

February 28, 2024

# ANSA SMS MANUAL

## SECOND EDITION



## 1 FOREWORD

ANSA is the air navigation service provider (ANSP) of Aruba, responsible for providing air traffic services within the Beatrix control zone.

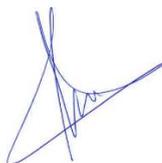
This ANSA SMS manual describes the following:

- a) safety policy and objectives;
- b) SMS requirements;
- c) SMS processes and procedures;
- d) accountability, responsibilities and authorities for SMS processes and procedures; and
- e) SMS implementation plan (roadmap). See appendix 1.



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## 4 DEFINITIONS

For all definitions see ICAO ANNEX 19 and ICAO DOC 9859 as well as ICAO DOC 4444.

## 5 ACRONYMS

AAA	Aruba Airport Authority
AIA	Aeronautical Information Affairs
AIO	Aeronautical Information Officer
AIS	Aeronautical Information Service
AMU	Apron Management Unit
ANSA	Air Navigation Services Aruba
ANSP	Air Navigation Service Provider
APA	Aruba Ports Authority
ARO	Air Traffic Services Reporting Office
ASMS	ANSA Safety Management System
ATC	Air Traffic Control
ATCO	Air Traffic Controller
ATM	Air Traffic Management
ATS	Air Traffic Services
CEO	Chief Executive Officer
CNS	Communications, Navigation, and Surveillance
DCAA	Department of Civil Aviation Aruba
DC-ANSP	Dutch Caribbean Air Navigation Service Provider
DMA	Departamento Meteorologico Aruba
DME	Distance Measuring Equipment
ICAO	International Civil Aviation Organization
ILS	Instrument Landing System
LOA	Letter of Agreement
MAIA	Manager Aeronautical Information Affairs
MATC	Manager ATC
MCAS	Manager CNS/ATM Systems
NOTAM	Notice to Airmen
SARPS	Standards and Recommended Practices
SATC	Supervisor ATC
SMS	Safety Management System
SOP	Standard Operating Procedure
SQO	Safety & Quality Officer
SRB	Safety Review Board
SRM	Safety Risk Management
VHF	Very High Frequency
VOR	VHF Omnidirectional Range

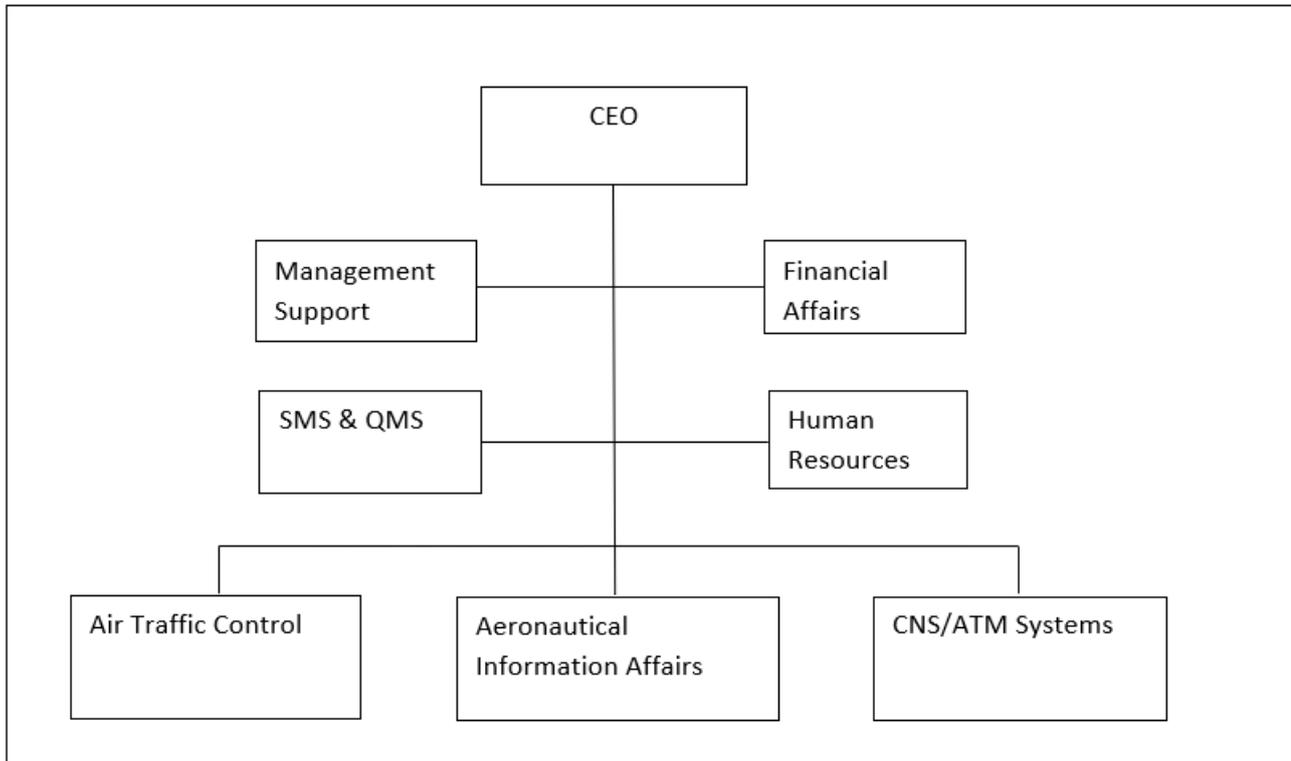
## 6 SMS REGULATORY REQUIREMENTS

With this manual ANSA aims to comply with the safety management requirements established in national regulations, ICAO ANNEX 19, ICAO DOC 9859 as well as ICAO DOC 4444 chapter 2 which contains the provisions and procedures regarding safety management of the air traffic services.

## 7 ORGANIZATIONAL STRUCTURE

The operational organizational structure is provided in Figure 1 below.

Figure 1 Organizational Structure ANSA



The CEO is the highest-ranking officer responsible for managing the overall operations of ANSA. The Air traffic control unit is headed by the MATC. The AIA unit is headed by the MAIA and the CNS/ATM systems unit by the MCAS.

## 8 SCOPE OF THE SMS

The ASMS addresses all ANSA's ATS activities within the Beatrix control zone and the Reina Beatrix International Airport of Aruba. These include all activities of the following units:

- The ATC unit.
- The AIA unit.
- The CNS/ATM Systems unit.

### 8.1 THE ATC UNIT

The ATC unit provides aerodrome control service to aerodrome traffic on the maneuvering area and all aircraft flying in the vicinity of the Beatrix airport and approach control service for arriving and or departing controlled flights.

ATC service is provided for the purpose of:

1. preventing collisions:
  - a) between aircraft, and
  - b) on the manoeuvring area between aircraft and obstructions; and
2. expediting and maintaining an orderly flow of air traffic.

### 8.2 THE AIA UNIT

The AIA unit is responsible for the provision of aeronautical data and aeronautical information necessary for the safety, regularity, and efficiency of air navigation. The ARO is a subunit of the AIA unit. The ARO is established for the purpose of receiving reports concerning air traffic services and flight plans submitted before departure.

### 8.3 THE CNS/ATM SYSTEMS UNIT

The CNS/ATM Systems unit is responsible for the commissioning, certification, and maintenance of all:

1. Voice and data communication networks for communication with aircrafts and other air traffic control centres, as well as for the exchange of air traffic management data.
2. Radio navigation systems for ATM includes the ILS and VOR/DME.
3. ATM surveillance and visualization systems comprises multilateration (MLAT) and automatic dependant surveillance broadcast (ADSB), data processing, as well as radar data visualization and preparation of the necessary data for use in air traffic coordination.

## 9 SAFETY POLICY AND OBJECTIVES

### 9.1 THE SIGNED SAFETY POLICY AND OBJECTIVES

At ANSA, our primary commitment is to ensure the safety of the services we provide and the overall aviation environment. We recognize that safety is paramount in every aspect of our operations and that the well-being of our employees, stakeholders, and the traveling public relies on our unwavering dedication to safety excellence.

#### **Our Commitment:**

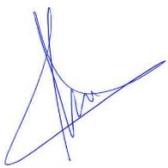
We are committed to implementing and maintaining an SMS that complies with ICAO Annex 19 standards and recommended practices. Our safety policy is underpinned by the following principles:

- 1. Leadership and Accountability:** We establish and nurture a positive/strong safety culture by ensuring that safety is everyone's responsibility, from the highest levels of management to the frontline staff.
- 2. Risk Management:** We systematically identify, assess, and mitigate safety risks associated with our operations. Our goal is to minimize the potential for accidents, incidents, and hazards.
- 3. Continuous Improvement:** We are dedicated to continually improve our safety performance through regular safety reviews, audits, and assessments. We actively seek opportunities to learn from incidents and from the analysis of data collected through our safety reporting system.
- 4. Compliance:** We commit to comply with all relevant international and national regulations, standards, and guidelines related to aviation safety. Our operations are aligned with the principles of ICAO Annex 19.
- 5. Communication:** We foster open and transparent communication to encourage the reporting of safety concerns, incidents, and hazards. We promote a non-punitive reporting environment to facilitate the free flow of safety-related information.
- 6. Training and Competency:** We provide our employees with the necessary training, tools, and resources to perform their tasks safely and effectively. We emphasize the importance of ongoing training to maintain a high level of competency.
- 7. Resources:** ANSA is fully committed to providing the necessary resources and support to ensure the successful implementation and maintenance of our SMS.

#### **Our Objectives:**

Our safety objectives are grounded in our commitment and our aspiration to continually improve our safety performance. These objectives include:

- Minimizing the risks associated with our activities through robust hazard identification and risk mitigation processes.
- Enhancing our safety reporting and investigation procedures to ensure that lessons learned from incidents are incorporated into our operations.
- Implementing safety performance indicators and monitoring systems to track our progress and identify areas for improvement.
- Promoting a positive safety culture among our employees through comprehensive training, communication, and continuous engagement.



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Date: February 28, 2024

February 28, 2024

## 9.2 DISTRIBUTION

The signed safety policy and objectives shall be disseminated to all operational personnel via AFAS. A signed and printed version will be framed and conspicuously displayed at all operation localities and at the ANSA headquarters. Additionally, a copy will be posted on the ANSA website.

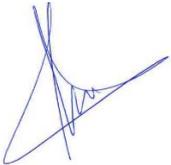
## 9.3 PROTECTION OF THE REPORTER

ANSA is committed to operating according to the highest safety standards.

To achieve this goal, it is imperative to have uninhibited reporting of all accidents, incidents, occurrences, hazards, risks, and other information that may compromise the safe conduct of our operations. To this end, every staff member is warmly encouraged to report any safety-related information.

Reporting is free of any form of reprisal. The main purpose of reporting is risk control and accident and incident prevention, not the attribution of blame. No action will be taken against any staff member who discloses a safety concern through the reporting system, unless such disclosure reveals, beyond any reasonable doubt, an illegal act, gross negligence, or a deliberate or willful disregard of regulations or procedures.

Our method for collecting, recording, and disseminating safety information guarantees the protection to the extent permissible by law, of the identity of those who report safety information.



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CEO ANSA

Date: February 28, 2024

## 10 SAFETY ACCOUNTABILITY AND RESPONSIBILITIES

### 10.1 CHIEF EXECUTIVE OFFICER

#### SAFETY ACCOUNTABILITIES:

- 1. Overall Safety Leadership:** The CEO is accountable for providing visible and strong safety leadership throughout the organization. This involves setting a clear tone at the top that emphasizes the importance of safety and encourages a positive safety culture.
- 2. Commitment to Safety Objectives:** The CEO is responsible for demonstrating commitment to safety objectives and ensuring they are aligned with ANSA's strategic goals. This includes allocating necessary resources to support safety initiatives.
- 3. Promoting a Just Culture:** The CEO shall champion a just culture where employees are encouraged to report safety concerns without fear of punitive actions by management and colleagues (see 8.2). This creates an environment where lessons can be learned from incidents and from the analysis of data collected through ANSA's safety reporting system.
- 4. Safety Performance Monitoring:** The CEO is accountable for regularly reviewing safety performance metrics and indicators. This involves monitoring safety trends, analyzing data, and ensuring that safety goals are being met.
- 5. Communication and Engagement:** The CEO shall communicate the importance of safety through regular interactions with employees at all levels. This includes addressing safety-related issues during company meetings, briefings, and other communication channels.
- 6. Alignment with Regulatory Requirements:** The CEO is responsible for ensuring that the ASMS complies with ICAO Annex 19 and any other relevant regulations and standards.

#### SAFETY RESPONSIBILITIES:

- 1. Establishing Safety Policies:** The CEO is responsible for establishing clear and comprehensive safety policies that outline ANSA's commitment to safety, its safety objectives, and its approach to managing safety risks.
- 2. Accountable Executive:** The CEO is the accountable executive and is therefore responsible for overseeing the implementation of the ASMS and ensuring its effectiveness.
- 3. Resource Allocation:** The CEO shall allocate sufficient resources, including personnel, training, technology, and budget, to support the effective implementation of the ASMS.
- 4. Risk Management Oversight:** The CEO shall oversee the organization's risk management processes, including the identification, assessment, and mitigation of safety risks. This involves ensuring that risk assessments are conducted, and appropriate actions are taken.
- 5. Emergency Response Planning:** The CEO is responsible for ensuring the development and maintenance of robust emergency response plans that address various contingencies and potential safety incidents.
- 6. Safety Promotion:** The CEO shall promote safety awareness and education throughout the organization. This may involve organizing safety campaigns, training sessions, and workshops.
- 7. Safety Reporting:** The CEO shall ensure that an effective safety reporting system is in place, allowing employees to report safety concerns, incidents, and hazards.

**8. Safety Reviews and Audits:** The CEO shall facilitate regular safety reviews and audits to assess the effectiveness of the ASMS and identify areas for improvement.

**9. Continuous Improvement:** The CEO is responsible for fostering a culture of continuous improvement by evaluating safety performance, analyzing lessons learned from incidents, and implementing corrective actions.

**10. External Stakeholder Engagement:** The CEO shall engage with relevant external stakeholders, such as regulatory authorities and industry partners, to promote safety collaboration and exchange of best practices.

In summary, the CEO's safety accountabilities and responsibilities within the ASMS framework involve providing strong safety leadership, aligning the organization with regulatory requirements, overseeing safety performance, allocating resources, promoting a positive safety culture, and driving continuous improvement in safety management practices.

## 10.2 SAFETY & QUALITY OFFICER

### SAFETY ACCOUNTABILITIES:

The SQO is the Safety Manager and as such acts as the focal point and is responsible for the development, administration, and maintenance of the ASMS. ANSA intends to assign two ATCOs to fulfill the role as Safety Manager combined with ATCO duties. Procedures to avoid (potential) conflict of interest shall be developed and implemented.

**1. SMS Implementation:** The Safety Manager is accountable for ensuring the effective implementation of the SMS across ANSA, encompassing all relevant departments and personnel.

**2. Safety Oversight:** The Safety Manager is responsible for overseeing the overall safety performance of the organization, monitoring safety indicators, and making informed recommendations to enhance safety.

**3. Safety Culture Promotion:** The Safety Manager is accountable for promoting and maintaining a positive safety culture throughout the organization, encouraging open reporting, learning from incidents, and fostering a proactive approach to safety.

**5. Safety Leadership:** The Safety Manager is accountable for providing leadership and guidance to all operational personnel, ensuring they are aligned with the safety objectives and principles of the organization.

### SAFETY RESPONSIBILITIES:

**1. Safety Policy Development:** The Safety Manager shall develop and communicate the organization's safety policy, outlining the commitment to safety and the objectives of the ASMS.

**2. Safety Risk Management:** The Safety Manager is responsible for the identification, assessment, and mitigation of safety risks across the organization.

**3. Safety Performance Monitoring:** The Safety Manager shall establish and implement methods for monitoring safety performance, collecting safety data, and analyzing trends to identify potential hazards.

**4. Safety Reporting and Investigation:** The Safety Manager is accountable for ensuring that safety concerns and incidents are reported, investigated, and analyzed to identify root causes and implement corrective actions.

**5. Safety Audits and Assessments:** The Safety Manager shall coordinate safety audits and assessments, both internal and external, to evaluate the effectiveness of safety measures and identify areas for improvement.

- 6. Safety Communication:** The Safety Manager shall ensure effective communication of safety information across the organization, including safety alerts, notices, and lessons learned.
- 7. Safety Training and Awareness:** The Safety Manager is responsible for coordinating safety training and awareness programs to ensure that all personnel understand their roles in the ASMS and safety protocols.
- 8. Contingency Planning:** The Safety Manager shall contribute to the development of contingency plans, to ensure the safe continuity of provided services and to ensure that ANSA is prepared to manage unexpected equipment degradations and adverse circumstances.
- 9. Continuous Improvement:** The Safety Manager shall lead and support continuous improvement initiatives by analyzing safety data, identifying opportunities for enhancement, and ensuring that corrective actions are implemented.
- 10. Safety Promotion:** The Safety Manager is responsible for promoting safety initiatives, recognizing safety achievements, and fostering an environment where safety is a priority for all personnel.
- 11. Safety Coordination:** The Safety Manager shall collaborate with various departments, managers, and stakeholders to ensure a holistic and coordinated approach to safety management.
- 12. SMS Documentation:** The Safety Manager is accountable for maintaining accurate and up-to-date documentation of safety policies, procedures, guidelines, and reports.
- 13. Change Management:** The Safety Manager shall ensure that changes to procedures, processes, or systems are assessed for their potential impact on safety and are managed appropriately.
- 14. Regulatory Compliance:** The Safety Manager is responsible for ensuring that the ASMS is compliant with ICAO Annex 19 and other relevant regulations and standards.

In summary, the Safety Manager's safety accountabilities and responsibilities within the ASMS framework encompass SMS implementation, safety oversight, safety culture promotion, regulatory compliance, safety leadership, risk management, performance monitoring, reporting, audits, training, continuous improvement, coordination, and change management. By fulfilling these roles, the Safety Manager significantly contributes to the overall safety and effectiveness of ANSA.

## 10.3 UNIT MANAGERS

### 10.3.1 MANAGER ATC

#### **SAFETY ACCOUNTABILITIES:**

- 1. Operational Safety Oversight:** The MATC is accountable for the operational safety of ATC services provided by the unit. This includes ensuring that safety measures are integrated into daily operations and adhered to by ATC staff.
- 2. ATC Staff Competency:** The MATC is accountable for ensuring that ATC personnel are adequately trained, qualified, and competent to perform their duties effectively and safely.
- 3. Safety Culture:** The MATC plays a critical role in fostering a positive safety culture within the ATC unit. This involves promoting open communication, reporting of safety concerns, and a non-punitive environment for sharing safety-related information.
- 4. Emergency procedures:** The MATC is accountable for establishing and maintaining effective procedures to ensure the safe and effective handling of aircraft in emergency situations.

**5. Performance Monitoring:** The MATC shall monitor and assess the operational performance of the ATC unit in terms of safety, efficiency, and compliance with established procedures.

**6. Risk Management:** The MATC is accountable for the identification, assessment, and management of safety risks associated with ATC operations within the unit.

#### **SAFETY RESPONSIBILITIES:**

**1. Procedures and Protocols:** The MATC shall ensure that appropriate ATC procedures, protocols, and guidelines are in place and followed by ATC personnel to ensure safe and efficient ATM.

**2. Training and Competency:** The MATC is responsible for coordinating and overseeing the training, qualification, and continuous professional development of ATC staff to maintain a high level of competency.

**3. Shift Planning and Staffing:** The MATC shall ensure that ATC operations are adequately staffed during all shifts, considering factors such as fatigue management, workload, and peak traffic periods.

**4. Incident Reporting and Investigation:** The MATC shall ensure that incidents and safety occurrences are reported, investigated, and analyzed to identify root causes and preventive measures.

**5. Collaboration:** The MATC shall collaborate with other units within ANSA, such as AIA, SQ, and CNS/ATM, to share safety-related information and address cross-functional safety concerns.

**6. Continuous Improvement:** The MATC shall actively participate in the continuous improvement of safety practices by implementing lessons learned from incidents, conducting safety assessments, and applying best practices.

**7. Safety Promotion:** The MATC shall promote safety awareness and education among ATC staff through regular safety briefings, workshops, and training sessions.

**8. Compliance Monitoring:** The MATC is responsible for ensuring that the ATC unit operates in compliance with relevant regulations, standards, and procedures, including those outlined in this manual.

**9. Safety Audits and Reviews:** The MATC shall collaborate and participate in safety audits and reviews of ATC operations, identifying potential risks, and implementing measures to mitigate them.

In summary, the MATC's safety accountabilities and responsibilities within the ASMS framework encompass operational safety oversight, staff competency, safety culture promotion, emergency response, risk management, and ensuring compliance with established procedures and regulations. By effectively fulfilling these roles, the MATC contributes significantly to the overall safety of ATC operations within ANSA.

### **10.3.2 MANAGER CNS/ATM SYSTEMS**

#### **SAFETY ACCOUNTABILITIES:**

**1. CNS/ATM System Safety:** The MCAS is accountable for ensuring the safety of communication, navigation, surveillance, and ATM systems, contributing to the overall safety of air navigation.

**2. Operational Safety Oversight:** The MCAS is accountable for overseeing the safety of CNS/ATM operations and systems, ensuring they are properly maintained, monitored, and compliant with safety regulations.

**3. Emerging Technologies:** The MCAS is accountable for managing the integration and implementation of new and emerging technologies in communication, navigation, and surveillance, ensuring their safety and interoperability.

**4. CNS/ATM Staff Competency:** The MCAS is accountable for ensuring that CNS/ATM personnel are adequately trained, qualified, and competent to perform their duties effectively and safely.

**SAFETY RESPONSIBILITIES:**

**1. System Reliability:** The MCAS shall ensure the reliability and availability of CNS/ATM systems, minimizing the risk of system failures or disruptions that could impact ATM.

**2. CNS/ATM systems Maintenance Procedures:** The MCAS shall establish and maintain procedures for the safe and efficient maintenance of communication, navigation, surveillance, and ATM systems

**3. Cybersecurity:** The MCAS shall address cybersecurity concerns, ensuring that CNS/ATM systems are adequately protected against cyber threats and unauthorized access.

**4. Collaboration:** The MCAS shall collaborate with other units within ANSA and relevant stakeholders to ensure the seamless integration of CNS/ATM systems and enhance safety.

**5. Safety Audits and Reviews:** The MCAS shall collaborate and participate in safety audits and reviews of CNS/ATM operations, identifying potential risks, and implementing measures to mitigate them.

**6. Quality Assurance:** The MCAS shall establish and maintain a quality assurance program to monitor the safety and performance of CNS/ATM systems.

**7. Emergency Management:** The MCAS shall effectively respond to emergencies related to CNS/ATM systems and support relevant authorities during critical incidents.

**8. Data Security:** The MCAS is responsible for ensuring the security and confidentiality of CNS/ATM data systems to protect against unauthorized access and data breaches. A cybersecurity plan shall be developed and implemented.

**9. Continuous Improvement:** The MCAS shall actively participate in safety improvement initiatives by analyzing safety-related data<sup>1</sup>, participating in safety audits, and implementing corrective actions.

**10. Safety Reporting:** The MCAS is responsible for ensuring that CNS/ATM personnel promptly report safety concerns, incidents, and hazards through established reporting channels within the ASMS.

In summary, the MCAS's safety accountabilities and responsibilities within the ASMS framework encompass CNS/ATM system safety, operational oversight, data integrity, cybersecurity, collaboration, safety assessments, emergency management, quality assurance, training, and continuous improvement. By fulfilling these roles, the MCAS contributes significantly to the overall safety of ANSA.

### 10.3.3 MANAGER AIA

**SAFETY ACCOUNTABILITIES:**

**1. AIS Operational Safety:** The MAIA is accountable for aeronautical information services to airspace users, supporting safe flight operations.

**2. Data Accuracy and Integrity:** The MAIA is accountable for maintaining the accuracy, consistency, and integrity of aeronautical information, ensuring that it meets regulatory standards.

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<sup>1</sup> Information on actual or potential safety hazards or deficiencies related to CNS/ATM and other safety significant systems and equipment.

**3. Timely Dissemination:** The MAIA is accountable for ensuring that aeronautical information is provided to airspace users in a timely manner, allowing pilots and operators to plan and execute flights safely.

**4. AIA Personnel Competency:** The MAIA is accountable for ensuring that AIA personnel are trained, qualified, and competent to perform their duties accurately and safely.

#### **SAFETY RESPONSIBILITIES:**

**1. AIS Procedures and Publications:** The MAIA shall establish, maintain, and update procedures, and publications related to aeronautical information in accordance with ICAO standards.

**2. NOTAM management:** The MAIA is responsible for managing the issuance and dissemination of NOTAMs to communicate critical information that affects flight safety.

**3. Data Quality Assurance:** The MAIA is accountable for implementing quality control measures to verify the accuracy, consistency, and completeness of aeronautical data and publications.

**4. Charting and Mapping:** The MAIA shall oversee the production and distribution of aeronautical charts, maps, and navigation aids necessary for safe navigation.

**5. Safety Audits and Reviews:** The MAIA shall collaborate and participate in safety audits and reviews of AIA operations, identifying potential risks, and implementing measures to mitigate them.

**6. Continuous Improvement:** The MAIA shall actively contribute to the improvement of safety practices by analyzing safety reports, participating in safety audits, and implementing corrective actions.

**7. AIS Data Security:** The MAIA shall monitor the security and confidentiality of aeronautical data systems, protecting against unauthorized access and cyber threats.

**8. Coordination and Collaboration:** The MAIA shall collaborate with other aviation entities, such as aircraft operators, ATC, airport operators, and meteorological services, to exchange safety-related information and ensure coordination.

**9. Safety Reporting:** The MAIA is responsible for ensuring that AIA personnel report safety concerns, incidents, and hazards through established reporting mechanisms within the SMS.

In summary, the MAIA's safety accountabilities and responsibilities within the SMS framework encompass ensuring accurate and timely provision of aeronautical information, data quality assurance, NOTAM management, personnel competency, and continuous improvement. By fulfilling these roles, the MAIAs contribute significantly to the overall safety of ANSA.

## **10.4 OPERATIONAL PERSONNEL**

### **10.4.1 SUPERVISOR ATC**

#### **SAFETY ACCOUNTABILITIES:**

**1. Operational Oversight:** The SATC is accountable for the overall safety and efficiency of ATC operations within their assigned area of responsibility.

**2. Supervisory Leadership:** The SATC holds a leadership role in promoting and maintaining a positive safety culture among ATC staff under their supervision.

**3. Procedural Compliance:** The SATC is accountable for enforcing compliance with established ATC policies and procedures.

**4. Situational Awareness:** The SATC is accountable for maintaining situational awareness across their operational area, ensuring timely detection and response to potential safety hazards.

**SAFETY RESPONSIBILITIES:**

**1. Supervision and Training:** The SATC is responsible for overseeing the performance of ATC personnel and identifying training needs.

**2. Shift Management:** The SATC shall manage shift assignments, breaks, and rotation schedules to mitigate the risk of controller fatigue and always ensure the availability of qualified controllers (minimum staffing).

**3. Conflict Resolution:** The SATC is responsible for resolving conflicts or disputes among ATC staff and promoting a harmonious working environment.

**4. Incident/hazard Reporting:** The SATC is responsible for ensuring that ATC personnel report safety concerns, incidents, hazards through established reporting mechanisms within the ASMS.

**5. Communication:** The SATC shall facilitate effective communication within the ATC team.

**6. Shift Handover:** The SATC is responsible for ensuring smooth and accurate shift handovers, ensuring that essential information is communicated between shifts to maintain safe operations. Shift handover procedures shall be reviewed by MATC.

**7. Emergency Management:** The SATC is responsible for coordinating and directing emergency response efforts in case of incidents, accidents, or any other emergency situations.

**8. Safety Audits and Assessments:** The SATC shall participate in safety audits, assessments, and reviews to evaluate the effectiveness of safety measures and identify areas for improvement.

**9. Collaboration:** ATCOs shall collaborate with other ATC units, departments, and stakeholders to ensure seamless communication, coordinate handovers, and address safety-related issues.

In summary, the ATC Supervisor's safety accountabilities and responsibilities within the ASMS framework encompass operational oversight, leadership in promoting safety culture, emergency management, effective supervision of ATC personnel and identification of their training needs. By fulfilling these roles, ATC Supervisors contribute significantly to the overall safety of ATC operations within ANSA.

#### 10.4.2 AIR TRAFFIC CONTROLLER

**SAFETY ACCOUNTABILITIES:**

**1. Operational Safety:** ATCOs are accountable for ensuring the safe and efficient separation and movement of aircraft under their control. They shall make decisions that prioritize safety while maintaining an expeditious flow of air traffic.

**2. Compliance with Procedures:** ATCOs are accountable for following established ATC policies, procedures, and guidelines provided by ANSA. Adherence to these procedures contributes to safe operations.

**3. Situational Awareness:** ATCOs shall maintain a high level of situational awareness by continuously monitoring radar displays, communication channels, and other relevant sources of information to detect potential conflicts or hazards.

**4. Communication:** ATCOs are accountable for clear and accurate communication with pilots, other ATC units, and relevant personnel. Effective communication is essential for coordination and avoiding misunderstandings.

**5. Conflict Resolution:** ATCOs are accountable for identifying and resolving conflicts or potential conflicts between aircraft under their jurisdiction. This involves providing clear instructions to pilots to ensure safe separation.

#### **SAFETY RESPONSIBILITIES:**

**1. Monitoring Traffic:** ATCOs shall continuously monitor the movement and positions of aircraft within their assigned airspace to ensure safe separation and adherence to assigned flight paths.

**2. Weather Awareness:** ATCOs shall be aware of weather conditions that may impact aircraft operations and provide relevant information to pilots.

**3. Emergency Situations:** In the event of emergencies, ATCOs shall provide guidance and support to pilots to ensure a safe outcome. This may involve assisting in emergency landings, diverting aircraft, or coordinating with relevant authorities.

**4. Aircraft Performance:** ATCOs shall consider the performance capabilities of different aircraft types when providing instructions, especially during takeoff, landing, and other critical phases of flight.

**5. Managing Workload:** ATCOs shall manage their workload effectively to prevent fatigue and maintain focus. Position rotation procedures shall be developed and implemented.

**6. Reporting Safety Concerns:** ATCOs shall promptly report any safety concerns, incidents, or deviations from procedures through the established reporting channels within the ASMS.

**7. Continuous Training:** ATCOs have a responsibility to participate in continuous training and professional development to enhance their skills, stay updated on procedures, and improve safety awareness.

**8. Collaboration:** ATCOs shall collaborate with other ATC units, departments, and stakeholders to ensure seamless communication, coordinate handovers, and address safety-related issues.

**9. Managing Complexity:** ATCOs shall adapt to changing traffic volumes, weather conditions, and other factors that contribute to the complexity of their workload while maintaining safety.

**10. Fatigue Management:** ATCOs are responsible for managing their own fatigue levels and adhering to fatigue management practices to ensure they are alert and fit for duty.

In summary, the ATCOs' safety accountabilities and responsibilities within the ASMS framework revolve around operational safety, compliance with procedures, effective communication, conflict resolution, situational awareness, and proactive management of potential safety risks. By fulfilling these roles, ATCOs contribute significantly to the overall safety of ATC operations within ANSA.

### 10.4.3 AIS OFFICER

#### SAFETY ACCOUNTABILITIES:

- 1. Data Accuracy:** The AIS officer is accountable for the accuracy and currency of aeronautical information and data, including charts, NOTAMs, and other relevant publications. Accurate information is essential for safe flight operations.
- 2. Procedural Compliance:** The AIS officer shall adhere to established procedures and guidelines for the collection, dissemination, and management of aeronautical information, ensuring compliance with international standards.

#### SAFETY RESPONSIBILITIES:

- 1. AIS Data Management:** The AIS officer is responsible for the collection, organization, and maintenance of aeronautical information, ensuring it is readily accessible to airspace users.
- 2. Data Verification:** Before publishing or disseminating aeronautical information, the AIS officer shall conduct rigorous checks to verify its accuracy and currency.
- 3. NOTAM Handling:** The AIS officer shall promptly issue and cancel NOTAMs related to airspace conditions, airport facilities, and other relevant information to notify pilots of potential hazards or changes.
- 4. Chart Production:** The AIS officer is involved in the review and distribution of aeronautical charts, including approach plates and enroute charts, ensuring they are up to date and accurate.
- 5. Compliance with AIS Manuals:** The AIS officer shall strictly follow established procedures outlined in AIS manuals.
- 6. Data Communication:** The AIS officer is responsible for efficiently disseminating aeronautical information to appropriate stakeholders, including ATCOs, pilots, and aviation organizations.
- 7. Safety Reporting:** Any discrepancies or errors in aeronautical information shall be promptly reported through the organization's safety reporting system, contributing to safety data collection and analysis.
- 8. Coordination:** The AIS officer shall collaborate with other units within ANSA, such as ATC and Safety & Quality unit, to address safety-related issues and promote a culture of safety across the organization.
- 9. Continuous Training:** The AIS officer shall engage in continuous training and professional development to stay updated on changes in regulations, procedures, and technology relevant to AIS operations.
- 10. Compliance:** The AIS officer shall ensure compliance with AIA manual and ICAO SARPS
- 11. Safety Audits and Reviews:** Participating in safety audits and reviews to assess the effectiveness of AIS processes and identify areas for improvement.
- 12. Data Protection:** Ensuring the confidentiality and integrity of aeronautical information, safeguarding it from unauthorized access or tampering.

In summary, the AIS officer's safety accountabilities and responsibilities within the ASMS framework revolve around data accuracy, procedural compliance, safety reporting, data management, NOTAM handling, chart production (if applicable), communication, safety reporting, coordination, continuous training, compliance with regulations, safety audits, and data protection. These responsibilities are essential for providing accurate and timely aeronautical information critical to aviation safety.

#### 10.4.4 AERONAUTICAL INFORMATION OFFICER

##### SAFETY ACCOUNTABILITIES:

- 1. Flight Plan Accuracy:** The AIO is accountable for ensuring the accuracy and completeness of flight plans, as well as associated data, to support safe and efficient ATM.
- 2. Timely Processing:** The AIO is responsible for processing flight plans in a timely manner, ensuring that airspace users receive necessary information before departure.
- 3. Aircraft Separation:** The AIO is accountable for managing flight plan data to help maintain appropriate aircraft separation in accordance with ATC procedures.

##### SAFETY RESPONSIBILITIES:

- 1. Flight Plan Processing:** The AIO shall accurately process flight plan information, including route details, equipment capabilities, and any other relevant data provided by the aircraft operator.
- 2. Route Planning:** The AIO shall assist with route planning by considering airways, waypoints, weather conditions, relevant NOTAMs, and airspace restrictions to optimize safe and efficient flight paths.
- 3. Data Quality Control:** The AIO is accountable for conducting quality control checks to verify the accuracy, consistency, and integrity of flight plan data.
- 4. Emergency Handling:** The AIO shall be prepared to handle emergency situations and promptly communicate relevant information to ATC and other relevant entities.
- 5. Communication:** The AIO shall effectively communicate with ATC, pilots, and other aviation entities to ensure that relevant flight plan information is properly transmitted and received.
- 6. Data Security:** The AIO is responsible for ensuring the security and confidentiality of flight plan data to protect against unauthorized access and data breaches.
- 7. Coordination:** The AIO shall coordinate with other departments, such as ATC, AMU, DC-ANSP ARO/AIS, to exchange safety-related information and ensure seamless operations.
- 8. Continuous Improvement:** The AIO shall actively participate in safety improvement initiatives by participating in safety audits and implementing corrective actions.
- 9. Safety Reporting:** The AIO is responsible for promptly reporting safety concerns through established reporting channels within the ASMS.
- 10. NOTAM Handling:** The AIO shall promptly issue and cancel NOTAMs related to airspace conditions, airport facilities, and other relevant information to notify pilots of potential hazards or changes.

In summary, the AIO safety accountabilities and responsibilities within the ASMS framework encompass accuracy of flight plans, timely processing, data integrity, coordination, communication, NOTAM integration, emergency handling, and continuous improvement. By fulfilling these roles, the AIOs contribute significantly to the overall safety of flight operations within ANSA.

#### 10.4.5 CNS/ATM TECHNICIAN

##### SAFETY ACCOUNTABILITIES:

- 1. System Maintenance Safety:** CNS/ATM Technicians are accountable for ensuring the safety and integrity of communication, navigation, surveillance, and ATM systems under their care.
- 2. Maintenance Quality:** The CNS/ATM Technicians are accountable for maintenance and availability of CNS/ATM systems to support safe and efficient ATM.

##### SAFETY RESPONSIBILITIES:

- 1. Maintenance Planning:** CNS/ATM Technicians shall contribute to the planning and scheduling of maintenance activities for CNS/ATM systems to minimize disruptions and ensure continuous safety and functionality.
- 2. Safety Inspections:** The CNS/ATM Technicians shall assist with safety inspections, assessments, and audits of CNS/ATM systems to identify potential hazards and mitigate risks.
- 3. Preventive Maintenance:** CNS/ATM Technicians shall implement preventive maintenance measures to proactively address potential issues and prevent system failures.
- 4. Corrective Maintenance:** In emergency situations, CNS/ATM Technicians shall respond promptly to address system failures and restore operational safety.
- 5. Data Integrity:** The CNS/ATM Technicians are accountable for maintaining the integrity and accuracy of CNS/ATM systems during maintenance procedures.
- 6. Cybersecurity Measures:** CNS/ATM Technicians shall adhere to cybersecurity measures and guidelines to ensure the security of CNS/ATM systems.
- 7. Quality Control:** CNS/ATM Technicians shall implement quality control checks during maintenance tasks to ensure that systems are restored to proper working order.
- 8. Documentation:** CNS/ATM Technicians are responsible for the accurate documentation of maintenance activities, findings, and repairs.
- 9. Emergency Management:** CNS/ATM Technicians shall effectively respond to emergencies related to CNS/ATM systems and support relevant authorities during critical incidents.
- 10. Continuous Improvement:** The CNS/ATM Technicians shall actively participate in safety improvement initiatives by analyzing maintenance data, participating in safety audits, and implementing corrective actions.
- 11. Safety Reporting:** CNS/ATM Technicians shall promptly report safety concerns, incidents, and hazards through established reporting channels within the ASMS.
- 12. Collaboration:** CNS/ATM Technicians shall collaborate with ATC, AIA and relevant stakeholders to ensure the seamless integration and safe operation of CNS/ATM systems.

In summary, the CNS/ATM Technicians' safety accountabilities and responsibilities within the SMS framework encompass system maintenance safety, maintenance quality, planning and scheduling, safety inspections, preventive maintenance, emergency repairs, data integrity, cybersecurity measures, quality control, documentation, training, emergency management, continuous improvement, and collaboration. By fulfilling these roles, CNS/ATM Technicians contribute significantly to the overall safety of ANSA.

## 10.5 SAFETY REVIEW BOARD

The SRB plays a crucial role in the ASMS to ensure compliance with ICAO Annex 19 and to promote continuous safety improvement. The SRB is responsible for reviewing safety-related activities, incidents, and safety data to make informed decisions about safety enhancements. This high-level committee considers strategic matters of safety in support of the CEO. The SRB is chaired by the CEO and is composed of the MATC and the SQO. The MCAS and MAIA may be invited to join if deemed necessary. Here are the key tasks and responsibilities of the SRB:

- 1. Review Safety Reports:** The SRB shall review safety reports, including hazard reports, incident reports, investigation reports and safety audits and shall analyze investigation findings.
- 2. Assess Safety Performance:** The SRB shall annually assess the safety performance of ANSA. This involves examining safety metrics, indicators, safety performance data and overall effectiveness of safety risk mitigation strategies to identify trends, patterns, and areas requiring improvement.
- 3. Determine Safety Actions:** Based on the review of safety reports and the assessment of safety performance the SRB shall determine actions to be taken for safety improvements. These actions may include changes to procedures, equipment, training, or other safety-related measures.
- 4. Monitor Implementation:** The SRB shall monitor the implementation of safety-related recommendations by relevant departments or units. This ensures that proposed safety enhancements are effectively put into practice.
- 5. Review Contingency Plans:** The SRB shall annually review and assess the effectiveness of contingency plans and procedures.
- 6. Evaluate Safety Culture:** The SRB shall annually assess the safety culture within ANSA, looking at factors such as reporting culture, communication, and the organization's commitment to safety. This evaluation helps identify opportunities for cultural improvements.
- 7. Coordinate Safety Initiatives:** The SRB shall coordinate safety-related initiatives and programs within ANSA, fostering collaboration between the operational units and promoting a unified approach to safety management.
- 8. Review Safety Policies:** The SRB shall periodically review and update safety policies and objectives to ensure they remain aligned with ICAO Annex 19 and ANSA's safety goals.
- 9. Provide Guidance:** The SRB can offer guidance and support to safety-related activities, including the development of safety plans, safety assessments, and safety training programs.
- 10. Ensure Compliance:** The SRB shall ensure that ANSA is compliant with ICAO Annex 19 and other relevant regulations and standards related to safety management.
- 11. Document Decisions:** The SRB shall maintain records of its meetings, decisions, and actions taken. Proper documentation helps in tracking safety-related activities and ensuring accountability.
- 12. Promote Positive Safety Culture:** The SRB's shall promote a positive safety culture within ANSA by proactively addressing safety issues, monitoring progress, and adapting safety measures as needed.

These tasks collectively contribute to the SRB's role in overseeing and enhancing the safety management efforts of ANSA, aligning with the requirements of ICAO Annex 19.

## 11 SAFETY REPORTING

### 11.1 SCOPE

The ANSA safety reporting program is designed to facilitate the collection of information on all reportable incidents and actual or potential safety hazards or deficiencies related to the provision of ATS, including route structures, procedures, communications, navigation and surveillance systems, controller workloads as well as failures or degradations of ATS systems, including communications, navigation, surveillance systems and other safety significant systems and equipment. The safety reporting program covers all ANSA's operational units and consists of a mandatory as well as a voluntary program.

### 11.2 MANDATORY REPORTING PROGRAM

All ATC staff shall report by the end of the shift any accident, incident and other safety related occurrence mentioned in this paragraph. If reporting by the end of the shift is not feasible a report shall be submitted as soon as possible but not later than 72 hours.

The following occurrences shall be reported:

#### 11.2.1 AIRCRAFT-RELATED OCCURRENCES

- (1) A collision or a near collision on the ground or in the air, between an aircraft and another aircraft, terrain, or obstacle<sup>2</sup>, including near-controlled flight into terrain (near CFIT).
- (2) Separation minima infringement<sup>3</sup>.
- (3) Inadequate separation<sup>4</sup>.
- (4) ACAS/ TCAS RAs.
- (5) Wildlife strike including bird strike.
- (6) Runway or taxiway excursion.
- (7) Actual or potential runway or taxiway incursion.
- (8) Final Approach and Take-off Area (FATO) incursion.
- (9) Aircraft deviation from ATC clearance.
- (10) Aircraft deviation from applicable air traffic management (ATM) regulation:
  - (i) aircraft deviation from applicable published ATM procedures;
  - (ii) airspace infringement including unauthorized penetration of airspace;

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<sup>2</sup> Obstacle includes vehicle.

<sup>3</sup> This refers to a situation in which prescribed separation minima were not maintained between aircraft or between aircraft and airspace to which separation minima is prescribed.

<sup>4</sup> In the absence of prescribed separation minima, a situation in which aircraft were perceived to pass too close to each other for pilots to ensure safe separation.

(iii) deviation from aircraft ATM-related equipment carriage and operations.

(11) Call sign confusion related occurrences.

(12) Missed approaches.

### 11.2.2 DEGRADATION OR TOTAL LOSS OF SERVICES OR FUNCTIONS

(1) Inability to provide ATM services or to execute ATM functions:

(i) inability to provide air traffic services or to execute air traffic services functions;

(ii) inability to provide airspace management services or to execute airspace management functions;

(iii) inability to provide air traffic flow management and capacity services or to execute air traffic flow management and capacity functions.

(2) Missing or significantly incorrect, corrupted, inadequate or misleading information from any support service<sup>5</sup>, including relating to poor runway surface conditions.

(3) Failure of communication service.

(4) Failure of surveillance service.

(5) Failure of data processing and distribution function or service.

(6) Failure of navigation service.

(7) Failure of ATM system security which had or could have a direct negative impact on the safe provision of service.

(8) Significant ATS sector/position overload leading to a potential deterioration in service provision.

(9) Incorrect receipt or interpretation of significant communications, including lack of understanding of the language used, when this had or could have a direct negative impact on the safe provision of service.

(10) Prolonged loss of communication with an aircraft or with other ATS units.

### 11.2.3 OTHER OCCURRENCES

(1) Declaration of an emergency ('Mayday' or 'PAN' call).

(2) Significant external interference with Air Navigation Services (for example radio broadcast stations transmitting in the FM band, interfering with ILS, VOR and communication).

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<sup>5</sup> For example: air traffic service (ATS), automatic terminal information service (ATIS), meteorological services, navigation databases, maps, charts, aeronautical information service (AIS), manuals.

- (3) Interference with an aircraft, an ATS unit or a radio communication transmission including by firearms, fireworks, flying kites, laser illumination, high-powered lights lasers, Remotely Piloted Aircraft Systems, model aircraft or by similar means.
- (4) Fuel dumping.
- (5) Bomb threat or hijack.
- (6) Fatigue impacting or potentially impacting the ability to perform safely the air navigation or air traffic duties.
- (7) Any occurrence where the human performance has directly contributed to or could have contributed to an accident or a serious incident.

In addition to the above, the following occurrences are mandatory to report:

- 1) All coordination related incidents.
- 2) Faulty procedures.
- 3) Noncompliance with procedures (SOP, LOA etc).

The MATC shall ensure that exact copies of all reports mentioned in paragraph 11.2 are immediately forwarded to the DCCA.

#### 11.2.4 ACCOUNTABILITY

The ATCO involved in an occurrence as stated in paragraph 11.2 shall report this through the mandatory safety reporting program. The SATC or in his or her absence the chief of the watch is responsible for the compliance with this procedure.

### 11.3 VOLUNTARY SAFETY REPORTING PROGRAM

The key objective of ANSA's voluntary safety reporting program is to enhance the safety of ANSA's activities through the collection of reports on actual or potential safety deficiencies that would otherwise not be reported through the mandatory reporting program described in paragraph 11.2. Voluntary safety reporting systems allow for the reporting of latent conditions, such as inappropriate safety procedures or regulations, human error, etc.

This reporting program is a voluntary and non-punitive, incident and hazard reporting system. It provides a channel for the voluntary reporting of aviation incidents or hazards relevant to ANSA's aviation activities. The voluntary safety reporting program covers all areas related to the activities of ANSA.

Reporters who wish to remain anonymous should submit a report via [ANSA.AW](https://ansa.aw)

### 11.4 HOW TO SUBMIT A REPORT

#### 11.4.1 ATC UNIT

All ATC personnel shall follow the following procedures.

1. Fill in the corresponding report form, which is available on all desktops and ATC SharePoint.
2. Load the completed report form in the corresponding tab in AFAS.
  - a. For all aircraft emergencies, bomb threats, hijack etc., use the Emergency tab.
  - b. For the reporting of all other mandatory safety related occurrences, use the Incident report tab.

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- c. For all voluntary reports, use the Hazard and general report tab.
3. Digitally sign the report through the AFAS authentication method and submit.

The reporting forms and the AFAS workflow shall be updated to reflect this procedural change.

#### 11.4.2 AIA UNIT

All AIA personnel shall follow the following procedures.

1. Fill in the AIA general report form, which is available on the AFAS portal.
2. The report shall be digitally signed through the AFAS authentication method and submitted.

#### 11.4.3 CNS/ATM SYSTEMS UNIT

When notified or having firsthand knowledge of an unscheduled facility interruption or malfunctioning, CNS/ATM Technicians shall promptly:

- a. Inform the User (ATC and/or AIA and/or AMU) of the facility interruption or malfunctioning (if not reported by the User).
- b. Inform MCAS.
- c. Report the interruption or malfunctioning by filling in a problem report form and send to MCAS by email. The problem report form and instructions for filling in the form are included in appendix 5 of the CNS/ATM Systems Manual.
- d. Digitally sign the report through the AFAS authentication method and submit.

#### 11.4.4 SAFETY INFORMATION SHARING

Relevant de-identified reports and extracts may be shared with external aviation stakeholders such as AAA and DC-ANSP as deemed appropriate. This will enable all concerned personnel and units within ANSA as well as appropriate external aviation stakeholders to review their own operations and support the improvement of aviation safety.

#### 11.4.5 CONTACTING THE SAFETY & QUALITY OFFICER

All ANSA personnel are welcome to call the SQO to enquire about the safety reporting program or to request a preliminary discussion with the SQO before making a report. The SQO can be contacted during office hours from Monday to Friday.

## 12 HAZARD IDENTIFICATION AND RISK ASSESSMENT

### 12.1 HAZARD IDENTIFICATION METHODS

Identifying hazards is a critical step in the safety management process for an ANSP. ANSA uses several methods and tools for hazard identification within the ASMS.

ANSA identifies hazards through:

- 1. Safety Reporting Systems (SRS):** Encourage all operational employees to report safety concerns, incidents, and hazards through an established reporting system. In addition, these reports are analyzed to identify recurring trends or potential hazards.
- 2. Safety Surveys and Questionnaires:** Conduct surveys or distribute questionnaires to gather feedback from staff regarding safety issues, concerns, or suggestions for improvement.
- 3. Safety Audits and Inspections:** Regularly perform safety audits and inspections of operational areas, facilities, equipment, and procedures to identify safety deficiencies, non-compliance, or potential hazards.
- 4. Safety Data Analysis:** Analyze historical safety data, such as incident reports, accident reports, reports about the serviceability of ATS facilities and systems, and safety performance indicators, to detect patterns and potential hazards.
- 5. Safety Risk Assessment (SRA):** Conduct safety risk assessments or safety impact assessments when implementing new procedures, technologies, or changes in operations to proactively identify hazards and mitigate potential risks (change management process).
- 6. Safety talks:** Use safety talks to collect feedback and opinions from employees, contractors, and other stakeholders regarding safety-related matters.
- 7. Safety Culture Assessments:** Assess the safety culture within the organization to identify cultural factors that may contribute to safety hazards or incidents.
- 8. Safety Walkthroughs:** Walkthrough operational areas with safety experts or experienced personnel to visually identify potential hazards and safety risks.
- 9. Yearly ATCO, and AIO /AIS officer proficiency checks:** Use safety checklists or templates tailored to specific operations, equipment, or procedures to systematically identify and document potential operational errors and hazards.
- 10. External Sources:** Stay informed about safety-related information from external sources, such as aviation safety authorities, regulatory agencies, industry associations, and other ANSPs.
- 11. Scenario Analysis:** Analyze hypothetical scenarios or potential emergency situations to identify hazards and develop contingency plans.
- 12. Yearly safety review.** In compliance with paragraph 2.5 of ICAO DOC 4444

It is important to note that hazard identification shall be an ongoing and dynamic process within the SMS, involving the active participation of all relevant stakeholders. Regular reviews and updates to hazard identification methods and processes shall also be conducted to ensure the SMS remains effective in managing safety risks.

## 12.2 HAZARD ANALYSIS PROCEDURE

The objective of this procedure is to systematically identify, assess, and manage safety hazards within the operations of ANSA to ensure the safe provision of air navigation services.

### Step 1: Hazard Identification

1. Define the Hazard: Clearly describe the hazard that has been identified to ensure that everyone involved understands the nature of the hazard.
2. Gather Information: Collect all available data and information about the hazard, including its location, context, and potential consequences.

### Step 2: Risk Assessment Team

3. Due to the small size of ANSA, the SQO has been put in charge of risk assessment. The SQO may be assisted by colleagues who are knowledgeable about the hazard, including ATCOs, unit managers and other operational personnel.

### Step 3: Likelihood Assessment

4. Assess Likelihood: Evaluate the likelihood of the hazard leading to an incident or accident by using the safety risk probability table (see Table 1).
5. Assign Likelihood Rating: Document the rationale behind the assigned rating.

### Step 4: Severity Assessment

6. Assess Severity: Evaluate the worst credible outcome of an incident or accident arising from the hazard by using the safety risk severity table (see Table 2).
7. Assign Severity Rating: Document the rationale behind the assigned rating.

### Step 5: Risk Matrix

8. Combine the likelihood and severity ratings on the safety risk assessment table (see Table 3) to determine the overall risk level.

### Step 6: Risk Evaluation

9. Consider Risk Tolerability: Evaluate whether the identified risk level is tolerable by using the safety risk tolerability matrix (see Table 4).

### Step 7: Risk Mitigation

10. Identify Mitigation Measures: Develop a list of potential risk mitigation measures that can reduce the likelihood or severity of the hazard.
11. Assess Effectiveness: Evaluate the effectiveness of each mitigation measure in reducing risk.
12. Select Mitigation Measures: Choose the most effective and feasible mitigation measures to implement.
13. Implement Mitigation: Put the selected mitigation measures into action and ensure that they are integrated into the organization's operations.

### Step 8: Risk Residual Assessment

14. Reassess Risk: After implementing the selected mitigation measures, reassess the risk to determine the residual risk level.

**Step 9: Risk Monitoring and Review**

15. Establish Monitoring: Set up a system for continuous monitoring and review of the hazard and its associated risk.
16. Periodic Review: Conduct regular reviews to assess the effectiveness of mitigation measures and to ensure that the risk level remains acceptable.

**Step 10: Documentation and Reporting**

17. Document Findings: The hazard identification template and hazard log shall be used to document the entire risk assessment process, including hazard identification, likelihood, severity, risk level, mitigation measures, and monitoring plans.
18. Report: Share the findings with relevant stakeholders, SRB, DCAA, operational personnel, and unit managers.

### 12.3 RISK ASSESSMENT TABLES

Table 1 Safety Risk Probability Table

<b>Likelihood</b>	<b>Meaning</b>	<b>Value</b>
Frequent	Likely to occur many times (has occurred frequently)	5
Occasional	Likely to occur sometimes (has occurred infrequently)	4
Remote	Unlikely to occur, but possible (has occurred rarely)	3
Improbable	Very unlikely to occur (not known to have occurred)	2
Extremely improbable	Almost inconceivable that the event will occur	1

Table 2 Safety Risk Severity Table

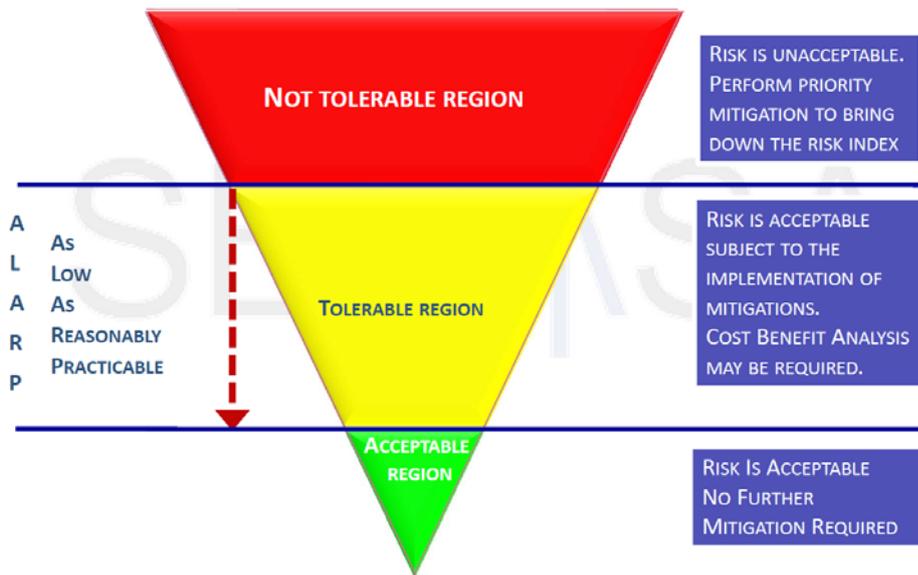
<b>A</b>	Catastrophic	<ul style="list-style-type: none"> <li>Equipment destroyed, multiple deaths. (SMM 2.14.8)</li> </ul>
<b>B</b>	Hazardous	<ul style="list-style-type: none"> <li>AIRPROX with risk of collision (DOC 4444 16.3.2.)</li> <li>A runway incursion in which a collision is narrowly avoided (Doc 9870 6.1)</li> <li>Other: Large reduction in safety margins, serious injury, major equipment damage. (SMM 2.14.8)</li> </ul>
<b>C</b>	Major	<ul style="list-style-type: none"> <li>AIRPROX safety not assured (DOC 4444 16.3.2.)</li> <li>A runway incursion in which separation decreases and there is a significant potential for collision, which may result in a time-critical corrective/evasive response to avoid a collision. (Doc 9870 6.1)</li> <li>Other: Significant reduction in safety margins, serious injury, major equipment damage. (SMM 2.14.8)</li> </ul>
<b>D</b>	Minor	<ul style="list-style-type: none"> <li>AIRPROX no risk of collision (DOC 4444 16.3.2.)</li> <li>A runway incursion characterized by ample time and/or distance to avoid a collision. (Doc 9870 6.1)</li> <li>Other: Nuisance, operating limitations, use of emergency procedures, minor incident. (SMM 2.14.8)</li> </ul>
<b>E</b>	Negligible	<ul style="list-style-type: none"> <li>A runway incursion such as the incorrect presence of a single vehicle, person, or aircraft on the protected area of the runway with no immediate safety consequences. (Doc 9870 6.1)</li> <li>Other: Few consequences. (SMM 2.14.8)</li> </ul>

Table 3 Safety Risk Assessment Table

RISK CLASSIFICATION MATRIX					
	A	B	C	D	E
5	5A	5B	5C	5D	5E
4	4A	4B	4C	4D	4E
3	3A	3B	3C	3D	3E
2	2A	2B	2C	2D	2E
1	1A	1B	1C	1D	1E

Table 4 Safety Risk Tolerability Matrix

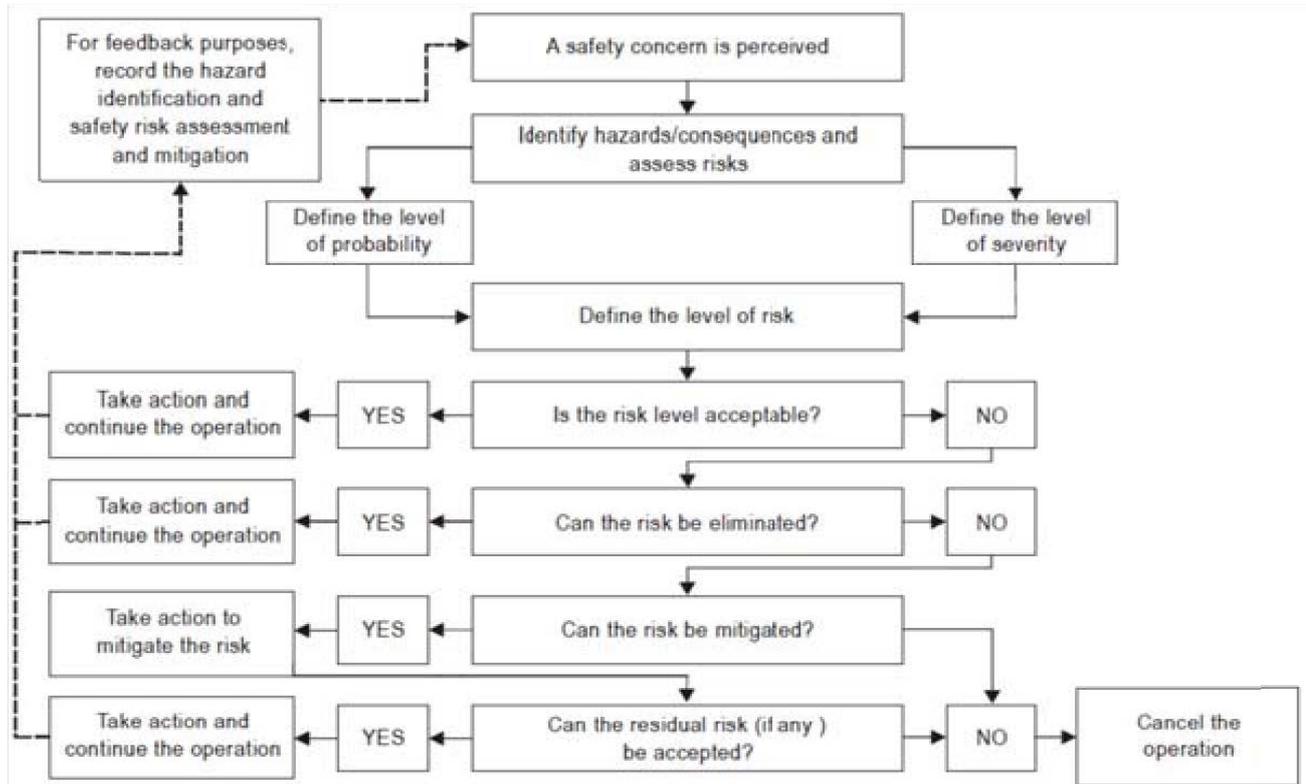
**TOLERABILITY: ALARP**



## 12.4 RISK MANAGEMENT PROCESS

As a summary, figure 2 below depicts the SRM process in its entirety. The process starts with the identification of hazards and their potential consequences. The safety risks are then assessed in terms of probability and severity, to obtain the level of inherent safety risk from the matrix.

Figure 2 The SRM Process



If the assessed safety risks are deemed to be tolerable, appropriate safety action is needed to bring down risk as much as possible (performing supplementary trade-offs or analysis to decide which is the optimum solution). Then, a new estimation of risk (residual) is performed and, if acceptable, safety actions will be implemented.

All hazard analysis and risk assessment are performed by the SQO and submitted accompanied with recommendations for mitigation to the CEO for approval.

Each risk assessment and mitigation exercise shall be documented.

## 13 SAFETY PERFORMANCE MONITORING AND MEASUREMENT

### 13.1 INTRODUCTION

Safety performance monitoring and measurement is the process by which ANSA's safety performance is verified in comparison to the overall safety policy and objectives.

Safety performance is defined as the level of safety achievement against the Safety Performance Targets (SPTs), using specific Safety Performance Indicators (SPIs). Safety performance reflects the ability of ANSA to effectively manage risks.

### 13.2 SAFETY PERFORMANCE MEASUREMENT PROCESS

#### **1. Define SPIs:**

Identify safety performance indicators that are relevant to the safety of air traffic services.

#### **2. Establish Baseline Data:**

Gather historical data and establish a baseline for each SPI. This data will serve as a reference point for measuring future performance.

#### **3. Determine SPTs:**

Set specific, measurable, achievable, relevant, and time-bound (SMART) SPTs for each SPI. These targets shall align with ANSA's safety objectives and regulatory requirements.

#### **4. Implement Data Collection Procedures:**

Develop and implement procedures for collecting data related to the identified SPIs. Ensure data accuracy, reliability, and consistency in the collection process.

#### **5. Analyze Data:**

Regularly analyze collected data to assess safety performance. This analysis shall include trend analysis, statistical methods, and comparisons against established targets and baseline data.

#### **6. Identify Trends and Anomalies:**

Continuously monitor and identify trends that may indicate a deterioration or improvement in safety performance. Also, be vigilant for anomalies that require immediate attention.

#### **7. Conduct Safety Performance Reviews:**

Periodically convene safety performance review meetings involving relevant stakeholders, including safety managers, operational staff, and experts. Discuss findings, trends, and anomalies.

#### **8. Investigate Incidents and Accidents:**

Whenever an incident or accident occurs, conduct thorough investigations to determine the root causes and contributing factors. This information can provide valuable insights for safety improvement.

#### **9. Take Corrective and Preventive Actions:**

Based on the findings of incident investigations and performance reviews, develop, and implement corrective and preventive actions (CAPAs) to address safety issues and enhance performance.

#### **10. Monitor the Effectiveness of CAPAs:**

Continuously monitor and assess the effectiveness of implemented CAPAs. Adjust and refine these actions as needed to achieve the desired safety improvements.

**11. Communicate Safety Performance:**

Share safety performance data, findings, and improvements with all relevant stakeholders, including regulatory authorities, staff, and external partners.

**12. Document and Report:**

Maintain comprehensive records of all safety performance monitoring and measurement activities. Prepare regular reports summarizing safety performance for management and regulatory purposes.

**13. Continuous Improvement:**

Foster a culture of continuous improvement by encouraging feedback and engagement from employees at all levels. Use lessons learned to refine the safety performance monitoring and measurement process.

**14. Regulatory Compliance:**

Ensure that all safety performance monitoring and measurement activities align with ICAO Document 9859 and any other relevant regulatory requirements.

**15. Audit and Review:**

Periodically audit and review the safety performance monitoring and measurement process to identify areas for improvement.

**13.3 SAFETY PERFORMANCE INDICATORS**

At different levels of maturity of the SMS, the amount of quality safety data available and the issues and actions that are most important for improving safety performance and actions will differ. ANSA has therefore defined the following SPIs based on safety data collected through the hazard identification and internal incident reporting processes:

*Table 5 ANSA’s SPIs*

SPI 1	Percentage of airproxes between IFR flights per annual aircraft movements.
SPI 2	Number of airproxes with risk of collision between IFR flights per annual aircraft movements.
SPI 3	Percentage of airproxes between IFR and VFR flights per annual aircraft movements.
SPI 4	Number of airproxes with risk of collision between IFR and VFR flights per annual aircraft movements.
SPI 5	Number of runway incursions per annual aircraft movements.
SPI 6	Percentage of ATC related missed approaches per annual aircraft movements.
SPI 7	Number of ATC related runway excursion per annual aircraft movements.
SPI 8	Number of yearly reported deviations from ATC clearance and LOAs (DC-ANSP, AMU, APA, DMA).
SPI 9	Percentage of ATCOs who have completed yearly refresher training.
SPI 10	Percentage of AIOs who have completed yearly refresher training.
SPI 11	Percentage of operational personnel who participated in yearly safety talks.
SPI 12	Percentage of ATCOs who have been subjected to a yearly voice recording review on all work positions.
SPI 13	Percentage of ATCOs who have been subjected to a yearly proficiency check on all work positions.
SPI 14	Percentage of AIOs who have been subjected to a yearly proficiency check.
SPI 15	Percentage of AIOs who have been subjected to a yearly data review.

SPI 16	Percentage of compliance with the management of change procedure.
SPI 17	Percentage of safety recommended corrective actions implemented.

### 13.4 SAFETY PERFORMANCE TARGETS

SPIs and SPTs are reviewed yearly by the SRB. Based on the SPIs and the maturity level of ANSA’s SMS, the following SPTs have been established:

*Table 6 ANSA’s SPTs*

SPT 1	Yearly reduction of percentage of airproxes between IFR flights per annual aircraft movements.
SPT 2	0 airproxes with risk of collision between IFR flights per annual aircraft movements.
SPT 3	Yearly reduction of percentage of airproxes between IFR and VFR flights per annual aircraft movements.
SPT 4	0 airproxes with risk of collision between IFR and VFR flights per annual aircraft movements.
SPT 5	0 runway incursions per annual aircraft movements.
SPT 6	Yearly reduction of percentage of ATC related missed approaches per annual aircraft movements.
SPT 7	0 ATC related runway excursion per annual aircraft movements.
SPT 8	Reduction in number of yearly reported deviations from ATC clearance and LOAs (DC-ANSP, AMU, APA, DMA).
SPT 9	100 percent of ATCOs who have completed yearly refresher training.
SPT 10	100 percent of AIOs who have completed yearly refresher training.
SPT 11	100 percent of operational personnel who participated in yearly safety talks.
SPT 12	100 percent of ATCOs who have been subjected to a yearly voice recording review on all work positions.
SPT 13	100 percent of ATCOs who have been subjected to a proficiency check on all work positions.
SPT 14	100 percent of AIOs who have been subjected to a yearly proficiency check.
SPT 15	100 percent of AIOs who have been subjected to a yearly data review.
SPT 16	100 percent of compliance with the management of change procedure.
SPT 17	100 percent of safety recommended corrective actions implemented.

## 14 INCIDENT INVESTIGATIONS

### 14.1 INTRODUCTION

An incident investigation is triggered by a report submitted through the ANSA safety reporting system. ANSA investigates all airproxes and runway incursions. However, not all submitted reports lead to an investigation. The decision what to investigate and the scope of the investigation is mainly guided by the following:

- a) the severity or potential severity of the outcome.
- b) organizational requirements to carry out an investigation.
- c) opportunity for safety action to be taken.
- d) risks associated with not investigating.
- e) identified trends.
- f) training benefit.

Decisions not to investigate shall be substantiated and documented.

### 14.2 SCOPE

The investigation should identify what happened and why it happened, and this may require root cause analysis to be applied as part of the investigation.

Incident Investigations consist of collecting data, analyzing events, determining causal and contributing factors, drawing up conclusions and making safety recommendations as applicable.

### 14.3 OBJECTIVE

The sole objective of the investigation of an incident shall be the prevention of accidents and incidents. It is not the purpose of this activity to apportion blame or liability.

### 14.4 ANSA INCIDENT INVESTIGATION TEAM

To give effect to the air traffic incident investigation process, the ANSA incident investigation team (ANSA IIT) has been established. The team includes SQO as team leader and the MATC. The MAIA and MCAS will participate in the team when required. The team will remain under the guidance of the team leader during the investigation process.

The SQO may at any time after consultation with the CEO decide to launch an investigation procedure when it is suspected that an incident has occurred.

When Curacao ACC or the Beatrix AMU is involved, the incident report will be de-identified and forwarded to these entities.

#### 14.4.1 RESPONSIBILITIES

The SQO shall be responsible for conducting a complete investigation and forwarding the findings and recommendations to the MATC. SQO, shall conduct the following:

- a) ensure that all pertinent data has been collected and documented in the investigation report and forwarded to the CEO of ANSA.
- b) assign duties to team members.
- c) ensure that interviews are conducted.

- d) ensure that ATC incident investigations. are conducted in accordance with the procedures contained in this manual.

## 14.5 INITIATION OF THE INVESTIGATION PROCESS

The investigation process is initiated after a report has been submitted by ANSA's personnel in accordance with the incident reporting scheme described in this manual or by pilots on the frequency or by other means.

## 14.6 INVESTIGATION AND DOCUMENTATION

It is essential to determine the cause of an air traffic incident, with minimum delay so that action can be taken to prevent recurrence. Immediately following an air traffic incident all documents and recordings relating to the incident shall be collected. ATCOs and supervisors shall record as many details as possible while they are still fresh in their minds. The MATC shall take all necessary measures to preserve relevant documents.

The SQO with the cooperation of the MATC shall obtain the following information:

- 1) statements by personnel involved.
- 2) transcripts of relevant recordings of air-ground communications, Direct Speech Circuit (DSC), and telephone communications (if necessary).
- 3) flight plan history log and other relevant data, including recorded surveillance data (if necessary).
- 4) copies of the meteorological reports and forecasts relevant to the time of the incident (if necessary).
- 5) technical statements concerning the operating status of equipment (if relevant).

## 14.7 INTERVIEWS

Certain information (e.g. rational for decisions made) which is necessary to complete the investigation shall be obtained from the ATCOs involved. Since the other ATC personnel who were on duty when the reported incident occurred may be knowledgeable of or a party to the incident, interviews with all personnel involved shall be held. It is important that these interviews be conducted in an atmosphere of shared concern as to the events leading to and surrounding the incident. When conducting the interview, the following shall be taken into consideration:

- a) ensure that the person being interviewed understands the purpose and goal of the interview.
- b) the person being interviewed shall be allowed to provide written comments and recommendations concerning the incident. The recommendations shall concern corrective actions that can be undertaken to preclude a similar incident.
- c) interviews shall be conducted by members of the ANSA IIT.

## 14.8 VOICE RECORDINGS

To establish a timeline the voice recordings of the ATC incident shall be reviewed as follows:

- a) as a minimum, one copy shall be made of the original recording.
- b) include the time track, if available, and all communications for a period of 5 minutes before initial contact to 5 minutes after the last contact with each control position involved in the ATC incident; and
- c) it may not be necessary to conduct a complete written transcript of the communications unless deemed relevant by the ANSA IIT.

## 14.9 ANALYSIS OF ATC INCIDENTS

The analysis of an incident by the ANSA IIT shall be considered in relation to system operation and considers factors such as the following:

- a) Procedures: Were the procedures and separation minima applied correctly for the situation?
- b) Identifying risk controls: Were the risk controls in place that should have prevented the event occurring?
- c) Data and display: Were the displayed data correct and complete in terms of unit instructions? Was the displayed information properly interpreted and utilized?
- d) Coordination: Were the prescribed coordination procedures adequate and correct and were they correctly and fully applied?
- e) Communication: Was correct phraseology used by all personnel involved? Were the communications clear and concise to not give rise to errors or misunderstandings? Was there any failure to note and correct any incorrect read back? Was there any failure to obtain acknowledgement of the receipt of information?
- f) Equipment: Was the performance of relevant technical equipment adequate? (If any failure or malfunction of equipment caused or contributed to the incident, specialized technical advice or evidence shall be sought.)
- g) Personnel performance: Were any factors present which may have affected an individual's performance, e.g., fatigue, illness, personal problems, etc.? (While human errors may be established by the investigation team, degrees of negligence, carelessness or blame are not to be specified.)
- h) Task environment: All aspects of the working environment shall be considered which may have affected the performance of personnel, e.g., background noise, heating, ventilation, ambient light levels, etc.
- i) General operations: Were all personnel familiar with the traffic situation and pertinent data before assuming responsibility for an operating position? The adequacy of staffing in relation to traffic density shall be considered as well as relief, and adequate rest periods. If applicable, was the level of supervision satisfactory?
- j) Reviewing safety data for any previous or similar events.

Once the analysis of an ATC incident has been completed, the ANSA IIT report shall be made available to all ANSA's personnel concerned so that corrective action may be taken, and all concerned are fully aware of lessons learnt and the results.

#### 14.10 CLASSIFICATION OF ATC INCIDENTS

Airproxes and runway incursion and other incidents are identified and designated in reports in accordance with the provisions in this chapter. The generic hazard, incident and contributing factors shall be classified by using the taxonomies developed by the CAST/ICAO Common Taxonomy Team (CICTT).

#### 14.11 SEVERITY CLASSIFICATION SCHEME

The ICAO DOC 9870 requirements for the classification of the severity of runway incursions have been incorporated in table 2 of this document. The requirements for the classification of aircraft proximities contained in DOC 4444 chapter 1 have also been incorporated in mentioned table. The severity of all incidents shall be classified in accordance with table 2 of this document. The degree of risk involved in an aircraft proximity shall be determined by the SQO.

#### 14.12 FINAL SAFETY INVESTIGATION REPORT

The report of the ANSA IIT shall include a summary of the incident and the cause. The report shall contain all relevant information, in chronological sequence where appropriate, and conclude with a list of findings, conclusions, causes and safety recommendations for the purpose of accident/incident prevention. Recommended corrective actions shall also be included in the report.

In addition, the following information may be submitted as appendices to the ANSA IIT report:

- statements by personnel involved.
- transcripts of relevant recordings of air-ground, DSC, and telephone communications.
- copies of meteorological reports or forecasts relevant to the incident.

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- flight plan history log and other data relevant to the incident, including recorded surveillance data.
- any technical statements concerning the operating status of equipment.

The ANSA IIT Report shall be completed within 30 days of the date the incident was reported. The ANSA IIT shall not make recommendations on personnel or disciplinary action in the event of controller error.

#### 14.13 SUBMISSION OF SAFETY INVESTIGATION REPORTS

The ANSA IIT shall submit the investigation report through the AFAS workflow to the CEO for approval. In case that there is difference in opinion between the MATC and the SQO, the CEO makes the final decision. After the approval by the CEO, the ANSA IIT report shall be forwarded to the DCAA. If there is another ATC unit involved, the investigation report shall also be sent to the mentioned unit.

#### 14.14 RELEASE OF INFORMATION

In the interest of accident and incident prevention, the MATC shall make the report available as soon as possible to ATC personnel. When the ANSA IIT considers that disclosure of records, described below, might have an adverse effect on the availability of information in that investigation or any future investigation, then such records shall not be made available.

Such records may include:

- statements from persons responsible for the safe operation of the aircraft.
- communications between persons having responsibility for the safe operation of the aircraft.
- medical or private information regarding persons involved in the accident or incident.
- cockpit voice recordings and transcripts from such recordings; and
- opinions expressed in the analysis of information, including flight recorder information.

Members of the press and public who make inquiries into incidents shall be referred to the CEO who is the only person authorized to release information. The information to be provided is decided on a case-to-case basis.

#### 14.15 REMOVAL FROM OPERATIONAL DUTIES

ATCOs involved in serious incidents can be temporarily removed from operational duties. It is important to note that reasons for removal from active duty of a controller and the assignment of remedial training are to assist and enhance the individual controller's performance to the best of his/her abilities and ensure that minimum quality standards are met. It is not intended that this process be viewed as punishment toward any individual. This will also improve the overall performance and quality of the air traffic services.

Before returning a controller to operational duties, the following actions shall be performed:

1. An in-depth review of the controller's role in the ATC incident shall be conducted. The review may include the following:
  - the events leading up to and surrounding the ATC incident.
  - the controller's statement.
  - the procedure or the separation minimum involved.
  - available voice recording of the ATC incident.
  - the controller's training record.
  - all applicable controller proficiency checks.
  - all applicable proficiency training received.
  - verification of currency on the control position.

- applicable computer data.
  - controller involvement in previous ATC incidents.
  - the results of the interviews and recommendations from the ANSA ITT.
  - identify all deficiencies in the controller's performance discovered during the ATC incident investigation.
  - determine the appropriate actions and remedial training necessary to return the controller fully to ATC operational duties in consideration of performance deficiencies identified in the review.
2. These actions shall be executed promptly to avoid causing unnecessary delays in the controller's return to ATC operational responsibilities.
  3. After the completion of the remedial training, a proficiency check shall be conducted at the control position where the controller was working at the time of the incident before the controller is allowed back on active duty.

#### 14.16 TRAINING AND PROFICIENCY RECORDS

The MATC shall appropriately document all training and proficiency records when additional training is assigned because of deficiencies identified during an ATC incident investigation.

## 15 SAFETY TRAINING AND COMMUNICATION

### 15.1 SAFETY PROMOTION

Safety Promotion is a process aimed at promoting a positive safety culture by ensuring that all personnel in an organization are aware that, at their level and in their day-to-day activity, they are key players in safety and that everyone, therefore, should contribute to an effective SMS. Safety promotion consists of safety training and safety communication.

### 15.2 SAFETY TRAINING PROGRAM

#### 15.2.1 OBJECTIVES

The objective of the safety training program is to ensure that ANSA's personnel are trained and competent to perform their SMS duties. The scope of the safety training program shall be appropriate to each individual's involvement in the SMS.

#### 15.2.2 SAFETY TRAINING PROCESS

##### 1. Identify Training Needs:

- Conduct a thorough assessment of ANSA's safety needs and risks.
- Identify specific areas, job roles, or processes that require safety training.
- Consider input from safety audits, incident reports, and safety risk assessments.

##### 2. Develop Training Objectives:

- Clearly define the learning objectives and outcomes for each training program.
- Ensure that training objectives align with the organization's safety goals and ICAO Annex 19 requirements.

##### 3. Training Program Design:

- Develop a training program that addresses the identified needs and objectives. Create a curriculum that includes both initial and recurrent safety training.
- Initial safety training shall consider, as a minimum, the following:
  - ANSA's safety policies and safety objectives.
  - organizational safety roles and responsibilities related to safety.
  - basic SRM principles.
  - ANSA's safety reporting systems.
  - ANSA's SMS processes and procedures.
  - human factors.
- Recurrent safety training focuses on changes to the SMS policies, processes, and procedures and to highlight any specific safety issues relevant to the organization and or lessons learnt.
- Determine the training methods and materials required (e.g., classroom, online, simulations, manuals, videos).

##### 4. Select and Develop Trainers:

- All trainers shall be qualified and experienced trainers and subject matter experts (SMEs) to deliver the training.
- Ensure that trainers are well-versed in ICAO Annex 19 regulations and ANSA's SMS.

##### 5. Training Delivery:

- Schedule training sessions based on organizational needs and employee availability.

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- Deliver training through various methods, including classroom instruction, e-learning, workshops, and hands-on exercises.
- Monitor the progress of trainees and provide feedback.

#### **6. Record Keeping:**

- Maintain detailed records of all safety training activities.
- Record attendance, training materials used, assessments, and any other relevant data.
- Ensure that records are easily accessible for audits and compliance verification.

#### **7. Assessment and Evaluation:**

- Implement assessments and evaluations to measure the effectiveness of training.
- Collect feedback from trainees to identify areas for improvement.
- Adjust the training program as needed to enhance its quality and relevance.

#### **8. Certification and Qualification:**

- Establish a process for certifying employees who successfully complete safety training.
- Ensure that qualified personnel are authorized to perform safety-critical tasks within the organization.

#### **9. Continuous Improvement:**

- Regularly review and update the safety training program to incorporate changes in regulations, technology, or organizational needs.
- Continuously improve the program based on lessons learned from safety events or incidents.

#### **10. Communication and Awareness:**

- Promote a culture of safety by ensuring that all employees are aware of the importance of safety training.
- Communicate the benefits of training and its contribution to overall safety.

#### **11. Compliance Monitoring:**

- Conduct regular internal audits and compliance checks to ensure that safety training processes align with ICAO Annex 19 and organizational requirements.
- Address any non-compliance issues promptly.

#### **12. Reporting and Documentation:**

- Document training activities, assessments, and any corrective actions taken.
- Generate reports for management and regulatory authorities as required.

#### **13. Emergency Response Training:**

- Develop and implement emergency response training programs to prepare employees for handling critical situations effectively.

#### **14. Management Review:**

- Include safety training as part of the periodic management review process to assess the SMS's overall effectiveness.

#### **15. Feedback Loop:**

- Encourage employees to provide feedback on the training program to identify areas for improvement continually.
- The table below indicates the minimum training frequency.

Table 7 Safety Training Intervals

ATCOs	Yearly
AIA personnel	Triennially
CNS/ATM Systems personnel	Triennially
SQO	Quinquennial or sooner due to the introduction of changes to ICAO DOC 9859 and or ANNEX 19.
CEO, Unit managers	Quinquennial

### 15.3 SQO SAFETY TRAINING

Specialized training for the SQO shall include the following:

- a) Incident investigation training (JAA)
- b) ICAO SMS online course.
- c) ICAO SMS for practitioners
- d) Auditing training.
- e) ICAO training instructor Course (TIC).
- f) ICAO training developers' course (TDC)
- g) Human Factors.

#### 15.3.1 OPERATIONAL PERSONNEL

The initial training for all operational personnel shall consist of:

- a) ANSA's safety policies and safety objectives.
- b) Their specific organizational roles and responsibilities related to safety.
- c) basic SRM principles.
- d) ANSA's safety reporting systems.
- e) ANSA's SMS processes and procedures; and
- f) human factors.

Recurrent training shall focus on changes to the SMS policies, processes, procedures, and should highlight any specific safety issues relevant to ANSA's operations and lessons learned.

#### 15.3.2 CEO AND UNIT MANAGERS

Safety training for the CEO and Unit Managers shall include the following topics.

1. SMS accountabilities and responsibilities.
2. importance of compliance with national and organizational safety requirements.
3. management commitment.
4. allocation of resources.
5. promotion of the safety policy and the SMS.
6. promotion of a positive safety culture.
7. effective interdepartmental safety communication.
8. safety objective, SPTs and alert levels; and
9. just culture

## 15.4 SAFETY COMMUNICATION

### 1. Establishment of a Safety Promotion Team:

The Safety promotion team consists of the SQO and all unit managers.

### 2. Objectives:

Objectives of the safety communication program is to:

1. ensure personnel are aware of the SMS to a degree commensurate with their positions.
2. conveys safety-critical information.
3. raise awareness of new safety risk controls and corrective actions.
4. provide information on new or amended safety procedures.
5. promote a positive safety culture and encourage personnel to identify and report hazards.
6. provide feedback.

### 3. Target Audience Analysis:

The target audience includes ATCOs, technicians, AIOs, and other staff members. Understand their needs, concerns, and communication preferences.

### 4. Develop Safety Communication Materials:

Create informative and engaging safety promotion materials, which may include:

1. Safety newsletters or bulletins
2. Safety posters
3. Safety videos
4. Safety presentations
5. Webinars or training sessions
6. Safety awareness campaigns

### 5. Safety Promotion Calendar:

Create a yearly calendar outlining when and how different safety promotion activities will be conducted. Ensure that activities are distributed evenly throughout the year.

### 6. Communication Channels:

Safety information may be disseminated via:

1. ANSA SharePoint.
2. Email newsletters.
3. Regular safety meetings and briefings.

### 7. Safety Training and Workshops:

Conduct regular safety training sessions and workshops for employees at all levels. Include topics such as hazard identification, risk assessment, and incident investigation.

### 8. Safety Culture Surveys:

Periodically conduct safety culture surveys to gauge the effectiveness of safety promotion efforts and identify areas for improvement.

### **9. Safety Rewards and Recognition:**

Implement a rewards and recognition program to acknowledge individuals or teams that actively contribute to safety improvements.

### **10. Incident Analysis and Learning:**

Ensure that incidents are thoroughly investigated and that the findings are shared with all relevant personnel. Use these incidents as opportunities for learning and improvement.

### **11. Evaluation and Continuous Improvement:**

Regularly evaluate the effectiveness of the safety promotion initiatives through feedback, metrics, and data analysis. Adjust the approach based on the results to continually improve safety culture.

### **12. Documentation and Reporting:**

Maintain records of all safety promotion activities, including attendance at training sessions

### **13. Safety Talks:**

To enhance safety awareness and promote a positive safety culture among employees by delivering informative and engaging safety talks that emphasize the importance of safety, highlight relevant safety issues and trends, and provide practical strategies for mitigating risks and preventing accidents/incidents.

**a. Increase Safety Awareness:** The primary objective of safety talks is to increase awareness among employees regarding potential hazards, safety procedures, and best practices. By providing regular safety talks, employees will be better informed about safety concerns specific to their roles and responsibilities.

**b. Promote a Positive Safety Culture:** Safety talks serve as a platform to foster a positive safety culture within the organization. Through open and transparent communication, employees are encouraged to actively participate in identifying safety concerns, reporting incidents, and contributing to continuous safety improvement initiatives.

**c. Highlight Relevant Safety Issues:** Safety talks should address current and relevant safety issues facing the air navigation service provider. This may include trends in safety performance, recent incidents or near-misses, changes in regulations or procedures, and lessons learned from internal and external safety audits.

**d. Provide Practical Strategies:** Safety talks should not only raise awareness of safety issues but also provide practical strategies and tips for mitigating risks and preventing accidents/incidents. This may involve discussing specific procedures, protocols, or tools available to employees to enhance safety in their daily operations.

Overall, the objective of safety talks is to empower employees with the knowledge, skills, and resources needed to actively contribute to the safety of air navigation services, thereby reducing the likelihood of accidents/incidents and enhancing overall safety performance.

### **14. Public display of safety policy and objectives**

A signed copy of the safety policy and objectives is framed and conspicuously placed in all operational locations and at ANSA headquarters.

### **15. Sharing reports and lessons learned**

All investigation, audit, safety, and other reports are placed in a folder on the ANSA SharePoint for all to read. Lessons learned are shared through the communication channels.

## 16 CONTINUOUS IMPROVEMENT AND SMS AUDIT

### 16.1 CONTINUOUS IMPROVEMENT PROCESS

#### 1. Continuous Improvement Team:

- The SRB has been appointed as the continuous improvement team.

#### 2. Identify Improvement Opportunities:

- Collect and analyze safety data, including incident reports, safety audits, and safety performance indicators.
- Review safety goals, objectives, and SPIs to identify areas that require improvement.
- Encourage all employees to report safety concerns and issues through the established reporting mechanisms.

#### 3. Prioritize Improvement Initiatives:

- Evaluate the identified opportunities and prioritize them based on risk assessment and potential impact on safety.
- Consider the resources required for each improvement initiative.

#### 4. Develop Improvement Plans:

- For each prioritized opportunity, create a detailed improvement plan.
- Define specific objectives, actions, responsibilities, and timelines for implementation.

#### 5. Implementation:

- Execute the improvement plans according to the established timelines.
- Ensure clear communication with all relevant stakeholders about the changes and their roles in the process.

#### 6. Monitor and Measure Progress:

- Continuously monitor the progress of each improvement initiative.
- Collect relevant data and compare it against established SPIs.
- Regularly review the effectiveness of the implemented changes.

#### 7. Review and Adjust:

- Conduct periodic reviews of the continuous improvement process itself to identify areas for enhancement.
- Adjust improvement plans as needed based on monitoring results and changing circumstances.
- Share lessons learned and best practices across the organization.

#### 8. Reporting:

- Prepare regular reports on the status of improvement initiatives and their impact on safety.
- Share these reports with relevant stakeholders, including management, employees, and regulatory authorities.

### 9. Feedback and Employee Involvement:

- Encourage employees to provide feedback on the improvement process.
- Foster a culture of continuous improvement by involving all levels of staff in identifying and implementing safety enhancements.

### 10. Regulatory Compliance:

- Ensure that all improvement initiatives align with ICAO Annex 19/DOC 9859 and other relevant regulatory requirements.
- Keep abreast of changes in regulations and adjust the continuous improvement process accordingly.

### 11. Documentation:

- Maintain detailed records of all improvement initiatives, including documentation of changes, results, and any corrective actions taken.

### 12. Celebrate Success and Learn from Failures:

- Acknowledge and celebrate successes and improvements in safety performance.
- Treat failures as opportunities for learning and improvement rather than as setbacks.

### 13. Continuous Training and Awareness:

- Provide ongoing training and awareness programs to ensure that all employees are well-informed about the continuous improvement process and their role in it.

### 14. Periodic Audits and Reviews:

- Conduct periodic internal audits to assess the overall effectiveness of the continuous improvement process and make necessary adjustments.

## 16.2 INTERNAL AUDIT

### Step 1: Establish the Audit Program

**1.1. Audit Scope Definition:** Determine the scope of the internal audit. This could include specific areas of the SMS, such as risk assessment, safety performance monitoring, or safety policy and objectives.

**1.2. Audit Schedule:** Develop an audit schedule that outlines when each audit will occur. Ensure that audits cover all relevant aspects of the SMS over a defined period (e.g., annually).

**1.3. Audit Team Selection:** Identify and select qualified individuals to form the audit team. Ensure that team members have a good understanding of the SMS and are independent of the areas being audited.

### Step 2: Pre-audit Preparation

**2.1. Audit Plan:** Develop a detailed audit plan for each specific audit. This plan shall include objectives, scope, criteria, and a list of documents and records to review.

**2.2. Checklists and Questionnaires:** Create checklists or questionnaires based on ICAO Document 9859 and your organization's specific requirements. These tools will guide auditors during the assessment.

**2.3. Communication:** Notify relevant personnel about the upcoming audit and provide them with the necessary information, including the audit schedule and objectives.

### **Step 3: Conduct the Audit**

**3.1. Entrance Meeting:** Start the audit with an entrance meeting. Explain the audit objectives, scope, and the process to the auditees. Address any initial questions or concerns.

**3.2. Document Review:** Examine relevant documents, records, and procedures to assess compliance with ICAO standards, national regulations and ANSA's SMS requirements.

**3.3. Interviews:** Conduct interviews with key personnel to gather information and clarify any discrepancies identified during document reviews.

**3.4. Observations:** If applicable, make observations of work processes and safety practices in action to verify compliance.

### **Step 4: Analysis and Evaluation**

**4.1. Findings Documentation:** Record all audit findings, including non-conformities, observations, and areas of improvement. Use the established checklists and questionnaires.

**4.2. Root Cause Analysis:** If non-conformities are identified, perform root cause analysis to understand why the issues occurred.

**4.3. Risk Assessment:** Assess the significance and potential impact of each finding on safety within ANSA.

### **Step 5: Reporting and Communication**

**5.1. Audit Report:** Prepare a comprehensive audit report that includes findings, root causes (if applicable), and recommendations for corrective actions.

**5.2. Exit Meeting:** Hold an exit meeting with auditees to discuss the findings, clarify any points, and confirm the corrective actions that will be taken.

### **Step 6: Corrective Action and Follow-up**

**6.1. Corrective Action Plan:** Develop a corrective action plan that outlines how each finding will be addressed, including responsible individuals and deadlines.

**6.2. Follow-up Audits:** Schedule follow-up audits to verify the implementation and effectiveness of corrective actions.

### **Step 7: Management Review**

**7.1. Management Review:** Present audit findings and the status of corrective actions to the CEO during SRB meetings.

### **Step 8: Continuous Improvement**

**8.1. Lessons Learned:** Collect and document lessons learned from the audit process and use them to improve future audits and the ASMS.

**8.2. Feedback:** Encourage feedback from auditors and auditees to enhance the internal audit process continually.

## 17 SMS RECORDS MANAGEMENT

### 17.1 DOCUMENT CONTROL AND REVISION MANAGEMENT

The SQO shall ensure that:

- Revisions of this manual are communicated to all staff concerned and modifications are identified.
- Obsolete/invalidated versions are clearly marked accordingly.
- Modified versions are clearly marked, changes are identified, and a current version number is incorporated.
- Document changes are recorded and kept for traceability purposes.

### 17.2 CONTROL AND REVISION OF THE SMS MANUAL

Table 8 SMS Manual Records Management

Steps	Consist of	Person in charge
Submit a change proposal	<ul style="list-style-type: none"> <li>• Identify need to change the SMS Manual.</li> <li>• Submit a change proposal to the SQO.</li> </ul>	All staff
Review the change proposal and advise the CEO	<ul style="list-style-type: none"> <li>• Check relevance.</li> <li>• Evaluate related risks.</li> <li>• Verify the requested change against:                             <ol style="list-style-type: none"> <li>1. Applicable regulations, standards, and norms.</li> <li>2. Other Company documents.</li> </ol> </li> </ul>	SQO
Approve, amend or reject the change proposal	<ul style="list-style-type: none"> <li>• Consider all relevant information.</li> <li>• Consult with the SQO or other staff.</li> <li>• Approve, amend or reject the change.</li> </ul>	CEO
Amend the SMS Manual	<ul style="list-style-type: none"> <li>• Make the relevant changes in the SMS Manual.</li> <li>• Record the modifications.</li> <li>• Update the version number, date of issue and list of effective pages.</li> </ul>	SQO
Record and distribute the revision	<ul style="list-style-type: none"> <li>• Record/archive the new version.</li> <li>• Distribute and publish the latest version.</li> <li>• Recall the former version.</li> </ul>	SQO

### 17.3 SMS MANUAL REVIEW PROCEDURE

This manual is reviewed annually by the SRB.

### 17.4 RECORD-KEEPING

All SMS related documents such as safety reports, safety reviews, investigation reports and other SMS related documents and records are permanently stored in SharePoint by the management support unit. This ensures easy and fast access to information.

ANSA's records shall be adequately referenced with an ANSA identification number and (author, title, issue date, revision number and date, list of effective pages) and archived/kept as records.

Records except for audio and or video, are kept in electronic format only.

## 18 THE MANAGEMENT OF CHANGE

### 18.1 INTRODUCTION

This management of change process is triggered by significant changes in the provision of ATS procedures applicable to an airspace or an aerodrome, and for the introduction of new equipment, systems, or facilities, such as:

- a. a reduced separation minimum to be applied within the Beatrix control zone;
- b. a new operating procedure, including departure and arrival procedures, to be applied within the Beatrix control zone or aerodrome;
- c. a reorganization of the ATS route structure;
- d. physical changes to the layout of runways and/or taxiways at an aerodrome; and
- e. implementation of new communications, surveillance or other safety-significant systems and equipment, including those providing new functionality and/or capabilities.

Proposals shall be implemented only when the assessment has shown that an acceptable level of safety will be met.

### 18.2 CHANGE MANAGEMENT PROCESS

#### 1. Establish a Change Management Team:

- The SQO shall form a dedicated team comprising of subject matter experts, and relevant stakeholders.

#### 2. Identify the Need for Change:

- Define the reasons behind the proposed change, such as new procedures, equipment upgrades, or organizational restructuring.

#### 3. Impact Assessment:

- Conduct a thorough assessment of the proposed change's potential impacts on safety, operations, personnel, and resources.
- Consider both short-term and long-term effects.

#### 4. Risk Assessment:

- Evaluate the potential risks associated with the change, including safety risks and operational disruptions.
- Prioritize and categorize risks based on severity and likelihood.

#### 5. Develop a Change Proposal:

- Create a detailed proposal outlining the scope of the change, objectives, expected benefits, and potential risks.
- Include a timeline and budget estimate.

#### 6. Review and Approval:

- Present the change proposal to the SRB for approval.

## **7. Plan Implementation:**

- Develop a comprehensive implementation plan that includes:
  1. Detailed tasks and responsibilities.
  2. Resource allocation.
  3. Communication plan.
  4. Training requirements.
  5. Contingency plans for potential issues.

## **8. Communication and Training:**

- Communicate the upcoming change to all affected parties, including staff, stakeholders, and the DCAA.
- Provide training and resources to ensure a smooth transition.

## **9. Implementation and Monitoring:**

- Execute the change according to the plan.
- Monitor the progress and regularly assess the change's impact on safety and compliance.

## **10. Periodic Reviews:**

- Conduct regular reviews of the change's effectiveness and safety performance.
- Make necessary adjustments based on feedback and lessons learned.

## **11. Documentation and Reporting:**

- Maintain detailed records of the change process, including approvals, implementation steps, and outcomes.
- Prepare regular reports for management and regulatory authorities as required by ICAO Annex 19.

## **12. Closeout and Evaluation:**

- Once the change is fully implemented and stabilized, conduct a final evaluation to ensure that all objectives have been met, and safety and compliance have been maintained.

## **13. Continuous Improvement:**

- Use lessons learned from the change management process to improve future change initiatives and enhance SMS procedures.

## **14. Compliance Verification:**

- Periodically verify that the change complies with ICAO SARPS and other relevant regulations and standards.

## **15. Feedback Loop:**

- Establish a mechanism for stakeholders to provide feedback on the change process and safety performance to continually improve the SMS.

## APPENDIX 1: SMS ROADMAP 2024-2026

SMS ROADMAP															
SMS PROJECT ACTIVITIES ANSA 2024-2026				2024				2025				2026			
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
		WHO?	FINALIZED												
<b>A</b>		<b>Safety &amp; Quality Officer - Charles Brouwer</b>													
1		SRB SMS review	SQ/SRB												
2		Update reporting forms	SQ/MATC												
3		Update AFAS workflow	SQ/HR												
4		Implement safety policy	SQ												
	4.1	Sign safety policy	SQ/CEO												
	4.2	Promulgate safety policy paper to all personnel via AFAS and Email	SQ												
	4.3	Post safety policy paper on website	SQ/HR												
	4.4	Frame safety policy and display at all operational sites	SQ												
5		Procedures to avoid potential conflict of interest between 2 ATCOs as SQOs	SQ												
6		Safety review													
	6.1	ATC	SQ/MATC												
	6.2	AIA	SQ/MAIA												
	6.3	CNS/ATM	SQ/MCAS												
7		Create link on ANSA website to report anonymously	SQ/MATC/HR												
8		Safety training	SQ												
	8.1	CEO and unit managers	SQ												
	8.2	ATC	SQ												
	8.3	AIA	SQ												
	8.4	CNS/ATM	SQ												
9		Safety talks	SQ												
	9.1	ATC	SQ												
	9.2	AIA	SQ												
	9.3	CNS/ATM	SQ												
10		Audit	SQ												
	10.1	Audit training	SQ												
	10.2	Audit program	SQ												
11		Conduct safety surveys to asses the safety culture	SQ												
12		Evaluate Safety Culture	SQ												
13		Safety communication materials	SQ												
14		Create a yearly calendar for safety promotion activities	SQ												
15		Walkthrough operational areas	SQ												
16		Include execution of safety recommendations in this roadmap	SQ												
17		Hazard log implementation	SQ												
18		Hazard identification template implementation	SQ												
19		Populate SharePoint with safety reports.	SQ												

