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INTERNATIONAL CIVIL AVIATION ORGANIZATION
SOUTH AMERICAN REGIONAL OFFICE



South American Region Safety Plan (SAMSP)

2023-2025 Edition

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Foreword

The ***South American Region Safety Plan (SAMSP)*** is published by the ICAO South American Regional Office on behalf of the accredited States and International Organizations involved. It addresses the implementation of safety management with respect to three main priorities: improvement of effective implementation (EI) within the context of the ICAO Universal safety oversight audit programme (USOAP) Continuous monitoring approach (CMA); the implementation of the State safety programme (SSP); and the reduction of the accident rate in the high-risk categories identified in the SAM Region. The SAMSP's goals have been developed in accordance with the goals of the Global Aviation Safety Plan (GASP), Edition 2023-2025.

The instance for the approval of the SAMSP and its future revisions is the Civil Aviation Authorities of the SAM Region. The ICAO SAM Regional Office will publish, on behalf of the States and International Organizations involved, revised versions of the plan as may be required to reflect current implementation activities.

The first edition of the SAMSP was approved on 7 December 2018, at the Sixteenth Meeting of the SAM States Civil Aviation Authorities, through Conclusion RAAC 16/02. This first edition was developed based on the Doc 10004 – GASP, 2020-2022 Edition.

This second edition contains guidance and recommendations of GASP, 2023-2025 Edition. Subsequent amendments and/or corrigenda will be shown in the amendment and corrigendum record table, in Page 4, as per the procedure established.

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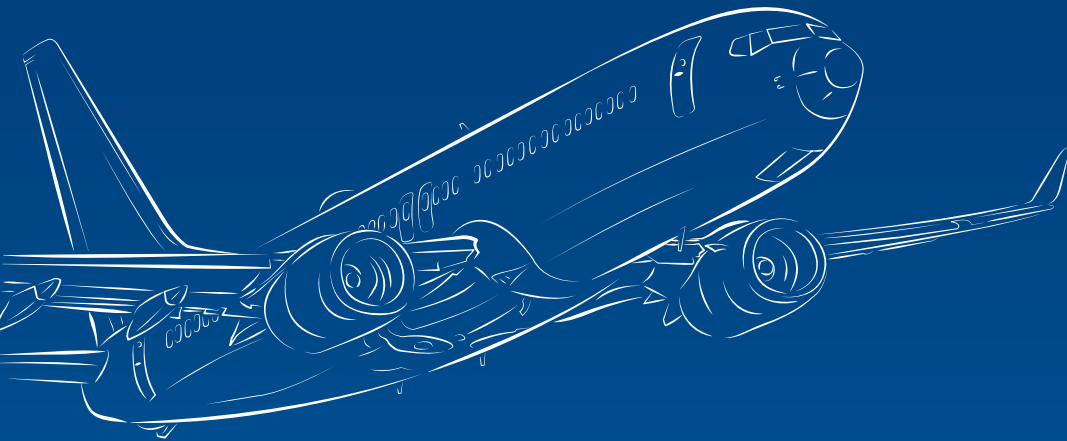
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CHAPTER 1

Introduction

- 1.1 Objective
- 1.2 Scope
- 1.3 Background
- 1.4 Roles and responsibilities of stakeholders
- 1.5 Structure of the SAMSP
- 1.6 SSP implementation results
- 1.7 Operational context



1.1 Objective

- 1.1.1 The SAMSP is the master planning document containing the strategic direction of South American Region for the management of aviation safety for a period of three years (2023 to 2025). This plan lists regional safety issues, sets regional aviation safety goals and targets, and presents a series of safety enhancement initiatives (SEIs) to address identified safety deficiencies and achieve the regional safety goals and targets.
- 1.1.2 The SAMSP has been developed taking into account the latest revision of the GASP, and falls within a preventive strategy for improving safety performance in the South American Region (SAM) from a regional perspective. This preventive safety-related strategy is based on the implementation of the State safety programme (SSP), which systematically addresses risks, the effective implementation (EI) and the continuous improvement of the eight (8) critical elements (CE) of the safety oversight system.
- 1.1.3 The plan is aimed at establishing a safety management implementation strategy in the SAM Region, mainly based on GASP guidelines, the provisions of Annex 19 and other safety-related Annexes, as well as the guidelines contained in Doc 9859 – *Safety Management Manual (SMM)*.
- 1.1.4 The document contains the vision of the SAM Region regarding safety management. Therefore, States will have the opportunity to manage, through hazard identification, risks assessment and mitigation measures implementation, a decrease in the accidents and incidents rates in all the segments of their national aviation system.
- 1.1.5 The ultimate objective of this plan is to save as many human lives as possible, reducing accidents in all aviation sectors at a minimum acceptable level. In accordance with the GASP and as an “aspirational” objective, this plan intends to reach and maintain zero fatalities in commercial operations for 2030 and beyond.

1.2 Scope

- 1.2.1 This plan covers the flight information regions (FIR) of the SAM Region and addresses safety management implementation in accordance with the objectives established in the GASP up to the year 2030.

1.3 Background

- 1.3.1 The International Civil Aviation Organization (ICAO) published the first version of the GASP in 1997, formalising a series of conclusions and recommendations formulated during an informal meeting held between the ICAO Air Navigation Commission (ANC) and the industry. The GASP was used to guide and set priorities for the technical work programme of the Organization.
- 1.3.2 The GASP (Doc 10004) constitutes a high-level strategic document on flight safety policies related to planning and execution. The GASP pursues an approach and a philosophy similar to the Global Air Navigation Plan (Doc 9750), also called GANP. Both documents encourage coordination and collaboration between international, regional and national initiatives intended to attain a harmonized, secure and efficient international civil aviation system.
- 1.3.3 The GASP presents a continuous improvement strategy that includes objectives to be reached by the States through the implementation of effective systems for the supervision of flight safety and State Safety Plans (SSP), elaborating advanced safety management systems that include risks predictive management. GASP also include deadlines for the global collective achievement of said objectives that adjust to the established procedure for the GASP and GANP update, which are object of revision every three years.
- 1.3.4 The GASP has undergone significant changes since its introduction in 1997, and has evolved through continuous consultation and review. The 2014-2016 edition was published in 2013 and included GASP objectives to be achieved by States through the implementation of an effective safety oversight system, a State safety programme (SSP) and the safety capabilities required to support future aviation

systems. The 2017-2019 edition updated the GASP and included a global aviation safety roadmap developed to support an integrated approach to implementation. The 2020-2022 edition was published in 2019, and included new safety management objectives, as well as tools to measure States' safety oversight capabilities. The 2023-2025 edition includes new and revised targets, as well as amendments based on feedback received, mainly as part of the High-Level Conference on COVID-19 (HLCC 2021), whose proposals have been taken into account for the formulation of this plan.

1.4 Roles and responsibilities of stakeholders

- 1.4.1 The stakeholders, including regional safety groups, air operators, service providers, regulatory bodies, and manufacturers, will be facing higher levels of interaction when implementing safety management. Interaction between the SSP and the service providers' SMS, as well as the sharing and exchange of safety data and information are highly integrated, thus, this requires a significant level of coordination and cooperation among all stakeholders.
- 1.4.2 States, air service operators and the industry will benefit from this plan and from the availability of international standards and recommended practices (SARPs) related to safety management, since they will permit the implementation of a more efficient, economical and safe aviation system in our Region.
- 1.4.3 The role of States in SAMSP is vital to ensure its success and effectiveness. States have the responsibility to provide a safe and secure environment for their citizens and to ensure the safety of the regional aviation system.
- 1.4.4 States are expected to support and participate fully in the implementation of the SAMSP. This includes providing the resources and infrastructure necessary to implement the plan effectively and efficiently. States should work in collaboration with regional aviation safety agencies and industry stakeholders to promote safety and improve the overall performance of the regional civil aviation system.

- 1.4.5 States should also participate in safety information exchange programmes and safety oversight activities with regional aviation safety agencies. This will help to ensure that safety information is shared and analyzed effectively, and that appropriate safety measures are taken to mitigate identified risks.
- 1.4.6 Likewise, States should educate and inform the aviation industry about the SAMSP and the existing regional aviation safety framework. This will help to promote a safety culture within the industry and encourage industry participants to adopt safety-oriented practices.
- 1.4.7 The role of industry in the SAMSP is crucial to ensure the success and effectiveness of the plan, and is expected to actively support and fully participate in the implementation of the SAMSP.
- 1.4.8 Industry participants are encouraged to identify and take relevant actions to support the implementation of the SAMSP. This includes the implementation of a safety management system (SMS) to continuously identify hazards and address safety risks. The SMS will be designed to enable regular and systematic assessments of safety performance and identify areas for improvement.
- 1.4.9 Industry should work in collaboration with national aviation safety agencies to exchange safety information, monitor safety performance and oversee safety programmes. It should also develop its own safety performance indicators aligned with States' national aviation safety plan (NASP) targets and goals to ensure that their safety strategies are consistent with those of the Region. Industry participants should adopt a harmonized approach to the development of SMS indicators and objectives, in order to promote consistency and clarity in the implementation of the SAMSP.

Regional Aviation Safety Group – Pan America (RASG-PA)

- 1.4.10 RASG-PA planning will take place at the strategic level, in support of ICAO strategic objectives set forth in the GASP. This regional group will actively promote coordination and harmonization of all activities carried out for the resolution of regional aviation safety problems.
- 1.4.11 The RASG-PA will facilitate the exchange of best practices, cooperation, and collaboration, applying a top-down approach to supplement the bottom-up planning and implementation approach of SAM States and Region. RASG-PA activities will be geared towards achieving the objectives of the GASP, while ensuring that the safety priorities of the SAM Region are taken into consideration. Likewise, the RASG-PA will monitor compliance with the SAMSP and will facilitate the publication of the safety reports of the Region.
- 1.4.12 The RASG-PA will also facilitate the sharing and exchange of information with SAM States, for the benefit of their SSPs.
- 1.4.13 The RASG-PA will annually inform the ICAO Air Navigation Commission (ANC) on the progress made in the GASP. Likewise, the RASG-PA has tasked the SAM Regional Office with the development of the Pan American Safety Report, which is presented every year at the plenary meeting of this Regional Group and is subsequently shared with the ANC.

ICAO South American Regional Office

- 1.4.14 The South American Regional Office will conduct its safety planning and implementation at a strategic level, and will provide support to the States at a tactical level for the achievement of their objectives and targets.
- 1.4.15 The SAM Office will provide support to the States in the planning and implementation of their national plans. To provide this support, the Regional Office will coordinate with the corresponding States the necessary virtual and on-site technical assistance by its officers and SRVSOP Technical Committee (TC) and ARCM experts.

- 1.4.16 The SAM Office will continuously monitor the implementation of the SEIs established in the States' national aviation safety plans (NASPs) and measure safety performance of the regional civil aviation system, to ensure the intended results are achieved, using the mechanisms presented in the appendix to this plan. In addition to the above, the SAMSP will be reviewed every three years or earlier, along with the GASP revisions, if required, to keep the identified operational safety risks, safety issues and selected SEIs updated and relevant.
- 1.4.17 In the event that the regional safety goals and targets are not met, the causes will be addressed and presented to stakeholders. If the SAM Office identifies critical operational safety risks, reasonable measures will be taken to mitigate them as soon as practicable, possibly leading to an earlier revision of the SAMSP.

Regional Safety Oversight Cooperation System (SRVSOP)

- 1.4.18 Planning and implementation by the SRVSOP will be accomplished at a strategic and tactical level. The Regional System will support its States in the SSP/SMS implementation and in the resolution of the safety issues identified during USOAP CMA activities.

AIG Regional Cooperation Mechanism (ARCM)

- 1.4.19 Planning and implementation by the ARCM will be at strategic and tactical levels. This mechanism will assist member States in improving their EI in the area of aviation accident and incident investigation (AIG), and will participate in the coordination of AIG cooperation between ARCM member States. The ARCM will also provide reactive and proactive information to ICAO, to the regional groups and to the States for safety management purposes in their SSPs.

1.5 Structure of the SAMSP

- 1.5.1 The SAMSP presents the SAM regional strategy for enhancing aviation safety for a period of three years. It comprises five chapters. In addition to the introduction, chapters include: the purpose of this Regional Aviation Safety Plan (RASP), SAM's strategic approach to managing aviation safety at the regional level, the regional

operational safety risks identified for the 2023-2025 SAMSP, other regional safety issues addressed in the SAMSP, and a description of how the implementation of the SEIs listed in the SAMSP is going to be monitored.

1.6 SSP implementation results

- 1.6.1 Starting in 2013, the SAM Regional Office established the SSP implementation meeting. At its fifth meeting, held in Lima, Peru, on 7-11 November 2016, an analysis was made of the status of SSP implementation in SAM States.
- 1.6.2 At this meeting, some States showed more progress than others. Accordingly, it was agreed to look for a mechanism that would allow all to achieve progress at the same pace. In this sense, by the end of 2018, Bolivia, Chile, Colombia, Ecuador, Panama, Peru and Venezuela expressed their intention to participate in a pilot project for the SSP implementation.
- 1.6.3 The SAM SSP implementation pilot project was deployed on 16 March 2017, with the participation of the aforementioned seven (7) States. Subsequently, Guyana, Argentina, Uruguay and Paraguay requested their inclusion.
- 1.6.4 At the moment, the States are implementing the SSP through 40 deliverables that were agreed upon. Some States have already started the self-assessment of the SSP protocol questions (PQs) based on the matrices that measure their level of maturity. In addition, the USOAP CMA has included a module in the USOAP CMA Online Framework (OLF) for States to self-assess SSP PQs.

1.7 Operational context

- 1.7.1 In 2022, the SAM Region was ahead in aviation recovery compared to the other Regions of the world, demonstrating the resilience of South American civil aviation. Regarding the number of departures, the Region ended 2022 with -7% compared to 2019 before the COVID-19 crisis. However, despite the economic slowdown that could be experienced next year and the challenges of the economy not only

in the SAM Region but worldwide, the forecast for the period 2023-2025 is for the Region's air transport to surpass pre-pandemic numbers, growing by around 5% per year, and with the recovery expected to be more homogeneous among States, especially in terms of passengers and international capacity.

1.7.2 In the period 2018-2022, there were 36 accidents in scheduled and non-scheduled commercial air transport involving aircraft above 5 700 kg. The accident categories with the highest recurrence were:

- 1) Runway excursion (RE);
- 2) Abnormal runway contact (ARC);
- 3) System/component failure - non-powerplant (SCF-NP);
- 4) Loss of control in-flight (LOC-I);
- 5) Controlled flight into terrain (CFIT);
- 6) Runway incursion (RI); and
- 7) Turbulence (TURB)

1.7.3 To address these accident categories, the SAM Region has set a target of maintaining a decreasing trend in the number/rate of accidents at regional level over the period 2023-2025.

1.7.4 From 2019 to 2021, the SAM Region increased its EI from 78.62 to **82%**, making it one of the Regions with the highest percentage of EI in the world. However, in 2022, this EI decreased to **79.56%**.

1.7.5 The extension of the periods between audits may be affecting the commitment of some States to continuous improvement of their civil aviation systems. Likewise, the COVID-19 pandemic may also have affected the maintenance of EI levels achieved by States in previous years, considering all the economic and human resource impacts on CAAs.

1.7.6 The SAM Region aims for its States to reach **75% by 2024; 85% by 2026 and 95% by 2030**, and is implementing several measures to support its States in achieving these targets.

1.7.7 SSP implementation is progressing at a very slow pace and its holistic implementation has become a major challenge for SAM States. On the established deliverables, the Region has made **38%** progress in implementing 40 SSP deliverables. Based on SSP implementation assessments (SSPIAs), the States and the Region should achieve in all their SSP PQs maturity level ***exists*** by **2025** and ***exists and is effective*** by **2028**.

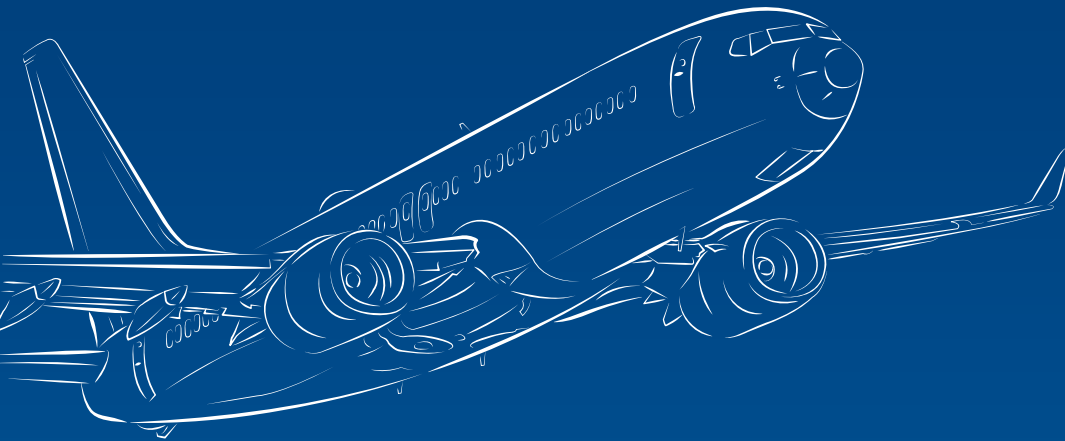
1.7.8 The main challenges facing the Region are:

- to reduce the accident rate in the accident categories with higher recurrence (RE; ARC; SCF-NP; SCF PP; LOC-I; CFIT; RI and TURB);
- that States with EI levels between 59 and 74% reach the targets set in this plan by 2024 (75%), 2026 (85%) and 2030 (95%);
- that States reach maturity level *exists* by the end of 2025 and *exists and effective* by the end of 2028 in the implementation of SSP/SMS;
- to increase regional collaboration as follows:
 - ✓ that States having difficulty meeting targets related to effective implementation (EI), national safety plans (NASPs) and SSP request assistance from the SAM Office and SRVSOP;
 - ✓ by 2025, States to contribute information on safety risks to ICAO, RASG-PA, SRVSOP and ARCM; and
- to maintain an increasing trend of States with an air navigation and airport infrastructure that meets relevant ICAO standards.

CHAPTER 2

SAM region strategic approach to managing aviation safety

- 2.1 ICAO strategic objective concerning safety
- 2.2 SAM strategic objectives
- 2.3 Regional safety goals, targets, indicators and emerging issues



2.1 ICAO strategic objective concerning safety

2.1.1 ICAO has established five general strategic objectives that are reviewed every three years. One of them is to strengthen global civil aviation safety, which is mainly focused on the regulatory oversight capacity of States. The objective is set within the context of a higher volume of passengers and cargo movements, and the need to respond to changes regarding efficiency and environment. Based on this objective, the GASP describes the key activities for the triennium. The ICAO website (www.icao.int/about-icao/Council/Pages/Strategic-Objectives.aspx) contains additional information on the ICAO strategic objectives.

2.2 SAM strategic objectives

2.2.1 For the purpose of this plan, the safety objectives of the SAM Region are the following:

- ✓ to strengthen safety oversight capabilities of States;
- ✓ to implement the SSP/SMS effectively;
- ✓ to achieve a continuous reduction of operational safety risks;
- ✓ to increment regional collaboration;
- ✓ to expand the use of industry programmes; and
- ✓ to ensure the appropriate air navigation services and aerodrome infrastructure to support safe operations.

2.3 Regional safety goals, targets, indicators and emerging issues

2.3.1 The SAMSP includes the following regional 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 as shown in **Table 2-1** (see next page). They are tied to the goals, targets and indicators listed in the GASP.

Table 2-1. SAMSP goals, targets and indicators

	Targets	Indicators	Link to GASP
Goal 1 Achieve a continuous reduction of operational safety risks.	1.1 Maintain a decreasing trend of the regional accident rate.	<ul style="list-style-type: none"> • Number of accidents per million departures (accident rate). • Number of fatal accidents per million 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.
	2.1 All States to improve their effective implementation (EI) score for the critical elements (CEs) of the State's safety oversight system (with focus on priority PQs) as follows: a) by 2024 – 75 per cent EI score b) by 2026 – 85 per cent EI score c) by 2030 – 95 per cent EI score	<ul style="list-style-type: none"> • Number of States that met the EI score as per the timelines. • Number of States that have fully complied with the priority PQs. 	This goal is directly linked to Goal 2 and Target 2.1 of the GASP.
Goal 3 Implement effective State safety programmes (SSPs).	3.1 By 2023, all States to implement the foundation of an SSP.	<ul style="list-style-type: none"> • Number of States having implemented the SSP foundation PQs. 	This goal is directly linked to Goal 3 and Target 3.1 of the GASP.
	3.2 By August 2023, all States to publish a national aviation safety plan (NASP).	<ul style="list-style-type: none"> • Number of States having published their NASP. 	This goal is directly linked to Goal 3 and Target 3.2 of the GASP.
	3.3 All States to work towards an effective SSP as follows: a) by 2025 – Exists b) by 2028 – Exists and is effective	<ul style="list-style-type: none"> • Number of States having an SSP that is present. • Number of States with an SSP that exists and is effective. • Number of States that require applicable service providers under their authority to implement an SMS. 	This goal is directly linked to Goal 3 and Target 3.3 of the GASP.

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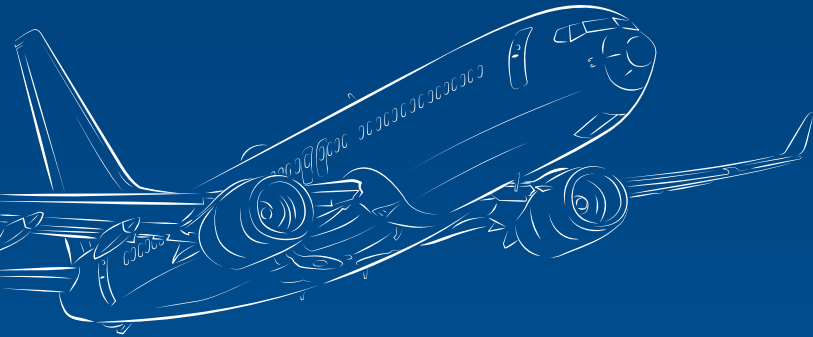
	Targets	Indicators	Link to GASP
Goal 4 Increase collaboration at the regional level.	4.1 By 2023, States that do not expect to meet GASP Goals 2 and 3 to seek assistance to strengthen their safety oversight capabilities or facilitate SSP implementation.	<ul style="list-style-type: none"> • Number of States seeking assistance, by using a regional safety oversight mechanism, another State or other safety oversight organization's ICAO-recognized functions. • Number of States that receive assistance. 	This goal is directly linked to Goal 4 and Target 4.1 of the GASP.
	4.2 By 2025, all States to contribute information on operational safety risks, including SSP safety performance indicators (SPIs), and emerging issues, to ICAO, RASG-PA, SRVSOP and ARCM.	<ul style="list-style-type: none"> • Number of States registered to the <i>Secure Portal on Operational Safety Risks and Emerging Issues</i>. • Number of States that are sharing their SSP SPIs with ICAO, RASG-PA, SRVSOP and ARCM. 	This goal is directly linked to Goal 4 and Target 4.3 of the GASP.
Goal 5 Expand the use of industry programmes and safety information sharing networks by service providers	5.1 Maintain an increasing trend in industry's contribution in safety information sharing networks to States and regions to assist in the development of NASPs.	<ul style="list-style-type: none"> • Number of service providers using globally harmonized metrics for their SPIs. 	This goal is directly linked to Goal 5 and Target 5.1 of the GASP.
Goal 6 Ensure the appropriate infrastructure is available to support safe operations.	6.1 By 2025, maintain an increasing trend of States with air navigation and aerodrome infrastructure that meets relevant ICAO standards.	<ul style="list-style-type: none"> • Number of States that have implemented the basic air navigation and airport infrastructure. 	This goal is directly linked to Goal 6 and Target 6.1 of the GASP.

- 2.3.2 SEIs derived from the ICAO global aviation safety roadmap were identified to achieve the regional safety goals and targets presented in the SAMSP. Some of the regional SEIs are linked to overarching SEIs at the international level and help to enhance aviation safety at regional and global levels. The full list of the SEIs is presented in the Appendix A to the SAMSP.
- 2.3.3 The SAMSP 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.
- 2.3.4 It is important that SAM Region remain vigilant on emerging issues to identify potential operational safety risks, collect relevant data and proactively develop mitigations to address them. The SAMSP addresses the following emerging issues identified by an analysis conducted by the working group for the revision of the SAMSP for further analysis:
- Number of wildlife/bird activities and strike.
 - Use of drones, in general, sharing the airspace, specially operating in the vicinity of aerodromes.
 - Laser in final approach.

CHAPTER 3

Planning and implementation considerations

- 3.1 Introduction
- 3.2 Performance targets with regard to EI improvement and SSP implementation
- 3.3 Safety performance indicators
- 3.4 Performance targets related to accident rate reduction
- 3.5 Alert levels for accident and incident rate control and monitoring
- 3.6 National aviation safety plan (NASP)
- 3.7 Follow up of the NASPs implementation
- 3.8 Safety data and information sources



3.1 Introduction

- 3.1.1 As air traffic volumes increase in the SAM Region and worldwide, so do the demands over air operators and the related services supporting the operations of these operators and, thus, the number of ground and flight operations increase, posing a risk to air operations.
- 3.1.2 EI improvement in the eight critical elements (CEs) of a safety oversight system and in the eight audit areas is a barrier against latent safety hazards. Therefore, it is necessary to plan a strategy for a gradual and sustainable improvement of EI in each State of the SAM Region.
- 3.1.3 It is foreseen that SSP/SMS implementation, together with EI, will allow for proactive management of safety risks and mitigation of hazards, resulting in safer, more efficient and sustainable operations.

3.2 Performance targets with regard to EI improvement and SSP implementation

- 3.2.1 In order to meet the SAM strategic objectives, **Table 3-1** (see next page) presents EI targets so that States may consider them in their NASPs. Targets have been set for years 2022, 2024, 2026, 2028 and 2030, and for each of the four groups of States indicated in the left-hand side column of the referred chart. Group percentages have been selected gradually and based on the present situation of each SAM State regarding EI.

Table 3-1. Indicators and targets regarding EI improvement

States with effective implementation (EI):	% Effective implementation (EI) improvement				
	2022	2024	2026	2028	2030
Less than 65% Group 1	EI = 70%	EI = 75%	EI = 85%	EI = 90%	EI = 95%
Between 65 and 74.99% Group 2	EI = 75%	EI = 80%	EI = 85%	EI = 90%	EI = 95%
Between 75 and 80% Group 3	EI = 80%	EI = 85%	EI = 90%	EI = 95%	EI = 95%
More than 80% Group 4	EI = 85%	EI = 90%	EI = 95%	EI = 95%	EI = 95%

3.2.2 It has been taken into account a gradual improvement of 5% every two years for the Groups 2, 3 and 4. This proposed improvement stems from the fact that several States have received, are receiving, or will receive, technical assistance from the SAM Regional Office and the SRVSOP for the completion of their corrective action plans (CAPs) and the PQs review.

3.2.3 On the other hand, SSP/SMS implementation targets are presented in **Table 3-2**. These targets have been established equally for all the States for years 2023 to 2028. The maturity levels **exists** and **exists and effective** are based on the criteria established in the SSP PQs maturity level matrices.

Table 3-2. Indicators and targets regarding SSP/SMS implementation

Indicators for the States	Targets					
	Exists			Exists and is effective		
% SSP and SMS implementation	2023 60%	2024 80%	2025 100%	2024 50%	2026 75%	2028 100%

3.3 Safety performance indicators

3.3.1 For the purposes of this plan, the following main indicators will be considered, if applicable:

- ✓ **EI improvement % indicator metric:** In order to know the percentage achieved by the States, the following formula will be applied:

$$EI (\%) = \frac{\text{number of satisfactory PQs}}{\text{number of total applicable PQs}} \times 100$$

- ✓ **SSP implementation indicator metric:** This metric will be based on the number of elements “exists” and “exists and is effective” of the total elements of the SSP implementation according to the criteria established in the SSP PQs maturity level matrices.

3.4 Performance targets related to accident rate reduction

3.4.1 To manage the reduction of accident rates, the SAM Region has planned to decrease accident rate with aircraft over 5 700 kg, during the period 2023-2025, in order to aim for zero accidents by 2030.

3.4.2 Since the number of occurrences in commercial aviation with aircraft over 5 700 kg MTOW shows an increasing trend, States should contemplate in their NASPs, in addition to information on accidents, the recording and processing of information arising from serious incidents and incidents, with the purpose of obtaining by 2025 proactive information--precursors--that will allow identifying others HRCs and contributing factors that are of interest in their States for assessing and proposing mitigation measures in the cited segment.

3.4.3 It is recommended that States also consider monitoring aircraft with MTOW < 5700 kg, including indicators related to Target 1.1 of the SAMSP that best suit local scenarios, to analyze the information obtained in the process of investigation of the occurrences (accidents, serious incidents and incidents), with the purpose of obtaining by 2025, the HRCs with their respective contributing

factors in this segment, which are of concern for your State, to evaluate and propose mitigation measures for each of the identified HRCs.

- 3.4.4 The States are recommended to establish in their NASPs the necessary measures to manage the reduction in the number of accidents, for example, a State could plan an annual reduction of 1% percent, in relation to the average percentage obtained from the accident percentages of the previous 5 years, for accidents involving aircraft weighing less than 5 700 kg.
- 3.4.5 SAMSP's Goal 1 calls for the continued reduction of accident-related safety risks. Therefore, States will identify the high-risk categories based on its risk picture obtained at the national level, once they have processed their historical data for at least five years. Although SAM States should take into account which global and regional HRCs affect their risk picture, each State will establish its own goals, indicators, baselines and alert levels, based on its own risk picture obtained from reactive and proactive safety data and information.
- 3.4.6 For scheduled and non-scheduled commercial air transport operations with aircraft of a maximum certificated take-off weight (mass) of over 5 700 kg, it is recommended to obtain an accident rate. To calculate the accident rate, the States should select a factor that corresponds to the total amount of departures. Following, the safety performance indicators will be set out for each affected sector. The 5-year average rate of each affected sector will correspond to the baseline from which the improvement (target) will be calculated, and then the new average rate (resulting target) will be established. Finally, the alerts levels will be defined based on the average rate of each sector. For aviation sectors where the number of departures is not available, the use of accident numbers and percentages instead of rates is recommended, as applicable. In the following table, an example on how establish a goal, indicator, metric, baseline, target and SEI is presented. It is recommended that this schematic planning be used in the development of the NASP for each goal established by the States.

Table 3-3. Example on how to establish a goal, indicator, metric, baseline, target and SEI

	Indicator and metrics	Baseline	Target	SEI
	Indicator	Enter as baseline the average accident rate of the last 5 years (2017-2021).	Enter the defined target, per example: 20% reduction of the average accident rate for 2023.	Enter the SEI that will allow the State to achieve the defined target of 0.8 accidents per 100 000 departures (See examples of SEI in Appendix A of this plan).
Goal Continued reduction of accident-related safety risks.	LOC-I accident rate per 100 000 departures in 5 years.			
	Metrics	In the 5 years period the air operator had 10 accidents and completed 1 000 000 departures (200 000 departures per year).	20% out of 1 = 0.2 1 – 0.2 = 0.8	
	$AR = \frac{\# \text{ LOC-I Accidents}}{\# \text{ Total departures}} \times \text{Constant}$	$AR = \frac{10}{1\,000\,000} \times 1\,000\,000 = 1$ The average accident rate is: 1 ACCD x 100 000 departures.	The defined target for 2023 is 0.8 .	

3.5 Alert levels for accident and incident rate control and monitoring

- 3.5.1 For the purposes of this plan, three alert levels are considered associated with the trend of the historical data of an indicator, which performance is measured specifically through the average value and the standard deviation (SD) value.
- 3.5.2 The alert levels for a new follow-up period (current year) will be based on the performance of the previous period (5 preceding years) and the average and standard deviation values will be derived from this period. Alert levels are illustrated in the safety indicator chart through three alert lines as follows:

- ✓ average + 1 SD;
- ✓ average + 2 SD; and
- ✓ average + 3 SD.

3.5.3 For purposes of indicator control and follow up, States will take some specific action if:

- ✓ 1 point is above the Third alert level
- ✓ 2 consecutive points are above the Second alert level
- ✓ 3 consecutive points are above the First alert level

3.6 National aviation safety plan (NASP)

3.6.1 In order to achieve the defined targets for the improvement of the EI, implementation of the SSP/SMS and the reduction of accident rates, each State will develop a national aviation safety plan (NASP), in line with the SAMSP goals, targets and G-HRCs, which has been aligned with the GASP.

3.6.2 The NASP should present the strategic direction for the management of aviation safety at the national level, for a set period, and define the safety policy, goals, indicators, targets and alert levels, in accordance with this plan, and in accordance with the safety performance of their own system.

3.6.3 The development and implementation of the NASP will depend on the maturity level in which each State is in relation to the implementation of its safety management system that integrates as a whole the eight critical elements (CE) of the safety oversight system with the SSP elements.

3.6.4 The NASP, with its corresponding parts, will be submitted to the ICAO South American Regional Office and ICAO headquarters for purposes of control and monitoring of Target 3.2.

3.6.5 Guidance related to the development of a NASP is provided in Doc 10131, *Manual on the Development of Regional and National Aviation Safety Plans*. The manual is found on the ICAO website at: www.icao.int/gasp. It provides guidance that may be used to establish a development process for the NASP, including methods to identify its SEIs.

3.7 Follow up of the NASPs implementation

- 3.7.1 For follow up purposes, the following meetings organized by the ICAO South American Regional Office will be used:
- ✓ **For EI improvement and maintenance** - National Continuous Monitoring Coordinators (NCCMC) monthly and annual meetings.
 - ✓ **For SSP/SMS implementation** - SAM Region SSP/SMS implementation monthly and annual meetings.
 - ✓ **To evaluate the performance of accident rates indicators and targets as established by the SAM Region in this plan** – SAMSP focal points quarterly meetings and ARCM Executive Committee annual meetings.
- 3.7.2 It is recommended that States publish their safety reports on an annual basis as part of their SSP implementation.
- 3.7.3 Reports will be published during the first three months of the following years, in the ICAO SAM Office website, intended for this purpose.
- 3.7.4 A suggested State safety report model is shown in **Appendix B**.

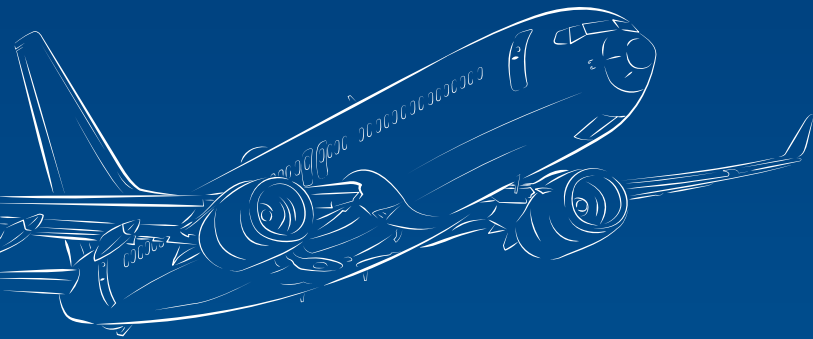
3.8 Safety data and information sources

The safety data and information sources that States could consult during the planning and implementation of their safety plans include: ICAO iSTARS-3 and SIMS, RASG-PA data sources, IATA data sources, ARCM data sources, and their own data sources (SDCPS, safety and ADREP/ECCAIRS platforms).

CHAPTER 4

Regional safety risks

- 4.1 Introduction
- 4.2 Commercial air transport occurrences
- 4.3 High-risk categories (HRC) of accidents in scheduled and non-scheduled commercial aviation
- 4.4 Trends in HRCs related to accidents in scheduled and non-scheduled commercial aviation
- 4.5 Serious incident trends in scheduled and non-scheduled commercial aviation
- 4.6 General aviation and other aviation segments



4.1 Introduction

- 4.1.1 In order to achieve the target of Goal 1 of Chapter 3 regarding maintaining a decreasing trend in the accident rate at the regional level, an analysis of accidents and serious incidents in the SAM Region is required to provide guidance on where to focus the efforts and resources of both the Region and the States.
- 4.1.2 In this regard, the high-risk categories (HRCs) of accidents that occurred in commercial air transport during the period 2018-2022 are listed, as identified in the analyses performed on the data submitted by the Occurrence Validation Study Group (OVSG), RAGS-PA and ARCM. Likewise, recommendations are offered in relation to serious incidents occurring in the same segment and time period.
- 4.1.3 Furthermore, **Appendix A** contains recommendations for safety enhancement initiatives (SEIs) that address safety risks at regional level, derived from analyses and lessons learned from accidents in recent years in the SAM Region. These SEIs have a preventive approach based on reactive data, and include actions such as: policy development, targeted safety activities, safety data analysis, safety risk assessments and safety promotion.

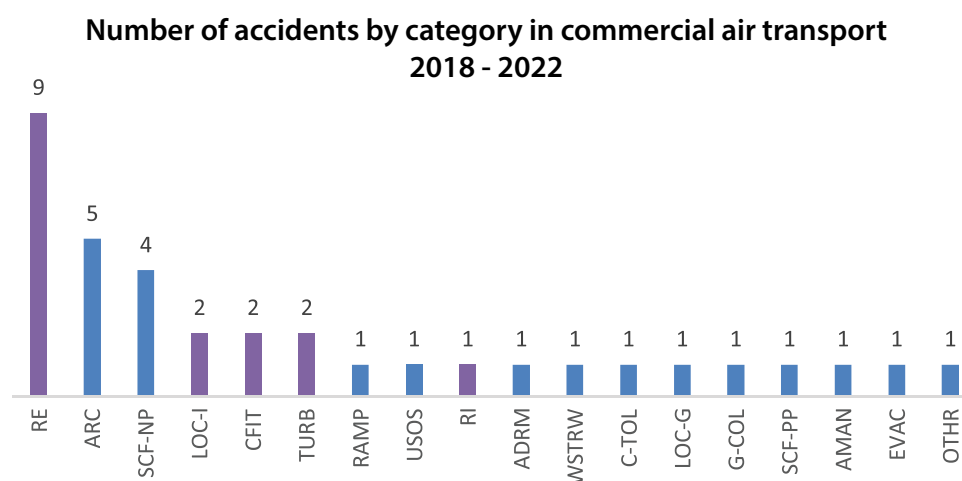
4.2 Commercial air transport occurrences

- 4.2.1 Based on the work done by the OVSG, which records and processes all occurrences in scheduled and non-scheduled commercial aviation operations worldwide involving aircraft with a maximum certificated take-off weight (MTOW) above 5 700 kg, the SAM Office and ARCM compile this data and perform the corresponding analysis to derive trends to guide the development of SEIs. The following table (see next page) summarizes the accidents and serious incidents that have occurred in the SAM Region in the last five (5) years.

Year	Accidents			Fatal accidents		Serious incidents
	Scheduled	Non scheduled	Total	Scheduled	Non scheduled	
2018	8	2	10	1	-	20
2019	6	3	9	-	1	7
2020	1	2	3	-	1	8
2021	1	5	6	-	1	21
2022	5	3	8	1	1	31
Total	21	15	36	2	4	87

a) Categories of accidents

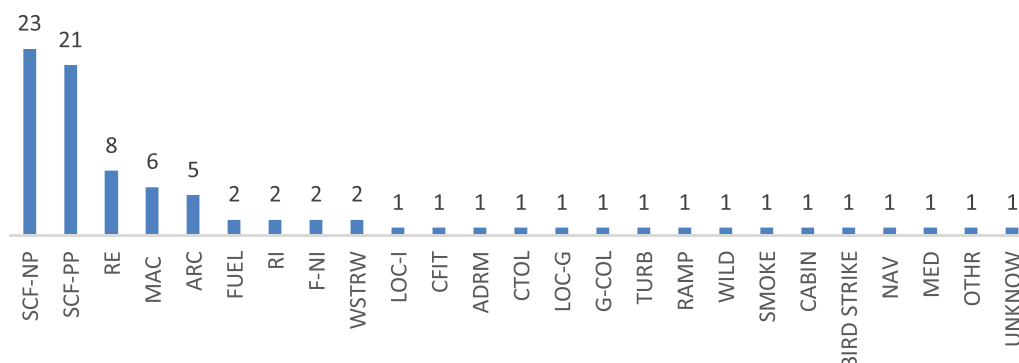
4.2.2 The following graph shows the number of accidents by category that occurred in the period 2018-2022 in scheduled and non-scheduled commercial air transport.



b) Categories of serious incidents

4.2.3 The table on the next page presents the number of serious incidents by category that occurred in the period 2018-2022 in scheduled and non-scheduled commercial air transport.

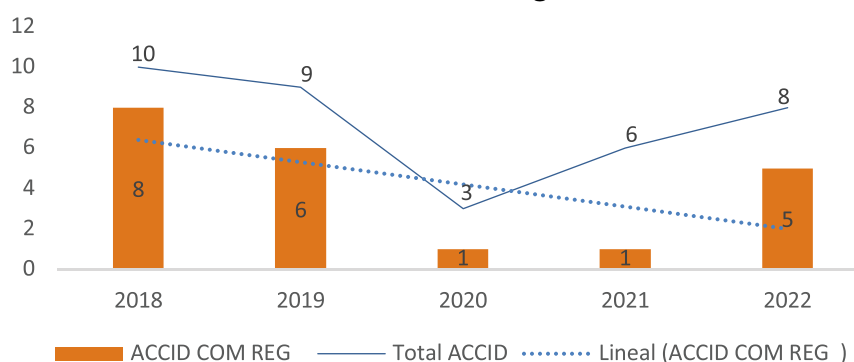
**Number of serious incidents by category in commercial air transport
2018 - 2022**



c) Accidents in scheduled commercial aviation

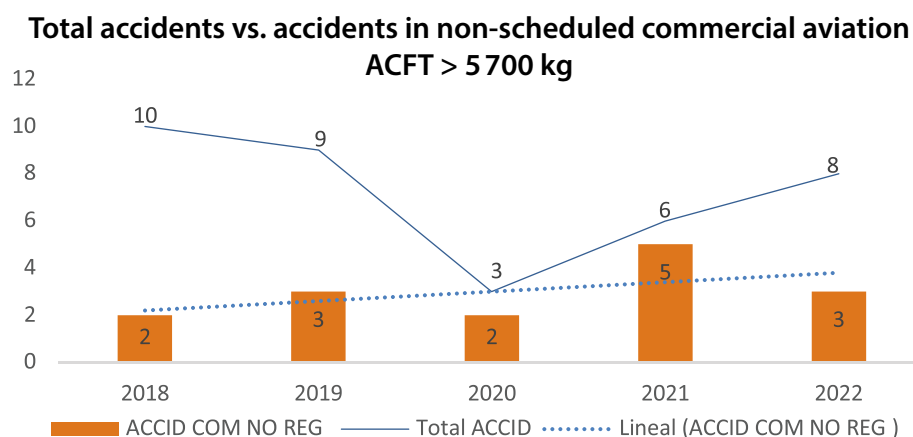
4.2.4 The table below shows in blue line the number of total accidents per year that occurred in the period 2018-2022 involving aircraft over 5 700 kg **versus** the number of accidents in **scheduled commercial aviation** represented in orange bars.

**Total accidents vs. accidents in scheduled commercial aviation
ACFT > 5 700 kg**



d) Accidents in non-scheduled commercial aviation

4.2.5 In the same sense as the previous table, the table on the next page shows in blue line the number of total accidents per year that occurred in the period 2018-2022 involving aircraft over 5 700 kg **versus** the number of accidents in **non-scheduled commercial aviation** represented in orange bars.



4.3 High-risk categories (HRC) of accidents in scheduled and non-scheduled commercial aviation

4.3.1 Based on the above tables, for the scheduled and non-scheduled commercial aviation segment involving aircraft with a MTOW greater than 5 700 kg, seven (7) HRCs have been identified in the period 2018-2022 as those of greatest interest for the South American Region, to be addressed through SEIs and monitored on an annual basis.

HRC 1: Runway excursion (RE);

HRC 2: Abnormal runway contact (ARC);

HRC 3: System/component failure - non-powerplant (SCF-NP);

HRC 4: Loss of control in-flight (LOC-I);

HRC 5: Controlled flight into terrain (CFIT);

HRC 6: Runway incursion (RI); and

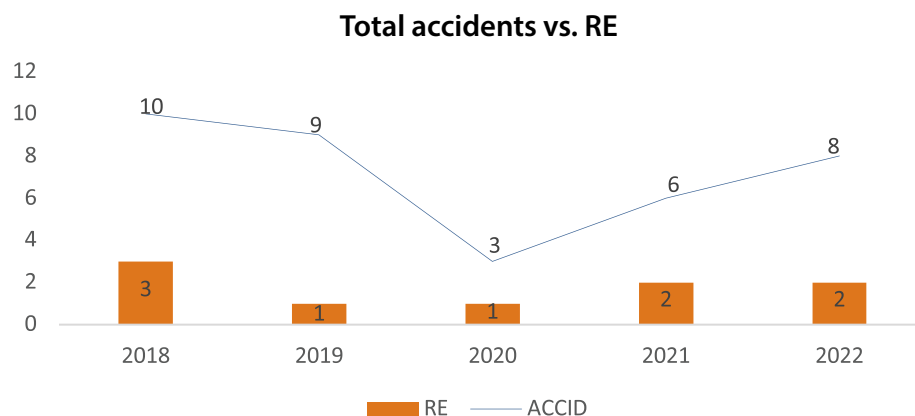
HRC 7: Turbulence (TURB)

These categories have been selected because of their high recurrence and because most fatalities and serious injuries have occurred in some of them.

4.3.2 HRC 1: Runway excursion (RE)

The RE Category includes all accidents where there was a deviation or overshoot of the runway or aerodrome surface during take-off or landing. In the last 5 years, nine (9) accidents were classified as RE.

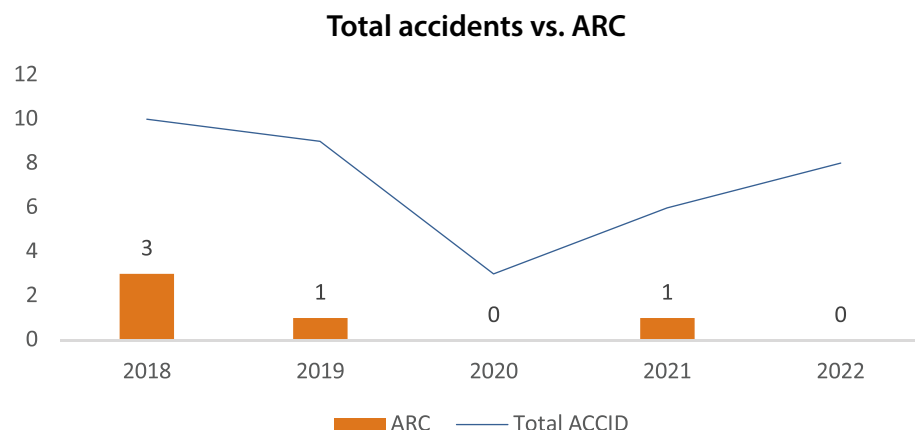
In the figure below and in the following figures, the blue line represents the number of total accidents per year in the SAM Region and the orange bars indicate the number of accidents in the specific category.



4.3.3 HRC 2: Abnormal runway contact (ARC)

This ARC category corresponds to accidents where the aircraft involved made a landing or take-off, which entailed abnormal contact with the runway or landing surface.

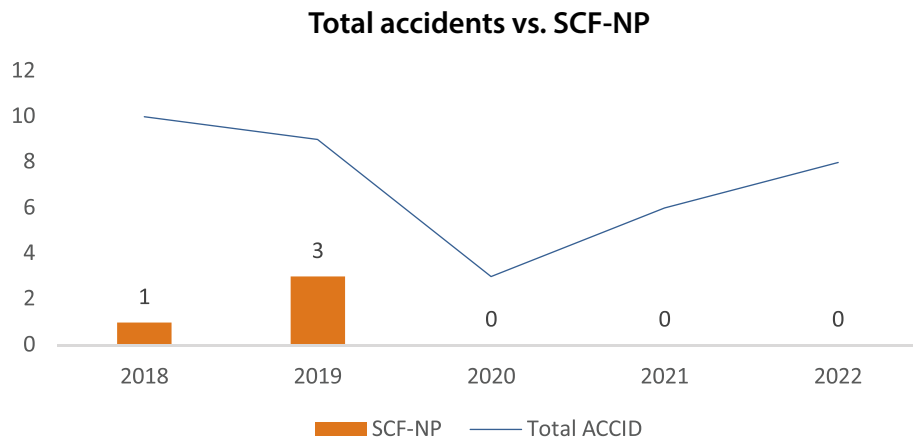
In the reporting period, there were five (5) accidents classified in this category. Although it shows a downward trend, it is recommended that it be addressed and monitored.



4.3.4 HRC 3: System/component failure - non-powerplant (SCF-NP)

Accidents are classified as SCF-NP when they occur due to a failure or malfunction of an aircraft system or component other than the powerplant.

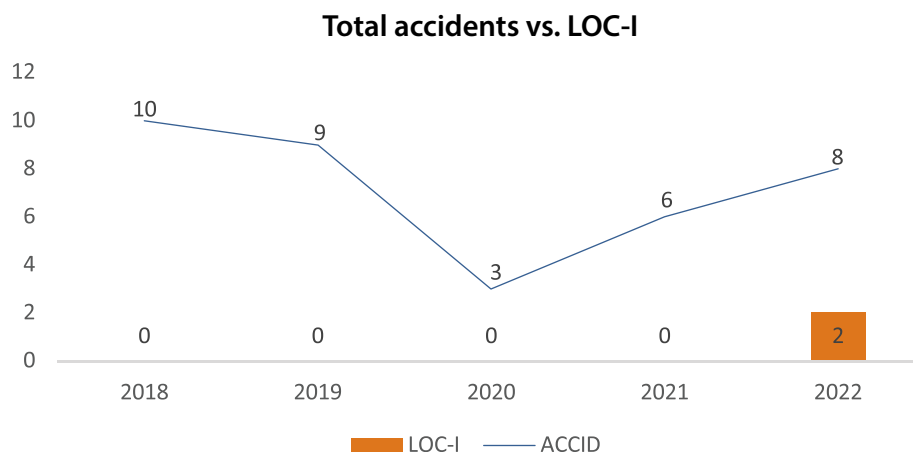
Based on the data obtained in the last 5 years, there were four (4) accidents classified in the SCF-NP category. Although there have been no accidents in this category in the last three (3) years, it is recommended that it be addressed and monitored.



4.3.5 HRC 4: Loss of control in-flight (LOC-I)

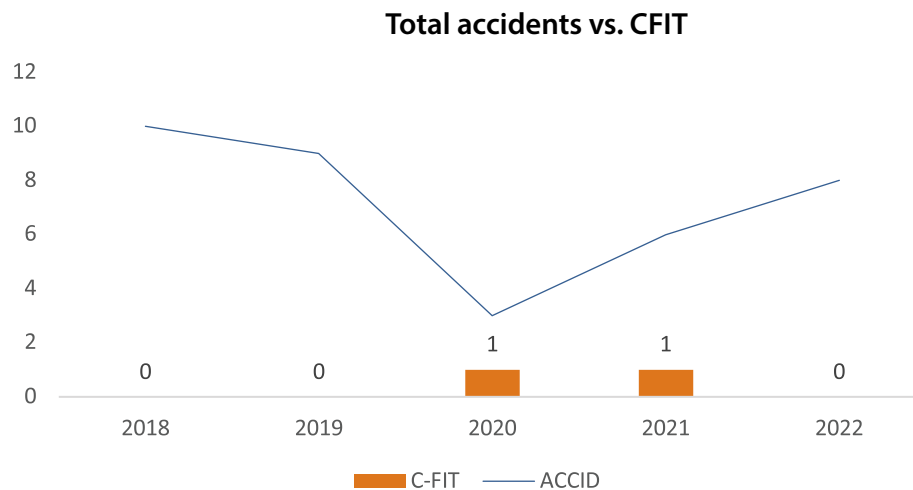
The LOC-I category includes accidents where the aircraft becomes uncontrollable for reasons other than system or component failure and suffers an in-flight deviation from the intended flight path.

For the period 2018-2022, two (2) accidents were classified as LOC-I, as shown in the figure below.



4.3.6 HRC 5: Controlled flight into terrain (CFIT)

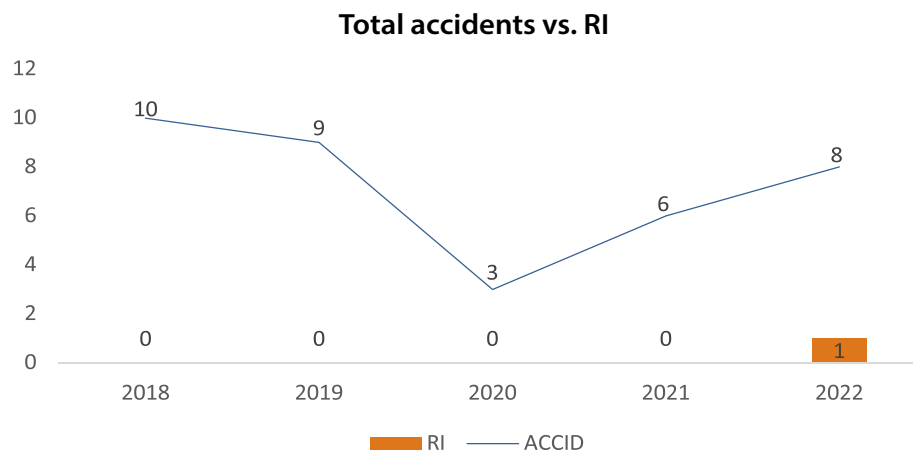
Controlled flight into terrain (CFIT) includes collisions or near-collisions with terrain, water or obstacles during flight, and where there is no indication or evidence of loss of control, regardless of the flight crew's situational awareness. According to occurrence records, there have been two (2) accidents classified in this category in the last five (5) years.



4.3.7 HRC 6: Runway incursion (RI)

RI occurs when there is a situation 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, or collision with, risk of collision with, or evasive action taken by an aircraft to avoid, an animal on a runway or at a heliport in use.

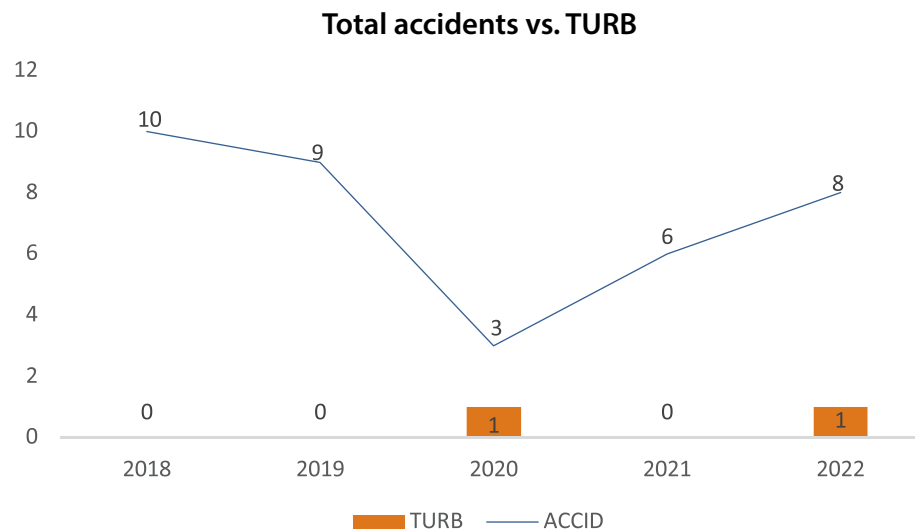
According to the database, there was one (1) accident in this category in the period 2018-2022.



4.3.8 HRC 7: Turbulence (TURB)

The TURB category includes all accidents where the aircraft encountered turbulence in-flight under various circumstances, resulting in serious injury to any of its occupants or damage to the aircraft.

According to occurrence records, there were two (2) accidents classified in this category in the last 5 years.

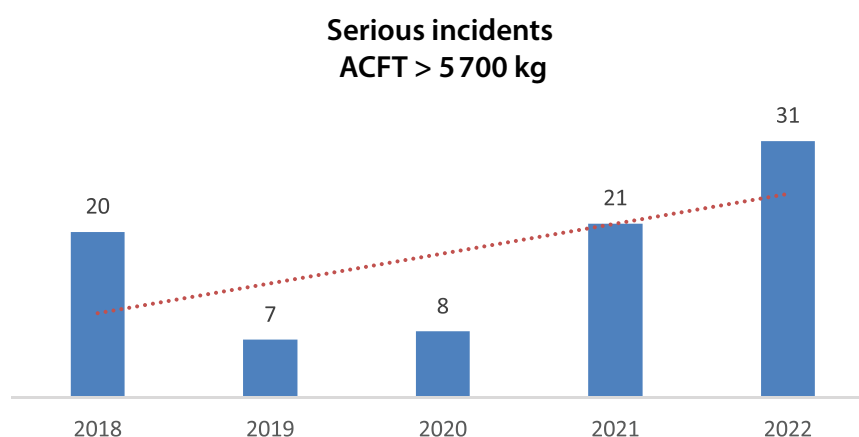


4.4 Trends in HRCs related to accidents in scheduled and non-scheduled commercial aviation

- 4.4.1 From the analysis carried out, it can be seen that there is an upward trend in the RE, LOC-I; SCF-NP, CFIT; RI and TURB HRCs, and it is therefore recommended that they be addressed through SEIs at regional level. As for ARC, this category shows a decreasing trend.

4.5 Serious incident trends in scheduled and non-scheduled commercial aviation

4.5.1 According to the figure below, it can be observed that there is an upward trend in serious incidents during the period 2018-2022, a situation that should be taken into account by each State in order to identify precursors in this type of occurrences and adopt preventive mitigation measures with the purpose of reducing risk levels.



4.5.2 Likewise, from the table presented in 4.2 b), it can be seen that the following categories of serious incidents should be of concern to the Region, and it is recommended that these categories be addressed by the ARCM through SEIs:

- System/component failure - non-powerplant (SCF-NP);
- System/component failure - powerplant (SCF-PP);
- Runway excursion (RE);
- Mid-air collision (MAC); and
- Abnormal runway contact (ARC)

4.5.3 The RE and ARC categories of serious incidents have also been considered as HRCs in the HRC accident analysis.

4.5.4 To mitigate safety risks at the national level, it is suggested that each State identify the accident and serious incident categories with the highest trend, so that they can be addressed within the national aviation safety plan (NASP).

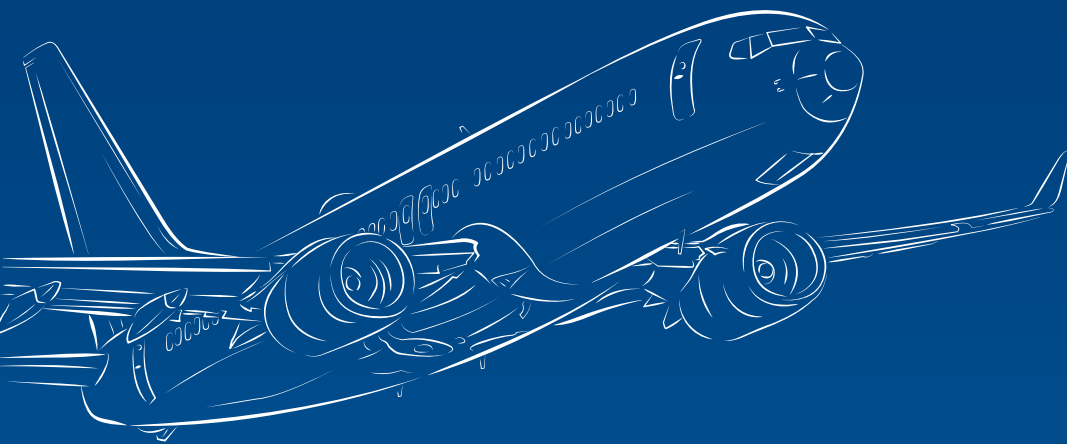
4.6 General aviation and other aviation segments

- 4.6.1 For general aviation and other aviation segments such as aerial work, helicopter operations, agricultural aviation, training aviation, UAS/RPAS, etc., it is recommended that each State identify the accident categories with the highest trend, so that they can be addressed in the national aviation safety plan (NASP).

CHAPTER 5

Other regional safety issues

- 5.1 Introduction
- 5.2 The eight critical elements (CEs)
- 5.3 Status of AIG capabilities in some SAM States



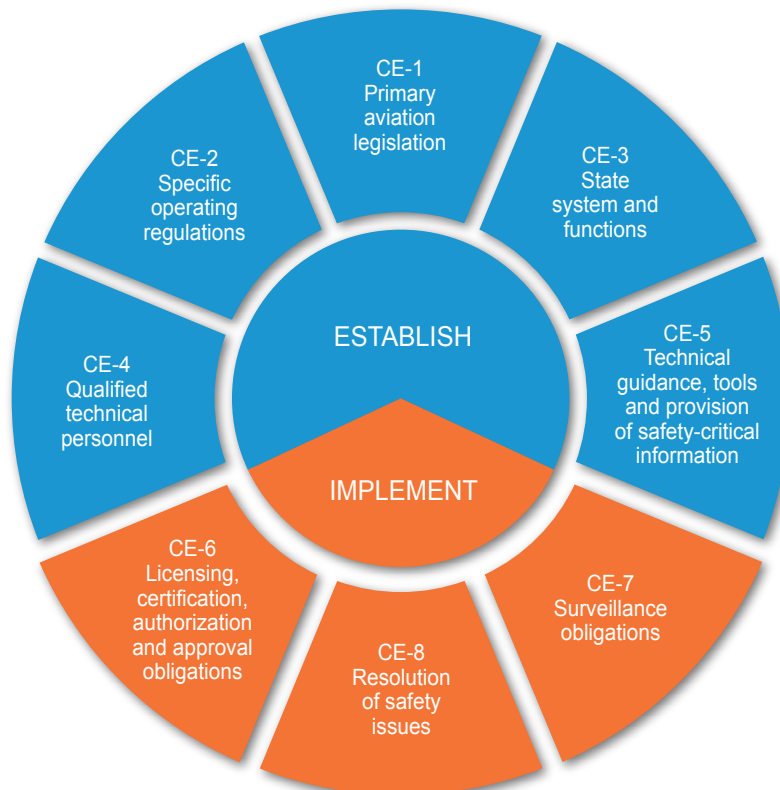
5.1 Introduction

- 5.1.1 In addition to the regional operational safety risks listed in the SAMSP, the working group for the revision of the SAMSP has identified other regional safety issues and initiatives selected for the SAMSP. These are given priority in the SAMSP since they are aimed at enhancing and strengthening the management of aviation safety at the regional level.

5.2 The eight critical elements (CEs)

- 5.2.1 The eight critical elements (CEs) of a safety oversight system are defined by ICAO. SAM Region is committed to the effective implementation of these eight CEs among all States in the region, as part of its overall safety oversight responsibilities, which emphasize SAM Region's commitment to safety in respect of its aviation activities. The eight CEs are presented in Figure 5-1.

Figure 5-1. Critical elements of a State's safety oversight system



- 5.2.2 Certain deficiencies in a specific CE of a safety oversight system are common to the majority of States in the region and considered a top concern. These deficiencies are addressed as a safety issue in the SAMSP because of their impact on the ability of States to fulfill their safety oversight responsibilities, which affects the region as a whole.
- 5.2.3 The latest ICAO activities, which aim to measure the effective implementation of the eight CEs of States' individual safety oversight systems, as part of the ICAO Universal Safety Oversight Audit Programme (USOAP), have resulted in the following scores, compiled as an average for the South American Region as a whole:

Overall EI score for the SAM Region							
79.64%							
EI score by CE for the SAM Region							
CE-1	CE-2	CE-3	CE-4	CE-5	CE-6	CE-7	CE-8
81.50%	86.42%	83.40%	73.56%	82.67%	81.97%	70.95%	68.87%
EI score by audit area ¹ for the SAM Region							
LEG	ORG	PEL	OPS	AIR	AIG	ANS	AGA
87.76%	80.08%	90.93%	83.23%	88.35%	64.78%	75.71%	73.45%

Data updated on 28 February 2023.

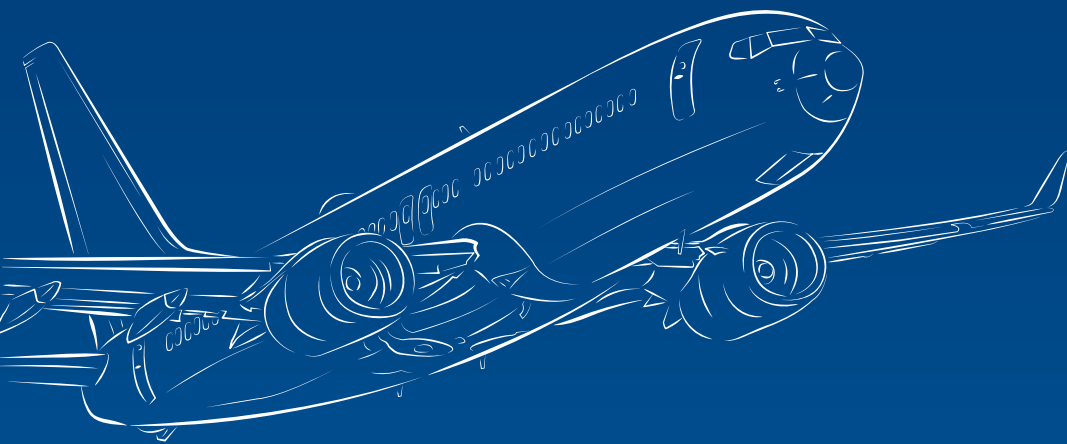
¹ Eight audit areas pertaining to USOAP, i.e. primary aviation legislation and civil aviation regulations (LEG), civil aviation organization (ORG); personnel licensing and training (PEL); aircraft operations (OPS); airworthiness of aircraft (AIR); aircraft accident and incident investigation (AIG); air navigation services (ANS); and aerodromes and ground aids (AGA).

5.3 Status of AIG capabilities in some SAM States

- 5.3.1 The following safety issue in the South American context were considered of the utmost priority because it is a systemic issue which impact the effectiveness of safety risk controls: lack of aviation accident and incident investigation capabilities in some states of the SAM Region.
- 5.3.2 This was the area where States in the region received the lowest EI score during the most recent ICAO USOAP audits and is therefore placed as a high priority issue to be resolved. This safety issue is in line with those listed in the 2023-2025 edition of the GASP.
- 5.3.3 It was identified based on analysis from USOAP data, accident and incident investigation reports, safety oversight activities from States in the region, their State safety programmes, as well as on the basis of regional analysis conducted by the SAM Regional Office.

APPENDIX A

Detailed safety enhancement initiatives (SEIs): regional safety risks



a) Commercial aviation aircraft with MTOW > 5 700 kg.

HRC 1: Runway excursion (RE)							
<p>Goal 1: Achieve a continuous reduction of safety risks Target 1.1: Maintain a decreasing trend of the regional accident rate</p>							
Safety enhancement initiative (SEI)	Action	Timeline	Responsible entity	Stakeholders	Metrics/Indicators	Priority	Monitoring activity
<p>SAMSP OPS SEI - RE</p> <p>Mitigate hazards, consequences, risks and contributing factors related to RE accidents and incidents</p> <p>Promote and sensitize air operators, approved training organizations and the different civil aviation organizations on RE high risk category (HRC) aspects.</p>	<p>1. Organize safety seminars or workshops in each SAM State on:</p> <ul style="list-style-type: none"> Hazards Consequences Risks Contributing factors Mitigation measures and how to implement them Lessons learned Safety recommendations New training methods 	<p>2023, 2024 and 2025</p>	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA Manufacturers' organizations CAST RSOO 	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA 121 and 135 air operators, corporate air operators and general aviation large aeroplane operators Approved training organizations CAST RSOO 	<p>Indicators</p> <ul style="list-style-type: none"> Number of seminars or workshops conducted in 2023, 2024 and 2025 Number of State participants attending the seminars or workshops each year Rate and number of RE accidents and incidents occurred in 2023, 2024 and 2025 <p>Metrics for accidents and incidents</p> <p>For accident rate (AR)</p> $AR = \frac{\#RE\ ACCID}{\#Total\ departures} \times Factor$ <p>For incident rate (IR)</p> $IR = \frac{\#RE\ SINCID/INCID}{\#Total\ departures} \times Factor$ <p>ACCID: Accidents SINCID: Serious incidents INCID: Incidents</p>	<p>High</p>	<ul style="list-style-type: none"> Continuous monitoring by SAMSP focal points of safety performance indicators of SAM States regarding reduction of RE accidents and incidents Accident Investigation Authorities (AIA) of SAM States and Accident Investigation entities if they are within the CAA, biannual meetings to review the progress made in the SEI and to take appropriate measures

HRC 2: Abnormal runway contact (ARC)							
Goal 1: Achieve a continuous reduction of safety risks Target 1.1: Maintain a decreasing trend of the regional accident rate							
Safety enhancement initiative (SEI)	Actions	Timeline	Responsible entity	Stakeholders	Metrics/Indicators	Priority	Monitoring activity
SAMSP OPS SEI - ARC Collect and process data on accidents, serious incidents and incidents related to ARC in the SAM Region and identify hazards, consequences, risks and contributing factors. Promote and sensitise air operators, approved training organisations, and the different civil aviation organisations on ARC HRC aspects.	1. Each SAM State will collect data through mandatory and voluntary safety reporting systems 2. Each SAM State will process the data through the SDCPS (ECCAIRS) to obtain safety information 3. Each SAM State will identify hazards, consequences, risks, contributing factors and trends 4. Each SAM State will establish goals, indicators, baselines, targets, alert levels and mitigation measures related to ARC	2023 to 2025	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA. Manufacturers' organizations CAST RSOO 	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation Entities if they are within the CAA 121 and 135 air operators, corporate air operators and general aviation large aeroplane operators Approved training organizations ATC service providers RSOO CAST 	Indicators <ul style="list-style-type: none"> Number of mandatory reports collected due to accidents Number of mandatory reports collected due to serious incidents Number of mandatory reports collected due to incidents Number of hazards identified per accident, serious incident and incident Number of risk analyses performed Number of contributing factors identified per accident, serious incident and incident Number of mitigation measures identified per accident, serious incident and incident Number of reports shared between CAAs and AIAs/Investigation entities in the CAA Rate and number of ARC accidents and incidents occurred in 2023, 2024 and 2025 Metrics for accidents and incidents For accident rate (AR) $AR = \frac{\# \text{ ARC ACCID}}{\# \text{ Total departures}} \times \text{Factor}$ For Incident rate (IR) $IR = \frac{\# \text{ ARC SINCID/INCID}}{\# \text{ Total departures}} \times \text{Factor}$	Medium	<ul style="list-style-type: none"> Continuous monitoring by SAMSP focal points of safety performance indicators of SAM States regarding the reduction of ARC accidents and incidents Accident Investigation Authorities (AIA) of SAM States and Accident Investigation entities if they are within the CAA, biannual meetings to review the progress made in the SEI and to take appropriate measures

					<p><i>Metrics for hazards vs. risk analyses</i></p> <ul style="list-style-type: none"> Percentage of hazards identified by risk analysis 		
	<p>5. Organize safety seminars or workshops in each SAM State</p> <ul style="list-style-type: none"> Hazards Consequences Risks Contributing factors Mitigation measures and how to implement them Lessons learned Safety recommendations New training methods 	<p>2023, 2024 and 2025</p>	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA RSOO CAST 	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA 121 and 135 air operators, corporate air operators and general aviation large aeroplanes operators Approved training organizations 	<p><i>Indicators</i></p> <ul style="list-style-type: none"> Number of seminars or workshops conducted in 2023, 2024 and 2025 Number of State participants attending the seminars or workshops each year 	Medium	

HRC3: System/component failure - non-powerplant (SCF-NP)							
Goal 1: Achieve a continuous reduction of safety risks Target 1.1: Maintain a decreasing trend of the regional accident rate							
Safety enhancement initiative (SEI)	Actions	Timeline	Responsible entity	Stakeholders	Metrics/Indicators	Priority	Monitoring activity
SAMSP OPS SEI - SCF-NP Collect and process data related to SCF-NP accidents, serious incidents and incidents in the SAM Region and identify hazards, consequences, risks and contributing factors. Promote and sensitize air operators, approved training organizations and the different civil aviation organizations on SCF-NP HRC aspects.	1. Each SAM State will collect data through the mandatory and voluntary safety reporting systems 2. Each SAM State will process data through the SDCPS (ECCAIRS) to obtain safety information 3. Each SAM State will identify hazards, consequences, risks, contributing factors and trends 4. Each SAM State will establish goals, indicators, baselines, targets, alert levels and mitigation measures related to SCF-NP	2023 to 2025	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA Manufacturers' organisations CAST RSOO 	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA 121 and 135 air operators, corporate air operators and general aviation large aeroplane operators Approved training organizations ATC service providers RSOO CAST 	Indicators <ul style="list-style-type: none"> Number of mandatory reports collected due to accidents Number of mandatory reports collected due to serious incidents Number of mandatory reports collected due to incidents Number of hazards identified per accident, serious incident and incident Number of risk analyses performed Number of contributing factors identified per accident, serious incident and incident Number of mitigation measures identified per accident, serious incident and incident Number of reports shared between CAAs and AIAs/Investigation entities in the CAA Rate and number of SCF-NP accidents and incidents occurred in 2023, 2024 and 2025 Metrics for accidents and incidents For accident rate (AR) $AR = \frac{\# SCF - NP ACCID}{\# Total departures} \times Factor$ For incident rate (IR) $IR = \frac{\# SCF - NP SINCID / INCID}{\# Total departures} \times Factor$	Medium	<ul style="list-style-type: none"> Continuous monitoring by SAMSP Focal Points of safety performance indicators of SAM States regarding reduction of SCF-NP accidents and incidents Accident Investigation Authorities (AIA) of SAM States and Accident Investigation entities if they are within the CAA, biannual meetings to review the progress made in the SEI and to take appropriate measures

					<p><i>Metrics for hazards vs risk analysis</i></p> <ul style="list-style-type: none"> Percentage of hazards identified by risk analysis 		
	<p>5. Organize safety seminars or workshops in each SAM State</p> <ul style="list-style-type: none"> Hazards Consequences Risks Contributing factors Mitigation measures and how to implement them Lessons learned Safety recommendations New training methods 	<p>2023, 2024 and 2025</p>	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA RSOO CAST 	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA 121 and 135 air operators, corporate air operators and general aviation large aeroplanes operators Approved training organizations 	<p><i>Indicators</i></p> <ul style="list-style-type: none"> Number of seminars or workshops conducted in 2023, 2024 and 2025 Number of State participants attending the seminars or workshops each year 	Medium	

HRC 4: Loss of control in-flight (LOC-I)							
Goal 1: Achieve a continuous reduction of safety risks Target 1.1: Maintain a decreasing trend of the regional accident rate							
Safety enhancement initiative (SEI)	Action	Timeline	Responsible entity	Stakeholders	Metrics/Indicators	Priority	Monitoring activity
SAMSP OPS SEI – LOC-I Collect and process data on accidents, serious incidents and incidents related to LOC-I in the SAM Region and identify hazards, consequences, risks, and contributing factors. <i>Promote and sensitize air operators, approved training organizations and the different civil aviation organizations on LOC-I HRC aspects.</i>	1. Each SAM State will collect data through the mandatory and voluntary safety reporting systems 2. Each SAM State will process data through the SDCPS (ECCAIRS) to obtain safety information 3. Each SAM State will identify hazards, consequences, risks, contributing factors and trends 4. Each SAM State will establish goals, indicators, baselines, targets, alert levels and mitigation measures related to LOC-I	2023 to 2025	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA Manufacturers' organisations CAST RSOO 	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA 121 and 135 air operators, corporate air operators and general aviation large aeroplanes operators Approved training organisations RSOO CAST 	Indicators <ul style="list-style-type: none"> Number of mandatory reports collected due to accidents Number of mandatory reports collected due to serious incidents Number of mandatory reports collected due to incidents Number of hazards identified per accident, serious incident and incident Number of risk analyses performed Number of contributing factors identified per accident, serious incident and incident Number of mitigation measures identified per accident, serious incident and incident Number of reports shared between CAAs and AIAs/Investigation entities in the CAAs Rate and number of LOC-I accidents and incidents occurred in 2023, 2024 and 2025 Metrics for accidents and incidents For accident rate (AR) $AR = \frac{\# LOC - I \text{ ACCID}}{\# Total \text{ departures}} \times \text{Factor}$	High	<ul style="list-style-type: none"> Continuous monitoring by SAMSP Focal Points of safety performance indicators of SAM States regarding reduction of LOC-I accidents and incidents Accident Investigation Authorities (AIA) of SAM States and Accident Investigation entities if they are within the CAA, biannual meetings to review the progress made in the SEI and to take appropriate measures

					<p><i>For Incident rate (IR)</i></p> $IR = \frac{\# LOC - 1 \text{ SINCID}/INCID}{\#Total \text{ departures}} \times \text{Factor}$ <p><i>Metrics for hazards vs risk analysis</i></p> <p><i>Percentage of hazards identified by risk analysis</i></p>		
	<p>5. Organize safety seminars or workshops in each SAM State</p> <ul style="list-style-type: none"> • Hazards • Consequences • Risks • Contributing factors • Mitigation measures and how to implement them • Lessons learned • Safety recommendations • New training methods 	<p>2023, 2024 and 2025</p>	<ul style="list-style-type: none"> • Civil Aviation Authorities (CAAs) • Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA • RSOO • CAST 	<ul style="list-style-type: none"> • Civil Aviation Authorities (CAAs) • Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA • 121 and 135 air operators, corporate air operators and general aviation large aeroplane operators • Approved training organisations 	<p><i>Indicators</i></p> <ul style="list-style-type: none"> • Number of seminars or workshops conducted in 2023, 2024 and 2025 • Number of State participants attending the seminars or workshops each year 	High	

HRC 5: Controlled flight into terrain (CFIT)							
Goal 1: Achieve a continuous reduction of safety risks Target 1.1: Maintain a decreasing trend of the regional accident rate							
Safety enhancement initiative (SEI)	Action	Timeline	Responsible entity	Stakeholders	Metrics/Indicators	Priority	Monitoring activity
SAMSP OPS SEI - CFIT Collect and process data on accidents, serious incidents and incidents related to CFIT in the SAM Region and identify hazards, consequences, risks and contributing factors. Promote and sensitize air operators, approved training organizations and the different civil aviation organizations on CFIT HRC aspects.	1. Each SAM State will collect data through the mandatory and voluntary safety reporting systems 2. 18. Each SAM State will process data through the SDCPS (ECCAIRS) to obtain safety information 3. Each SAM State will identify hazards, consequences, risks, contributing factors and trends 4. Each SAM State will establish goals, indicators, baselines, targets, alert levels and mitigation measures related to CFIT	2023 to 2025	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA Manufacturers' organisations CAST RSOO 	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA 121 and 135 air operators, corporate air operators, and general aviation large aeroplane operators Approved training organizations ATC service providers RSOO CAST 	Indicators <ul style="list-style-type: none"> Number of mandatory reports collected due to accidents Number of mandatory reports collected due to serious incidents Number of mandatory reports collected due to incidents Number of hazards identified per accident, serious incident and incident Number of risk analyses performed Number of contributing factors identified per accident, serious incident and incident Number of mitigation measures identified per accident, serious incident and incident Number of reports shared between CAAs and AIAs / Investigation entities in the CAA Rate and number of CFIT accidents and incidents occurred in 2023, 2024 and 2025 Metrics for accidents and incidents For accident rate (AR) $AR = \frac{\# CFIT ACCID}{\# Total departures} \times Factor$	High	<ul style="list-style-type: none"> Continuous monitoring by SAMSP focal points of safety performance indicators of SAM States regarding reduction of CFIT accidents and incidents Accident Investigation Authorities (AIAs) of SAM States and Accident Investigation entities if they are within the CAA, biannual meetings to review the progress made in the SEI and to take appropriate measures

					<p><i>For Incident rate (IR)</i></p> $IR = \frac{\# CFIT \ SINCD / INCID}{\# Total \ departures} \times Factor$ <p><i>Metrics for hazards vs. risk analysis</i></p> <ul style="list-style-type: none"> Percentage of hazards identified by risk analysis 		
	<p>5. Organize safety seminars or workshops in each SAM State</p> <ul style="list-style-type: none"> Hazards Consequences Risks Contributing factors Mitigation measures and how to implement them Lessons learned Safety recommendations New training methods 	<p>2023, 2024 and 2025</p>	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA RSOO CAST 	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA 121 and 135 air operators, corporate air operators and general aviation large aeroplane operators Approved training organizations ATC service providers 	<p><i>Indicators</i></p> <ul style="list-style-type: none"> Number of seminars or workshops conducted in 2023, 2024 and 2025 Number of State participants attending the seminars or workshops each year 	High	

HRC 6: Runway incursion (RI)							
Goal 1: Achieve a continuous reduction of safety risks Target 1.1: Maintain a decreasing trend of the regional accident rate							
Safety enhancement initiative (SEI)	Action	Timeline	Responsible entity	Stakeholders	Metrics/Indicators	Priority	Monitoring activity
SAMSP OPS SEI - RI Collect and process data on accidents, serious incidents and incidents related to RI in the SAM Region and identify hazards, consequences, risks and contributing factors. Promote and sensitize air operators, approved training organizations and the different civil aviation organizations on RI HRC aspects.	1. Each SAM State will collect data through the mandatory and voluntary safety reporting systems 2. Each SAM State will process data through the SDCPS (ECCAIRS) to obtain safety information 3. Each SAM State will identify hazards, consequences, risks, contributing factors and trends 4. Each SAM State will establish goals, indicators, baselines, targets, alert levels and mitigation measures related to RI	2023 to 2025	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA ATC service providers 	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA 121 and 135 air operators, corporate air operators, and general aviation large aeroplane operators Approved training organizations ATC service providers RSOO CAST 	Indicators <ul style="list-style-type: none"> Number of mandatory reports collected due to accidents Number of mandatory reports collected due to serious incidents Number of mandatory reports collected due to incidents Number of hazards identified per accident, serious incident and incident Number of risk analyses performed Number of contributing factors identified per accident, serious incident and incident Number of mitigation measures identified per accident, serious incident and incident Number of reports shared between CAAs and AIAs/Investigation entities in the CAA Rate and number of RI accidents and incidents occurred in 2023, 2024 and 2025 Metrics for accidents and incidents For accident rate (AR) $AR = \frac{\# RI ACCID}{\# Total departures} \times Factor$	High	<ul style="list-style-type: none"> Continuous monitoring by SAMSP Focal Points of safety performance indicators of SAM States regarding reduction of RI accidents and incidents Accident Investigation Authorities (AIA) of SAM States and Accident Investigation entities if they are within the CAA, biannual meetings to review the progress made in the SEI and to take appropriate measures

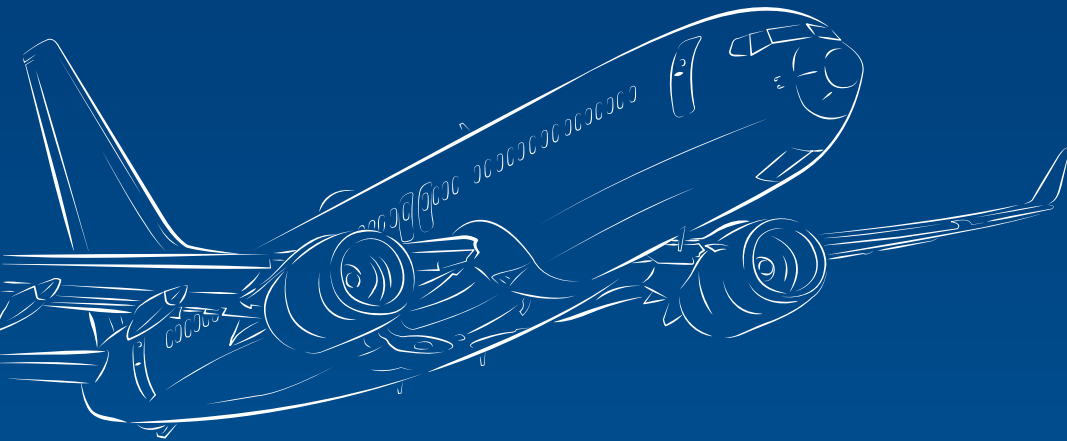
					<p><i>For incident rate (IR)</i></p> $IR = \frac{\# RI \ SINCLD/INCID}{\#Total \ departures} \times Factor$ <ul style="list-style-type: none"> • <i>Metrics for hazards vs. risk analysis</i> • <i>Percentage of hazards identified by risk analysis</i> 		
	<p>5. <i>Organize safety seminars or workshops in each State</i></p> <ul style="list-style-type: none"> • <i>Hazards</i> • <i>Consequences</i> • <i>Risks</i> • <i>Contributing factors</i> • <i>Mitigation measures and how to implement them</i> • <i>Lessons learned</i> • <i>Safety recommendations</i> • <i>New training methods</i> 	<p>2023, 2024 and 2025</p>	<ul style="list-style-type: none"> • <i>Civil Aviation Authorities (CAAs)</i> • <i>Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA</i> • <i>ATC service providers</i> 	<ul style="list-style-type: none"> • <i>Civil Aviation Authorities (CAAs)</i> • <i>Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA</i> • <i>121 and 135 air operators, corporate air operators and general aviation large aeroplane operators</i> • <i>Approved training organizations</i> • <i>ATC service providers</i> • <i>RSOO</i> • <i>CAST</i> 	<p><i>Indicators</i></p> <ul style="list-style-type: none"> • <i>Number of seminars or workshops conducted in 2023, 2024 and 2025</i> • <i>Number of State participants attending the seminars or workshops each year</i> 	High	

HRC 7: Turbulence (TURB)							
Goal 1: Achieve a continuous reduction of safety risks Target 1.1: Maintain a decreasing trend of the regional accident rate							
Safety enhancement initiative (SEI)	Action	Timeline	Responsible entity	Stakeholders	Metrics/Indicators	Priority	Monitoring activity
SAMSP OPS SEI - TURB Collect and process data on accidents, serious incidents and incidents related to TURB in the SAM Region and identify risks and contributing factors. Promote and sensitize air operators, approved training organizations and the different civil aviation organizations on TURB HRC aspects.	1. Each SAM State will collect data through the mandatory and voluntary safety reporting systems 2. Each SAM State will process data through the SDCPS (ECCAIRS) to obtain safety information 3. Each SAM State will identify hazards, consequences, risks, contributing factors and trends 4. Each SAM State will establish goals, indicators, baselines, targets, alert levels and mitigation measures related to TURB	2023 to 2025	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA Meteorological authorities 	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA 121 and 135 air operators, corporate air operators, and general aviation large aeroplane operators Meteorological authorities Manufacturers' organisations ATC service providers RSOO CAST 	Indicators <ul style="list-style-type: none"> Number of mandatory reports collected due to accidents Number of mandatory reports collected due to serious incidents Number of mandatory reports collected due to incidents Number of hazards identified per accident, serious incident and incident Number of risk analyses performed Number of contributing factors identified per accident, serious incident and incident Number of mitigation measures identified per accident, serious incident and incident Number of reports shared between CAAs and AIAs/Investigation entities in the CAA Rate and number of TURB-related accidents and incidents occurred in 2023, 2024, and 2025 Metrics for accidents and incidents: For accident rate (AR) $AR = \frac{\# \text{ TURB ACCID}}{\# \text{Total departures}} \times \text{Factor}$	Medium	<ul style="list-style-type: none"> Continuous monitoring by SAMSP focal points of safety performance indicators of SAM States regarding reduction of TURB accidents and incidents Accident Investigation Authorities (AIA) of SAM States and Accident Investigation entities if they are within the CAA, biannual meetings to review the progress made in the SEI and to take appropriate measures

					<p><i>For incident rate (IR)</i></p> $IR = \frac{\# TURB_SINCID / INCID}{\# Total\ departures} \times Factor$ <p><i>Metrics for hazards vs. risk analysis</i></p> <ul style="list-style-type: none"> Percentage of hazards identified by risk analysis 		
	<p>5. Organize safety seminars or workshops</p> <ul style="list-style-type: none"> Hazards Consequences Risks Contributing factors Mitigation measures and how to implement them Lessons learned Safety recommendations New training methods 	<p>2023, 2024 and 2025</p>	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIA) and Accident Investigation entities if they are within the CAA Meteorological authorities 	<ul style="list-style-type: none"> Civil Aviation Authorities (CAAs) Accident Investigation Authorities (AIAs) and Accident Investigation entities if they are within the CAA 121 and 135 air operators, corporate air operators and general aviation large aeroplane operators Meteorological authorities Manufacturers' organisations ATC service providers RSOO CAST 	<p><i>Indicators</i></p> <ul style="list-style-type: none"> Number of seminars or workshops conducted in 2023, 2024 and 2025 Number of State participants attending the seminars or workshops each year 	Medium	

APPENDIX B

State safety report model



Contents

- Foreword
- Executive summary
- General statistics
- Summary of safety performance

Chapter 1: Performance of NASP goals and targets

Example:

Goals	Targets		Performance
Goal 1: Achieve a continuous reduction of safety risks	1.1	0.5 or less	0.38
...	1.2
Goal 2: Strengthen safety oversight capabilities of States	2.1	a) by 2024 – 75% EI b) by 2026 – 85% EI c) by 2030 – 95% EI	83% in 2024
...

Chapter 2: Occurrences (accidents, serious incidents and incidents) related to high-risk categories (HRCs)

Example:

HRC	MTOW > 5 700kg	MTOW < 5 700kg
HRC 1: Runway excursion (RE)		
...

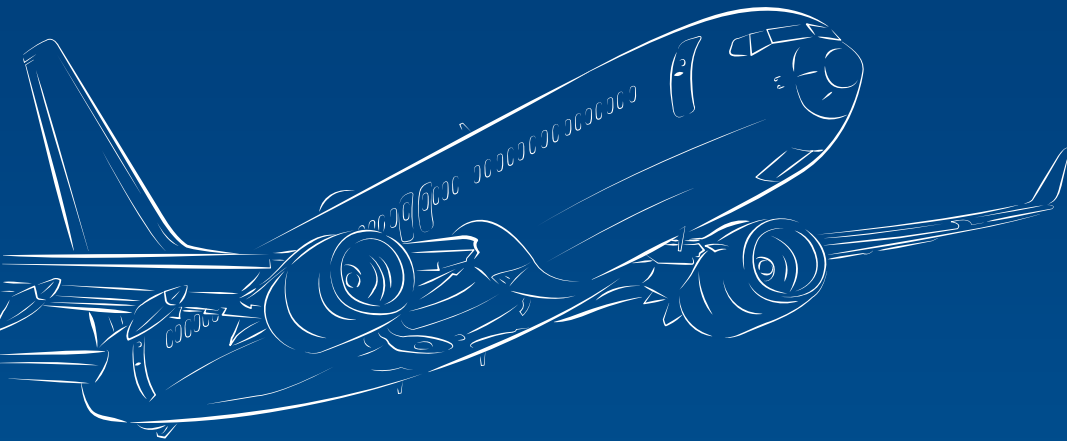
- Type of occurrence (accidents, serious incidents and incidents)
- Type of operation (scheduled, non-scheduled, general aviation, aerial work, etc.)
- Type of aeroplane (aeroplane, helicopter, glider, etc.)
- Number of fatalities

Chapter 3: Other occurrences monitored by the State, including drones, RPA, type of occurrence, type of operation, type of aeroplane, number of fatalities, etc.

Chapter 4: Risks and hazards identified by the State

APPENDIX C

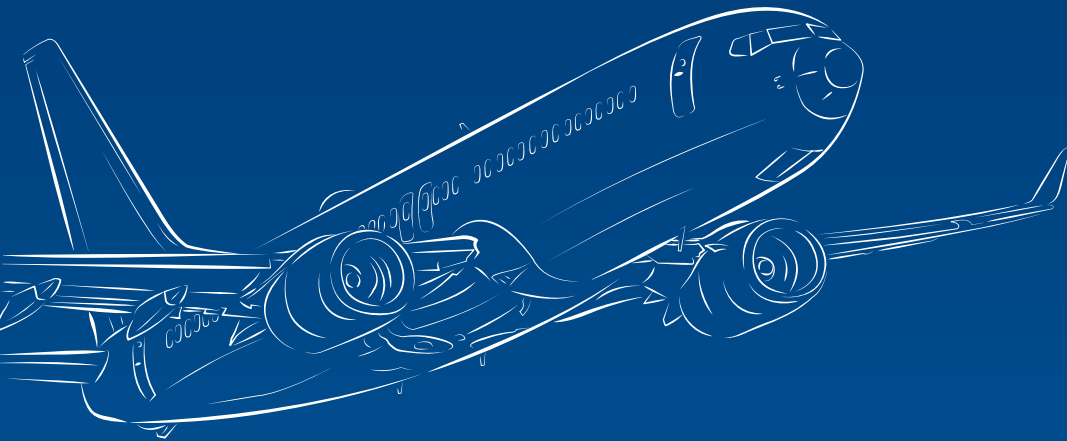
Reference applications and documents



- Annex 19 to the Convention on International Civil Aviation, last edition – *Safety management*
- Doc 9859, Fourth edition – *Safety management manual (SMM)*
- Doc 10131 – *Manual on the Development of Regional and National Aviation Safety Plans*
- Doc 10004 - *Global aviation safety plan (GASP)* in force
- USOAP CMA on-line framework
- ICAO iSTARS-3

APPENDIX D

Glossary



ADREP	Accident/incident data reporting
AGA	Aerodromes and ground aids
AIG	Aviation accident and incident investigation
AIR	Airworthiness
ANC	Air Navigation Commission
ANS	Air navigation services
ARCM	AIG Regional cooperation mechanism (South America)
ATM	Air traffic management
CAA	Civil aviation authority
CAP	Corrective action plan
CAR	Central America and the Caribbean
CE	Critical elements
CE-1	Primary aviation legislation
CE-2	Specific operating regulations
CE-3	State systems and functions
CE-4	Qualified technical personnel
CE-5	Technical guidance, instruments and provision of critical safety information
CE-6	Licensing, certification, clearance and/or approval obligations
CE-7	Oversight obligations
CE-8	Resolution of safety concerns
CMA	Continuous monitoring approach

ECCAIRS	European Coordination Centre for Accident and Incident Reporting Systems
EI	Effective implementation
FIR	Flight information regions
GANP	Global air navigation plan
GASP	Global Aviation Safety Plan
G-HRC	Global high-risk category
HRC	High-risk category
IATA	International Air Transport Association
ICVM	ICAO coordinated validation mission
iSTARS	Integrated Safety Trend Analysis and Reporting System
LEG	Primary aviation legislation and civil aviation regulations
NCMC	National continuous monitoring coordinator
OLF	On-line framework
OPS	Aircraft operations
ORG	Civil aviation Organization
PEL	Licensing and training
PQ	Protocol question
RAAC	Meeting of the civil aviation authorities
RASG	Regional aviation safety group
RASG-PA	Regional aviation safety group – Pan-America
RE	Runway excursion

RPA	Remotely piloted aircraft
RSOO	Regional safety oversight Organization
SAM	South American Region
SAMSP	South American safety plan
SARP	Standards and recommended practices
SD	Standard deviation
SDCPS	Safety data collection and processing system
SEI	Safety enhancement initiative
SMM	Safety management manual
SMS	Safety management system
SPI	Safety performance indicators
SRVSOP	Regional safety oversight cooperation system
SSP	State safety programme
USOAP	Universal safety oversight audit programme



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