THE REPUBLIC OF GHANA

NATIONAL AVIATION SAFETY PLAN

2023 -2025

Table of Contents

Records of Amendments

Revision No.	Date	Entered By
Original Issue	18th May 2022	SSP Implementation Team
Rev. 1	25th June 2025	SSP Implementation Team

Abbreviations / Acronyms

AFI-RASP	African Indian Ocean - Regional Aviation Safety Plan
AIB-Ghana	Aircraft Accidents and Incident Investigation and Prevention Bureau
AIP	Aeronautical Information Publication
AIR	Airworthiness
ANS	Air Navigation Service
ANSP	Air Navigation Service Provider
APIRG	AFI Planning and Implementation Regional Group
ASAS	Aerodrome Safety And Standards
ATM	Air Traffic Management
BAGASOO	Banjul Accord Group Aviation Safety Oversight Organisation
BAGAIA	Banjul Accord Group Accident Investigation Agency
CE	Critical Element
CFIT	Control Flight Into Terrain
CMA	Continuous Monitoring Approach
CNS	Communication, Navigation and Surveillance
eTOD	Electronic Terrain and Obstacle Data
EPA	Environmental Protection Agency
GASP	Global Aviation Safety Plan
GCAA	Ghana Civil Aviation Authority
GFA	Ghana Air Force
GMET	Ghana Meteorological Agency
GNRA	Ghana Nuclear Regulatory Authority
HRC	High Risk Categories
ICAO	International Civil Aviation Organisation
LOC-I	Loss of Control – Inflight
MAC	Mid Air Collision
MoR	Mandatory Occurrence Reporting

NASCG	National Aviation Safety Coordination Group
NASP	National Aviation Safety Plan
NCA	National Communication Authority
N-HRC	National High Risk Categories
OPS	Aircraft Operations
RASG	Regional Aviation Safety Group
RASP	Regional Aviation Safety Plan
RE	Runway Excursion
RI	Runway Incursion
SCF-NP	System Component Failure – Non Powerplant
SEI	Special Enhancement Initiatives
SOI	Safety Oversight Index
SRD	Safety Regulation Department of GCAA
TAWS	Terrain Avoidance Warning System
USOAP	Universal Safety Oversight Audit Programme
VoR	Voluntary Occurrence Reporting

List of Tables and Figures

List of Tables

List of Figures

1. Introduction

1.1 Overview of the NASP

Ghana is committed to enhancing aviation safety and to the resourcing of supporting activities as clearly outlined and stated in Ghana's State Safety Policy (see Appendix D). The purpose of this National Aviation Safety Plan (NASP) is to develop and implement a national aviation safety strategy to help reduce fatalities and the risk of fatalities, continually. A safe aviation system contributes to the economic development of Ghana and its industries. The NASP promotes the effective implementation of Ghana's safety oversight system, a risk-based approach to managing safety, as well as a coordinated approach to collaboration between Ghana and other States, regions and the global aviation industry.

All stakeholders are encouraged to support and implement the NASP as the strategy for the continuous improvement of aviation safety.

The NASP of Ghana is in alignment with the ICAO *Global Aviation Safety Plan* (GASP, Doc 10004) and the AFI Regional Aviation Safety Plan (AFI-RASP).

.....

Stephen Wilfred Arthur (Rev.)
Ag. Director-General, GCAA
& Chairperson, NASCG

Date: 23RD OCTOBER 2025

1.2 Structure of the NASP

This NASP presents the strategy for enhancing aviation safety for a period of 2 years. It is comprised of six sections. In addition to the introduction, sections include the purpose of the NASP, Ghana'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 identified in the ICAO GASP and the AFI-RASP. Through its implementation of SSP, Ghana is able to identify and mitigate national operational safety risks. The SSP provides safety information to the NASP and allows Ghana 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. The NASP is one of the key documents produced as part of Ghana's SSP documentation. It is the means by which Ghana defines and drives the implementation of SEIs generated by the SSP process and drawn from the ICAO GASP and the AFI-RASP. It also allows Ghana 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. Further information on Ghana's developing SSP can be found at https://www.gcaa.com.gh/web/safety-safety-programme/

1.4 Responsibility for the NASP development, implementation and monitoring

The Ghana Civil Aviation Authority, under the auspices of the Ministry of Transport, is responsible for the development, implementation, and monitoring of the NASP. This is done in collaboration with National Aviation Safety Coordination Group (NASCG) which comprises of Ghana Civil Aviation Authority (GCAA), Ghana Meteorological Agency (GMET), National

Communication Authority (NCA), Environmental Protection Agency (EPA), Ghana Air Force, Ghana Nuclear Regulatory Authority (GNRA), Aircraft Accidents and Incident Investigation and Prevention Bureau (AIB) Ghana.. The NASP was developed in consultation with national operators and other stakeholders, and in alignment with the 2023-2025 Edition of the GASP and the AFI-RASP.

1.5 National safety issues, goals and targets

The identification of safety-related challenges and the prioritization of areas that require action are key steps in the aviation safety planning process. Safety data used to identify challenges and define priorities includes, but is not limited to: accident or incident investigations; mandatory and voluntary occurrence reporting (MoR/VoR); operational performance monitoring; inspections, audits, surveys; and safety studies and reviews.

The NASP has been developed in alignment with the GASP and the AFI-RASP. It supports the GASP's aspirational goal of zero fatalities by 2030 and beyond, along with its objectives, goals, targets, and indicators. The NASP aims to enhance awareness of safety risks and their consequences, fostering a commitment from the State, industry, and relevant stakeholders to allocate necessary resources—both human and financial—for advancing safety management, strengthening oversight capabilities, and improving operational safety performance. Additionally, it serves as a foundation for effective information sharing among stakeholders, enabling proactive actions and coordinated support to address safety challenges.

The NASP structure adheres closely to the GASP and AFI-RASP. A comprehensive gap analysis was undertaken to identify the existing gaps between the NASP, the AFI-RASP and the ICAO Manual: Doc 10131, ‘Manual on the Development of Regional and National Aviation Safety Plans. The NASP takes into consideration the RASG-AFI safety strategy, which is aligned with the GASP 2023-2025 Edition and contained in the AFI-RASP.

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) System Component Failure/Malfunction – Non-Powerplant (SCF-NP)

7) Bird Strikes and Wildlife Hazard

8) Dust Haze

9) Large Height Deviation (LHD)

10) Unavailability of required Aeronautical Charts

11) Failure of Navigational Aids (ATM/CNS)

12) Unreliable Navigational Aids (ATM/CNS)

13) Unreliable Meteorological forecast (OTHER)

14) Ground Collision (GCOL)

To address the issues listed above and enhance aviation safety at the national level, the 2023-2025 Edition of the NASP contains the following goals and targets, which are in alignment with the goals and targets of the 2023-2025 Edition of the GASP and the AFI-RASP to ensure consistency:

Goal 1 of the NASP is to achieve a continuous reduction of operational safety risks. This reduction is achieved by a series of SEIs targeting the N-HRCs. This goal addresses operational safety issues, which the State, the region and industry face and being mitigated as part of the NASP and AFI-RASP.

Target 1.1 calls for the maintaining a decreasing trend of the national accident rate for commercial scheuled operations. Several indicators are linked to this target including accident, fatal accident and fatality rates (i.e. number of occurrences per ten thousand departures). These indicators also include the percentage of occurrences related to the HRCs, percentage of national airports with established runway safety teams (RSTs), number of AIRPROX occurrences recorded.

Goal 2 is aimed at strengthening Ghana's safety oversight capabilities. This goal calls for Ghana to progress in its implementation of the eight Critical Elements (CEs) and address the organizational challenges faced in the audit areas, when implementing the safety oversight system.

Target 2.1 calls for all audit areas to improve their score for the EI of the CEs of the State's safety oversight system in a progressive manner that would result in incremental increases until a high overall EI score is reached. As part of this target, the State will focus closely on the priority protocol questions (PPQs) related to a safety oversight system. The term "priority PQs" refers to PQs that have a higher correlation to operational safety risks. Examples of indicators related to this target include percentage of required corrective action plans (CAPs) submitted (using OLF), percentage of completed CAPs (using OLF) and percentage of Priority PQs completed (using OLF) to address findings from Universal Safety Oversight Audit Programme (USOAP) continuous monitoring approach (CMA) activities.

Note.— The list of priority PQs can be found on the USOAP CMA OLF at https://www.icao.int/safety/CMAForum/Pages/default.aspx.

Goal 3 is also aimed at individual States and calls for the implementation of effective SSPs. This goal addresses organisational challenges faced by States when implementing an SSP and includes the implementation of SMS by service providers within individual States, in accordance with Annex 19.

Target 3.1 calls for the implementation of an effective State Safety Programme (SSP) by 2025. The term "foundation of an SSP" refers to a subset of USOAP PQs that aim to assist the State in building a solid safety oversight foundation for the implementation of an SSP. These are referred to as "SSP foundation PQs".

Indicators related to the foundation of an SSP include percentage of required CAPs related to the SSP foundational PQs submitted and the percentage of required CAPs related to the SSP foundational PQs completed using the ICAO USOAP-CMA OLF.

Note.— The full list of SSP foundation PQs is provided with the SSP foundation tool available viathe ICAO iSTARS at www.icao.int/safety/iStars.

Target 3.2 calls for Ghana to review and publish its national aviation safety plan (NASP) by 2025. This is part of the SSP-related GASP goal because the State is required to define and publish its strategy and actions to ensure effective safety management and address organizational challenges in a dedicated plan, as part of the SSP. Therefore, the NASP outlines a strategy, including an action plan with specific SEIs, to facilitate SSP implementation. Through the NASP, the State expresses its commitment to enhancing aviation safety and to the resourcing of supporting activities. The publication of the NASP, as the document containing the State's strategic direction for the management of aviation safety at the national level, allows for the allocation of resources dedicated to the SSP, through the development and implementation of that plan. The indicator for this target is the published Ghana NASP on the ICAO Website.

Target 3.3 calls for work towards an effective SSP through a phased approach, with target dates leading up to 2028. Ghana, having implemented the foundation of an SSP, is working to achieve

an effective SSP as follows: a) by 2025 – Present; b) by 2028 –Present and effective. An "effective SSP" refers to an SSP that actually achieves the desired results. The terms "present" and "present and effective" are based on the maturity levels established in the ICAO SSP Implementation Assessment (SSPIA) which forms part of the USOAP CMA activities to assess States' implementation of ICAO safety management provisions. The indicator for this target includes the level of maturity achieved in the implementation of the SSP (using iSTARS), the number of Service Providers who have implemented SMS and the number of Service Providers having a present and effective SMS.

Goal 4 calls for the State to increase collaboration at the regional level to enhance safety. The associated target with this goal is:

Target 4.1 calls for the State to contribute information on operational safety risks, including SSP SPIs and emerging issues, to the RASG-AFI by 2025. This target aims to contribute to RASG-AFI's safety risk management capabilities. Indicators for this target include the number of Reports made on the Secure Portal regarding operational safety risks and Emerging Issues to RASG-AFI, the number of SSP SPIs shared with RASG-AFI, and the percentage of safety enhancement initiatives completed in safety risk management.

Note.— Additional information on the Secure Portal on Operational Safety Risks and Emerging Issues is found on the ICAO website at https://www.icao.int/safety/GASP/Pages/Secure-Portal.aspx.

Goal 5 of the NASP is directed at industry and aims to expand the use of industry programmes and safety information sharing networks by service providers.

Target 5.1 calls for industry to maintain an increasing trend in its contribution in safety information sharing networks with the State and the RASG-AFI region to assist in the development of the NASP and the AFI-RASP, respectively. Indicators related to this target include establish a safety

data collection and processing system (SDCPS) to facilitate participation in a safety information-sharing network, the number of service providers contributing to the SDCPS and in the safety information sharing network and the number of meetings and workshops conducted for sensitization on the NASP and the SSP.

For the purpose of the GASP, ICAO-recognized industry assessment programmes include the following:

(a) Airports Council International (ACI) Airport Excellence (APEX) in Safety programme;
(b) Civil Air Navigation Services Organisation (CANSO) and European Organisation for the
(c) Safety of Air Navigation (EUROCONTROL) maturity assessment within the Standard of
(d) Excellence in Safety Management Systems;
(e) Flight Safety Foundation (FSF) Basic Aviation Risk Standard (BARS);
(f) International Air Transport Association (IATA) Operational Safety Audit (IOSA); and
(g) IATA Safety Audit for Ground Operations (ISAGO);

Goal 6 focuses on the need to ensure the appropriate infrastructure is available to support safe operations.

Target 6.1 aims for the State to implement the air navigation and aerodrome infrastructure that meets relevant ICAO Standards by 2025. Indicators for this target are the number or percentage of infrastructure related air navigation deficiencies reported against the AFI eANP and the percentage of implemented infrastructure-related PQs linked to the basic building blocks. This target is associated to the activities outlined in the GANP.

Note.— The Manual on Monitoring Implementation of the National Aviation Safety

Plans (Doc 10162) contain guidance on data sources for indicators used to measure the achievement of the NASP.

1.6 Operational Context

There are two (2) aerodromes going through certification in Ghana, and one (1) international aerodrome which is certified. The airspace of Ghana is classified into Classes A, B, C, D, E, F and G. There were 134,090[1] aircraft movements in Ghana over the period of 2022 to 2024. There are currently eight (8) active air operator certificates (AOCs) issued by Ghana, and of those, there are two (2) issued to operators conducting international commercial air transport operations. Ghana also has two (2) helicopter operators. There are 20 heliports in Ghana. Common challenges in Ghana include but not limited to:

- Aeronautical Meteorological services (lack of equipment and qualified personnel etc.)
- Topography (high grounds around airports on approach and take-off paths)
- Infrastructure (lack of appropriate ground aids, strength, length and surfaces of Runways etc.)
- Socio-political issues (location of some airports, building in restricted areas around airports, number of people who can afford air travel etc.)

1 www.gacl.com.gh/traffic-statistics-2019/

2. Purpose of Ghana's National Aviation Safety Plan

The NASP is the master planning document containing the strategic direction of Ghana for the management of aviation safety for a period of two (2) years from 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 national safety goals and targets.

The NASP has been developed using international safety goals and targets and High Risk Categories (HRCs) from both 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 safety risks and recommended SEIs for individual States set out in the AFI-RASP. Ghana has adopted these SEIs and has included them in this plan. Cross-references are provided to the AFI-RASP for individual SEIs where relevant.

3. Ghana's Strategic Approach To Managing Aviation Safety

The NASP presents the SEIs that were developed based on the organizational challenges (ORG) and operational safety risks (OPS), as presented in the ICAO global aviation safety roadmap, as well as State-specific issues identified by safety oversight inspections and audits, data collection and analysis from service providers' SMS, etc. This plan is developed and maintained by Ghana Civil Aviation Authority (GCAA), in coordination with all stakeholders and is updated at least every two (2) years.

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

Table 1: NASP Goals, Targets and Indicators linkage to that of GASP and RASP

Goals	Targets		Indicators	Link to GASP and RASP
Goal 1: Achieve a continuous reduction of operational safety risks	1.1	Maintain a decreasing trend of the national accident rate	• Number of accidents • Number of accidents per 10,000 departures (accident rate) • Number of fatal accidents • Number of fatal accidents per 10,000 departures (fatal accident rate) • Number of fatalities per passengers carried (fatality rate) • Percentage of occurrences related to high-risk categories (HRCs)	• This goal is directly linked to Goal 1 and Target 1.1 of the GASP and linked to Goal 1 and Target 1.1 of the AFI-RASP

			• Number of accidents • Number of airports with established Runway Safety Teams (RSTs) • Number of AIRPROX Occurrences recorded.	
Goal 2: Strengthen Ghana's safety oversight capabilities	2.1	Ghana intends to improve its current score of 89.89% achieved in 2019 for the Effective Implementation (EI) of the critical elements (CEs) of its safety oversight system (with focus on priority PQs) as follows: by 2026 – 92 per cent by 2028 – 95 per cent by 2030 – 99 per cent	• Percentage of required corrective action plans (CAPs) submitted (using OLF) • Percentage of completed CAPs (using OLF) • Percentage of Priority PQs completed by Ghana (using OLF) •	• This goal is directly linked to Goal 2 and Target 2.1 of the GASP and linked to Goal 2 and Target 2.1 of the AFI-RASP
	2.2	By 2026, Ghana to reach a safety oversight index greater than 1, in all categories.	• • Number of categories with safety oversight index greater than 1.	• This goal is directly linked to Goal 2 and Target 2.2 of the GASP and linked to Goal 2 and Target 2.2 of the AFI-RASP

Goal 3: Implement effective State Safety Programme (SSP)	3.1	By end of 2025, Ghana to implement the foundation of its SSP	• Percentage of required CAPs related to the SSP foundational PQs submitted (using OLF) • Percentage of required CAPs related to the SSP foundational PQs completed (using OLF)	• This goal is directly linked to Goal 3 and Target 3.1 of the GASP and linked to Goal 3 and Target 3.1 of the AFI-RASP
	3.2	By 2025, Ghan to review and publish its national aviation safety plan (NASP).	• • Published Ghana NASP on the ICAO Website	• This goal is directly linked to Goal 3 and Target 3.2 of the GASP and linked to Goal 3 and Target 3.2 of the AFI-RASP
	3.3	Ghana to work towards an effective SSP as follows: a) by 2025 – Present[2] b) by 2028 –Present and effective	• The level of maturity achieved in the implementation of the SSP (using iSTARS) • Number of Service Providers who have implemented SMS • Number of Service Providers having a present and effective SMS	• This goal is linked to Goal 3 and Target 3.3 of the GASP and Target 3.3 of the AFI-RASP

[2] The terms “present” and “present and 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 2025, Ghana to contribute information on operational safety risks, including SSP safety performance indicators (SPIs), to AFI Regional Aviation Safety Group (RASG-AFI)	• Registration on the Secure Portal on Operational Safety Risks and Emerging Issues • • Number of Reports made on the Secure Portal on Operational Safety Risks and Emerging Issues to RASG-AFI • Number of SSP SPIs shared with RASG-AFI • • Percentage of safety enhancement initiatives completed on safety risk management	• This goal is directly linked to Goal 4 and Target 4.3 of the GASP and linked to Goal 4 and Target 4.2 of the AFI-RASP
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 with the State and the region to assist in the development of the NASP and AFI - RASP.	• • Establish a safety data collection and processing systems (SDCPS) to facilitate participation in a safety information-sharing network • Number of service providers contributing to the SDCPS and in the safety information sharing network • Number of meetings and workshops conducted for sensitization on the	• This goal is directly linked to Goal 5 and Target 5.1 of the GASP and linked to Goal 5 and Target 5.1 of the AFI-RASP

			NASP and the SSP	
Goal 6: Ensure the appropriate infrastructure is available to support safe operations	6.1	By 2025, Ghana to implement the air navigation and aerodrome infrastructure that meet relevant ICAO Standards.	• • Number or percentage of infrastructure related air navigation deficiencies reported against the AFI eANP. • Number or percentage of States having 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 linked to Goal 6 and Target 6.1 of the RASP

The SEIs in this plan are implemented through Ghana'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 Appendix A to the NASP.

The NASP also addresses emerging issues. Emerging issues include concepts of operations, technologies, public policies, business models or ideas that might impact safety in the future, for which insufficient data exists to complete typical data-driven analysis. It is important that the State 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 emerging issues, which were identified by Surveillance inspections and audits, occurrence reports received from the general public and industry, etc., for further analysis:

1) Operations of RPAS
2) Small drones operating in the vicinity of aerodromes

3) SBAS Operations
4) Cross Crew Qualifications
5) Use of Tablets in the Cockpit for departures and approaches
6) Frequency interference, in particular the use of 5G telecommunication system, especially within the vicinity of aerodromes
7) Laser strikes/attacks.
8) The use of wind turbines in the vicinity of aerodromes for electric power generation.
9) Cybersecurity
10) The installation of solar farms in the vicinity of aerodromes. Note: Issue of glare and glint to ATC and pilots.
11) Public health issues, e.g. Ebola, COVID–19, etc.
12) skilled workforce shortages.
13) Lack of appropriate air navigation and aerodrome Infrastructure
14) Traffic patterns
15) Political instability in the region

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 SEIs may include actions such as: rule-making; policy development; targeted safety oversight activities; safety data analysis; and safety promotion.

Ghana publishes an Annual Safety Report, which is available on the Ghana Civil Aviation Authority's website at https://www.gcaa.com.gh/web/?page_id=13. The summary of accidents and serious incidents that occurred in Ghana and those for aircraft registered in Ghana involved in commercial air transport with a maximum mass of over 5700 kg and aircraft involved in general aviation are shown in Tables 3 and 4 respectively.

Table 2: Summary of Accidents and Serious Incidents that occurred in Ghana

Year	Fatal accidents	Non-fatal accidents	Serious incidents
Commercial air transport occurrences in Ghana			
2006 to 2022	**2**	**13**	**28**
2023	**0**	**1**	**3**
General aviation aircraft occurrences in Ghana			
2006 to 2022	**1**	**0**	**1**
2023	**0**	**0**	**0**

Table 3: Summary of Accidents and Serious Incidents involving Ghana registered aircraft

Year	Fatal accidents	Non-fatal accidents	Serious incidents
Occurrences involving commercial air transport aircraft registered in Ghana			
2006 - 2022	**0**	**5**	**24**
2023	**0**	**1**	**3**
Occurrences involving general aviation aircraft registered in Ghana			
2006 - 2022	**0**	**0**	**0**
2023	**0**	**0**	**0**

From an analysis of data gathered from the Safety Occurrence Reporting System, 49 occurrences were identified as National High-Risk Categories (HRCs) within the Ghanaian context. These HRCs are considered of utmost priority due to the associated fatalities and risk of fatalities.

The identification of these HRCs was a comprehensive process, drawing from:

- Mandatory and voluntary reporting systems
- Accident and incident investigation reports
- Safety oversight activities in 2023
- The State Safety Program (SSP)

Furthermore, the analysis incorporated regional insights from the AFI-RASG, BAGASOO, APIRG, and BAGAIA, and aligned with operational safety risks outlined in the Global Aviation Safety Plan (GASP). These Ghanaian HRCs are consistent with those presented in the 2023-2025 editions of both the GASP and the AFI-RASP. These include:

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) System Component Failure/Malfunction – Non-Powerplant (SCF-NP)
7) Bird Strikes and Wildlife Hazard (BIRD)
8) Dust Haze (OTHER)
9) Large Height Deviation (LHD)
10) Unavailability of required Aeronautical Charts (OTHER)
11) Failure of Navigational Aids (ATM/CNS)
12) Unreliable Navigational Aids (ATM/CNS)
13) Unreliable Meteorological Forecast (OTHER)
14) Ground Collision (GCOL)

The aviation occurrence categories from the Commercial Aviation Safety Team (CAST)/ICAO Common Taxonomy Team (CICTT) were used to assess risk categories in the process of determining national operational safety risks. The CICTT taxonomy can be found in Appendix C.

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

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 in Ghana in 2023, there should not 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:

1) Non-stabilised approach.

2) Lack of situational awareness.
3) Inadequate or non-compliance to standard operating procedures (SOPs).
4) The choice of non-precision over precision approaches for landing.
5) Inadequate training programme, including crew resource management (CRM).
6) Weather.
7) Runway conditions (contaminated runway).
8) Outdated Electronic Terrain and Obstacle Data (eTOD).

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

Even though no Aircraft upset or LOC-I related accidents and fatalities were reported in Ghana in 2023, there should not be any complacency in putting it under the safety radar, as it continues to be a regional HRC. It has registered the highest number of fatalities in the RASG-AFI region in recent past. 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:

1) Lack of proper Upset Recovery Training (UPRT)
2) Adverse weather
3) Inappropriate flight control inputs in response to a sudden awareness of an abnormal bank angle
4) Aircraft malfunction
5) Flight crew errors (Inadequate use of SOPs)

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

Despite the absence of MAC incidents and fatalities in Ghana in 2023, scenarios have been reported that constituted potential mid-air collisions. Therefore, complacency should not prevail

in monitoring safety, as it remains a R-HRC.

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. The following factors, although not exhaustive, could contribute to MAC occurrence:

1) Human Factors: Situational Awareness, Operational workload, Discipline, Stress, Communication, etc.
2) Technology: Technical Equipment Failures, inadequate or non-availability of required technology, unreliable systems.
3) Coordination Failures
4) Airspace structure: capacity, weather, organisation of sectors, etc.
5) Procedures: Non-compliance to, incorrect application of, none or inadequate procedures.
6) Organisational: staffing, training, policies, supervision, etc.

N-HRC 4: Runway Excursion (RE)

RE has not been reported in Ghana Runway in 2023. However, since RE remains a safety concern in the RASG-AFI region, it is imperative to monitor it critically.

RE covers materialized runway excursions, both at high and low speed, and occurrences where the flight crew had difficulties in maintaining the directional control of the aircraft or of the braking action during landing, where the landing occurred long, fast, off-centred or hard, or where the aircraft had technical problems with the landing gear (not locked, not extended or collapsed) during landing. The following factors, although not exhaustive, could contribute to RE occurrence:

1) Runway contaminated with water with no information on the extent to pilots.
2) Non-implementation of the Global Reporting Format (GRF) for assessment and reporting of Runway Surface conditions.
3) Organizational issues such as staffing, training, policies, supervision, procedures, etc.

N-HRC 5: Runway Incursion (RI)

A Runway Incursion refers to the incorrect presence of an aircraft, vehicle or person on an active runway or in its areas of protection; the accident outcome is a runway collision. Despite the absence of RI-related incidents and fatalities in Ghana in 2023, scenarios have been reported that constituted potential Runway Incursions. There is a need to monitor and report occurrences that could lead to real RI occurrences. This will aid the analysis regarding runway incursion to identify the root causes and associated safety issues. The following factors, although not exhaustive, could contribute to RI occurrence:

1) Insufficient or lack of communication between pilots and ATC
2) Lack of awareness on Runway Safety.
3) Organizational issues such as training, Inactive Runway Safety teams, etc.
4) Lack of proper visual aids
5) inadequacy or lack of procedures on runway occupancy

N-HRC 6: System Component Failure/Malfunction – Non-Powerplant (SCF-NP)

The SCF-NP is a classification of aviation occurrences that refers to failures or malfunctions of aircraft systems and components, excluding the powerplant (engine-related components). This includes errors or failures in software and database systems, non-powerplant parts or pieces separating from an aircraft, and all failures/malfunctions, including those related to or caused by maintenance issues.

SCF-NP was the second-largest number of occurrences in 2023 in Ghana and has become a major occurrence of concern in the RASG-AFI region. Although not exhaustive, some contributory factors include:

1) Use of non-certified aircraft parts
2) Non-adherence to appropriate maintenance procedures
3) Lack of software and database updates

N-HRC 7: Bird Strikes and Wildlife Hazard (BIRD)

Bird Strikes and Wildlife Hazard (BIRD) refers to the risk posed by birds and other wildlife to aircraft operations, particularly during takeoff, landing, and low-altitude flight. Bird strikes can cause significant damage to aircraft structures, engines, and windshields, potentially leading to emergency situations. The presence of wildlife in and around airports is a serious safety concern, prompting aviation authorities to implement wildlife hazard management programmes. These programmes include habitat modification, bird deterrence systems, and continuous monitoring to reduce the likelihood of wildlife-related incidents.

Bird Strike (BIRD) was the most frequent hazard in Ghana, with 27 occurrences at different aerodromes, indicating a significant wildlife risk to aircraft operations. Some contributory factors identified include:

1) Migration of Birds across the Runway of Certified Aerodromes.
2) Location of Abattoir in close proximity to Airports.
3) Human activities in settlements which have come close to the Airports.
4) Birds being attracted to grasshoppers, earth worms, and other insects after clearing weeds around the Runway and also the airside of airports.

N-HRC 8: Dust Haze

Dust haze poses a major aviation hazard in the AFI region, particularly in the Sahel, Sahara, and other arid and semi-arid areas. It significantly reduces visibility, making aircraft operations, including take off, landing, and en-route navigation, more challenging. Pilots may experience difficulty in maintaining visual contact with runways, increasing the risk of runway incursions or missed approaches. Additionally, dust particles can enter aircraft engines, leading to performance degradation, increased maintenance requirements, and potential engine failures. The phenomenon is most severe during the Harmattan season, typically from November to March, when strong winds transport fine dust from the Sahara across West and Central Africa.

Despite that Dust Haze-related incidents or accidents have not been reported in Ghana, it creates a lot of operational challenges, and as such, it remains a safety concern, and it is imperative to

monitor it critically. Some identified contributing factors include:

1) Harmattan season
2) Strong North-easterly winds
3) Lack of advanced navigation and instrument landing systems to ensure safe operations.
4) Lack of proper and timely meteorological forecasting.
5) Lack of adequate information for operational planning

N-HRC 9: Large Height Deviation (LHD)

Large Height Deviation (LHD) is a critical aviation safety concern in the AFI region, particularly in airspace where surveillance and communication limitations exist. LHD occurs when an aircraft deviates from its assigned altitude due to pilot errors, air traffic control (ATC) miscommunication, equipment malfunctions, or turbulence.

Although LHD-related incidents or accidents have not been reported in Ghana, traffic from adjoining FIRs and lack of proper communication and coordination can create LHD-related occurrences in Ghana, and as such, it remains a safety concern, and it is imperative to monitor it critically. Contributing factors include:

1) limited radar coverage
2) outdated air traffic management infrastructure
3) poor communication coverage over remote oceanic areas for long-haul flights
4) weak coordination between adjacent flight information regions (FIRs)
5) inconsistent ATC procedures
6) unreliable communication links.

N-HRC 10: Unavailability of required Aeronautical Charts

The unavailability of required aeronautical charts poses a serious aviation safety hazard affecting flight planning, navigation, and air traffic management. Aeronautical charts provide critical information on airspace structures, navigation aids, terrain elevations, controlled airspace, and

airport layouts, all essential for safe flight operations. Inadequate access to updated charts can lead to navigation errors, increased risk of airspace infringements, and difficulties in executing precise instrument approaches, particularly in adverse weather conditions. The challenge is further compounded by the reliance on outdated or incomplete data, which may not reflect recent airspace modifications, obstacles, or changes in instrument flight procedures.

Even though the unavailability of required Aeronautical Charts has not led to any serious occurrence or incident in Ghana, the issue is particularly concerning for both domestic and international operators relying on Ghana's air navigation system. Identified factors contributing to this safety concern include:

1) Lack of up-to-date aeronautical charts
2) Charts not published and present in the Ghana AIP
3) Lack of trained and qualified personnel to produce and maintain aeronautical charts
4) outdated or incomplete WGS-84 data, which may not reflect recent airspace modifications, obstacles, or changes in instrument flight procedures.

N-HRC 11: Failure or Unreliability of Navigational Aids (ATM/CNS)

The failure or unreliability of navigational aids (NAVAIDs) presents a major aviation safety hazard disrupting air traffic management, precision approaches, and en-route navigation. Despite the fact that failure of NAVAID-related incidents or accidents has not been reported in Ghana in 2023, it creates a lot of challenges for the safety, regularity and efficiency of aircraft operations. It remains a safety concern, hence it is imperative to monitor it critically. Some identified contributing factors include:

1) uncalibrated NAVAIDs in accordance with ICAO periodicity requirements.
2) erratic power supply and failure of the mains power supply
3) inadequate backup power solutions
4) failure of NAVAID system components and obsolete parts
5) encroachment of the critical and sensitive areas of NAVAIDs.

N-HRC 12: Unreliable Meteorological Forecast (OTHER)

Unreliable meteorological forecasts pose a serious aviation safety hazard affecting flight planning, air traffic management, and in-flight decision-making. One of the primary causes of this issue is the lack of qualified meteorological forecasters at aerodromes and meteorological watch offices, leading to inaccurate or delayed weather reports.

Without skilled personnel to interpret weather patterns and provide timely updates, an operating crew may encounter unexpected adverse conditions such as thunderstorms, wind shear, or low visibility without warning and increased operational risks. Unreliable meteorological reports have not caused any serious incidents in Ghana in 2023 but have resulted in several flight diversions. Contributing factors include:

1) Lack of appropriate meteorological equipment installed at aerodromes
2) Obsolete or inadequate instruments to provide real-time data on critical weather parameters such as wind speed, temperature, and cloud cover.
3) Training and qualification of an aeronautical meteorologist or forecaster
4) Lack of proper coordination between meteorological services, air traffic management, and other stakeholders.

N-HRC 13: Ground Collision (GCOL)

Ground collisions pose a major aviation safety hazard, particularly at busy airports where multiple aircraft, ground vehicles, and personnel operate in close proximity. These incidents can occur due to poor visibility, miscommunication between pilots and air traffic controllers, inadequate ground markings, congested apron areas, and failure to adhere to standard operating procedures. Such collisions involve aircraft colliding with other aircraft, vehicles, or ground infrastructure during taxiing, pushback, or parking and can cause severe structural damage, operational disruptions, and, in extreme cases, injuries or fatalities. In 2023, one Ground Collision accident was reported to have occurred in Ghana. Identifiable contributing factors to GCOL include:

1) defective airport lighting systems
2) insufficient ground movement guidance

3) insufficient airport signage
4) human errors
5) lack of proper coordination between pilots, ground handlers, and air traffic controllers
6) non-adherence to ground control protocols

The full list of the SEIs is presented in Appendices A and B to the NASP. In implementing these Safety Enhancements Initiatives (SEIs), resources will be committed to N-HRCs in the order of priorities.

5. Other Safety Issues

In addition to the national operational safety risks listed in the NASP, Ghana 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 Ghana'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. Ghana is committed to the effective implementation of these eight CEs, as part of its overall safety oversight responsibilities, which emphasise Ghana's commitment to safety in respect of its aviation activities. The eight CEs are presented in Figure 1 below:

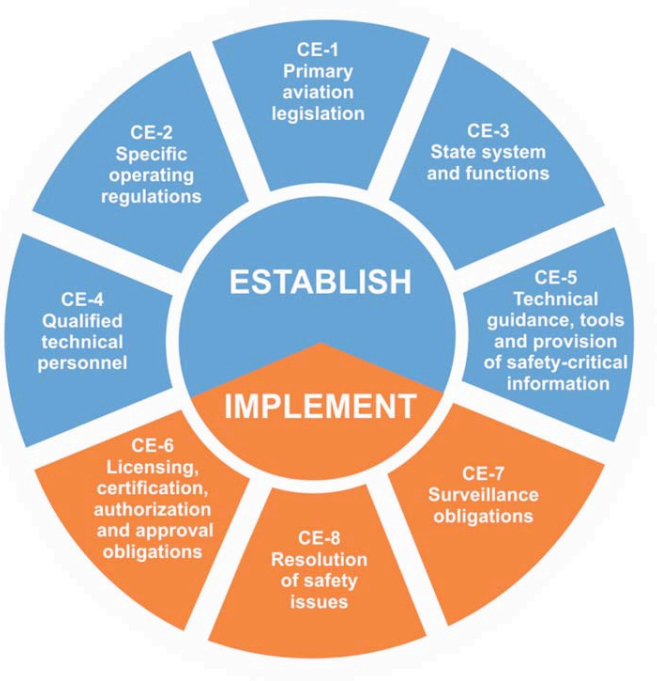

Figure 1: Critical elements of a State's safety oversight system

The latest ICAO activities, which aim to measure the effective implementation of the eight CEs of Ghana's safety oversight system, as part of the ICAO Universal Safety Oversight Audit Programme (USOAP), have resulted in the scores shown in Table 5.

Table 4: ICAO USOAP Scores for Ghana

Overall EI score							
89.89%							
EI score by CE							
CE-1	**CE-2**	**CE-3**	**CE-4**	**CE-5**	**CE-6**	**CE-7**	**CE-8**
96.88%	95.79%	92.31%	98.53%	92.91%	86.11%	78.38%	83.33%
EI score by audit area[3]							
LEG	**ORG**	**PEL**	**OPS**	**AIR**	**AIG**	**ANS**	**AGA**
91.30%	91.67%	98.75%	87.60%	93.40%	93.48%	84.94%	87.12%

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 Ghana's SOI have resulted in the scores shown in Table 6.

3 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).

Table 5: Calculated ICAO SOI Scores for Ghana

Overall SOI score	Score in the area of Operations	Score in the area of Air Navigation	Score in the area of Support Functions
1.63	**1.42**	**1.64**	**1.7**

The following other safety issues in the Ghanaian 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, and safety oversight activities over the past five (5) years, as well as the SSP. These issues are typically organisational 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 Ghana Civil Aviation Authority (GCAA), Ghana Meteorological Agency (GMET), National Communication Authority (NCA), Environmental Protection Agency (EPA), Ghana Air Force, Ghana Nuclear Regulatory Authority (GNRA), Aircraft Accident and Incident Investigation and Prevention Bureau (AIB-Ghana), and that of service providers. These safety issues are in line with those listed in the 2023 - 2025 Edition of the GASP, as well as the AFI-RASP:

1) **Lack of consistent implementation of ICAO SARPs at the national level**

   There is no systematic follow-up to ensure the implementation of corrective action plans submitted by the State in response to findings related to Protocol Questions (PQs) under the USOAP Continuous Monitoring Approach (CMA) on the ICAO Online Framework (OLF).

2) **Release of Balloons as a Hazard**

   In recent times, reports of Balloons being released in the vicinity of aerodromes during celebrations and promotional events by event organizers is posing serious threat to aircraft

operations. These can lead to, inter alia, the following:

a. Balloons, especially those made of metallic materials (such as Mylar), can be ingested into an aircraft's engine, potentially causing engine failure.
b. Large clusters of balloons may obstruct a pilot's field of view, increasing the risk of spatial disorientation or loss of situational awareness.
c. Although small in size, balloons can still pose a risk of mid-air collision, particularly in high-traffic airspace near airports.

3) **Pointing of Laser Beams into the Cockpit as a Hazard**

There have been a few reports of Laser beams directed into an aircraft cockpit. These occurrences, whether intentionally or accidentally, are highly dangerous due to their potential to impair pilot vision. This can lead to inter alias, the following:

(i) Temporary or Permanent Vision Impairment to the Pilot: Laser beams can cause flash blindness, glare, or even retinal damage, especially if the beam is of high intensity or directed at close range to an aircraft cockpit during the approach and landing phases of flight.
(ii) Distraction and Disorientation of Pilots: A sudden burst of laser light can distract pilots at critical moments, potentially leading to loss of control or navigational errors.
(iii) Compromised Night Vision: Pilots flying at night rely on their eyes' adaptation to low-light conditions. A laser strike can disrupt this adaptation, making it difficult for them to read instruments or identify visual cues for landing.

In order to address the issues listed above, Ghana 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 A and Appendix B to the NASP.

6. Monitoring Implementation

Ghana 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.

A National Aviation Safety Plan (NASP) Implementation Monitoring Tool has been developed using a structured spreadsheet designed to track the progress of Safety Enhancement Initiatives (SEIs) under the NASP. The tool will be managed by the SSP Office and provides a systematic way to monitor, assess, and update the implementation status of planned safety actions.

The key components of the Tool, which form the columns of the spreadsheet comprise of:

1. Safety Enhancement Initiative (SEI) Reference – Identifies the specific initiative being tracked.
2. Action Description – Specifies the detailed steps required for implementation.
3. Responsible Party – Indicates which entity (e.g., regulator, airline, or other stakeholders) is responsible for the action.
4. Stakeholders Involved – Lists organisations that need to collaborate to achieve the goal.
5. Priority Level (High/Medium/Low) – Categorises the urgency and significance of each action.
6. Implementation Status – Shows whether the action is Not Started, Started, or Completed.
7. Planned Completion Date – Provides target completion dates for each initiative.
8. Actual Completion Date – Allows for tracking whether initiatives were completed on time.
9. Notes/Comments – Captures relevant observations or updates related to the initiative.

The following are the benefits of the NASP Monitoring Tool:

(i) Ensures Accountability – Assigning responsible parties helps track progress and ownership.
(ii) Facilitates Decision-Making – Provides a clear view of which actions are on track and which need intervention.
(iii) Improves Compliance with ICAO Standards – Ensures that safety initiatives align with international best practices.

(iv) Enhances Transparency – Enables all stakeholders to stay informed about the progress of aviation safety actions.

(v) Supports Continuous Monitoring – Helps regulatory bodies and aviation organizations identify delays, challenges, and required adjustments in implementation.

In addition , Ghana will review the NASP every 2 years in line with the GASP to keep the identified operational safety risks, safety issues, and selected SEIs updated and relevant. The SSP will periodically review the safety performance of the initiatives listed in the NASP to ensure the achievement of national safety goals and targets. Where necessary, Ghana will seek the support of RASG-AFI, BAGASOO, industry, etc., to ensure the timely implementation of SEIs to address safety deficiencies and mitigate risks. Through close monitoring of the SEIs, Ghana will make adjustments to the NASP and its initiatives, where necessary, and update the NASP accordingly.

Ghana will use the indicators listed in Section 3 of this plan to measure the 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 Ghana 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.

Ghana has adopted a standardized approach to provide information at the regional level, for reporting to the RASG-AFI (i.e. Ghana's safety information is shared with RASG-AFI through the designated focal point, the USOAP National Continuous Monitoring Coordinator (NCMC)) on the ICAO Secure Portal on Operational Safety Risks and Emerging Issues. This allows the region to receive information and assess safety risks using common methodologies.

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

The SSP Office

Ghana Civil Aviation Authority (GCAA)

Private Mail Bag

Kotoka International Airport, Accra

Telephone: +233302776171

Fax: +233302773293

Email: sspghana@caa.com.gh

Website: https://www.gcaa.com.gh/web/?page_id=13

Appendix A: Detailed SEIs – 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 the 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:		GCAA Inspectors (Airworthiness / Operations Sections, SRD)	GCAA Inspector (ANS, Airworthiness & Operations Sections), ANSPs, Air Operators	Number of CFIT Accident/incident per 10,000 Flight Movements	Low	Surveillance of Air Operators, ANSP activities
	a) Issue a Safety Advisory to increase adherence to TAWS warning procedures	End of 2025					
	b) Ensure the timeliness of updates and accuracy of Electronic Terrain and Obstacle Data (eTOD)	End of 2025					
	c) Promote the use of GPS-derived position data to feed TAWS	End of 2025					
	2. Monitor 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)	Continuing Process	CAA Inspectors (Safety Regulation Department (SRD))	GCAA Inspectors (SRD), Accident/Incident Investigation Bureau (AIB), National Aviation Safety Coordination Group (NASCG)	Number of CFIT Accident/incident per 10,000 Flight Movements	Medium	High Safety reporting (MOR/VOR)
	3. Identify additional contributing factors :	Continuing Process	GCAA Inspectors (ANS and Operations Sections)	GCAA Inspectors (ANS & Operations sections, Section), ANSP, PANS-OPS	Number of CFIT Accident/incident per 10,000	Low	Continuous monitoring via surveillance activities on
	a) Flight in adverse environmental conditions						

	b) Approach design and documentation (e.g. approaches with vertical guidance (APV) or localizer performance with vertical guidance (LPV) approaches) c) Phraseology used (standard vs. non-standard) d) Pilot fatigue and disorientation 5. Conduct continuous evaluations of the performance of the SEIs			Service Providers, Air Operators	Flight Movements		ANSP, ATO and Air Operators
SEI -2: Mitigate contributing factors to CFIT accidents and incidents	1. Implement the following CFIT safety actions: a) Promote the adherence to TAWS warning procedures b) Promote greater awareness of approach risks c) Promote the implementation of CDFA d) Promote the implementation of MSAW systems e) Promote the timeliness of updates and accuracy of eTOD f) Promote the use of global positioning system (GPS)-derived position data to update TAWS	Continous	GCAA Inspectors (Airworthiness & Operations Sections)	GCAA Inspectors (ANS, Airworthiness, and Operations Sections), ANSP, Air Operators	Number of CFIT Accident / incident per 10,000 flight movements.	Low	Surveillance of Air Operators, ANSP activities
	2. Validate the effectiveness of the SEIs presented in this roadmap using data provided by service providers (apply safety management methodologies)	Continuing Process	GCAA Inspectors (SRD), SSP Implementation Team, AIB,	GCAA Inspectors (SRD), SSP Implementation Team, AIB, Air Operators, & Flight simulator products and service providers	Number of occurrences analysed per year / CFIT occurrence rates in MOR, VOR and AIG reports	Low	High Safety reporting (MOR/VOR)

	3. Identify additional contributing factors:	End of 2025	GCAA Inspectors (Airworthiness & Operations Sections)	GCAA Inspectors (ANS, Airworthiness, and Operations Sections), ANSP, Air Operators	Number of CFIT Accident / incident per 10,000 flight movements.	Low	Surveillance of Air Operators, ANSP activities
	a) Flight in adverse environmental conditions						
	b) Approach design and documentation						
	c) Phraseology used (standard vs non-standard)						
	d) Pilot fatigue and disorientation						
	5. Conduct continuous evaluation of the performance of the SEIs						
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 the national accident rate							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI -3: Mitigate contributing factors to the risk of LOC-I accidents and incidents	1. Identify contributing factors:	Continuing Process	GCAA Inspectors (Operation Section)	GCAA Inspectors (Operation Section), Air Operators, Flight simulator products and service providers	Stick shaker activation events in FDA data LOC-I occurrence rates 10,000 FHs	Low	Surveillance of Air operator and ATO training activities
	a) Distraction						
	b) Adverse weather				Number of LOC-I occurrence per 10,000 FHs		
	c) Complacency						
	d) Inadequate standard operating procedures (SOPs) for effective flight management						
	e) Training required to avoid/manage situations with insufficient height above terrain for recovery.						

	f) Required Training to develop awareness and competence in procedures for recovery from unusual aircraft attitudes						
	g) Training required to correct inappropriate flight control inputs made when suddenly aware of an abnormal bank angle.						
	5. Conduct continuous evaluations of the performance of the SEIs						
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 the national accident rate							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI 4: Mitigate contributing factors to MAC accidents and incidents	1. Implement the following MAC safety actions:				Number of MAC occurrence per 10,000 FHs	Medium	Certification and Surveillance of Air Operators, ATOs, ANSPs
	a) Ensure adherence to ACAS warning procedures	Continuing Process	GCAA Inspectors (Operations and Airworthiness Sections)	GCAA Inspectors (Operations and Airworthiness Sections), Air Operators			
	b) Promote the improvement of air traffic control (ATC) systems, procedures and tools to enhance conflict management	Continuing process	GCAA Inspectors (ANS Section)	GCAA Inspector (ANS Section), ANSPs and Air Operators			
	2. Validate the effectiveness of the SEIs through the analysis of MORs and VORs and accident/incident investigations (apply safety management methodologies)	Continuing Process	GCAA Inspectors (ANS Section)	GCAA Inspector (ANS Section), ANSPs and Air Operators	Number of MAC occurrence per 10,000 FHs	Low	High Safety reporting (MOR/VOR)

	3. Identify additional contributing factors, for example: a) Traffic conditions - traffic density, complexity, mixture of aircraft types and capabilities, etc. b) ATC performance related to workload, competence, teamwork, procedures, commitment, etc., as well as the influence of air navigation services providers' (ANSP) safety management	Continuing Process	GCAA Inspectors (ANS and Operations Sections)	GCAA Inspectors (ANS and Operations Sections), Air Operators, ANSPs and Airport Operators	Number of MAC occurrence per 10,000 FHs	Low	Continuous monitoring via surveillance activities on ANSP, ATO and Air Operators
	c) Flight crew training and corporate culture with workload, competence, teamwork, procedures, commitment etc., and the influence of aircraft operator's safety management	Continuing Process	CAA Inspectors (Operations Sections)	Operations Sections, SRD, Air Operators, ATOs and Flight simulator products and service providers,			
N-HRC 4: Runway Excursion (RE)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of the national accident rate							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI 5: 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 for regional airports in Ghana.	Q4 of 2025	GCAA Inspectors (ANS and ASAS Sections)	GCAA Inspectors (ANS and ASAS Section), ANSP, Aerodrome Operators	Number of RE Accident / incident per 10,000 FHs	Medium	Continuous monitoring via surveillance activities on ANSP, Aerodrome Operators, ATO and Air Operators
	b) Promote the establishment of policy and training on rejected landings, go-arounds, crosswind and tailwind landings (up to the maximum manufacturer demonstrated winds)	Continuing pro-cess	GCAA Inspectors (Operations Section)	GCAA Inspectors (Operations Section), Air Operators, ATO and Flight Simulator products and service providers			

	c) Ensure 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)	Continuing process	GCAA Inspectors (ANS and ASAS Sections)	GCAA Inspectors (ANS and ASAS Sections), ANSPs, Aerodrome operators			
	e) Certify aerodrome in accordance with ICAO Annex 14, Volume I as well as Doc 9981, PANS-Aerodrome	Continuing process	GCAA Inspectors (ANS and ASAS Sections	GCAA Inspectors(ASAS Section), Aerodrome Operators			
	f) Ensure that procedures to systematically reduce the rate of unstabilized approaches to runways are developed and used	Continuing pro-cess	GCAA Inspectors (Operations Section)	GCAA Inspector (ASAS Section), Aerodrome Operators			
	2. Validate the effectiveness of the SEIs through the analysis of MORs, VORs and accident/incident investigations (apply safety management methodologies)	Continuing process	SSP Implementation Team, GCAA SRD and AIB,	SSP Implementation Team, AIB, GCAA Inspector (Operations Section), Air operators			High Safety reporting (MOR/VOR)
	3. Identify additional contributing factors, for example:	Continuing process	GCAA Inspectors (SRD), SSP Implementation Team, AIB,	SSP Office, AIB, GCAA Inspectors (SRD), Air operators, AMOs, ATOs, ANSPs, Aerodrome operators			Continuous monitoring via surveillance activities on ANSP, Aerodrome Operators, ATO and Air Operators
	a) Ineffective SOPs						
	b) Failure to adhere to the appropriate SOPs						
	c) Training is needed to address long/floated/bounced/firm/ off-centre/ crabbed landings.						
	d) Inadequate approach procedures design						
	e) Inadequate regulatory oversight						
	5. Conduct continuous evaluations of the performance of the SEIs		GCAA Inspectors (SRD)				

N-HRC 5: Runway Incursion (RI)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of the national accident rate							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI 6: Mitigate contributing factors to RI accidents and incidents	1. Implement the following RI safety actions:			GCAA Inspectors (ANS, ASAS, Operations Sections), ANSPs, Air Operators, Aerodrome Operators and allied services.	Number of RI Accident / incident per 10,000 FHs	Medium	
	a) Ensure the establishment and implementation of a State runway safety programme and runway safety teams for regional airports	Q4 of 2025	GCAA Inspectors (ANS and ASAS Sections)				Continuous monitoring via surveillance activities on ANSP, Aerodrome Operators, ATO and Air Operators
	b) Promote the establishment of policy, procedures and training that supports situational awareness for controllers, pilots and airside vehicle drivers	Q4 of 2025					
	c) Ensure effective use of stop bars while promoting the use of suitable technologies to assist the improvement of situational awareness, such as improved resolution airport moving maps (AMM), electronic flight bags (EFBs), enhanced vision systems (EVS) and head-up displays (HUD), advanced-surface movement guidance and control systems (A-SMGCS), and runway incursion warning systems (ARIWS).	Continuing process	GCAA Inspectors (ANS, Operations, and ASAS Sections)				
	d) Certify regional aerodromes in accordance with ICAO Annex 14, Volume I as well as Doc 9981, PANS-Aerodrome	Q4 of 2025	GCAA Inspectors (ASAS Section)				

	f) Ensure the identification and publication in the aeronautical information publication (AIP) of hot spots at aerodromes	Continuing process	GCAA Inspectors (ANS Section)				
	g) Ensure that suitable strategies to remove hazards or mitigate risks associated with identified hot spots are developed and executed.	Continuing process	GCAA Inspectors (ANS and ASAS Sections)				
	2. Validate the effectiveness of the SEIs through the analysis of MORs, VORs and accident/incident investigations (apply safety management methodologies)	Continuing process	SSP Implementation Team, GCAA SRD and AIB,	SSP Implementation Team, AIB, GCAA Inspector (Operations Section), Air operators	Number of RI Accident / incident per 10,000 FHs	Low	High Safety reporting (MOR/VOR)
	3. Identify additional contributing factors, for example:			GCAA Inspectors (ANS, ASAS, Operations Sections), ANSPs, Air Operators, Aerodrome Operators and allied services.	Number of RI Accident / incident per 10,000 FHs	Low	Continuous monitoring via surveillance activities on ANSP, Aerodrome Operators, ATO and Air Operators
	b) Complex or inadequate aerodrome design	Continuing process	GCAA Inspectors (ANS and ASAS Sections)				
	c) Conditional clearances	Continuing process	GCAA Inspectors (ANS Section)				

N-HRC 6: System Component Failure/Malfunction – Non-Powerplant (SCF-NP)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of the national accident rate							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI 7: Mitigate contributing factors to System Component Failure/Malfunction - Non-Powerplant (SCF-NP) accidents and incidents	Implement the following Bird Strike safety actions: a. Use of certified aircraft parts b. Adherence to appropriate maintenance procedures for aircraft b. Ensure update and upgrade of software and databases of onboard systems	Continuing process	GCAA Inspectors (Operations and Airworthiness Sections)	GCAA Inspectors (Operations and Airworthiness Sections), Air Operators, Approved Maintenance Organisations (AMOs),	Number of SCF-NP reported Accident / incident per 10,000 FHs	High	Surveillance of Air operators and AMOs activities
N-HRC 7: Bird Strike and Wildlife Hazards							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of the national accident rate							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI 8: Mitigate contributing factors to Bird Strike & Wildlife accidents and incidents	Implement the following Bird Strike safety actions: a. Observe bird activities and bird strikes at the airports and promote collecting, reporting, recording and analysis of data through various means. b. Ensure the better management of vegetation and land use at and around the airports.	Continuing process	GCAA Inspectors (ASAS, and ANS Sections), SSP Implementation Team and AIB	GCAA Inspectors (ANS, ASAS, and Operations Sections), ANSP, Air Operators, Aerodrome Operators and allied services	Number of Bird strike Accident/incident per 10,000 flying hours.	High	Surveillance of Aerodromes, ANSP, air operators activities Safety reporting (MOR/VOR)

	c. Promote wildlife Management measures including reporting, recording and analysis of data through various means.						
N-HRC 8: Dust and Haze							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of the national accident rate							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI 9: Mitigate contributing factors to Dust and Haze related accidents and incidents	Implement the following Dust and Haze safety actions: a. Ensure proper and timely meteorological forecasting by qualified meteorologists b) ensure provision and availability of Automatic Weather Observation Systems (AWOS) c) Ensure provision of adequate information for operational planning	Q4 of 2025	GCAA Inspectors (ANS Sections)	SSP Office, AIB, GCAA Inspectors (SRD), Air operators, AMOs, ATOs, ANSPs, Aerodrome operators	Number of Dust & Haze Accident/incident per 10,000 flying hours.	High	Surveillance of Aerodromes, ANSP, air operators activities

N-HRC 9: Large Height Deviation (LHD)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of the national accident rate							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI 10: Mitigate contributing factors to Largh Height Deviation (LHD) related accidents and incidents	Implement the following LHD safety actions: a. Promote Human factor principles to mitigate pilot fatigue or distractions as well as ATC workload and distractions b) Promote compliance with RVSM Standards and appropriate input altimeter Settings c. Report LHDs to the AFI Regional Monitoring Agency (ARMA) regularly.	Q4 of 2025	GCAA Inspectors (ANS and OPS Sections)	SSP Office, AIB, GCAA Inspectors (SRD), Air operators, AMOs, ATOs, ANSPs, Aerodrome operators	Number of LHD Accident/incident per 10,000 flying hours.	Low	Surveillance of Aerodromes, ANSP, air operators activities

N-HRC 10: Unavailability of required Aeronautical Charts							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of the national accident rate							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI 11: Mitigate contributing factors to Aeronautical Charts related accidents and incidents	Implement the following safety actions: a. Ensure up-to-date aeronautical charts are available, maintained and published in the Ghana AIP b) Promote regular update of WGS-84 data to reflect recent airspace modifications, obstacles, or changes in instrument flight procedures	Q4 of 2025	GCAA Inspectors (ANS Section)	SSP Office, AIB, GCAA Inspectors (SRD), Air operators, ANSPs, Aerodrome operators	Number of Aeronautical Charts Accident/incident per 10,000 flying hours.	High	Surveillance of Aerodromes, ANSP, air operators activities
N-HRC 11: Unreliable Navigational Aids (ATM/CNS)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of the national accident rate							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI 12: Mitigate contributing factors to the risk of unreliable navigational aids accidents and incidents	Implement the following safety actions:			SSP Office, AIB, GCAA Inspectors (SRD), Air operators, ANSPs, Aerodrome operators	Number of failures of Navigational aids Accident/incident due to power failure per Year.	High	Surveillance of Aerodromes, ANSP, air operators activities
	b) Ensure the flight and ground testing of navigational aids in accordance with the periodicity requirements of the systems as per the Ghana Civil Aviation Directives and ICAO Standards.	Continuing process	GCAA Inspectors (ANS Section)				
	c) ensure protection against encroachment of the critical and	Continuing process	GCAA Inspectors (ANS and ASAS Sections)				

	sensitive areas of navigational aids.						
	d) ensure effective maintenance of navigational aids systems in accordance with OEM specifications and maintenance schedule of service provider.	Continuing process	GCAA Inspectors (ANS Section)				
N-HRC 12: Unreliable Meteorological forecast (OTHER)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of the national accident rate							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI 13: Mitigate contributing factors to the risk of unreliable Meteorological Forecast accidents and incidents	Ensure appropriate Meteorological equipment is installed at aerodromes		GCAA Inspectors (ANS Section)	GCAA Inspectors (ANS Section), ANSP, Air Operators, Aerodrome Operators	Installed and commissioned appropriate Meteorological equipment at aerodromes	High	Surveillance and monitoring of ANSP

N-HRC 9: Ground Collision (GCOL)							
Goal 1: Achieve a continuous reduction of operational safety risks							
Target 1.1: Maintain a decreasing trend of the national accident rate							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI 14: Mitigate contributing factors to the risk of Ground Collision accidents and incidents	Implement the following safety actions:			CAA Inspectors (ANS, ASAS and Operations Sections), Aerodrome operators and allied services, ANSPs, and Air operators	Number of Ground collisions Accident/incident per year	High	Surveillance and monitoring of ANSP, Air Operators, Aerodrome Operators and Allied Services
	a) Ensure adherence to Standard Operating Procedures (SOPs) by personnel and vehicular movements on the RAMP	Continuing process	GCAA Inspectors (ANS, ASAS and Operations Sections)				
	b) ensure training personnel are authorised to conduct operations on the RAMP to help reduce accidents and incidents by Human Error	Continuing process	CAA Inspectors (ANS, ASAS and Operations Sections)				
	c) Training of ATC personnel on correct aviation phraseology to prevent Unclear instructions for operations	Continuing process	CAA Inspectors (ANS Section)				
	d) ensure RAMP Markings and lighting meet ICAO Standards	Continuing process	CAA Inspectors (ASAS Section)				
	e) ensure provision and availability of updated and current Ground movement charts	Q4 of 2025	CAA Inspectors (ANS and ASAS Sections)				

Appendix B: Detailed SEIs – Other Safety Issues

Goal 2: Strengthen Ghana's safety oversight capabilities							
Target 2.1: Ghana to improve its current score of 89.89% achieved in 2019 for the Effective Implementation (EI) of the critical elements (CEs) of its safety oversight system (with focus on priority PQs) as follows: by 2026 – 92 per cent; by 2028 – 95 per cent; and by 2030 – 99 per cent.							
Target 2.2: By 2025, Ghana to reach a safety oversight index greater than 1, in all categories.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI 15: Consistent implementation of ICAO SARPs at the national level	Implement the following safety actions:	Q4 of 2025	GCAA & AIB	GCAA, AIB, Air operators, ANSPs, Aerodrome operators, ATOs and Flight Simulators service providers	Number of priority PQs implemented related to its safety oversight system per Table 2 of the NASP	Medium	State EI Score on OLF Dashboard
	a) Address all priority protocol questions (PQs) of the USOAP CMA						ICAO and Regional Safety Oversight Team (ROST) mission Assessments
	b) 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)				Percentage of required corrective action plans (CAPs) submitted by Ghana (using OLF)		
	c) obtain Safety Oversight Index (SOI) greater than 1, in all categories				safety oversight index score greater than 1, in all categories		State SOI score on iSTARs
Goal 3: Implement effective State Safety Programme (SSP)							
Target 3.1: By end of 2025, Ghana to implement the foundation of its SSP							
Target 3.2: By 2025, Ghana to implement an effective SSP, appropriate to its aviation system complexity							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI – 16: Implement effective State Safety Programme (SSP)	1. Implement the following safety actions:	End of 2025	SSP Implementation Team (GCAA & AIB)	GCAA & AIB, Air operators, ANSPs, Aerodrome operators, ATOs and	· Percentage of each Audit area or CE implemented satisfactorily	Medium	· State SOI score on iSTARs

	a) implement the foundation of its SSP			Flight Simulators service providers	· Percentage of satisfactory SSP foundational PQs · Percentage of required CAPs related to the SSP foundational PQs submitted by Ghana (using OLF) · Percentage of required CAPs related to the SSP foundational PQs completed by Ghana (using OLF)		
	b) Review and publish its national aviation safety plan (NASP).	2Q 2025			Published Ghana NASP on the ICAO Website		
Goal 4: Increase collaboration at the regional level							
Target 4.1: By 2025, Ghana to contribute information on operational safety risks, including SSP safety performance indicators (SPIs) to the AFI Regional Aviation Safety Group (RASG-AFI)							
Target 4.2: By 2025, Ghana to contribute information on safety risks, including SSP safety performance indicators (SPIs), to AFI Regional Aviation Safety Group (RASG-AFI)							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI – 17:Strategic collaboration with ICAO Regional Office and aviation stakeholders to enhance safety in a coordinated manner	Implement the following safety actions:	Continuing process	SSP Office	Ghana SSP, ICAO Regional Office, and the aviation industry	Number of Reports made to RASG-AFI on the Secure Portal on Operational Safety Risks and Emerging Issues to RASG-AFI	Medium	ICAO AFI Portal on Operational Safety Risk & National Aviation Safety Plan Monitoring Tool
	a)Contribute information on operational safety risks to AFI Reional Aviation Safety Group				Number of SSP SPIs shared with RASG-AFI		

	b) contribute information on safety risks, including SSP safety performance indicators (SPIs), to AFI Regional Aviation Safety Group (RASG-AFI)				Percentage of safety enhancement initiatives completed on safety risk management		
Goal 5: Expand the use of industry programmes							
Target 5.1: By 2025, maintain an increasing trend in industry's contribution to safety information sharing networks with the State and the region to assist in the development of the NASP and AFI-RASP.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**
SEI-21: Improvement of industry compliance with applicable regulations and contribution to NASP, and AFI-RASP	Implement the following safety actions: a) Maintain an increasing trend in industry's contribution in safety information sharing networks with the State and the region to assist in the development of the NASP and AFI - RASP. b) Encourage service providers to participate in the corresponding, ICAO-recognized industry assessment programmes (IOSA, ISAGO, etc.,) c)Encourage the active participation of industry in the RASGs to assist with the implementation of safety enhancement initiatives (CE-6 to CE-8)	Continuing process	SSP Office and Industry	Industry, SSP Implementation Team and NASCG and, USOAP NCMC, ICAO Regional Office and aviation	Number of service providers contributing to the SDCPS and in the safety information sharing network Number of meetings and workshops attended by service providers, on NASP and the SSP	Low	Surveillance of service providers, USOAP CMA activities
Goal 6: Ensure the appropriate infrastructure is available to support safe operations							
Target 6.1: By 2025, Ghana to implement the air navigation and aerodrome infrastructure that meets relevant ICAO Standards.							
Safety enhancement initiative	**Action**	**Timeline**	**Responsible entity**	**Stakeholders**	**Metrics / Indicators**	**Priority**	**Monitoring Activity**

SEI –26: Implementation of appropriate air navigation and airport core infrastructure to support safe operations In accordance with conclusions and resolutions of ICAO PIRGs and RASGs	Implement appropriate core infrastructure in accordance with the ICAO Basic Build Blocks (BBBs), Aviation System Block Upgrades (ASBU), etc., as described in the ICAO GANP	Continuing process	GCAA, ANSPs, and Aerodrome Operators	GCAA, ANSPs, Aerodrome Operators, ICAO Regional Office and aviation industry	• Number or percentage of infrastructure related air navigation deficiencies reported against the AFI eANP. • Number or percentage of States having implemented infrastructure-related PQs linked to the basic building blocks	High	Surveillance of service providers, USOAP CMA activities

Appendix C: CICTT' AVIATION OCCURRENCE TAXONOMY

This Appendix describes the common taxonomies and their definitions and their usage for occurrence reporting developed by the Commercial Aviation Safety Team (CAST) / International Civil Aviation Organization (ICAO) Common Taxonomy Team (CICTT). The CICTT comprises of Government officials and aviation industry leaders, charged with developing common taxonomies and definitions for aviation accident and incident reporting systems intended to improve the aviation community's capacity to focus on common safety issues.

The descriptions of occurrences below are derived from CICTT's Aviation Occurrence Categories: Definitions and Usage, October 2011 (4.2) document.

1. **ABNORMAL RUNWAY CONTACT (ARC)**

Definition: Any landing or takeoff involving abnormal runway or landing surface contact

Usage Notes:

- Events such as hard/heavy landings, long/fast landings, off center landings, crabbed landings, nose wheel first touchdown, tail strikes, and wingtip/nacelle strikes are included in this category.

- Gear-up landings are also recorded here. However, if a system/component failure or malfunction occurred, which led to the gear up landing, the event is also coded under the appropriate system/component failure or malfunction category.

- Do not use this category for runway contacts after losing control, e.g., runway contact after take-off.

- Occurrences in which the gear collapses during the take-off run or the landing roll are not included here except if a condition in the usage notes above has been met.

NOTE: Throughout this document the term runway or landing area is taken in its broadest sense and includes runways, landing strips, waterways, unimproved landing areas, and landing pads (which may include offshore platforms, building roofs, roads, ships, and fields), or other landing areas.

NOTE: Does not include helicopter hard/heavy landings after an off-field emergency autorotation when there was no intention to land before the autorotation was entered.

NOTE: Includes (tail) rotor striking the intended landing surface during take-off and landing. However, collisions with obstacles during take-off and landing, such as trees or walls, should be coded under TOL.

NOTE: Does not include off-field landing by gliders.

2. ABRUPT MANEUVER (AMAN)

Definition: The intentional abrupt maneuvering of the aircraft by the flight crew.

Usage Notes:

- This category includes the intentional maneuvering of the aircraft to avoid a collision with terrain, objects/obstacles, weather or other aircraft (Note: The effect of intentional maneuvering is the key consideration).

- Abrupt maneuvering may also result in a loss of control or system/component failure or malfunction. In this case the event is coded under both categories (e.g., AMAN and LOC–I, AMAN and SCF–NP, or AMAN and SCF–PP).

- Abrupt maneuvering may also occur on ground, examples include hard braking maneuver, rapid change of direction to avoid collisions, etc**.**

3. AERODROME (ADRM)

Definition: Occurrences involving Aerodrome design, service, or functionality issues.

Usage Notes:

- Includes deficiencies/issues associated with a State approved Aerodrome runways, taxiways, ramp area, parking area, buildings and structures, Crash/Fire/Rescue (CFR) services, obstacles on the Aerodrome property, lighting, markings, signage, procedures, policies, and standards.

- Examples include closed runways, improperly marked runways, construction interference, lighting failures, signage limitations, etc.

- Occurrences do not necessarily involve an aircraft.

- Effects of Aerodrome design are also included here. For example, building layout and architecture which leads to surface wind disruptions would be coded as both ADRM and WS/TRW or TURB as appropriate.

- Includes heliports (excludes unprepared or natural landing sites).

- Includes loose foreign objects on aerodromes and on heliports (excludes unprepared or natural landing sites).

4. AIRPROX/TCAS ALERT/LOSS OF SEPARATION/NEAR MIDAIR COLLISIONS/MIDAIR COLLISIONS (MAC)

Definition: Airprox, TCAS alerts, loss of separation as well as near collisions or collisions between aircraft in flight.

Usage Notes:

- Includes all collisions between aircraft while both aircraft are airborne.
- Both air traffic control and cockpit crew separation-related occurrences are included.
- To be used for AIRPROX reports.
- Genuine TCAS alerts are included here.

5. ATM/CNS (ATM)

Definition: Occurrences involving Air traffic management (ATM) or communications, navigation, or surveillance (CNS) service issues.

Usage Notes:

- Includes ATC facility/personnel failure/degradation, CNS service failure/degradation, procedures, policies, and standards.
- Examples include, NAVAID outage, NAVAID service error, controller error, Supervisor error, ATC computer failure, Radar failure, and navigation satellite failure.

- Occurrences do not necessarily involve an aircraft.

NOTE: ATM includes all of the facilities, equipment, personnel, and procedures involved in the provision of State approved Air Traffic Services.

6. *BIRD (BIRD)*

Definition: Occurrences involving collisions/near collisions with bird(s)/wildlife.

Usage Notes:

- *May occur in any phase of flight.*

NOTE: Bird strikes were previously categorized as "other". Users may wish to update their historic data by replacing "other" with "BIRD" where the occurrence involved a bird/wildlife strike.

7. CABIN SAFETY EVENTS (CABIN)

Definition: Miscellaneous occurrences in the passenger cabin of transport category aircraft.

Usage Notes:

- Includes significant events related to carry-on baggage, supplemental oxygen, or missing/non-operational cabin emergency equipment.

- Includes inadvertent deployment of emergency equipment.

- Includes medical emergency for a person other than a flight crewmember or a medical evacuation patient.

- Excludes turbulence and other weather-related events, which are covered under TURB, ICE, or WSTRW respectively.

8. COLLISION WITH OBSTACLE(S) DURING TAKE-OFF AND LANDING (CTOL)

Definition: Collision with obstacle(s) during take-off or landing whilst airborne.

Usage Notes:

- For all aircraft (excluding rotorcraft), to be used only in cases where the crew was aware of the true location of the obstacle, but its clearance from the aircraft flightpath was inadequate.
- Includes contact with obstacles, such as vegetation, trees and walls, snow drifts, power cables, telegraph wires and antennae, offshore platforms, maritime vessels and structures, land structures and buildings.
- Includes collisions during take-off to and landing from the hover.
- Includes water obstacles during take-off from water (e.g., waves, dead-heads, ships, swimmers).
- Not to be used for occurrences classified under CFIT, LOC–I or SCF–PP.

9. CONTROLLED FLIGHT INTO OR TOWARD TERRAIN (CFIT)

Definition: Inflight collision or near collision with terrain, water, or obstacle without indication of loss of control.

Usage Notes:

- CFIT is used only for occurrences during airborne phases of flight.
- CFIT includes collisions with those objects extending above the surface (for example towers, trees, power lines, cable car support, transport wires, power cables, telephone lines and aerial masts).
- CFIT can occur during either Instrument Meteorological Conditions (IMC) or Visual Meteorological Conditions (VMC).
- Includes instances when the cockpit crew is affected by visual illusions or degraded visual environment (e.g., black hole approaches and helicopter operations in brownout or whiteout conditions) that result in the aircraft being flown under control into terrain, water, or obstacles.
- If control of the aircraft is lost (induced by crew, weather or equipment failure), do not use this category; use Loss of Control – Inflight (LOC–I) instead.
- For an occurrence involving intentional low altitude operations (e.g., crop dusting, aerial work operations close to obstacles, and Search and Rescue (SAR) operations close to water or ground surface) use the Low Altitude Operations (LALT) code instead of CFIT.

- Do not use this category for occurrences involving intentional flight into/toward terrain. Code all collisions with obstacles during take-off and landing under TOL. Code all suicides under Security Related (SEC) events.

- Do not use this category for occurrences involving runway undershoot/overshoot, which are classified as Undershoot/Overshoot (USOS).

- Includes flying into terrain during transition into forward flight.

- For helicopter operations, not to be used for take-off and landing phases, except when the occurrence involves flying into terrain without indication of loss of control during transition into forward flight.

10. EVACUATION (EVAC)

Definition: Occurrence where either: (a) person(s) are injured during an evacuation; (b) an unnecessary evacuation was performed; (c) evacuation equipment failed to perform as required; or (d) the evacuation contributed to the severity of the occurrence.

Usage Notes:

- Includes cases where an injury(ies) was (were) sustained during the evacuation through an emergency exit or main cabin door.

- Includes cases where the evacuation itself is the accident (in essence, had there not been an evacuation there would not have been an accident).

- An unnecessary evacuation is one that was either erroneously commanded by the crew or uncommanded.

- Only used for passenger carrying operations involving transport category aircraft.

- Includes evacuation following a ditching or survivable crash landing in water provided one of the conditions above is met.

11. EXTERNAL LOAD RELATED OCCURRENCES (EXTL)

Definition: Occurrences during or as a result of external load or external cargo operations.

Usage Notes:

- Includes cases where external load or the load lifting equipment used (e.g., long line, cable) contacts terrain, water surface, or objects.

- Includes cases where the load or, in the absence of a load, the load lifting equipment strikes or becomes entangled with the main rotor, tail rotor, or the helicopter fuselage.

- Includes injuries to ground crew handling external loads as result of contact with/dropping/inadvertent release of external load.

- Includes ground injuries to ground crew handling external loads due to the downwash effect or falling branch, trees, etc.

- Includes external hoist, human external cargo, and long lines.

- If the preparation of the external load by ground crew played a role, also code under RAMP.

- Failures or malfunctions of the onboard external load handling lifting equipment or release systems should be coded under SCF-NP, as these are considered to be aircraft systems.

12. FIRE/SMOKE (NON-IMPACT) (F–NI)

Definition: Fire or smoke in or on the aircraft, in flight, or on the ground, which is not the result of impact.

Usage Notes:

- Includes fire due to a combustive explosion from an accidental ignition source.
- Includes fire and smoke from system/component failures/malfunctions in the cockpit, passenger cabin, or cargo area.
- Non-combustive explosions such as tire burst and pressure bulkhead failures are coded under System/Component Failure – Non-Powerplant (SCF–NP).
- Fire/Smoke resulting from an accident impact is coded under Fire/Smoke (post-impact) (F–POST).

13. FIRE/SMOKE (POST-IMPACT) (F–POST)

Definition: Fire/Smoke resulting from impact.

Usage Notes:

- This category is only used for occurrences where post impact fire was a factor in the outcome.

- This category is only used in conjunction with another category. For example, a system/component failure that also results in a post-impact fire will be coded as SCF–PP and F–POST or SCF–NP and F–POST.

14. FUEL RELATED (FUEL)

Definition: One or more powerplants experienced reduced or no power output due to fuel exhaustion, fuel starvation/mismanagement, fuel contamination/wrong fuel, or carburetor and/or induction icing.

Usage Notes:

- The following fuel-related definitions are provided for clarity:

  - ✓ Exhaustion: No usable fuel remains on the aircraft.

  - ✓ Starvation/mismanagement: Usable fuel remains on the aircraft, but it is not available to the engines.

  - ✓ Contamination: Any foreign substance (for example, water, oil, ice, dirt, sand, bugs)in the correct type of fuel for the given powerplant(s).

  - ✓ Wrong fuel: Fuel supplied to the powerplant(s) is incorrect, for example, Jet A into a piston powerplant, 80 octane into a powerplant requiring 100 octane.

- Includes cockpit crew or ground crew-induced fuel-related problems that are not the result of mechanical failures. Interruptions of the fuel supply caused by mechanical failures are coded elsewhere as non-powerplant or powerplant system/component failures (SCF–NP or SCF–PP), as appropriate.

- Also used when the wrong fuel causes a powerplant failure (e.g., through detonation). In this case it should be coded as FUEL, not as a system/comfponent failure or malfunction-powerplant (SCF–PP).

- Includes cases where there was a high risk of fuel exhaustion but there was no actual loss of power.

15. GLIDER TOWING RELATED EVENTS (GTOW)

Definition: Premature release, inadvertent release or non-release during towing, entangling with towing, cable, loss of control, or impact into towing aircraft/winch.

Usage Notes:

- Applicable both to aircraft under tow by winch or by another aircraft or to aircraft executing towing.

- To be used in events only after reaching airborne phase.

- Includes loss of control because of entering the towing aircraft wake turbulence and events where of airspeed is out of limits during tow.

16. GROUND HANDLING (RAMP)

Definition: Occurrences during (or as a result of) ground handling operations.

Usage Notes:

- Includes collisions that occur while servicing, boarding, loading, and deplaning the aircraft also during boarding and disembarking while helicopter is hovering.
- Includes injuries to people from propeller/main rotor/tail rotor/fan blade strikes.
- Includes pushback/powerback/towing events.
- Includes Jet Blast and Prop/rotor down wash ground handling occurrences.
- Includes aircraft external preflight configuration errors (examples: improper loading and improperly secured doors and latches) that lead to subsequent events.
- Includes all parking areas (ramp, gate, tiedowns).
- Except for powerback events, which are coded here, if a collision occurs while the aircraft is moving under its own power in the gate, ramp, or tiedown area, code it as a ground collision (GCOL).
- Includes operations at aerodromes, heliports, helidecks, and unprepared operating sites.
- If external loads involved, also code as EXTL.

17. GROUND COLLISION (GCOL)

Definition: Collision while taxiing to or from a runway in use.

Usage Notes:

- Includes collisions with an aircraft, person, animal, ground vehicle, obstacle, building, structure, etc., while on a surface other than the runway used for landing or intended for takeoff.

- Ground collisions resulting from events categorized under Runway Incursion (RI) or Ground Handling (RAMP) are excluded from this category.

NOTE: Taxiing includes ground and air taxiing for rotorcraft on designated taxiways.

18. ICING (ICE)

Definition: Accumulation of snow, ice, freezing rain, or frost on aircraft surfaces that adversely affects aircraft control or performance.

Usage Notes:

- Includes accumulations that occur inflight or on the ground (i.e., deicing-related).

- Carburetor and induction icing events are coded in the FUEL Related (FUEL) category.

- Windscreen icing which restricts visibility is also covered here.

- Includes ice accumulation on sensors, antennae, and other external surfaces.

- Includes ice accumulation on external surfaces including those directly in front of the engine intakes.

19. LOSS OF CONTROL – GROUND (LOC-G)

Definition: Loss of aircraft control while the aircraft is on the ground.

Usage Notes:

- Used only for non-airborne phases of flight, i.e., ground/surface operations.
- The loss of control may result from a contaminated runway or taxiway (e.g., rain, snow, ice, slush).
- The loss of control during ground operations can occur as the result of other occurrence categories as well. For example, LOC-G may result from a system/component failure or malfunction to the powerplant (SCF–PP) or non-powerplant (SCF–NP), or from evasive action taken during a Runway Incursion (RI–VAP, or RI–A). For these occurrences, the event is coded under both categories (e.g., LOC–G and SCF–PP, LOC–G and SCF–NP, or LOC–G and RI–VAP or RI–A).
- Do not use when a mechanical failure rendered the aircraft uncontrollable.
- Rotorcraft during sloping ground or moving helideck operations, dynamic rollover and ground resonance events are also included here.

20. LOSS OF CONTROL – INFLIGHT (LOC-I)

Definition: Loss of aircraft control while, or deviation from intended flightpath, inflight. Loss of control inflight is an extreme manifestation of a deviation from intended flightpath. The phrase "loss of control" may cover only some of the cases during which an unintended deviation occurred. It is, therefore, suggested that the occurrence title is reviewed and changed accordingly (for example, Deviation from Intended Flightpath- DEV).

Usage Notes:

- Used only for airborne phases of flight where aircraft control was lost.
- Loss of control can occur during either Instrument Meteorological Conditions (IMC) or Visual Meteorological Conditions (VMC).
- The loss of control during flight may occur as a result of a deliberate maneuver (e.g., stall/spin practice)
- Occurrences involving configuring the aircraft (e.g., flaps, slats, on-board systems, etc.) are included as well as rotorcraft retreating blade stall.
- Stalls are considered loss of control and are included here.
- Rotorcraft occurrences which involve power settling (vortex ring), or settling with power to ground contact are coded here and as ARC if during normal landing or takeoff.
- Rotorcraft External Load operations involving loss of control related to the external load should be coded as LOC-I as well as EXTL.

- Includes Rotorcraft “Loss of Tail Rotor Effectiveness”.
- Includes loss of control during practice or emergency autorotation.
- Includes pilot-induced or assisted oscillations.
- For unmanned aircraft events, includes hazardous outcomes involving deviation from intended flight path associated with anticipated or unanticipated loss of datalink. However, if loss of datalink is the direct result of a system/component failure or malfunction, code the occurrence as system/component failure or malfunction – non powerplant (SCF-NP) only.
- For icing-related events, which are also loss of control, code both LOC–I and ICE).
- If the loss of control is a direct result of a system/component failure or malfunction (SCF), code the occurrence as an SCF–NP, or SCF–PP only. However, loss of control may follow less severe system/component failures, and in this case, code both categories.
- Cockpit crew vision-related events and flight in degraded visual environments (for example, obscuration, black hole approach events, brownouts, or whiteout events), where the aircraft is flown under control into terrain, water, or obstacles, are coded under CFIT, not LOC–I.

21. LOSS OF LIFTING CONDITIONS EN-ROUTE (LOLI)

Definition: Landing en-route due to loss of lifting conditions.

Usage Notes:

- Applicable only to aircraft that rely on static lift to maintain or increase flight altitude, namely sailplanes, gliders, hang gliders and paragliders, balloons and airships.\
- All static lift forms to be considered, including atmospheric lift, namely from Orographic, Thermal, Mountain Wave and Convergence Zone, and buoyancy lift namely from lighter than air gas or hot air.
- Also include motorglider and paramotor aircraft if operating under static atmospheric lift conditions, and the engine could not be started.
- If the aircraft was flying intentionally at low height above the terrain, use LALT instead (typical cases occur with gliders in competition flying).

22. LOW ALTITUDE OPERATIONS (LALT)

Definition: Collision or near collision with obstacles/objects/terrain while intentionally operating near the surface (excludes takeoff or landing phases).

Usage Notes:

- 'Terrain' includes water, vegetation, rocks, and other natural elements lying on, or growing out of, the earth.

- Includes ostentatious display, maneuvering at low height, aerobatics, sightseeing, demonstration flights, aerial inspection, avalanche mining, human hoist or human cargo sling, search and rescue operations, aerial application, intentional helicopter operations close to obstacles during aerial work and scud running with airplanes (ducking under low visibility conditions).

- Also includes intentional maneuvering in close proximity to cliffs, mountains, into box canyons, and similar flights where the aircraft aerodynamic capability is not sufficient to avoid impact.

- If there is a loss of control during low altitude operations, both loss of control – inflight (LOC–I) and LALT are coded.

NOTE: Excluding rotorcraft air taxi phase of flight on designated taxiways.

23. OTHER (OTHR)

Definition: Any occurrence not covered under another category.

24. RUNWAY EXCURSION (RE)

Definition: A veer off or overrun off the runway surface.

Usage Notes:

- Only applicable during either the takeoff 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. In this case, code both categories.

- Use RE in all cases where the aircraft left the runway/helipad/helideck regardless of whether the excursion was the consequence of another event.

25. RUNWAY INCURSION – ANIMAL (RI–A)

Definition: Collision with, risk of collision, or evasive action taken by an aircraft to avoid an animal on a runway or on a helipad/helideck in use.

Usage Notes:

- Includes encounters with wildlife on a runway in use.

- Includes instances where evasive action is taken by the flight crew that leads to a collision off the runway or to consequences other than a collision (e.g., gear collapsing).

- Runway incursions may occur at controlled or uncontrolled airports.

- Excludes unprepared/natural landing sites.

26. RUNWAY INCURSION – VEHICLE, AIRCRAFT OR PERSON (RI–VAP)

Definition: 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.

Notes:

- *From Procedures for Air Navigation Services – Air traffic Management (ICAO DOC 4444), first included in April 2004.*

- *Excludes unprepared/natural landing sites.*

27. SECURITY RELATED (SEC)

Definition: Criminal/Security acts which result in accidents or incidents (per the International Civil Aviation Organization [ICAO] Annex 13).

Usage Notes:

- While security-related acts can lead to accidents as defined as by ICAO Annex 13, they are not considered accidents by some organizations. Regardless, these events have similar consequences in that they result in serious injury or death to person(s) and/or substantial damage to the aircraft. For these reasons, they are categorized as security-related occurrences for prevention purposes only.

- Examples include, a) hijacking and/or aircraft theft; b) interference with a crewmember (e.g., unruly passengers); c) flight control interference; d) ramp/runway/taxiway security; e) sabotage; f) suicide; and g) acts of war.

28. SYSTEM/COMPONENT FAILURE OR MALFUNCTION (NON-POWERPLANT) (SCF–NP)

Definition: Failure or malfunction of an aircraft system or component other than the powerplant.

Usage Notes:

- If the failure renders the aircraft uncontrollable it is coded as SCF–NP only, not as loss of control (LOC–I or LOC–G). However, if the failure does not render the aircraft uncontrollable, but leads to a loss of control, code the event under both SCF–NP and LOC–I or LOC–G, as appropriate.

- Rotorcraft main rotor and tail rotor system, drive system and flight control failures or malfunctions are also coded here.

- Includes errors or failures in software and database systems.

- Includes non-powerplant parts or pieces separating from an aircraft.

- For unmanned aircraft, includes failure or malfunction of ground-based, transmission, or aircraft-based communication systems or components –or– datalink systems or components.

- Includes failures/malfunctions of ground-based launch or recovery systems equipment.

- Includes all failures/malfunctions, including those related to or caused by maintenance issues.

29. SYSTEM/COMPONENT FAILURE OR MALFUNCTION (POWERPLANT) (SCF–PP)

Definition: Failure or malfunction of an aircraft system or component related to the powerplant.

Usage Notes:

- If the failure renders the aircraft uncontrollable it is coded as SCF–PP only, not as loss of control (LOC–I or LOC–G). However, if the failure does not render the aircraft uncontrollable, but leads to a loss of control, code the event under both SCF–PP and LOC–I or LOC–G, as appropriate.

- Includes failures or malfunctions of any of the following: propellers, propeller system and engine gearbox, reversers, and powerplant controls.

- Includes powerplant parts or pieces separating from a powerplant.

- Includes all failures/malfunctions, including those related to or caused by maintenance issues.

- Rotorcraft main rotor and tail rotor system, drive system and flight control failures or malfunctions are coded as non-powerplant failures (SCF–NP), not SCF–PP.

- The following fuel-related powerplant problems are coded under the category FUEL, not under the category SCF–PP: fuel exhaustion; fuel

starvation/mismanagement; fuel contamination; wrong fuel; carburetor and induction icing.

NOTE: For sub-categorization of SCF–PP, a separate taxonomy has been developed and can be found on the CICTT website.

30. TURBULENCE ENCOUNTER (TURB)

Definition: In-flight turbulence encounter.

Usage Notes:

- Includes encounters with turbulence in clear air, mountain wave, mechanical, and/or cloud-associated turbulence.
- Wake vortex encounters are also included here.
- Flights into wind shear or thunderstorm-related turbulence are coded as WSTRW.
- Includes turbulence encountered by aircraft when operating around or at buildings, structures, and objects.

31. UNDERSHOOT/OVERSHOOT (USOS)

Definition: A touchdown off the runway/helipad/helideck surface.

Usage Notes:

- An undershoot/overshoot of a runway/helipad/helideck occurs in close proximity to the runway/helipad/helideck and includes offside touchdowns and any occurrence where the landing gear touches off the runway/helipad/helideck surface.
- Off-airport emergency landings are excluded from this category.
- To be used for occurrences during the landing phase.
- Includes offside touchdowns on heliports, helidecks and other defined areas to be used wholly or in part for the arrival, departure and surface movement of helicopters (does not include helicopter unprepared or natural landing sites).

32. UNINTENDED FLIGHT IN IMC (UIMC)

Definition: Unintended flight in Instrument Meteorological Conditions (IMC).

Usage Notes:

- May be used as a precursor to CFIT, LOC–I or LALT.
- Applicable if the pilot was flying according to Visual Flight Rules (VFR), as defined in Annex 2 – Rules of the Air – to the Convention on International Civil Aviation, and by any reason found oneself inadvertently in IMC.
- Only to be used when loss of visual references is encountered.

- Only to be used if pilot not qualified to fly in IMC and/or aircraft not equipped to fly in IMC.

33. UNKNOWN OR UNDETERMINED (UNK)

Definition: Insufficient information exists to categorize the occurrence.

Usage Notes:

- Includes cases where the aircraft is missing.
- Includes those occurrences where there is not enough information at hand to classify the occurrence or where additional information is expected in due course to better classify the occurrence.

34. WIND SHEAR OR THUNDERSTORM (WSTRW)

Definition: Flight into wind shear or thunderstorm.

Usage Notes:

- Includes flight into wind shear and/or thunderstorm-related weather.
- Includes inflight events related to hail.
- Includes events related to lightning strikes.
- Includes events related to heavy rain (not just in a thunderstorm).

- Icing and turbulence encounters are coded separately (see ICE and TURB).

APPENDIX D STATE SAFETY POLICY

STATE SAFETY POLICY STATEMENT

Ghana is committed to developing, implementing and constantly improving strategies, regulatory frameworks and processes to ensure that aviation activities under its responsibility achieve the highest practicable level of safety performance, and meet both national and international standards.

Ghana Civil Aviation Authority promotes and regulates the safety of aviation in Ghana in collaboration with other related State Organisations as listed in the Attachment.

Our Commitment is to:

1. **Set** national standards that are in line with the Standards, Recommended Practices and Procedures of the International Civil Aviation Organisation;
2. **Adopt** a data-driven and performance-based approach to safety regulation and industry surveillance activities where appropriate;
3. **Identify** safety trends within the aviation industry and adopt a risk-based approach to address areas of greater safety concern or need;
4. **Monitor and measure** safety performance of our aviation system continuously through the State's aggregate safety performance indicators as well as service providers' safety performance indicators;
5. **Collaborate and consult** with stakeholders in the aviation industry to address safety matters and resolve safety concerns and continuously enhance aviation safety;
6. **Promote** good safety practices and a positive safety culture within the industry based on sound safety management principles, and oversee the implementation of Safety Management Systems (SMS) by service providers in Ghana;
7. **Encourage** safety information collection, analysis, sharing and exchange amongst all relevant aviation organisations and service providers, with the intent that such information is to be used for safety management purposes only;
8. **Allocate** sufficient financial and human resources for safety management;
9. **Equip** staff with the proper skills and expertise to discharge their safety management responsibilities competently;
10. **Maintain** an enforcement policy and procedures that complement the protection of information derived from the safety data collection and processing systems; and
11. **Ensure** no information derived from the safety data collection and processing systems shall be used as the basis for enforcement action except in the case of gross negligence or willful deviation.

.....

Charles Ebo Kraikue
Accountable Executive,
Ghana SSP & Director-General, GCAA.
18Th February, 2022.

---ATTACHMENT---

This Safety Policy is endorsed by the following Representatives from the State Entities in Ghana involved in the SSP Implementation:

1. (Signed) ..... Date: 09/03/22
Mr. Akwasi Agyeibi Prempeh
Commissioner [AIB GHANA]
responsible under the SSP

2. (Signed) ..... Date: 09/03/22
Mr. Bernard Amissah-Ocran
Deputy Director, Engineering [NCA]
responsible under the SSP

3. (Signed) ..... Date: 09/03/22
Dr. Cyrus Cyril Arwui
Senior Regulatory Officer [GNRA]
responsible under the SSP

4. (Signed) ..... Date: 09/03/22
Mr. Emmanuel K-E. Appoh
Head of Environmental Quality Department
[EPA]
responsible under the SSP

5. (Signed) ..... Date: 10/03/2022
Air Commodore Reginald Yaw Cole
Air Officer Commanding, Training Command
[Ghana Air Force]
responsible under the SSP

6. (Signed) ..... Date: 10/03/2022
Mr. James Dusu
Head, Engineering [GMET]
responsible under the SSP

— END —