requested to provide information on a regular basis and the information collected also serves to guide future editions of the GASP and AFI-RASP. Details on how regional entities and other stakeholders may use this information for regional and national aviation safety planning is found on the ICAO website at https://www.icao.int/safety/GASP/Pages/Secure-Portal.aspx.

## SECTION 5. ORGANIZATIONAL CHALLENGES

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

The eight critical elements (CEs) of a safety oversight system are defined by ICAO. URT is committed to the effective implementation of these eight CEs, as part of its overall safety oversight responsibilities, which emphasize URT's commitment to safety in respect of its aviation activities. The eight CEs are presented in Figure 5.0 below.

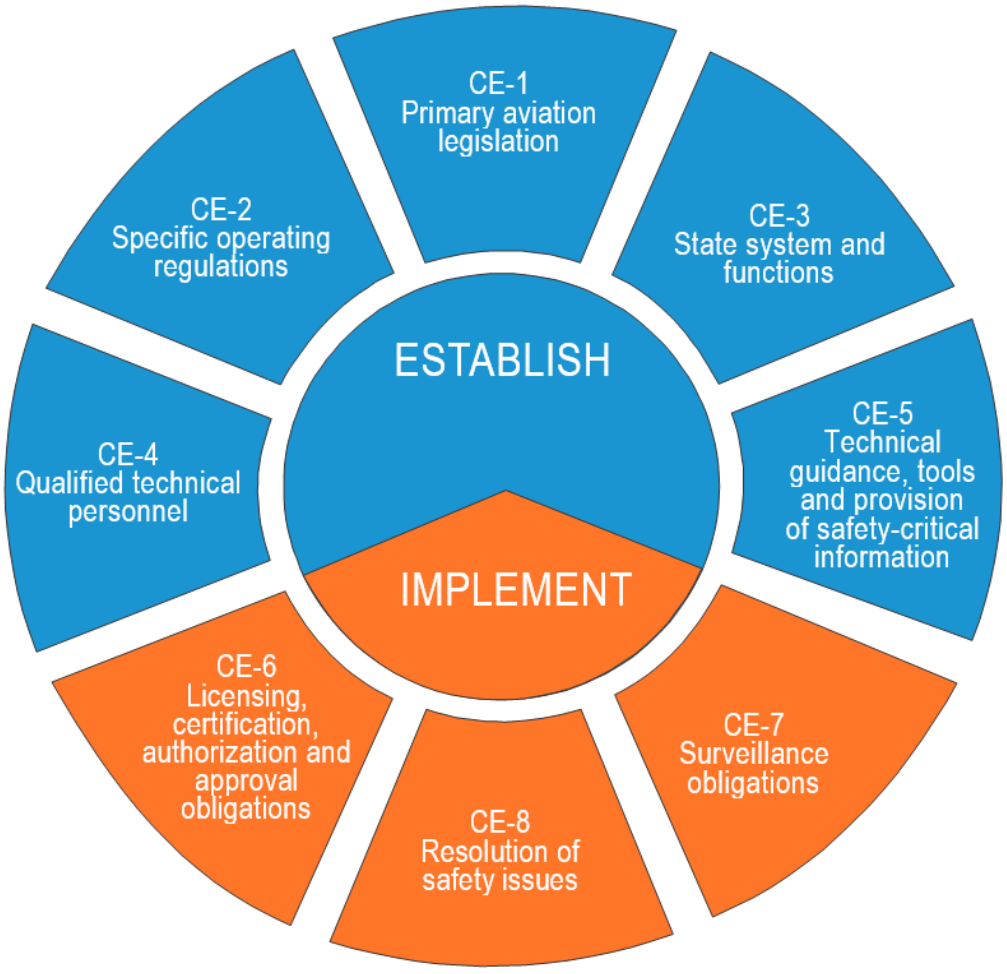


Figure 5.0: Critical elements of a state's safety oversight system

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

| *Overall EI* | | | | | | | |
|---|---|---|---|---|---|---|---|
| % | | | | | | | |
| **EI score by CE** | | | | | | | |
| **CE-1** | **CE-2** | **CE-3** | **CE-4** | **CE-5** | **CE-6** | **CE-7** | **CE-8** |
| 72.41% | 82.35% | 79.31% | 79.07% | 74.53% | 66.29% | 53.19% | 20% |
| **EI score by audit area**[1] | | | | | | | |
| **LEG** | **ORG** | **PEL** | **OPS** | **AIR** | **AIG** | **ANS** | **AGA** |
| 85.71% | 90% | 81.93% | 46.09% | 95.83% | 50.63% | 66.36% | 61.34% |

The following six (6) organizational challenges in the URT 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 10 years, as well as on the basis of regional analysis conducted by RASG-AFI. 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 national service providers. They take into consideration organizational culture, policies and procedures within URT's aviation stakeholders and those of service providers. These safety issues are in line with those listed in the 2023-2025 edition of the GASP and the RASP.

a) Lack of aircraft accident and incident investigation capabilities.

b) Lack of sufficient number of qualified and experienced technical personnel to carry out safety oversight functions at the regional level.

c) Implementation of a Safety Oversight System (CE-6 TO CE-8)

d) Wildlife and bird strikes.

[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).

e) Unmanned aircraft system (UAS); and

f) Operation of aircraft in unmanned aerodromes.

To address the issues listed above, aviation stakeholders will implement a series of SEIs, some of which are derived from the ICAO ORG roadmap, contained in the ICAO Global Aviation Safety Roadmap (Doc 10161). The full list of the SEIs is presented in appendix 1 and 2 to the NASP.

## SECTION 6: MONITORING IMPLEMENTATION

The United Republic of Tanzania (URT) will continuously monitor the implementation of the SEIs listed in the NASP and measure safety performance of the national civil aviation system, to ensure the intended results are achieved, using the mechanisms presented in the appendix to this plan.

In addition to the above, URT will review the NASP every three (3) years or earlier, if required, to keep the identified operational safety risks, safety issues and selected SEIs updated and relevant. The Tanzania Civil Aviation Authority (TCAA) will periodically review the safety performance of the initiatives listed in the NASP to ensure the achievement of national safety goals and targets. If required, URT will seek the support of the RASG-AFI to ensure the timely implementation of SEIs to address safety deficiencies and mitigate risks. Through close monitoring of the SEIs, URT will make adjustments to the NASP and its initiatives, if needed, and update the NASP accordingly.

URT 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. An 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.

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

URT adopted a standardized approach to provide information at the regional level, for reporting to the RASG through performance reports provided by the SSTs using a common monitoring tool and to the RASC every six months. This allows the region to receive information and assess operational safety risks using common methodologies.

Any questions regarding the NASP and its initiatives, and further requests for information,

may be addressed to the following:

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# APPENDIX 1: DETAILED SEIs ON NATIONAL OPERATIONAL SAFETY RISKS

**N-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 regional accident rate.**

| *Safety enhancement initiative* | *Action* | Timeline | *Responsibleentity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| Mitigate contributing factors to the risk of CFIT | 1. Implement the following CFIT safety actions:<br><br>a) Ensure aircraft are equipped with terrain awareness and warning system (TAWS) in accordance with Annex 6 – *Operation of Aircraft*<br><br>1. Promote the wider use of TAWS beyond the requirements of Annex 6<br>2. Issue a Safety Advisory to increase adherence to TAWS warning | Q4 2024 to Q4 2025 | TCAA | TCAA; Air Operators (AOC Holders) | • Number of AOC Holders that have attained TAWS-related PQs satisfactory.<br>• Number of completed CAPs/Self-Assessment on TAWS-related PQs. | High | • Review TAWS-related PQs (4.151; 4.171; 4.301)<br>• Use the USOAP CMA OLF to obtain the status of TAWS-relatedPQs.<br>• Review PQs related to PBN authorization (4.434) |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsibleentity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | procedures<br>3. Promote greater awareness of approach risks<br>4. Consider the implementation of continuous descent final approaches (CDFA)<br>5. Consider the implementation of minimum safe altitude warning (MSAW) systems<br>6. Ensure the timeliness of updates and accuracy of Electronic Terrain and Obstacle Data(eTOD)<br>7. Promote the use of GPS-derived position data to | | | | • Number of Aerodromes that have PBN approved procedures for their Instrument Runways. | | |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsibleentity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | feed TAWS | | | | | | |
| | 2. Validate the effectiveness of the safety enhancement initiatives (SEIs) presented in this roadmap through the analysis of mandatory occurrence reporting (MORs) and voluntary occurrence reporting systems (VORs) and accident/incident investigations (apply safety management methodologies) | Annually | TCAA | TCAA; ICAO Regional Offices (ESAF/WACAF); Industry | • MOR system established.<br>• VOR system established, non-punitive; and protects the information and source of information. | High | • Review PQs related to Flight Data Analysis Programme (FDAP) (4.203)<br>• Use the USOAP CMA OLF to obtain the status of FDAP-related PQs. |
| | 3. Identify additional contributing factors,for example:<br>a) Flight in adverse environmental conditions<br>b) Approach design and | Annually | TCAA | TCAA; Industry | • MOR system established.<br>• VOR system established, | Medium | |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsibleentity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | documentation (e.g. approaches with vertical guidance (APV) or localizer performance with vertical guidance (LPV) approaches)<br>c) Phraseology used (standard vs. non- standard)<br>d) Pilot fatigue and disorientation | | | | | | |
| | 4. Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for CFIT. | Continuous | | | | | |
| | 5. Conduct continuous evaluations of the performance of the SEIs | Continuous | | | | | |

**N-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 regional accident rate.**

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| Mitigate contributing factors to LOC-I accidents and incidents | 1. Implement the following LOC-I safety actions:<br><br>a) Require upset prevention and recovery training in all full flight simulator | Q4 2024 – Q4 2025 | TCAA | Air Operators, ATOs, AIB | Advisory circulars issued | High | CMA self assessment |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | type conversion and recurrent training programmes<br>b) Require more time devoted to training for the pilot monitoring role | | | | | | |
| | 2. Validate the effectiveness of the SEIs in the industry through MORs and VORs | Annually | TCAA | Air Operators, AIB | Number of MORs and VORs | Medium | CAPs assessment |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | systems and accident/incident investigations (apply safety management methodologies) | | | | | | |
| | 3. Identify additional contributing factors, for example:<br>a) Distraction<br>b) Adverse weather<br>c) Complacency<br>d) Inadequate standard operating procedures (SOPs) for | Continuous | TCAA | Air Operators, AIB | Number of MORs and VORs | Medium | CAPs assessment |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | effective flight management<br><br>e) Insufficient height above terrain for recovery<br><br>f) Lack of awareness of or competence in procedures for recovery from unusual aircraft attitudes<br><br>g) Inappropriate flight control inputs in response to a sudden awareness of an abnormal bank angle | | | | | | |
| | 4. Develop and implement further SEIs to mitigate the risk of the | Continuous | TCAA | Air Operators, ATOs, AIB, Ministry responsible for Civil Aviation | • Number of MORs and VORs<br>• Number of | Medium | • TGMs developed,<br>• CAPs assessment |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | identified contributing factors, if any, for LOC-I, for example:<br>a) Increase the effectiveness of regulatory oversight<br>b) Improve regulations | | | matters | CARs developed | | |
| | 5. Conduct continuous evaluations of the performance of the SEIs | Continuous | TCAA | Air Operators, ATOs, AIB | • Number of MORs and VORs<br>• Number of CARs developed | Medium | • TGMs developed,<br>• CAPs assessment |

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

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

**Target 1.1: Maintain a decreasing trend of regional accident rate.**

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| Mitigate contributing factors to MAC accidents and incidents | 1. Implement the following LOC-I safety actions:<br>a) Establish guidance and regulations to ensure aircraft are equipped with airborne collision | Q4 2024 – Q4 2025 | TCAA | Air Operator, ANSP, | • Number of aircraft equipped with ACAS<br>• Number of MOR and VORs<br>• Number of ATC training systems, | High | • TOPSKY ATC safety net playbacks<br>• Review filed hazard/incident report forms<br>• Review training |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | avoidance system (ACAS), in accordance with Annex 6 – Operation of Aircraft<br>b) Ensure adherence to ACAS warning procedures<br>c) Promote the improvement of air traffic control (ATC) systems, procedures and tools to enhance conflict management<br>d) Promote the improvement of | | | | procedures and tools to enhance conflict management conducted<br>• Number of communication breakdown recorded | | records<br>• Review ATC logbook recordings |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | communications systems and procedures, such as controller-pilot datalink | | | | | | |
| | 2. Validate the effectiveness of the SEIs in the industry through MORs and VORs systems and accident/incident investigations (apply safety management methodologies) | Continuous | TCAA | Air Operator, ANSP, | Number of occurrences determined using systematic occurrence analysis methodology (SOAM) | Medium | Review SOAM results |
| | 3. Identify additional contributing factors, for example:<br>a) Traffic conditions - traffic density, complexity, | Continuous | TCAA | ANSP, TMA, Air Operator | • Number of MORs and VORs<br>• Number of CRM Training | High | • Review MORs and VORs<br>• Review training records for |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | mixture of aircraft types and capabilities, etc.<br>b) ATC performance related to workload, competence, teamwork, procedures, commitment, etc., as well as the influence of air navigation services providers' (ANSP) safety management<br>c) Flight crew training and corporate culture with workload, competence, teamwork, procedures, | | | | conducted<br>• Number of ATS team resource management (TRM) training conducted<br>• Number of missing flight plans reported | | CRM and ATS TRM |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | commitment, etc., and the influence of the aircraft operator's safety management<br>d) ATC systems - flight data processing, communication, short term conflict alert (STCA), etc., as well as the interaction with the human operators and the aircraft systems, and the procurement policy of the ANSP | | | | | | |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | e) Aircraft equipment - autopilots, transponders and ACAS, but also aircraft performance (e.g. rate-of-climb) and their physical size<br>f) Navigation infrastructure - both coverage and quality<br>g) Surveillance - both coverage and quality<br>h) Flight plan processing - efficiency and | | | | | | |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | reliability of flight plan submission, approval and distribution<br>i) Airspace - complexity of airspace design, route layout, extent of controlled or uncontrolled airspace, proximity of military operational or training areas, etc.<br>j) Flight in adverse environmental conditions that | | | | | | |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | may influence conflict management and collision avoidance | | | | | | |
| | 4. Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for MAC | Continuous | TCAA | | | | |
| | 5. Conduct continuous evaluations of the performance of the SEIs | Continuous | TCAA | | | | |

**N-HRC 4: Runway Excursion (RE)**

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

**Target 1.1: Maintain a decreasing trend of regional accident rate.**

| *Safety enhancemen tinitiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| Mitigate contributing factors to RE accidents and incidents | 1. Implement the following RE safety actions:<br>a) Ensure the establishment and implementation of runway safety programme and runway safety teams<br>b) Promote the establishment of policy and training on rejected landings, go-arounds, crosswind and tailwind landings (up to the maximum | Q3 2024 – Q4 2025 | TCAA | Aerodrome Operators, Air Operator, ANSPs | • Number of aerodromes with established runway safety teams (RSTs)<br>• Number of MORs and VORS<br>• Number of awareness/sensitization seminars conducted<br>• Number of attendance at | Medium | Review MORs and VORs |

| *Safety enhancemen tinitiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | manufacturer-demonstrated winds)<br>c) Promote equipage of runway overrun awareness and alerting systems on aircraft<br>d) Ensure effective and timely reporting of meteorological and aerodrome conditions (e.g. runway surface condition in accordance to the ICAO global reporting format in Annex 14 – Aerodromes, Volume I – Aerodrome Design and Operations braking action and revised declared | | | | the seminars<br>• Number of certified aerodromes in accordance with ICAO Annex 14, Volume I, as well as PANS-Aerodromes<br>• Number of aerodromes complying with submission of RCRs | | |

| *Safety enhancemen tinitiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | distances)<br>e) Certify aerodrome in accordance with ICAO Annex 14, Volume I, as well as PANS-Aerodromes (Doc 9981)<br>f) Promote the installation of arresting systems if runway end safety area (RESA) requirements cannot be met<br>g) Ensure that procedures to systematically reduce the rate of unstabilized approaches to | | | | | | |

| *Safety enhancemen tinitiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | runways are developed and used | | | | | | |
| | 2. Validate the effectiveness of the SEIs in the industry through MORs and VORs systems and accident/incident investigations (apply safety management methodologies) | Annually | TCAA | Aerodrome Operators, Air Operator, ANSPs | Number of MORs and VORs | Medium | CAPs assessment |
| | 3. Identify additional contributing factors, for example:<br>a) Ineffective SOPs<br>b) Failure to adhere to the appropriate SOPs<br>c) Long/floated/bounced/firm/off-centre/crabbed landing<br>d) Inadequate approach procedures design | Continuous | TCAA | Aerodrome Operators, Air Operator, ANSPs | Number of MORs and VORs | Medium | CAPs assessment |

| *Safety enhancemen tinitiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | e) Inadequate regulatory oversight | | | | | | |
| | 4. Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for RE | Continuo us | TCAA | | | | |
| | 5. Conduct continuous evaluations of the performance of the SEIs | Continuo us | TCAA | | | | |

**N-HRC 5: Runway Incursion (RI)**

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

**Target 1.1: Maintain a decreasing trend of regional accident rate.**

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| Mitigate contributing factors to RI accidents and incidents | 1. Implement the following RI safety actions:<br>a) Ensure the establishment and implementation of a runway safety programme and runway safety teams<br>b) Promote the establishment of policy, procedures and training that supports situational awareness for | Q3 2024 – Q4 2025 | TCAA | Aerodrome Operators, Air Operator, ANSPs | • Number of aerodromes with established runway safety teams (RSTs)<br>• Number of MORs and VORS<br>• Number of awareness/sensitization seminars conducted<br>• Number of attendance at the seminars<br>• Number of certified aerodromes in | Medium | Review MORs and VORs<br>Review hazard register |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | controllers, pilots and airside vehicle drivers<br>c) Ensure effective use of suitable technologies to assist the improvement of situational awareness, such as improved resolution airport moving maps (AMM), electronic flight bags (EFBs), enhanced vision systems (EVS) and head-up displays (HUD), advanced- | | | | accordance with ICAO Annex 14, Volume I, as well as PANS-Aerodromes<br>• Number of aerodromes with published hot spots in the aeronautical information publication (AIP) | | |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | surface movement guidance and control systems (A SMGCS), stop bars and runway incursion warning systems (ARIWS)<br>d) Certify aerodrome in accordance with ICAO Annex 14 – Aerodromes, Volume I – Aerodrome Design and Operations, as well as PANS-Aerodromes (Doc 9981)<br>e) Ensure the use of standard phraseologies in | | | | | | |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | accordance with applicable State regulations and ICAO provisions (e.g. Doc 9432, Manual of Radiotelephony)<br>f) Ensure the identification and publication in the aeronautical information publication (AIP) of hot spots at aerodromes<br>g) Ensure that suitable strategies to remove hazards or mitigate risks | | | | | | |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | associated with identified hot spots are developed and executed | | | | | | |
| | 2. Validate the effectiveness of the SEIs in the industry through MORs and VORs systems and accident/incident investigations (apply safety management methodologies) | Annually | TCAA | Aerodrome Operators, Air Operator, ANSPs | Number of MORs and VORs | Medium | CAPs assessment |
| | 3. Identify additional contributing factors, for example:<br>a) Operations in low visibility conditions | Continuous | TCAA | Aerodrome Operators, Air Operator, ANSPs | Number of MORs and VORs | Medium | • Review procedures for operations in low visibility |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | b) Complex or inadequate aerodrome design<br>c) Complexity of traffic (multiple simultaneous line-ups)<br>d) Conditional clearances<br>e) Simultaneous use of intersecting runways<br>f) Late issue of or late changes to departure clearances<br>g) Phraseology use (e.g. non-standard | | | | | | conditions<br>• Review incident reports<br>• CAPs assessment |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | vs. standard, call-sign confusion)<br>h) Concurrent use of more than one language for ATC communications<br>i) English language competence despite the introduction by ICAO of a system of validating competence in aviation English<br>j) Inadequate manoeuvring area driver training and assessment programme | | | | | | |

| *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 RI | Continuous | TCAA | | | | |
| | 5. Conduct continuous evaluations of the performance of the SEIs | Continuous | TCAA | | | | |

APPENDIX 2: DETAILED SEIs ON NATIONAL ORGANIZATIONAL CHALLENGES

| **Organizational challenge 1: Lack of aircraft accident and incident investigation capabilities at the national level** |
|---|
| **Goal 2: Strengthen the State's safety oversight capabilities.**<br>**Target 2.1: By 2026, reach an effective implementation score of 85%** |

| *Safety enhancement initiative* | *Action* | Timeline | Responsible entity | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| Establishment of an independent accident and incident investigation authority, consistent with Annex 13 — Aircraft Accident and Incident Investigation | 1. Establish an effective system to attract, recruit, train and retain qualified and sufficient technical personnel to support accident and incident investigations<br>2. Establish an independent accident and incident | Q4 2024 – Q4 2025 | Ministry responsible for Aviation | TCAA, Aviation stakeholders and the general public | • Independent AAIB established<br>• Percentage of required CAPs submitted using OLF<br>• Percentage of completed CAPs using OLF | High | • CC-EFOD<br>• CAPs |

| *Safety enhancement initiative* | *Action* | Timeline | Responsible entity | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | investigation authority, as per Annex 13 requirements (CE-1 and CE-3)<br>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)<br>4. Establish an | | | | | | |

| *Safety enhancement initiative* | *Action* | Timeline | Responsible entity | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | effective system to attract, recruit, train and retain qualified and sufficient technical personnel to support accident and incident investigations (see SEI-5) (CE-3 and CE-4) | | | | | | |

**Organizational challenge 2: Lack of sufficient number of qualified and experienced technical personnel to carry out safety oversight functions at the national level.**

**Goal 2: Strengthen the State's safety oversight capabilities.**

**Target 2.1: By 2026, reach an effective implementation score of 85%**

| *Safety enhancement initiative* | *Action* | Timeline | Responsible entity | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| Qualified technical personnel to support effective safety oversight | 1. Establish an effective system to identify and track qualifications and training of existing technical personnel (CE-4)<br>2. Identify the gaps in qualified technical personnel and training requirements necessary to implement the oversight mandate (CE-4) | Q4 2024 – Q4 2025 | TCAA | DSR, DCS | • Number of qualified technical personnel<br>• Rate of turnovers for qualified technical personnel | High | Review number of qualified technical personnel |

| *Safety enhancement initiative* | *Action* | Timeline | Responsible entity | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | 3. Establish a compensation scheme for the attraction and retention of qualified technical personnel (CE-4)<br>4. Establish human resource plans to support hiring and retention of the appropriate number of qualified technical personnel required (CE-4)<br>5. Implement training policies and programmes for technical personnel and verify that the type and frequency of training successfully completed (i.e. initial, recurrent, | | | | | | |

| *Safety enhancement initiative* | *Action* | Timeline | Responsible entity | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | specialized and on-the-job training) are sufficient to acquire/maintain the required qualifications and level of competence corresponding to the assigned duties and responsibilities of technical personnel (CE-4)<br>Develop a process for assessing changing needs for qualified technical personnel requirements and develop procedures to update hiring, retention and training of personnel needs | | | | | | |

| **Organizational challenge 3: Implementation of a Safety Oversight System (CE-6 TO CE-8)** |
|---|
| **Goal 2: Strengthen the State's safety oversight capabilities.**<br>**Target 2.1: By 2026, reach an effective implementation score of 85%** |

| Safety enhancement initiative | Action | Timeline | Responsible entity | Stakeholders | Metrics/ Indicators | Priority | Monitoring Activity |
|---|---|---|---|---|---|---|---|
| Consistent and continued implementation of ICAO SARPs at the national level | 1. Work at the national level to address Significant Safety Concerns as a priority.<br>2. Increase the level of compliance with ICAO SARPs and the EI of CEs at the national level (all CEs, emphasis on CE-6 to CE-8)<br>3. Implement licensing, certification, authorization | Q4 2024 – Q4 2025 | TCAA | Aerodrome Operators, Air Operators, ANSPs | • Number of satisfactory PQs with potential to cause SSCs<br>• Percentage of EI scores | High | Review CAPs and PQs (self-assessment) through the USOAP CMA OLF |

| Safety enhancement initiative | Action | Timeline | Responsible entity | Stakeholders | Metrics/ Indicators | Priority | Monitoring Activity |
|---|---|---|---|---|---|---|---|
| | and approval processes (CE-6)<br>4. Establish a system to resolve safety issues identified via accident and incident investigations, surveillance activities, safety reports and other means (CE-8)<br>5. Implement regulatory oversight and enforcement processes (CE-7 and CE-8) | | | | | | |
| Strategic allocation of resources to enable effective safety oversight | 1. Identify resource requirements.<br>2. Leverage regional groups such as the RASG, RSOO (CASSOA & | Continuous | TCAA | DCS, DSR, CASSOA, SASO | Allocated budget | High | Review allocated resources |

| Safety enhancement initiative | Action | Timeline | Responsible entity | Stakeholders | Metrics/ Indicators | Priority | Monitoring Activity |
|---|---|---|---|---|---|---|---|
| | SASO) to identify additional resources | | | | | | |

**Organizational challenge 4: State Safety Programme (SSP)**

**Goal 3: Implement effective State Safety Programme.**

**Target 3.2: By 2024, to publish a National Aviation Safety Plan**

**Target 3.3: To work towards an effective SSP as follows:**

**a) By 2025, Present**

**b) By 2028, present and effective**

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| 1. Start of SSP implementation at the national level | 1. Secure State-level commitment to improve safety<br>2. Conduct initial SSP gap analysis (checklist) then the detailed SSP self assessment<br>3. Establish an SSP implementation team | Q4 2024 | TCAA | Aviation stakeholders, AAIB | • Reviewed Safety policy<br>• SSP Gap analysis conducted<br>• SSP Implementation team | High | • CC-EFOD<br>• CAPs |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | 4. Develop an implementation plan for the SSP<br>5. Issue SMS regulations for service providers and verify SMS implementation<br>6. Identify and share safety management best practices | | | | established<br>• Developed SSP Implementation plan | | |
| 2. Strategic allocation of resources to start SSP implementation | 1. Establish a process for planning and allocation of resources to enable SSP implementation and identify areas where resources are needed<br>2. Obtain resources from national and | Q4 2024 – Q4 2025 | TCAA | ICAO, CASSOA, SASO, Ministry responsible for aviation, AFCAC, National Aviation | • Established process for planning and allocation of resources.<br>• Number of training conducted by | High | Review the use of allocated budget |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | appropriate authorities' leadership and stakeholders within the State to support SSP implementation<br>3. Work with the ICAO Regional Office to make use of available means (e.g. Technical Cooperation Bureau) to acquire assistance needed for SSP implementation<br>4. Work with RSOO, other States and other organizations, as appropriate to train qualified technical personnel to fulfil their | | | stakeholders | ICAO, AFCAC and RSOO | | |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | duties and responsibilities regarding SSP implementation | | | | | | |
| 3. Strategic collaboration with key aviation stakeholders to start SSP implementation | 1. Identify areas where collaboration/support is needed as part of the SSP implementation plan<br>2. Identify relevant key aviation stakeholders from key aviation stakeholders, including other States that are implementing or have implemented an SSP<br>3. Develop an action plan to address the elements identified as | Q4 2024 – Q4 2025 | TCAA | ICAO, CASSOA, SASO, Ministry responsible for aviation, AFCAC, National Aviation stakeholders | • Number of training/workshops/seminars conducted by ICAO, AFCAC and RSOO<br>• Attendance in training/workshops/seminars | High | • CAPs assessment<br>• USOAP CMA OLF |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | missing or deficient during the SSP gap analysis<br>4. Establish a process via RASG and/or RSOO for a mentoring system, including providing assistance to States/industry, as well as sharing of best practices to support SSP implementation<br>5. Develop a process to provide training on SSP to relevant staff, in collaboration with RSOO and/or other States (e.g. initial, recurrent and | | | | | | |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | advanced)<br>6. Establish and implement a process for sharing technical guidance, tools and safety-critical information related to SSP (e.g. advisory circulars, staff instructions, safety performance indicators), in collaboration with other States, RASG, RSOO, ICAO and/or other stakeholders | | | | | | |
| 4. Strategic collaboration with key aviation | 1. Work with key aviation stakeholders to execute the action plan | Q4 2024 – Q4 2025 | TCAA | ICAO, CASSOA, SASO, | • Executed SSP implementatio | Medium | • CAPs assessment<br>• USOAP CMA OLF |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| stakeholders to complete SSP implementation | for implementation<br>2. Work with key aviation stakeholders on establishing and updating SSP elements<br>3. Establish a system for the continuous improvement of the SSP, in collaboration with all key aviation stakeholders<br>4. Serve as a champion State to promote best practices among other States | | | Ministry responsible for aviation, AFCAC, National Aviation stakeholders | n plan<br>• SSP elements updated<br>• Established system for the continuous improvement of the SSP | | |
| 5. Availability of safety data and safety information to | 1. Establish national laws, regulations and policies protecting safety data, safety information and | Q4 2024 – Q4 2025 | TCAA | ICAO, CASSOA, SASO, Ministry | • National laws, regulations and policies protecting | High | • CAPs assessment<br>• USOAP CMA OLF |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| support safety management activities at the national level (step 1) | related sources, in accordance with Appendix 3 of Annex 19 – Safety Management:<br>i. Ensure that the protection of safety data, safety information and related sources does not interfere with the proper administration of justice or with maintaining or improving safety<br>ii. Ensure that safety data, safety information and related sources are | | | responsible for aviation, Office of the Attorney General, AFCAC, National Aviation stakeholders | safety data, safety information and related sources established<br>• Established mechanism of collecting safety data and processing<br>• Established mandatory occurrence reporting system | | |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | protected<br>iii. Specify the conditions under which safety data, safety information and related sources qualify for protection, including principles of exception and authoritative safeguards, such as de-identification of data<br>iv. Ensure that safety data and safety information remain available for the purpose of maintaining or | | | | | | |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | improving aviation safety<br>2. Establish a State mandatory occurrence reporting system<br>3. Establish safety data collection and processing systems (SDCPS) to capture, store, aggregate and enable the analysis of safety data and safety information to support their safety performance management activities<br>4. Establish and maintain a process to identify hazards from collected | | | | | | |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | safety data<br>5. Establish and utilize a process to ensure the assessment of safety risks associated with identified hazards<br>6. Establish a State confidential voluntary safety reporting system providing data to the safety database | | | | | | |
| 6. Availability of safety data and safety information to support safety management activities at the national level | 1. Establish the safety objectives to be achieved through the SSP<br>2. Develop safety performance measurement methodologies, aligned | Q4 2024 – Q4 2025 | TCAA | National Aviation stakeholders obliged to implement SMS | • Developed safety objectives<br>• Developed safety performance measurement | High | • CAPs assessment<br>• USOAP CMA OLF |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| (step 2) | with the regional safety metrics, using the established safety risk management process.<br>3. Develop safety performance indicators and safety performance targets using the established safety risk management process<br>4. Contribute information on operational safety risks, including SSP safety performance indicators and emerging issues to the RASG<br>5. Ensure the establishment of | | | | methodologies.<br>• Developed safety performance indicators and safety performance targets using the established safety risk management process.<br>• Contributed information on operational safety risks to the RASG | | |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | mandatory safety reporting systems by service providers<br>6. Encourage establishment of voluntary safety reporting systems as part of service providers' SMS<br>7. Promote safety awareness and the two-way communication, sharing and exchange of safety-relevant information within the aviation organizations of the State and encourage sharing of | | | | • Number of service providers established voluntary safety reporting systems<br>• Number of seminars/sensitizations held | | |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | safety information with industry within the State | | | | | | |
| 7. Acquisition of resources to increase the proactive use of risk modelling capabilities | 1. Identify resources needed to support safety intelligence collection and processing, advanced data analysis, risk modelling and information-sharing capabilities<br>2. Ensure that the Civil Aviation Safety Inspector workforce is trained to perform safety oversight of service providers that | Q4 2024 – Q4 2025 | TCAA | DSR, DCS | • Resources identified.<br>• Number of Aviation Safety Inspectors recruited, trained and retained | High | • CAPs assessment<br>• USOAP CMA OLF |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | have implemented SMS<br>3. Attract, recruit, train and retain qualified technical personnel to specialize in risk modelling | | | | | | |
| 8. Strategic collaboration with key aviation stakeholders to support the proactive use of risk modelling capabilities | 1. Identify areas where collaboration/support is needed to ensure that stakeholders understand and foster a positive safety culture that creates a high degree of trust and respect between personnel and management and promotes safety | Q4 2024 – Q4 2025 | TCAA | Aviation stakeholders obliged to implement SMS, RASG, RSOO. | • Established mechanism for the regular sharing and exchange of safety information, analyses, safety risk discoveries/lesson | High | Review reports |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | reporting<br>2. Establish a process via RASG and/or RSOO (or other regional bodies) for a mentoring system, including providing assistance to States/industry, as well as the sharing of best practices, to support positive safety culture development and the proactive use of risk modelling<br>3. Foster and participate in public-private partnerships similar to the commercial/general aviation safety teams' | | | | • Number of MORs and VORs | | |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | concept to identify and implement system safety enhancements<br>4. Collaborate with key aviation stakeholders to establish a mechanism for the regular sharing and exchange of safety information, analyses, safety risk discoveries/lessons learned and best practices within a confidential and non-punitive environment | | | | | | |
| 9. Advancement of safety risk management at the national level | 1. Establish data sharing connectivity and integration among the aviation safety | TBN | TCAA | | | | |

| *Safety enhancement initiative* | *Action* | Timeline | *Responsible entity* | *Stakeholders* | *Metrics/ Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | databases of the State, including the mandatory occurrences reporting system, voluntary safety reporting systems, safety audit reports and aviation system statistics (traffic volume, weather information, EI scores, etc.)<br>2. Develop risk modelling capabilities to support monitoring system safety issues and accident/incident prevention<br>3. Encourage information-sharing with industry | | | | | | |

# APPENDIX 3: DETAILED SEIS ON OTHER SAFETY ISSUES

| |
|---|
| **Issue 1: Wildlife and bird strikes;** |
| **Goal 1: Achieve a continuous reduction of operational safety risks**<br>**Target 1.1: Maintain a decreasing trend of National accident rate** |

| *Safety enhancement initiative* | *Action* | *Timeline* | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|

| *Safety enhancement initiative* | *Action* | *Timeline* | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| Mitigate contributing factors to the risk of wildlife and bird strike | 1. Ensure establishment of Runway Safety Teams at aerodromes<br>2. Ensure formation of wildlife and bird strike committees at aerodromes<br>3. Ensure compliance with procedures for operations at unmanned aerodromes. | Q4 2024 – Q4 2025 | TCAA | ANSPs, Aerodrome Operators, Air Operators | • Approved National Wildlife Hazard Management Plan<br>• Letters of appointment to the National Wildlife Hazard Management Committee<br>• Number of meetings held | High | CAPs assessment |

| *Safety enhancement initiative* | *Action* | *Timeline* | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | 4. Ensure establishment and implementation of National Wildlife hazard management committee and programme<br>5. Validate the effectiveness of the SEI through the analysis of bird strike data and report from stakeholder<br>6. Conduct continuous evaluation of the performance of the SEI | | | | | | |

**Issue 2: Unmanned aircraft system (UAS);**

**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* |
|---|---|---|---|---|---|---|---|
| Mitigate contributing factors to the risk of unmanned aircraft system (UAS). | 1. Ensure compliance with Civil Aviation (Remotely Piloted Aircraft System) Regulations<br>2. Sensitization to stakeholders on operations of UAS in the vicinity and beyond | Q4 2024 – Q4 2025 | TCAA | ANSPs, Aerodrome Operators, Air Operators, general public, ATOs | • Adhered Civil Aviation (Remotely Piloted Aircraft System) Regulations<br>• Number of awareness Seminars/training conducted. | High | CAPs assessment |

| *Safety enhancement initiative* | *Action* | *Timeline* | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | aerodromes | | | | • Attendance to awareness seminars | | |

**Issue 3: Operation of aircraft in unmanned aerodromes.**

**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* |
|---|---|---|---|---|---|---|---|
| Mitigate contributing factors to the risk of operation of aircraft in unmanned aerodromes. | 1. Monitor adherence to Civil Aviation (Rules of the Air) Regulations<br>2. Develop procedures for operations at unmanned aerodromes.<br>3. Conduct safety risk assessment on developed procedures of | Q4 2024 – Q4 2025 | TCAA | Air operators, Tanzania pilots Associations, aerodromes operators, ANSPs | • Adhered Civil Civil Aviation (Rules of the Air) Regulations<br>• Number of awareness Seminars/training conducted.<br>• Attendance to awareness | High | *CAPs assessment* |

| *Safety enhancement initiative* | *Action* | *Timeline* | *Responsible entity* | *Stakeholders* | *Metrics/Indicators* | *Priority* | *Monitoring Activity* |
|---|---|---|---|---|---|---|---|
| | operation on unmanned aerodromes<br>4. Sensitize stakeholders on developed procedures<br>5. Publish developed procedures | | | | seminars | | |