CIVIL AVIATION AUTHORITY

SAFETY MANAGEMENT SYSTEMS MANUAL

FOR AIR NAVIGATION SERVICES

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Date of Rev.	Particulars			Type of changes	Entered by
	Rev. No.	Sec	Page No.		
07/11/18	3	Appendix I Procedure 13	I-17	Inserted procedure for change management	Moses Wabomba
07/11/18	3	1.2	5	These external SMS interfaces should share Information regarding their operations or activities that impact on safe operations of ANS. ANS should do likewise with all external SMS interfaces.	Moses Wabomba
07/11/18	3	2.4.1	10	Included Accountable executive and Corporate SRC on the *DANS SMS functional chart* *Inserted Text differentiating SMS functional Chart from the SMS organogram*	Moses Wabomba
07/11/18	3	2.4.4	12	Included Director ANS in the *DANS Safety office Organisational Chart* *Inserted reference for Minimum Duties and responsibilities of MSMS/QA*	Moses Wabomba
07/11/18	3	2.4.5	13	Inserted text "The generic accountabilities and responsibilities of each of the safety personnel are stipulated in their respective job descriptions. The specific duties of each of the safety personnel shall be assigned from time to time by the manager SMS/QA	Moses Wabomba
07/11/18	3	2.4.7	13	Defined the composition of SAG members for each of the stations where SAG is established Inserted description for The Safety Services Office. And reference for basic functions	Moses Wabomba

Date of Rev.	Particulars			Type of changes	Entered by
	Rev. No.	Sec	Page No.		
07/11/18	3	2.4.8	13	Inserted the word Directorate before SRC to Differentiate Directorate SRC from Corporate SRC. Defined the responsibilities/ duties of the DSRC are as detailed in the applicable version of the ICAO Doc 9859, Safety Management Manual	Moses Wabomba
07/11/18	3	2.4.9	14	Inserted the word Corporate before SRC to Differentiate Directorate SRC from Directorate SRC	Moses Wabomba
07/11/18	3	2.4.10	14	Inserted reference for the safety accountabilities and responsibilities of each of the staff at DANS in their respective job descriptions in the applicable operational manuals	Moses Wabomba
07/11/18	3	2.4.11	14	Inserted text " Section heads Contract managers, unit supervisors should ensure that all contractors should undergo safety briefing prior to commencing works within the building at any ANS facility or equipment in liaison with SMS office"	Moses Wabomba
07/11/18	3	2.5	14	Inserted text "a comprehensive emergency response plan has been developed as Appendix F to this manual *(Appendix F is an ERP coordination procedure)."*	Moses Wabomba
07/11/18	3	2.5.1	15	Defined the Role of SMS in Coordination of ERP	Moses Wabomba
07/11/18	3	3.1.2	18	Replaced phrase "appropriate management" with phrase "the line	Moses Wabomba

Date of Rev.	Particulars			Type of changes	Entered by
	Rev. No.	Sec	Page No.		
				manager”	
07/11/18	3	3.4	13	Inserted text “All reportable incidents must be reported.”	Moses Wabomba
07/11/18	3	4.2.2	21	Inserted description of how safety reviews are conducted and rationale for staff who conduct safety reviews are selected	Moses Wabomba
07/11/18	3	4.6	24	Inserted text “software” to cover additional area where pertinent changes may occur.	Moses Wabomba
07/11/18	3	5.2	30	Inserted description of how SMS refresher training is achieved	Moses Wabomba
07/11/18	3	5.3,2	31	Inserted provision for External safety Communication	Moses Wabomba
07/11/18	3	Appendix A	A-3	Edited SMS Form 113 (workshop/seminar attendance record) and renamed it SMS Form 113 A. Introduced SMS Form 113 B.	Moses Wabomba
07/11/18	3	Appendix A	A-6	Inserted text “MSMS/QA” in brackets as the office responsible for approving the change management form (SMS form 115) Changed ‘Approved/Authorised by MSMS/QA’ to ‘Accepted by MSMS/QA’ Inserted the text ‘*The proposed mitigations are sufficient to address the identified hazards’* to signify acceptance.	Moses Wabomba
07/11/18	3	Appendix A	A-6	Introduced SMS Form 126 CAP Request Form	Moses Wabomba
07/11/18	3	Appendix A	A-9	Inserted text “Line manager(s)” as responsible for approving the Hazard and Risk management register for ANS (SMS form 122)	Moses Wabomba
07/11/18	3	Appendix A	A-12	Introduced SMS form 124 (Monitoring effectiveness of safety risk controls) to replace SMS Form 124 (Accident and incident	Moses Wabomba

Date of Rev.	Particulars			Type of changes	Entered by
	Rev. No.	Sec	Page No.		
				investigation)	
	3	Appendix A	A-11	Inserted three columns to the Follow up actions on safety recommendations table (SMS form 123). The columns are CAP submission date, CAP acceptance date and Time taken.	Moses Wabomba
	3	Appendix C	C-1	Included Questions regarding effectiveness of communications channels in gap analysis	Moses Wabomba
	3	Appendix G	G-1	Included column to the left of the table to number the items	Moses Wabomba
	3	Appendix G	G-1	Changed item 1 of the table to 'Internal audit by SMS department'	Moses Wabomba
	3	Appendix G	G-1	Changed scheduled frequency of Internal Audits from Semi-annual to annual	Moses Wabomba
	3	Appendix G	G-1	Introduced internal safety inspections with scheduled frequency as 'bi-annually'	Moses Wabomba
	3	Appendix G	G-1	Changed the scheduled frequency for Safety Review Committee meetings to 'at least once a month'	Moses Wabomba
	3	Appendix D	D-1	The word 'sample' in the heading deleted	Moses Wabomba
	3	Appendix F	F-1	The word 'sample' in the heading deleted	Moses Wabomba
	3	Appendix G	G-1	The word 'sample' in the heading and text deleted	Moses Wabomba
	3	Appendix I	I-1	Introduced incident investigation procedure	Moses Wabomba
	3	Appendix I	I-7	Introduced steps 3 and 4 of the Mechanism for coordination between ANS SMS and SMS of External organizations as; 1. Notify them of any of our activities or operations that may affect safety of their operations; 2. Request the External	Moses Wabomba

Date of Rev.	Particulars			Type of changes	Entered by
	Rev. No.	Sec	Page No.		
				organisations to share information regarding their activities or operations that may affect safety of ANS operations	
	3	Appendix I Procedure 11	1-15	Included industry reports on the list of hazard sources	Moses Wabomba
	3	Appendix J	J-1	Inserted appendix J defining the Key Job Functions for Elements of the SMS Functional Chart	Moses Wabomba

Distribution List

NAME	COPY NO.
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Manager Public Affairs	10
Manager Air Traffic Management	11
Manager Communication, Navigation and Surveillance	12
Manager Aeronautical Information Management	13
AIS Library	14
Manager Safety Management Systems (DAAS)	15
Manager Quality Assurance (Corporate)	16
Principal Air Traffic Management Officer/OC ANS Entebbe	17
Principal Air Traffic Management Officer/ OPS	18
Principal Technical Officer/ Maintenance	19
Principal Technical Officer/ Radar	20
Principal Communication Operation Officer	21
Principal AIS Officer AIS Headquarters	22
Senior Air Traffic Management Officer/Operations	23
Senior Technical Officer/Engineer-in-Charge	24
Officer-in-Charge Soroti ANS	25
Officer-in-Charge Gulu ANS	26
Gulu Tower	27
Soroti Tower	28
Entebbe Control Tower	29
Entebbe Area Control Centre	30
Engineering Equipment Room	31
Entebbe Communication Centre	32
Entebbe Briefing Office	33
Bird Hazard and Wild Life Management Office	34
CAA Main Library	35
Procedure Design Unit	36
Radar Control unit	37
NOTAM Office	38
PAIMO Cartography	39
PATMO Procedure Design	40

NAME	COPY NO.
Planning Office	41
Manager Administration	42
Manager Air Navigation Services and Aerodrome Standards	43
Principal Licensing Officer	44
Air Traffic Management Supervisor OJT	44
Rescue Coordination Centre	45
Principal AIM Officer Cartography	46
Principal Air Navigation Services Inspector	47

Preface

This manual provides guidance and procedures for managing the Safety Management System (SMS) in Air Navigation Services. SMS comprises of four components namely Safety Policy and Objectives, Safety Risk Management, Safety Assurance and Safety Promotion. The Safety Policy and Objectives has a critical element of top management commitment. The manual emphasizes this critical element for realisation of SMS. The implementation of SMS in ANS is in accordance with the ICAO recommended four phase approach.

The traditional methods of managing safety focused on outcomes of accidents, assigning blame and only investigating technical errors. With global aviation activity forecast to grow, there was concern that traditional methods of reducing accidents and safety risks to an acceptable level were insufficient. New methods of understanding and managing safety are therefore evolving. SMS is a result of the improvement in technology, human and organizational factors in the aviation industry. It applies business management practices to aviation safety, with its underlying routine collection and analysis of operational data, to strike a balance between protection and production.

The SMS addresses the need for the continued collection and analysis of safety data to identify trends regarding ATC and navigation services. The manual provides tools, procedures, and processes for identifying, analyzing, mitigating, and tracking safety hazards – leading to safer Air Navigation Services in Entebbe FIR. This safety information is critical for Top management to enable right decision making as explained by 'the iceberg theory of ignorance'.

Much as this SMS manual applies to all staff in ANS, it recognizes the vital role of other directorates such as Corporate, Finance, Human Resource and Administration, Airports and Aviation Security and Regulation Oversight and other stakeholders in promoting safety.
It embraces other programs in the Organization such as Airport SMS, QMS and Corporate Audit and Risk Management

This manual emphasises a safety culture as an integral aspect to Safety Management System. Safety culture provides the tone for SMS and its atmosphere is created by Management that shapes staff attitudes towards safety normally phrased as "*This is how we do things here"*

This manual covers the required aspects of planning, implementation, operation and continuous improvement of SMS in Air Navigation Services.

Acknowledgement

In implementation of SMS in Uganda CAA, and in particular, Air Navigation Services, the SMS manual is one of the key tools for communicating DANS' approach to safety to the whole organization. Top Management would like to recognize the participation of the team that tirelessly worked to review and update this edition:-

From Corporate; Mr. Samuel Kiyemba.

From DSSER; Ms. Agnes Aguma, Mr. Gerald Agaba.

From DAAS; Mr. Nicholas Kamuntu, Mr. Francis Aule, Mr. Joseph Kakone, Mr. Ronnie Bbossa, Ms. Asea Badaru.

From DANS; Mr. Samuel Omona, Mr. Moses Otaremwa, Ms. Stella Adoko, Mr. Emmanuel Wandera, Mr. Edmond Kakama, Mr. Bonny Lwoto, Mr. Johnson Mugisha, Mr. Nicholas Ndema, Mr. Isaac Kissa, Mr. Emmanuel Opalakiro, Ms. Victoria Birungi, Mr. Balikuddembe Joseph Bukenya, Mr. Andrew Mwesige, Mr. Rogers Wanzunula, Mr. Moses Wabomba and Mr. David Matovu.

And all staff who directly or indirectly contributed to the development of this manual.

Acronyms and abbreviations

AIM	Aeronautical Information Management
ANS	Air Navigation Services
ASAP	Aviation Safety Action Programs
ATC	Air Traffic Control
ATM	Air Traffic Management
ATS	Air Traffic Service(s)
CAA	Civil Aviation Authority
CASS	Continuing Analysis and Surveillance System
CEO	Chief Executive Officer
CMC	Crisis Management Centre
CNS	Communication, Navigation and Surveillance
DANS	Directorate of Air Navigation Services
DSSER	Directorate of Safety, Security and Economic Regulation
GA	General Aviation
ICAO	International Civil Aviation Organization
IEP	Internal Evaluation Program
ISO	International Organization for Standardization
LICC	Local Incident Control Centre
LOSA	Line Operations Safety Audit
MSMS/QA	Manager Safety Management System and Quality Assurance
OJT	On-the-job Training
PAIMO	Principal Aeronautical Information Management Officer
PANS-ATM	Procedures for Air Navigation Services — Air Traffic Management
PATMO	Principal Air Traffic Management Officer
PTO	Principal Technical Officer
QA	Quality Assurance
SAG	Safety Action Group
SM	Safety Manager
SMM	Safety Management Manual
SMS	Safety Management Systems
SOPs	Standard Operating Procedures
SRC	Safety Review Committee
SRM	Safety Risk Management

Definitions

Accident – As defined in Annex 19 First Edition July, 2013

All Staff – Uganda CAA employees in DANS.

Analysis – A process of identifying a question or an issue to be addressed; modelling the issue, investigating model results, interpreting the results and possibly making a recommendation Analysis typically involves using scientific or mathematical methods for evaluation.

Assessment – Process of measuring or judging the value or level of something.

Audit – Scheduled, formal reviews and verifications to evaluate compliance with policy, standards, and/or contractual requirements. The starting point for an audit is the management and operations of DANS, and it moves outward to DANS's activities and products/services.

Internal audit – an audit conducted by, or on behalf of, DANS being audited.

External audit – an audit conducted by an entity outside of DANS being audited.

Accountable Manager – Director Air Navigation Services.

Accountable Executive – The managing director Civil Aviation Authority, Uganda

Aviation hazard- Any hazard/issues that can have an impact (whether directly or indirectly) on the operational safety of aircraft or aviation safety-related equipment, products and services should be deemed pertinent to an aviation.

Corrective action – Action to eliminate or mitigate the cause or reduce the effects of a detected nonconformity or other undesirable situation

Evaluation – A functionally independent review of Organization policies, procedures, and systems. The evaluation process builds on the concepts of auditing and inspection. An evaluation is an anticipatory process, and is designed to identify and correct potential findings before they occur.

Hazard – Any existing or potential condition that can lead to injury, illness, or death to people; damage to or loss of a system, equipment, or property; or damage to the environment. A hazard is a condition that is a prerequisite to an accident or incident.

Incident – A near miss episode with minor consequences that could have resulted in greater loss. An unplanned event that could have resulted in an accident, or did result in minor damage, and indicates the existence of, though may not define a hazard or hazardous condition.

Just Culture – An important aspect of a positive safety culture that ensures that while staff will be held accountable for their actions, they will at all times be treated fairly and with respect.

Learning Culture – An important aspect of a positive safety culture that ensures that the information contained in reports, audits, investigation, and other data sources is analyzed to generate safety recommendations which are then implemented in DANS.

Likelihood – The estimated probability or frequency, in quantitative or qualitative terms, of an occurrence related to the hazard. Same as probability.

Occupational Safety Health and Environment (OSHE) Hazard- Hazards related to the safety, health and welfare of people engaged in work or employment.

Organization – Civil Aviation Authority Uganda.

Oversight – A function that ensures the effective promulgation and implementation of the safety-related standards, requirements, regulations, and associated procedures. Safety oversight also ensures that the acceptable level of safety risk is not exceeded in the air transportation system.

Preventive action – Action to eliminate or mitigate the cause or reduce the effects of a potential nonconformity or other undesirable situation.

Probability – The estimated probability or frequency, in quantitative or qualitative terms, of an occurrence related to the hazard. Same as likelihood.

Procedure – Specified way to carry out an activity or a process.

Process – Set of interrelated or interacting activities which transform inputs into outputs.

Records – Evidence of results achieved or activities performed. In this context it is distinct from documentation because records are the documentation of SMS outputs.

Reporting Culture – An important aspect of a positive safety culture that cultivates the willingness of every member to contribute to DANS's knowledge base.

Residual safety risk – The remaining safety risk that exists after all control techniques have been implemented or exhausted and all controls have been verified. Only verified controls can be used for the assessment of residual safety risk.

Enterprise Risk - Effect of uncertainty on objectives

Risk Control – Refers to steps taken to eliminate hazards of to mitigate their effects by reducing severity and/or probability of risk associated with those hazards.

Risk Owner – A person or entity that has been given the authority to manage a particular risk and is accountable for doing so.

Safety assurance – SMS process management functions that systematically provide confidence that organizational products/services meet or exceed safety requirements.

Safety - A state in which the risk of harm to persons or property damage is reduced to, and maintained at or below, an acceptable level through a continuing process of hazard identification and risk management

Safety culture – The product of individual and group values, attitudes, competencies, and patterns of behaviour that determine the commitment to, and the style and proficiency of, DANS's management of safety.

Safety data – Information that is pertinent to aviation safety.

Safety Management System (SMS) – A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

Safety risk – The composite of predicted severity and probability of the potential effect (*injury, illness, or death to people; damage to or loss of a system, equipment, or property; or damage to the environment*) of a hazard in the worst credible system state.

Safety risk control – Anything that reduces or mitigates the safety risk of a hazard. Safety risk controls shall be written in requirements language, measurable, and monitored to ensure effectiveness.

Safety risk management (SRM) – A formal process within the SMS composed of describing the system, identifying the hazards, assessing the risk, analysing the risk, and controlling the risk.

Safety promotion – a combination of safety culture, training, and data sharing activities that support the implementation and operation of an SMS in an organization.

Severity – The consequence or impact of a hazard in terms of degree of loss or harm.

Substitute risk – Risk unintentionally created as a consequence of safety risk control(s).

Top Management – Managing Director, Deputy Managing Director, Corporation Secretary, Departmental Directors and General Manager EIA.

TABLE OF CONTENTS **PAGE**

List of Tables

List of Figures

1.0 CHAPTER 1: INTRODUCTION

1.1 Applicability

All DANS' staff contribute to the safety of everyday ANS operations. This manual is intended for use by all staff. The Safety Manager, and safety personnel have SMS duties to ensure planning, implementation and operation of SMS within DANS but the full realisation of SMS is a responsibility of everyone. It is therefore important for each employee to give strong consideration to safety in all of their actions and promote a safety culture of reporting potential hazards to the Safety Office for detailed analysis and correction.

This SMS applies to all DANS' staff, Managers, Contractors and related service providers who are either directly or indirectly involved in providing ATC or navigation services. This includes but is not limited to; Area/Airways Controllers, Approach Controllers, Radar Controllers, Aerodrome Controllers, CNS Technical Officers, Aeronautical Information Management Officers and support staff.

1.2 Scope and integration of the safety management system

DANS is responsible for providing safe and efficient air navigation services within the Entebbe FIR. The scope of SMS covers three functional areas i.e. Air Traffic Management (ATM), Aeronautical Information Management (AIM) and Communication, Navigation and Surveillance (CNS).

SMS interfaces with external directorates/organizations is detailed in the SMS implementation plan, Appendix 3: SMS interfaces. The Hazard Identification and Risk Management (HIRM) program applies to processes, operations and equipment detailed in the SMS implementation plan, Appendix 1: ANS System description.

These external SMS interfaces should share Information regarding their operations or activities that impact on safe operations of ANS. ANS should do likewise with all external SMS interfaces.

The SMS uses QMS processes such as auditing, inspection, investigation, root cause analysis and document control under safety policy and objectives in the safety assurance process. Reports from these processes provide a source of information to the safety risk management process. The Quality Management System (QMS) complements DANS' Safety Management System (SMS).

1.3 Quality Policy

In the planning, implementation and operation of the SMS, the organisation shall observe the applicable CAA quality policy detailed in the CAA quality manual.

1.4 SMS regulatory requirements

This manual provides guidance in the development, implementation, operation and maintenance of a safety management system for ANS that meets the requirements of the Civil Aviation (Safety Management) Regulations 2014, and all national safety regulatory requirements, and is in compliance with the applicable ICAO SARPS.

Development of this SMS manual is as per requirements and in line with guidance in the following regulations, SARPs and documents;

a. Statutory Instruments 2014 No. 61:- The Civil Aviation (Safety Management) Regulations, 2014.

b. Applicable Safety Management Systems Advisory circulars.

c. Annex 19 (1st Edition, July 2013), Safety Management.

d. Doc 9859 (3rd Edition, 2013), Safety Management Manual.

Additional systems to ensure regulatory compliance have been incorporated into the operational procedures utilized by DANS and found in the various departmental manuals.

1.5 Manual Organization

This manual is organized around the four components of safety management systems:

- Safety Policy and Objectives (Chapters 2)
- Safety Risk Management (Chapter 3)
- Safety Assurance (Chapter 4)
- Safety Promotion (Chapters 5)

The forms used in SMS are contained in Appendix A. Other appendices contain reference materials, procedures and checklists.

1.6 References

1.6.1 Internal Organization Documents

- Manual of Air Navigation Services Operations (MANSOPS)
- CAA Quality Manual
- Enterprise Risk Management Manual
- SMS Implementation Plan
- ATS Contingency Plan
- Aeronautical Information Publication (AIP)
- Approved Training Plan.
- Civil Aviation (Safety Management) regulations, 2014.
- Civil Aviation (Air Navigation Service) regulations, 2014
- Civil Aviation (Personnel Licensing) regulations, 2014
- Advisory Circulars

- Manual of Air Navigation Services Standards
- Airport SMS Manual
- Airport Emergency Plan
- CAA Business Plan, Financial year 2014/2015
- CAA Budget, Financial year 2014/2015

1.6.2 External supporting Documents

- ICAO Document 9859, 3rd edition. *Safety Management Manual (SMM)*
- ICAO Annex 19 – Safety Management First Edition, July 2013
- ICAO Annex 11 – Air Traffic Services, Thirteenth Edition July 2001
- ICAO Annex 13 Accident/Incident Investigation , Tenth Edition July 2010
- ICAO Procedures for Air Navigation Services – Air Traffic Management, Doc. 4444, Fifteenth Edition: 2007

2.0 CHAPTER 2: SAFETY POLICY AND OBJECTIVES

2.1 Safety Policy

Safety Policy of Air Navigation Services

The Safety Policy of Air Navigation Services (ANS) as defined by top management is outlined as follows:

i) The Managing Director of CAA and Management are fully committed to all issues regarding safety in the course of providing ANS.

ii) CAA Management shall commit all necessary resources to enable implementation of this safety policy.

iii) CAA Management is committed to the full implementation of all applicable safety Standards, Regulations, proven best practices and programs aimed at enhancing safety so as to achieve the highest safety standards.

iv) The Director ANS and Managers shall promote mandatory, voluntary and confidential reporting programmes among DANS personnel in all operations.

v) The Director ANS and Managers shall ensure that the safety policy of ANS is understood, implemented and maintained at all levels in the Directorate.

vi) In promotion of safety, disciplinary action shall not apply to outcomes of safety investigations resulting from human error unless such findings indicate beyond reasonable doubt, gross negligence or a deliberate or wilful disregard of the regulations or procedures.

vii) To attain safety satistaction, the quality policy and other policies complement this safety policy.

viii) In order to realise the objectives of this policy, all staff at their respective levels shall participate in SMS activities.

Signed ..... Date: 6/10/2017
Director Air Navigation Services

Endorsed ..... Date: 6/10/2017
Managing Director

2.2 Safety Objectives

SAFETY OBJECTIVES FOR AIR NAVIGATION SERVICES

The Safety objectives of Air Navigation Services as set by the Directorate's Management and outlined in the SMS Implementation plan are:

1. To implement and maintain a safety management system that is in line with ICAO SMS framework and meets applicable ICAO/ regulatory safety requirements.

2. To enhance safety culture, responsibility and satisfaction among staff through the provision of safety training, effective safety communication and staff involvement in safety activities.

3. To improve safety in operations within the directorate of ANS

4. To facilitate the continuous identification and effective mitigation of hazards.

5. To ensure timely effective implementation of safety recommendations and Corrective Action Plans (CAPS).

Signed PP .....

Manager SMS/QA

Date 14/03/2018

2.3 Safety Planning

The Accountable Executive (AE) is responsible for planning, organizing, directing and controlling the safety management system in DANS. This manual and SMS implementation plan constitutes the formal safety management plan of this organization and will be updated as stipulated in section 2.6. They will be used in the implementation and continued operation of the SMS.

To guide the systematic implementation of the SMS in DANS, a standalone SMS Implementation Plan (CAA/DANS/SMS/02) was developed following the ICAO four phase implementation approach.

2.4 Safety accountabilities and key personnel

Detailed responsibilities of individual positions for the continued operation of the SMS are addressed in Section 2.4.

2.4.1 SMS Functional Organization Chart

DANS is composed of various categories of staff who all contribute to its success. Each staff interacts with safety in some way, but the degree of SMS involvement varies for each position. Those staff who have more direct contact with safety management have greater responsibilities with the SMS while staff who are involved in more technical areas will have fewer responsibilities in the SMS. In order to specify the SMS responsibilities for each staff the following functional categories have established as listed below.

- Accountable Executive
- Accountable Manager
- Safety Manager
- Safety Personnel
- Safety Action Group
- Safety Review Committee
- All Staff

DANS' staff job descriptions include SMS functional / responsibilities. Staff from other directorates attached to DANS shall be oriented in their safety responsibilities by the safety office.

Fig 1 below is a functional chart showing the interfaces and interrelationships in terms of the management of safety among the various departments in DANS. It depicts functions rather than organization. It is not intended to depict the organization of the management of safety in terms of departments and functional units and their relative hierarchical positions within the directorate, but rather the functions of each department and/or functional unit in terms of the delivery of safety as a core business process

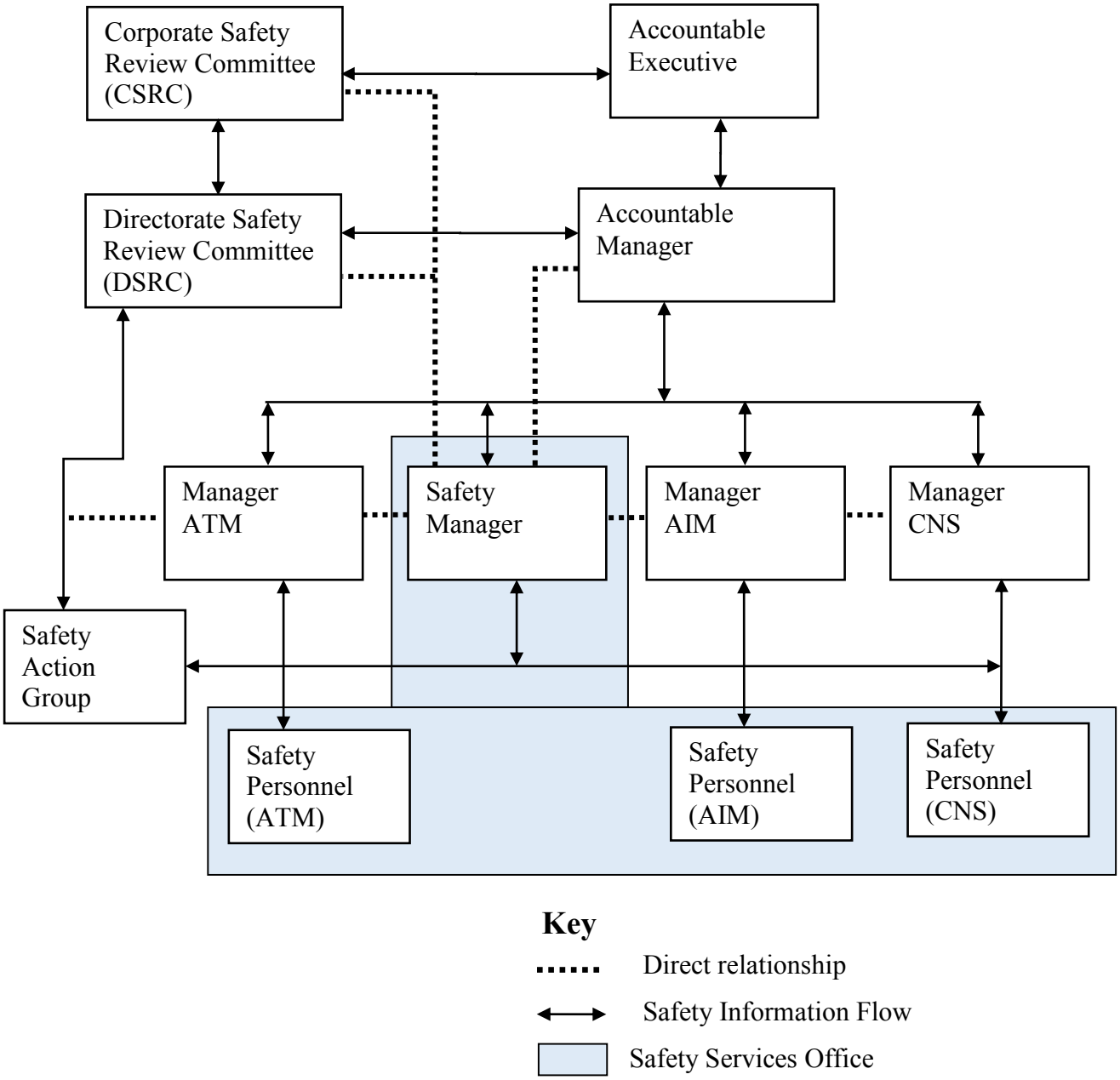


Fig.1 DANS SMS functional chart

2.4.2 Accountable Executive

The Accountable Executive who is the managing director (MD) has ultimate responsibility and accountability for the SMS and will provide the resources necessary to implement and maintain the SMS. The Accountable Executive's authorities and responsibilities are detailed in appendix I to this manual.

2.4.3 Accountable Manager

The Accountable manager is the Director ANS and reports directly to the Accountable Executive. The Accountable manager's authorities and responsibilities are detailed in appendix I to this manual.

2.4.4 Safety Manager

The Safety Manager who is the Manager Safety Management Systems/Quality Assurance is responsible for accomplishing many of the daily tasks and functions of the SMS. This person reports directly to the Accountable Manager.

The duties and responsibilities of Manager Safety Management Systems/Quality Assurance are detailed in appendix I to this manual.
The Safety Manager is assisted by the safety personnel shown in the chart below. The Safety Manager provides direct supervision for these personnel for all SMS related activities.

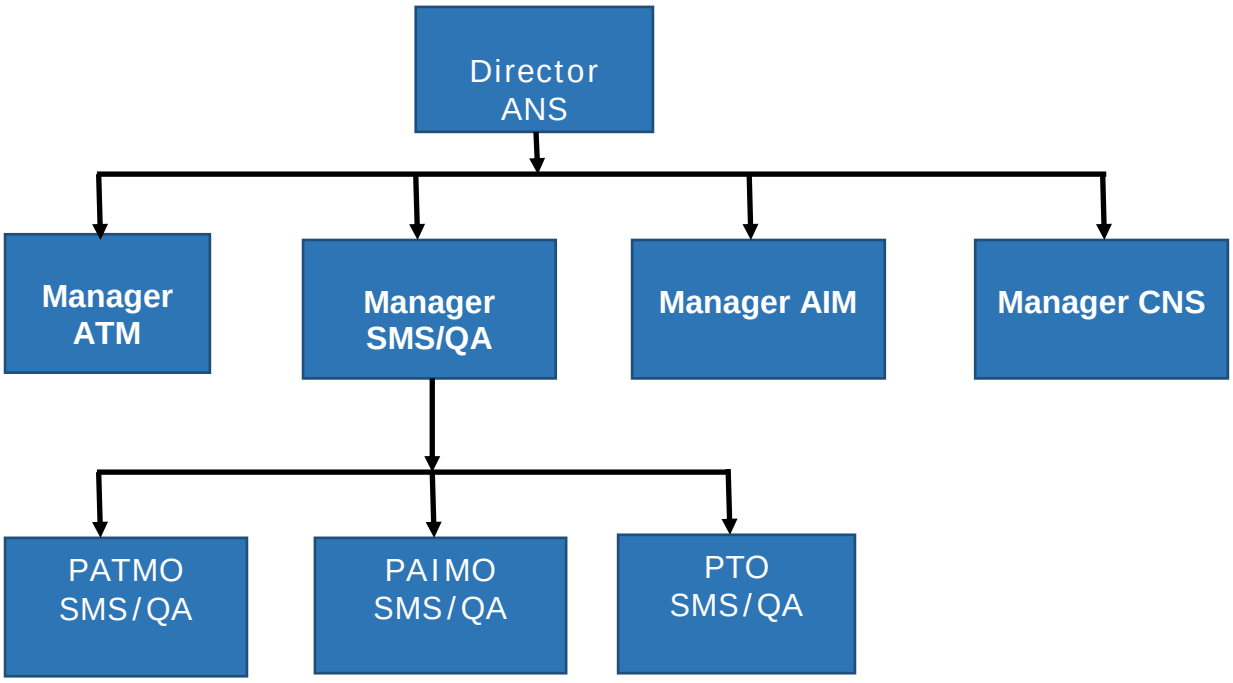


Fig. 2 DANS Safety office Organisational Chart

The Safety Manager's role is to provide safety expertise to assist all operating departments in achieving their safety targets. The responsibilities/duties, functions and authority of the safety manager are as detailed in the applicable version of the ICAO Doc 9859, Safety Management Manual, and the CAA job description for Manager SMS/QA.

2.4.5 Safety Personnel

The Safety Manager is assisted by staff from various departments as referenced in the chart above. The Safety Manager provides direct supervision for these personnel for all SMS related activities and may assign SMS duties to these personnel, their Safety duties are detailed in appendix I to this manual.

The generic accountabilities and responsibilities of each of the safety personnel are stipulated in their respective job descriptions. The specific duties of each of the safety personnel shall be assigned from time to time by the manager SMS/QA

2.4.6 The Safety Services Office.

The safety services office is at the heart of the functional chart. The safety services office is independent and neutral in terms of the processes and decisions made regarding the delivery of services by the line managers of operational units. In an SMS environment, the safety services office fulfils four essential corporate functions detailed in appendix I to this manual:

2.4.7 Safety Action Group

The Safety Action Group(s) (SAG) of DANS serves to coordinate the implementation of safety strategies as per the strategic direction developed by the Directorate SRC.

Station SAGs are formed at each station (Entebbe, Gulu and Soroti stations) and are chaired by the officer in Charge of the respective station. The SAG comprises of

a. Principals and supervisors in case of Entebbe station. Include in-charges NOF, COM, BFG, STO-R, SATMO-OPS, and SATMO-OJT.
b. Unit/section supervisors in case of Gulu station. And Other stakeholders as and when issues on agenda necessitate so
c. Unit/section supervisors in case of Soroti station. And Other stakeholders as and when issues on agenda necessitate so eg. (safety personnel from the Academy and meteorology(UNMA) at Soroti)

The responsibilities/duties, of the station SAG are as detailed in are detailed in appendix I to this manual. The SAGs will convene regularly as detailed in Appendix G.

2.4.8 Directorate SRC (DSRC)

DSRC utilizes the line Managers, and Principal Officers within DANS to oversee, review the activities and own all outputs from station SAG. A line manager chairs the DSRC in the absence of the Accountable Manager.

The responsibilities/duties of the DSRC are as detailed in appendix J to this manual.

2.4.9 Corporate Safety Review Committee (CSRC)

The organization has established a corporate Safety Review Committee (SRC) to provide a formal process for assessing the effectiveness and efficiency of aviation safety risk mitigation strategies. The corporate SRC further provides a platform for achieving the objectives of resource allocation and for discussing safety related issues from different perspectives.

The corporate SRC comprises members of the CAA Management Meeting representing the entire organisation is a multidisciplinary expertise which provides a natural forum for sharing ideas and assessing safety performance from an organisational perspective.

The Accountable Executive or the designated deputy will chair the corporate SRC and the SMS Managers will participate on this committee in advisory capacity only. This committee will convene at least, once every four (4) months or as circumstances may dictate.

The responsibilities/duties of the corporate SRC are as detailed in the applicable version of the ICAO Doc 9859, Safety Management Manual.

2.4.10 All Staff

All staff shall consider the safety implications of their actions as well as communicate relevant safety-related information.

All staff shall be responsible for safety and their specific duties and accountabilities are detailed in appendix I to this manual.

The generic safety accountabilities and responsibilities of each of the staff at DANS are stipulated in their respective job descriptions in the applicable operational manuals

2.4.11 Contractors [Service Providers and Suppliers]

Generally documentation of requirements for contracts will incorporate SMS inputs. Specifically the Contractor's role in SMS are detailed in appendix I to this manual.

Section heads, Contract managers, unit supervisors should ensure that all contractors undergo safety briefing prior to commencing works within the building, at any ANS facility or equipment in liaison with SMS office.

2.5 Coordination of emergency response planning

Although the organisation has taken every precaution to avoid mishaps and emergency situations, it is inevitable that incidents may still occur. In order to deal with these unexpected situations in a positive manner, an emergency response plan coordination procedure has been developed as in Appendix F to this manual. The purpose of this procedure is to guide operational departments such that the in the event of a situation requiring emergency response, transition from normal to emergency then back to normal operations is smooth. The procedure requires operational departments to develop comprehensive emergency response/contingency

plans commensurate to their operations including responsibilities, contact details of persons that may be of help in managing emergencies, relevant checklists and check sheets delegation of emergency responsibilities during and after emergency and requirement to, periodically conduct table top exercises and full scale simulations of the emergency response system.

2.5.1. Role of SMS in Coordination of ERP

SMS department shall ensure that the contingency plans developed by the operational departments are in line with sample ERP in Appendix 3 chapter 5 of Doc 9859 Third Edition. SMS department shall further ensure that the implementation of the developed ERP to the minimum follows the procedure in Appendix F to this manual.

2.6 SMS documentation

2.6.1 General documentation

The organization shall maintain all applicable SMS documents, records, and other information in accordance with document control requirements detailed in the CAA Quality manual. These documents, records and other information are maintained in both hard copy and soft/electronic form.

All documents and records are maintained in structured systems that provide legibility, original dates, revision dates, and easy retrieval. All documents are periodically reviewed, revised as necessary and approved as appropriate for adequacy by authorized personnel.

The current versions of relevant documents are provided to all locations where operations essential to the functioning of the SMS are performed. Obsolete documents are promptly removed from all points of use and retained or discarded in accordance with the schedule below.

Records are kept about the metrics of system analysis, hazard reporting, new operational procedures, risk analysis, risk mitigations, accidents, incidents, safety reviews and operational errors.

The following SMS records are retained:
SMS policy and objectives (retained 2 years)
The original SMS documents and subsequent revisions
Potential Safety Hazard Reports
Voluntary Safety Reports
SMS Training records

Outputs of the SMS (retained 2 years)
Completed Hazard and Risk Management Register for ATS operations (risk assessment & associated action plans)
Minutes of the meetings of the Safety Committees
Annual Safety Report

Accident and incidents (retained 2 years)
Completed accident and incident investigation reports
If legal action is pending or anticipated accident/incident records will be kept until the legal action has been resolved.

2.6.2 SMS manual for ANS

The Safety Management Systems Manual, its revisions and amendments are published and issued by the Safety Manager or his/her designee. The Safety Manager is responsible for its contents and for keeping instructions and information up-to-date. Submission, review and acceptance of SMS manual revisions shall be as per QMS procedure (CAA/CORP/OP/01) for control of documents and records. This manual shall not be reproduced in whole or in part or otherwise disclosed to any third parties without prior written consent from the Accountable Manager. Copies of this manual may be made available to certain contractors or industry partners, but the ownership of those copies remains with the Accountable Manager.

2.7 Procedures and Controls

Procedures and controls with measurable criteria are essential to the successful operation of the SMS. DANS utilizes many technical operating procedures which are incorporated into the various departmental manuals and handbooks. The procedures that are specifically applicable to the implementation and operation of SMS are contained in appendix I of this manual. These measurable criteria are reviewed annually to ensure the objectives of the safety policy are being accomplished.

CHAPTER 3: SAFETY RISK MANAGEMENT

3.1 Introduction

The Directorate manages safety by ensuring that, through its Safety Management processes, the safety risk of the consequences of hazards in critical activities related to the provision of Air Navigation Services are controlled to a level that is as low as reasonably practicable (ALARP). This is known as safety risk management, a generic term that encompasses two distinct activities; hazard identification and safety risk assessment and mitigation.

DANS Safety Management System uses the formal process of Safety Risk Management to identify hazards that are associated with its operations, analyse and assess the risks associated with those hazards and implement controls where necessary to prevent future incidents and accidents. The safety risk management process is both reactive and proactive. The process is also used to prioritise the resulting process improvements to ensure the best allocation of available resources.

3.2 Hazard Identification

The purpose of hazard identification is to allow for a safety analysis of the risks associated with the hazard and the subsequent elimination of the hazard or the reduction of its risks to an acceptable level. While the identification of every conceivable hazard is impossible, all staff shall exercise due diligence to identify hazards related to their operations. These hazards can be actual or potential. All hazards identified shall be assigned a unique tracking number and introduced into the Safety Risk Management process described in this chapter. All hazards which still appear at the close of the year in the Risk Register will be transferred to the Hazard Register (Form 125)

The Directorate utilizes both reactive and proactive methods of hazard identification. The traditional reactive methods of hazard identification will analyze hazards that have been identified or have already contributed to a safety occurrence. These reactive processes include the conduct of investigations into accidents, incidents, occurrences, Mandatory and Voluntary employee reports, external audits and regulatory violations.

Proactive methods attempt to identify and analyze hazards before they have resulted into an incident or accident. The proactive methodologies are discussed below.

a) Existing procedures and operations will be analyzed to identify inherent risks. This system and task analysis process is described in section 3.3 and will be performed as per the schedule in appendix G.
b) All significant changes to the operations will be analyzed prior to implementation to foresee new hazards and to revise the proposal to eliminate the hazards or to control the risks to an acceptable level. This process is described in section 4.6.
c) Continual review of operational data and trend analysis to proactively identify hazards as described in section 3.6
d) The internal evaluation process described in section 4.8.2.

e) Internal and external audits described in section 4.8.1 and 4.8.3

3.3 System and Task Analysis

All policies, procedures and operations incorporate safety; however, they may be reviewed to determine opportunities for improving their inherent levels of safety.

System and task analysis will be carried out using Form 121 by subject matter expert(s) identified by the respective section heads under the guidance of line managers. As a minimum, system and task analysis reports shall have background information, system description, task analysis and a completed form 121 with safety recommendations and forwarded to SAG for review.

Hazards identified by the System and Task Analysis process shall be subjected to the SRM process detailed in appendix A (form 122) to this manual. SMS Form 122 is used to organize the SRM process and record the results.

3.4 Mandatory Reporting Program

In order to comply with the prevailing Safety Management regulation, all DANS' staff shall participate in the mandatory reporting program. As a minimum all incidents associated with aircraft shall be reported under the mandatory reporting program. Electronic and Manual Situation Report (SITREP) form (SMS Form 116) accompanied by a log entry in the operational Log book shall be used under this program. All incident investigation reports shall be submitted to DSSER. Copies of these reports shall also be submitted to the Safety Manager for subjection to the Safety Risk Management process.

Mandatory reporting of incidents shall include;

- unauthorized penetration of airspace
- aircraft near CFIT
- Significant level bust incidents
- loss of separation incidents
- Runway incursion
- Runway excursion/overshoot
- Any other ANS-related deficiency/defect/malfunction as reported to (and verified by) the ANS/CNS operator and which is deemed to have an impact on the safety of air navigation
- Any other incidents or occurrences deemed by the State as reportable under this mandatory reporting system.

Note: Concealment or not reporting incidents/safety occurrences is regarded as unacceptable behaviour within DANS and will be subject to punitive measures. All reportable incidents must be reported.

3.5 Voluntary Reporting Program

Staff who work in operational areas are in the best position to be aware of hazards and incidents. Thus, all personnel are strongly encouraged to report all actual or potential hazards, incidents, observed deficiencies in existing procedures/processes. Reports should also be made where procedures were not followed for either inadvertent or intentional reasons. They may be made verbally, by e-mail (sms-dans@caa.co.ug) or to any Safety Office personnel, but it is preferred that the report is made in writing to the Safety Manager using SMS Form 120 with a full explanation of all related details from which an analysis can be made. Any member of staff in the Safety Office who receives a verbal report will complete SMS Form 120 for submission to the Safety Manager. These reports may also be deposited into the suggestion box available within the DANS building.

The Voluntary Reporting Program is a confidential program that protects the identity of the reporter. Only the Safety Manager, and/or the safety office personnel who received the report, will know the identity of the reporter and shall keep that identity confidential. The Safety Manager, or his designee, may contact the reporter to obtain additional information necessary to fully analyze the situation. Further use of the reported information outside of the Safety Office shall not contain any facts that can identify the reporter. The Safety Manager may report the supplied information to the regulator, without revealing the identity of the reporter.

Additionally, the Voluntary Reporting Program is non-punitive and shall not use the reported information to punish staff, but is instead focuses upon developing process improvements to eliminate the identified hazards or control the risks associated with the hazard. It is recognized that some incidents and accidents are due to inadequate procedures or inadequate training given to staff about the procedures, and considering the human factors aspect, there is no benefit in allocating personal blame in these cases. However, this non-punitive approach does not apply to illegal acts or blatant disregard of regulations or applicable procedures.

All reporters shall receive a confidential confirmation of receipt of their report from the Safety Manager. Upon resolution of the issue, the reporter shall also receive a confidential summary of the actions taken. These corrective actions may also be communicated to the entire directorate, but the identity of the reporter will remain confidential.

Furthermore, the directorate maintains a suggestion box located in all operational and general areas. Although staff are encouraged to use the dedicated reporting systems described above, any employee is free to deposit hazard observations and safety information in the suggestion box.

Reports collected through the voluntary reporting program will be submitted to the Safety Manager. Hazards identified from these reports will be subjected to the safety risk management process.

3.6 Operational Data Analysis

Data about the operations of the directorate is available from many sources including but not limited to; ATS logs, equipment logs, reliability data, etc. A safety database shall be maintained to facilitate the effective analysis of information on actual and potential safety deficiencies identified including that from the incident reporting systems. This operational data will be monitored and analyzed for trends and other indications of inherent hazards.

All identified hazards will be subjected to the Safety Risk Management process.
Preventive actions to address actual or potential safety deficiencies identified shall be implemented. The organisation will also monitor the implementation and effectiveness of the responses.
The organisation endeavours to implement an ADREP – compatible database system.

3.7 Risk Analysis

Risk analysis follows a simple three step process of condition (hazard), consequence (event), and risk (the probability and severity of the event.)

All incoming reports shall be screened to ensure they are not simple process quality problems that can be handled without risk analysis.

Trained personnel shall evaluate each identified hazard, and the system state(s) in which it exists, to determine what controls exist to prevent or reduce the effect(s) of the hazard. The team performing any risk analysis shall be comprised of at least one personnel trained in safety risk management and other staff who understand operations where hazards under consideration are. Each hazard will be analyzed to determine its potential to cause damage or harm, known as risk. The analysis will also include examining events or conditions that could cause the hazard to reduce system operability or safety levels. SMS Form 122 is used to organize the risk analysis process and record the results.

Each identified hazard has one or more associated risks. It is important for the risk analysis to identify all reasonable risks arising from each hazard. Each risk should then be defined in terms of its predicted severity and its probability of occurrence. Risks that are not within the scope of DANS' operations shall be forwarded to the relevant offices.

The severity of each risk is determined by its worst credible outcome. Less severe effects may also need to be included so that they can also receive proper assessment. It is important that the probability of the effect is not considered at this stage. The table below shows the severity levels.

Severity of occurrence	Meaning	Value
Catastrophic	- Equipment destroyed - Multiple deaths or Single death	A
Hazardous	- A large reduction in safety margins, physical distress or a workload such that the operators cannot be relied upon to perform their tasks accurately or completely - Serious injury -Major equipment damage	B
Major	- A significant reduction in safety margins, a reduction in the ability of the operators to cope with adverse operating conditions as a result of increase in workload, or as a result of conditions impairing their efficiency - Serious incident - Injury to persons	C
Minor	- Nuisance - Operating limitations - Use of emergency procedures - Minor incident	D
Negligible	- Little consequences	E

Table 3.1: Risk severity

The probability of outcomes is determined by statistical analysis or by expert opinion in the absence of other data. The table below shows probability definitions.

	Meaning	Value
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 3.2: Risk probability

3.8 Risk Assessment

To accomplish a risk assessment, the results of each analyzed risk (risk index) will be plotted on the Risk Assessment Matrix shown below. This will be accomplished by the Safety Manager. The location of the risk on the matrix will determine the priority of corrective actions.

Severity Probability	Catastrophic A	Hazardous B	Major C	Minor D	Negligible E
Frequent - 5	5A	5B	5C	5D	5E
Occasional - 4	4A	4B	4C	4D	4E
Remote - 3	3A	3B	3C	3D	3E
Improbable - 2	2A	2B	2C	2D	2E
Extremely Improbable - 1	1A	1B	1C	1D	1E

Table 3.3: Safety risk assessment matrix

1.	Unacceptable .(Intolerable)
2.	Acceptable with Mitigation (Tolerable)
3.	Acceptable

Table 3.4 Risk Tolerability description

3.9 Unacceptable Risk

Hazards with risk indices falling in this range are intolerable and therefore un-acceptable under any circumstances. They require immediate action to eliminate the hazard or control the factors leading to its higher probability or severity. The Safety Manager shall receive immediate notification of such assessments from SAG, SRC and Line Managers. The DANS will own the Unacceptable risks by signing off the report/notification/assessment received from the SAG/SRC/line manager and by doing so will signify that top Management is aware about these risks and the course of action taken/to be taken thereafter.

Newly identified hazards with unacceptable risks will require the development of controls within the normal course of business.

3.10 Acceptable with Mitigation

Hazards with risks falling in this range are tolerable and therefore acceptable provided appropriate mitigation strategies are implemented. They require the implementation of mitigation strategies as expeditiously as possible. Continued monitoring will be required to ensure the effectiveness of the implemented controls.

3.11 Acceptable Risk

Risks in this range are acceptable without further action, but prior efforts should be made to reduce the risk to as low as reasonably practicable (ALARP) if it is economical to do so. The objective of this SMS is to reduce risk to as low as reasonably practicable (ALARP) whenever possible.

3.12 Risk Assessment approvals

Risk assessment reports shall be subjected to approval by the line manager

Risk Index	Tolerability	Action required (customize as appropriate)
5A, 5B, 4A	Extreme risk	Stop operation or process immediately. Unacceptable under the existing circumstances. Do not permit any operation until sufficient control measures have been implemented to reduce the risk to an acceptable level. Top management approval required.
5C, 4B, 3A	High risk	Caution. Ensure that risk assessment has been satisfactorily completed and declared preventive controls are in place. Senior management approval of risk assessment before commencement of the operation or process.
1A, 2A, 2B, 3B, 3C, 4C, 4D, 5D, 5E	Moderate risk	Perform or review risk mitigation as necessary. Departmental approval of risk assessment.
1B, 1C, 2C, 2D, 3D, 3E, 4E	Low risk	Risk mitigation or review is optional.
1D, 1E, 2E	Negligible risk	Acceptable as is. No risk mitigation required.

Table 3.5 Risk acceptability (tolerability) table

3.13 Risk Control

The risk assessment of section 3.8 may indicate that controls need to be designed and implemented. These controls may be additional/changed procedures, new supervisory controls,

addition of organizational hardware, or software aids, changes to training, additional or modified equipment, changes to staffing arrangements, or any of a number of other system changes.

Risk control will be accomplished in the organisation using the Hazard and Risk Management Register for ATS operations, SMS Form 122 found in Appendix A. This form shall be generated and retained in Organizational files for every risk that completes the risk assessment process.

3.14 Hierarchy of Controls

The process of selecting or designing controls will be approached in a structured manner. System safety technology and practice have provided a hierarchy or preferred order of control actions that range from most to least effective. Depending on the hazard under scrutiny and its complexity there may be more than one action or strategy that may be applied. Further, the controls may be applied at different times depending on the immediacy of the required action and the complexity of developing more effective controls. For example, it may be appropriate to post warnings while a more effective elimination of the hazard is developed. The hierarchy of controls is:

a. Design the hazard out – modify the system (this includes hardware/software systems involving physical hazards as well as organizational systems).
b. Physical guards or barriers – reduce exposure to the hazard or reduce the severity of consequences.
c. Warnings - advisories, or signals of the hazard.
d. Procedural changes to avoid the hazard or reduce probability or severity of associated risk
e. Training to avoid the hazard or reduce the probability of an associated risk.

All controls will be clearly and fully documented to allow for further analysis, tracking and post-implementation monitoring and validation using SMS forms 122, 123 or 125.

3.15 Residual and Substitute Risk

It is seldom possible to entirely eliminate risk, even when highly effective controls are used. After these controls are designed, but before the system is placed on line, an assessment shall be made of whether the controls are likely to be effective and/or if they introduce new hazards to the system. The latter condition is referred to as “substitute risk,” a situation where “a new risk is unintentionally created as a consequence of implementing safety risk control(s).” The former situation, where the controls fail to eliminate the risk entirely is referred to as “Residual risk”.

3.16 Risk Control monitoring

Risk control monitoring will be accomplished in DANS using the Hazard and Risk Management Register for ATS operations, SMS Form 122 found in Appendix A. These forms will be retained as specified in section 2.6.1 to provide a lasting record of the actions.

Each hazard is uniquely identified which allows to validate whether the risk controls were fully implemented and that they were found to be effective. The next process, safety assurance, uses auditing, analysis, and review systems to further monitor the risk controls to ensure they continue to be implemented as designed and continue to be effective in the changing operational environment. Any control that is found to be deficient or ineffective will have its associated hazard re-entered into the safety risk management process for the development of more effective controls.

CHAPTER 4: SAFETY ASSURANCE

4.1 Introduction

The safety assurance process provides confidence that the SMS is operating as designed and is effective. Safety assurance consists of processes and activities undertaken by the organisation to determine whether the SMS is operating according to expectations and requirements. The primary purpose of this process is to ensure the performance and effectiveness of the risk controls. Safety assurance uses information from various sources including Mandatory incident reporting systems, voluntary incident reporting systems, Safety studies, Safety surveys, safety reviews, evaluations, operational data, system and task analyses, audits and internal investigations.

Safety studies are analyses used to gain an understanding of broad safety issues or those of a global nature. This involves analysing global safety recommendations to assess their ability to improve safety performance in the context of aviation activities in DANS.

Safety reviews are a fundamental component of change management. They are conducted during the introduction of new technologies, new procedures or systemic changes that affect aviation operations. Safety review shall be conducted before such change is effected, in order to ensure that safety performance is maintained at appropriate levels during periods of change.

Safety surveys examine procedures and processes related to a specific operation. They may involve the use of checklists, questionnaires and informal confidential interviews. Safety surveys generally provide quantitative information that may require validation to determine appropriate corrective action.

Safety audits (internal & external) and evaluations are core safety management activities that provide a means of systematically assessing how well DANS is meeting its safety objectives.
Evaluations can be scheduled or unscheduled formal reviews, examinations and verifications of activities and operations. They improve the quality of products, processes, or services and provide a means for monitoring compliance with international standards and national regulations.

Safety assurance provides for the continued monitoring of internal processes as well as its operating environment to detect changes or deviations that may introduce emerging safety risks or the degradation of existing risk controls. If personnel identify that existing risk controls are ineffective, have not been fully implemented, or are not being properly followed, they work with the department management to arrive at corrective actions to reinstate the control. In some cases, the resolution of corrective action could constitute a change to established procedures. Proposed changes shall be subjected to the change management process described in section 4.6 prior to implementation.

As the SMS matures, the existing Quality Management System audits will be phased into this Safety Management System. The SMS will then include all functions accomplished by this earlier program. This will expand the safety efforts to a much more comprehensive level.

4.2 Information Acquisition

Information used for measuring safety performance of the organization is generated from safety reporting systems described in sections 3.4, 3.5 and 4.1.

4.2.1 Continuous Monitoring of operational data

The Directorate actively seeks the information necessary to confirm the successful operation of the SMS processes. Continuous monitoring involves analysis of operational data as it becomes available. The operational data listed in section 3.6 is continually monitored to discover any pertinent trends. The Safety Manager is responsible for monitoring this information and accomplishing this review on a quarterly basis.

4.2.2 Safety reviews

Safety reviews are a fundamental component of change management. They are conducted during the introduction of new technologies, new procedures or systemic changes that affect aviation operations. Safety reviews have a clearly defined objective that is linked to the change under consideration. Safety reviews ensure that safety performance is maintained at appropriate levels during periods of change. Safety reviews shall be conducted by analyzing the system in which the change is to be introduced. The analysis looks at the aspects of the system that are to be affected by the change with intent to identify hazards being introduced into the system if any and any effect thereof on existing defenses. The output of a system safety review are populated SMS form 121 and SMS forms 122. Safety reviews shall be conducted by a team of officers allocated to the project that is implementing the change.

Choice of officers allocated to any project shall be guided by the officer's knowledge, skills and expertise in the area under consideration.

4.2.3 Safety studies

Safety studies are analyses used to gain an understanding of broad safety issues or those of a global nature. For example, the airline industry may produce safety recommendations and implement measures to reduce accidents and incidents during the approach and landing phases. Individual service providers may find that these global recommendations improve safety performance in the context of their aviation activities.

4.2.4 Safety surveys

Safety surveys examine procedures or processes related to a specific operation. Safety surveys may involve the use of checklists, questionnaires and informal confidential interviews. Safety surveys generally provide qualitative information that may require validation to determine appropriate corrective action. Nonetheless, surveys may provide an inexpensive source of significant safety information.

4.2.5 Internal Investigations

DANS investigates certain safety events in accordance with internal and/or regulatory requirements. Reports from accidents and serious incidents investigations by DSSER or other regional/international accident and incident investigation bodies will also provide the impetus for internal investigations to be undertaken by the directorate

These investigations are used to facilitate the implementation of more effective risk controls in the operation. They are not intended to be a chase for the guilty party, but rather a move towards effective risk mitigation. This ensures the cooperation of those involved in the event and facilitates discovery of the underlying causes. The short-term expediency of finding someone to blame is detrimental to the long-term goal of preventing future mishaps.

Incidents may be indicative of potentially serious hazards, perhaps systemic problems or latent conditions that will not be revealed unless the occurrence is properly investigated. Some safety occurrences may not require detailed investigation. In DANS, all these events are subjected to appropriate level of investigation and then subjected to the SRM process for hazard identification, tracking and control.

When an event occurs, the respective departmental head will assign a person or team to investigate it as per the Accident and Incident Investigation Plan detailed in Appendix I to this manual. Upon conclusion the investigator shall use the information in the incident investigation report (Appendix I) to document all findings and hazards discovered using SMS Form 124 (Appendix A). The SMS office shall be given a copy of the report of the investigation detailing the findings and mitigation action taken or recommendations to prevent the re-occurrence of unsafe acts.

All incident and accident reports will be retained for the periods of duration specified in section 2.6.1.

4.2.6 Investigating organizational and management factors

Organizational culture has a very important role in determining the safety culture of an organization and management creates a safety culture when effecting accident prevention by eliminating unacceptable risks. Management is in better position to achieve this because they introduce changes in the organization, its structure, corporate culture, policies and procedures.

As a result of management's duties and responsibilities, their actions or inactions usually introduce organizational and management factors which affect the safety of operations. Organizational and management factors in accident causation are those factors within an organization's sphere of influence which increase the probability of an unsafe act occurring, or which reduce the effectiveness of defences in place to reduce the impact of unsafe acts.

Accident/incident investigation therefore needs to probe the contribution of these factors to the incident or accident.

The process of collecting data on organizational and management factors during the investigation of an incident is guided by two checklists used in conducting two types of interview.

Checklist A (Appendix I, Procedure 1) is used by the investigator to interview management and employees for general background information on organizational and management factors. It probes into the "4Ps" beginning with Practices observed during the interview and checking for their consistency with Procedure, Policy and Philosophy of the organization.

It may be used by starting with the practices observed during an occurrence investigation and working backwards to determine the degree to which there is consistency between these practices and the procedures, policies and philosophy of DANS.

Alternatively, a top down approach may be adopted in which the investigator begins by examining the safety philosophy of an organization and investigates the extent to which this is translated into policies, procedures and practices.

Checklist B (Appendix I) is based on checklist A, and is used by the investigator to interview management and employees to determine how the organization handles specific unsafe acts or conditions that have been identified in the investigation.

The investigators use the checklists as a starting point to guide their investigation but build on them as necessary. The objective is that the latent unsafe organizational and management factors are unearthed. This checklist is subject to review and maybe applied in whole or part depending on the situation.

4.3 Analysis of safety Data

A critical component of the SMS is tracking and analyzing safety data to enhance the awareness of potentially hazardous situations. This screening and decision process will evaluate the data for significance and is applied to all incoming data. Safety data described in section 4.2 is collected and analyzed. This information is continually shared to improve the level of safety. This safety information is used to:

- Identify risks and verify the effectiveness of implemented controls.
- Identify areas in which safety could be improved.
- Contribute to accident and incident prevention.
- Assess the effectiveness of training.

The Safety Manager is responsible for analysing safety data to identify adverse trends and to identify indicators of potential safety issues. Over time this data will help identify indicators that point to potential problems in the system. We also use safety data to assess the effectiveness of the SMS by tracking safety matrix.

4.4 Safety Management System Assessment

The safety office will conduct a safety management system's assessment to determine the level of maturity/implementation of the SMS periodically by using the SMS gap analysis tool, CANSO SMS Standard of Excellency Questionnaire or any other assessment tool deemed appropriate by the safety manager. The Safety Manager may enlist the assistance of appropriate individuals throughout the organization for this purpose.

The Safety Manager and his/her team will provide a report on the effectiveness, efficiency and maturity/level of implementation of the SMS. Action plans will be generated to address the findings. SMS assessment shall be conducted as per schedule in appendix G.

4.5 Safety Performance indicators (SPIs)

The final output of a safety performance monitoring and measurement process is the development of safety performance targets based on analysis of data collected through the sources referenced above. The monitoring and measurement process involves the use of selected safety performance indicators, corresponding safety performance targets and alert levels.
Procedure for developing and monitoring the coherent set of safety performance indicators, their corresponding safety performance targets and alert levels is as described in appendix I to this manual.

4.6 Management of Change

Whenever there are pertinent changes to operations/processes, facilities/equipment/software, key safety personnel or pertinent changes external to DANS such as regulatory/industry standards, best practices or technology, new safety risks may come up or current defences to existing risks may be degraded. All unit heads shall monitor and recommend changes to the safety manager or his/her designee for approval prior to implementation. Prior to approval and implementation of the proposed changes, they shall undergo a System and Task Analysis process as described in section 3.3 to identify hazards which will be subjected to the Safety Risk Management Process for analysis and implementation of controls, as necessary. Such changes shall be controlled using;

i) The system and task analysis worksheet (SMS Form 121)
ii) The hazard and risk management register for ANS (SMS form 122) and
iii) The Change Management Form (Form 115).

The objective is to eliminate or control potential hazards and their associated risks before implementing the changes in order to maintain or improve the organization's acceptable level of safety. This process may also be referred to as Safety Assessment Process.

4.7 Continuous improvement of the SMS

Safety assurance processes support improvements to the SMS through continual verification and follow-up actions. These objectives are achieved through the application of internal evaluations and independent audits of the SMS.

4.8 Safety Audits

Audits evaluate the effectiveness of the overall SMS, identify areas in need of improvement, and verify the results of those improvements. Audits further contribute to the identification of negative safety trends, which can lead to the identification and mitigation of hazards. Audits may be conducted by entities that are external to the service provider or through an internal audit process having the necessary policies and procedures to ensure its independence and objectivity.

Audits are intended to provide assurance of the safety management functions, including staffing, compliance with approved regulations, levels of competency and training.

Audits shall be conducted regularly as per the SMS Calendar of Regular Scheduled Events in aappendix J of this manual. The scope of an audit varies with the stage of the program/operation, its maturity, type of safety processes, and level of confidence developed from previous audits.

4.8.1 Internal safety Audits

Internal audits involve the systematic and scheduled examination of our operations, including those specific to implementation of the SMS. Internal audits are conducted by persons from within DANS who are independent of the functions being evaluated. They provide the organization's management with the ability to track the implementation and effectiveness of the SMS as well as its supporting systems.

General Internal audit checklists are provided in Appendix B and Appendix C and are subject to review.

The Safety Manager may also use these self-audit checklists to identify events, policies, procedures or practices that may be indicative of safety hazards.

4.8.2 Internal Evaluation

Internal evaluation is an on-going process that monitors the pulse of all Organization functions, including the SMS. Deficiencies, hazards, and associated risks identified by this process are then alerted to top management for action. Internal evaluation can identify problem areas before they result in a mishap and therefore contribute to the *proactive* hazard identification processes.

In the Directorate the internal evaluation function is accomplished by trained personnel in the Safety Office using operational checklists which are located in Appendix B and Appendix C. Trained personnel may be utilized on a part-time basis to perform evaluations of departments where they do not work. When performing evaluations, they are responsible only to the internal evaluation process and its management.

4.8.3 External Auditing of the SMS

External audits of the SMS are conducted by DSSER and may be conducted by industry associations or other third parties selected by the service provider. All external audits and safety inspections provide valuable information that can be used to improve safety in the daily operations. All deficiencies identified through this process are entered into the SRM processes described in this manual. These external audits enhance the internal audit system as well as provide independent oversight.

4.8.4 Preventive/Corrective Action

Following each system & task analysis, safety review, safety study, safety survey, audit cycle, incident investigation, evaluations, data analyses or risk assessment the directorate will take action to address identified non-conformances and deficient areas. This response will include both preventive and corrective actions.

Preventive action is taken to eliminate the cause of a potential nonconformity or other undesirable potential situation.

Corrective action is taken to eliminate the cause of a detected nonconformity or other undesirable situation. There can be more than one cause of nonconformity. Corrective action is taken to prevent recurrence whereas preventative action is taken to prevent occurrence.

During the preventive/corrective action process, the Safety Manager will present the findings from the system & task analysis, safety review, safety study, safety survey, audit cycle, incident investigation, evaluations, data analyses or risk assessment to the manager of the unit or section where the deficiency/non conformity has been detected. This may be verbal or written as appropriate to the situation. This initial process will be used to solicit additional information and correct any misunderstandings.

Dates for issuing interim reports and for receiving comments will be mutually agreed upon after which planned remedial actions will be generated and documented for all identified areas of safety concern. Each departmental manager has the responsibility to develop a corrective action plan setting out the actions to be taken to resolve identified deficiencies or safety shortcomings. Each action item will be assigned an agreed time period for completion.

Implementation of the corrective action plan will be accomplished by the appropriate department manager with the assistance of the Safety Manager. Final reports will include these corrective actions taken and detail any follow-up action proposed.

The manager of the affected section is responsible for ensuring the timely implementation of the appropriate corrective/preventive actions. Any preventive/corrective actions that introduce new procedures or equipment shall be subjected to the change management process described in section 4.6.

4.8.5 Sources of Information relevant to a safety audit / evaluation

a) Physical examination of the equipment used. This may include examining the front-line equipment used, its components, and the workstations and equipment used by supporting personnel.
b) Documentation spanning a broad spectrum of the operation, for example:
   i) maintenance records and logs
   ii) personal records/logbooks
   iii) certificates and licences
   iv) in-house personnel and training records and work schedules
   v) MANSOPS and SOPs
   vi) training manuals and syllabi
   vii) manufacturers' data and manuals and
   viii) Regulatory authority records.
c) Interviews conducted with individuals. These can provide a principal source of information for any investigation. In the absence of measurable data, interviews may be the only source of information.
d) Direct observation of actions performed by operating or maintenance personnel in their work environment. This can reveal information about potential unsafe conditions. However, the persons being observed shall be aware of the purpose of the observations.
g) Specialist advice. Investigators cannot be experts in every field related to the operational environment. It is important that they realize their limitations. When necessary, they shall be willing to consult with other professionals during an audit or evaluation.

4.8.6 Management Reviews

Top management shall review the SMS at planned intervals to ensure its continuing suitability, adequacy and effectiveness (Appendix J). This review shall include assessing opportunities for improvement and the need for changes to the SMS, including policy and objectives of the SMS.

The input to the management reviews shall include;

i. Results of audits, evaluations, and assessments
ii. Customer feedback
iii. Process performance and product conformity
iv. Status of preventive and corrective actions
v. Follow-up actions from previous management reviews
vi. Changes that could affect the SMS
vii. Recommendations for improvement

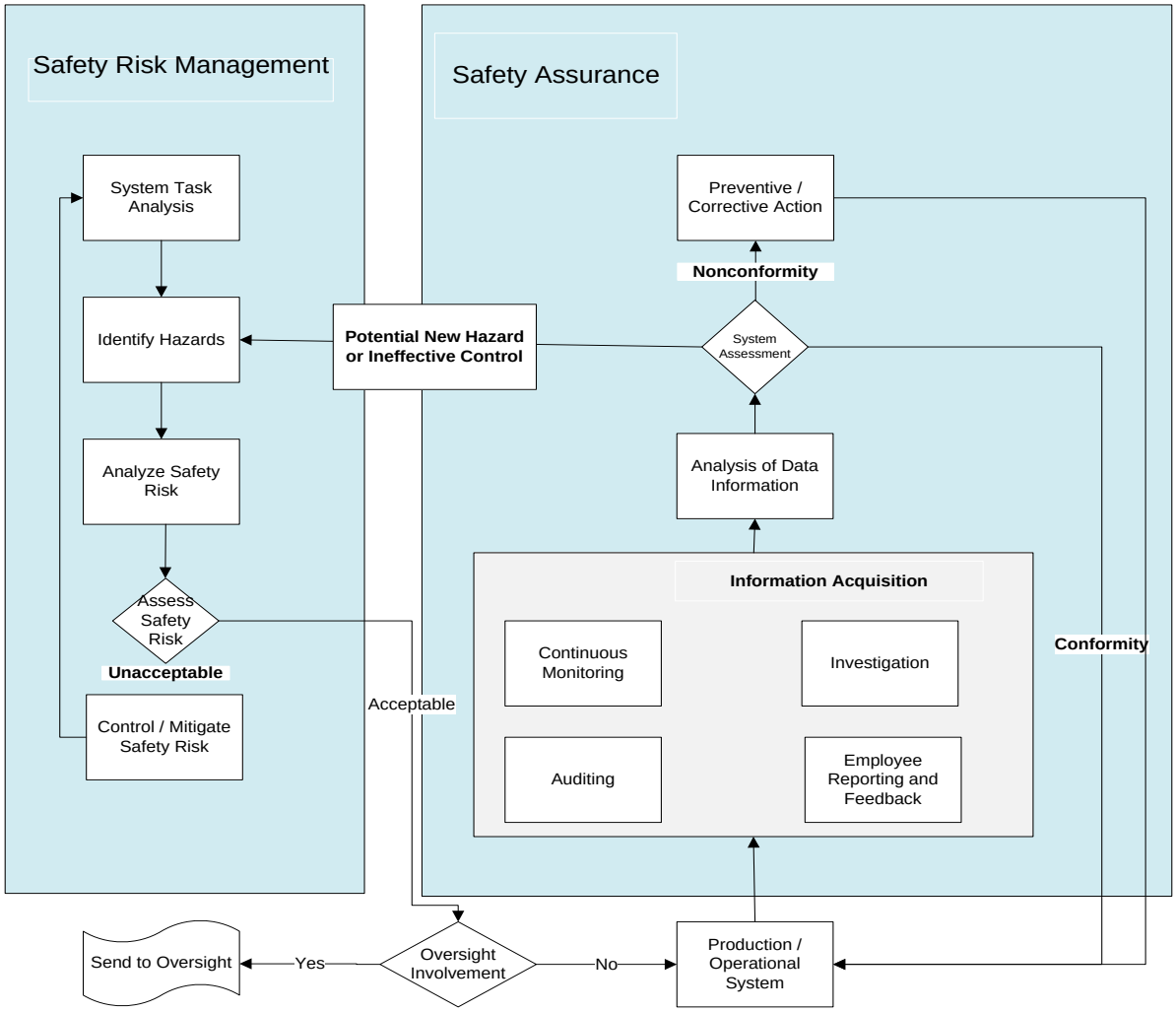


Fig.3 Relationship between Safety Risk Management and Safety Assurance

CHAPTER 5: SAFETY PROMOTION

5.1 Introduction

Safety Promotion refers to the collection of activities undertaken by DANS to promote a positive safety culture and create an environment that is conducive to the achievement of the safety objectives. A positive safety culture is characterized by values, attitudes and behaviour that are committed to DANS's safety efforts. This is achieved through technical competence that is continually enhanced through training and education, effective communications and information sharing. The elements of a positive safety culture are described below;

i) **Informed culture**
Management intends to foster a culture where people understand the hazards and risks inherent in their areas of operation. Personnel are provided with the necessary knowledge, skills and job experience to work safely, and they are encouraged to identify the threats to their safety and to seek the changes necessary to overcome them.

ii) **Learning culture**
Learning in this organization is seen as more than a requirement for initial skills training, rather it is valued as a lifetime process. People are encouraged to develop and apply their own skills and knowledge to enhance organizational safety. Staff are updated on safety issues by management, and safety reports are fed back to staff so that everyone can learn the pertinent safety lessons.

iii) **Reporting culture**
Managers and operational personnel freely share critical safety information without the threat of punitive action. Personnel are able to report hazards or safety concerns as they become aware of them, without fear of sanction or embarrassment.

iv) **Just culture**
While a non-punitive environment is fundamental for a good reporting culture, all staff must know what is acceptable and what unacceptable behaviour is. Negligence or deliberate violations will not be tolerated in this organization, even in our non-punitive environment.

Safety promotion affects both individual and organizational behavior and supplements the directorate's policies, procedures and processes, providing a value system that supports safety efforts.

The Directorate is committed to ensuring that all staff are informed about the safety policies and goals, how well we are meeting those goals, results of accident and incident investigations, new safety practices, and other matters dealing with safety.

The safety manager has the responsibility of ensuring that the objective of safety promotion is achieved. The Accountable Manager provides leadership to promote the safety culture throughout DANS.

5.2 Safety training

The Directorate will provide SMS training to all staff appropriate to the individual's responsibility and involvement in the SMS. Training needs assessment shall be conducted as per procedure in appendix K to this manual. Training shall consist of initial and recurrent SMS training for operational personnel, managers and supervisors, senior managers and the Accountable Executive. SMS awareness shall be incorporated into DANS' employee indoctrination programs. All SMS training content developed internally shall be validated by the safety manager or his/her designee prior to its use. The ANS safety office under the supervision of the safety manager shall develop an annual SMS training plan and manage the SMS training records.
The directorate utilises the monthly and annual SMS sensitisation workshops to refresh staff on safety management knowledge and its application in the works environment. Additionally, the SMS display, presentations during workshops organised by professional associations like UGATCA, UGAISOA, and UGATSEA to refresh staff on various elements of safety management systems.

Occasionally, based on recommendations arising from incident investigations, the SSMS department organises workshops to address the critical gaps that may be existing in the knowledge and application of safety management.

Successful operation of the directorate's SMS is tied to the success of the safety management system training program detailed in appendix K of this manual. All personnel shall understand the safety philosophy, policies, procedures and practices. They should understand their roles and responsibilities within that safety management framework. Accordingly, safety training will begin with each employee's initial indoctrination and continue throughout the term of employment.

5.3 Safety Communication

Successful Safety Management Systems are marked by good communication between all interested parties. This enhances safety, lifts morale, and improves productivity, efficiency, and profitability.

5.3.1 Internal safety Communication

Organization's SMS objectives and procedures shall be communicated to all staff. Information regarding safety performance trends, specific safety issues, lessons learned from investigations/case histories/experiences both internally and from other organizations shall be disseminated through established communication channels/processes described in this section. Staff shall be encouraged to use available communication channels to continuously identify and report hazards.

5.3.2 External safety Communication

DANS SMS shall share safety information with external organizations whose operations affect safety of ANS operations (customers, contractors, regulatory organization, and other departments of CAA) as appropriate on prior arrangement. This may be either on request or voluntary basis through workshops, seminars, newsletters, meetings publications, adhoc training and official memos.

Additionally, the runway safety team to which DANS SMS has representation provides a platform for safety information sharing/exchange as well as collaborative safety risk management.

5.3.3 Communication initiatives

To achieve this, SMS initiated the communication and information dissemination channels/process described below.

a. A formal Safety Policy Statement has been published.
b. The employee safety feedback system described in Section 3.4 and 3.5 is in operation and provides for complete confidentiality.
c. Clear channels of communication are established throughout the directorate and open, honest communications may be rewarded.
d. Safety issues are discussed at all staff meetings and other directorate gatherings to provide for the open exchange of ideas.
e. The Directorate maintains a Safety Bulletin Board where safety information is posted for all staff.
f. Safety Bulletins describing new hazards and interim procedures are distributed immediately to affected staff.
g. The Directorate undertakes safety promotional campaigns/workshops when necessary to promote system-wide awareness of important safety issues. These campaigns may utilize various media such as posters, videos, displays, seminars, meetings, and/or workshops.
h. The lessons learned from safety reports will be communicated to operational staff.

Examples of DANS communication initiatives include;

a) Dissemination of the SMS manual
b) Safety processes and procedures
c) Safety newsletters, notices and bulletins, and
d) Websites or email.

APPENDIX A: SMS Forms

SMS FORMS INDEX REFERENCE

DIRECTORATE OF AIR NAVIGATION SERVICES
SAFETY MANAGEMENT SYSTEMS AND QUALITY ASSURANCE

WORKSHOP / SEMINAR ATTENDANCE RECORD **SMS FORM 113 A**

ACTIVITY NAME _____ACTIVITY DATE_____

ACTIVITY VENUE_____

No	NAME	ORGANISATION	POSITION	E-MAIL	PHONE	SIGN

FACILITATOR(S)

	Print Name	Signature	Organization
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____

SAFETY MANAGEMENT SYSTEMS AND QUALITY ASSURANCE

ACTIVITY ATTENDANCE RECORD **SMS FORM 113 B**

ACTIVITY NAME _____ ACTIVITY DATE_____

ACTIVITY VENUE_____

No	NAME	POSITION	PHONE	SIGNATURE

SMS FORM 114

EMPLOYEE SMS RECOGNITION NOMINATION

Nominator's Name: **Signature:** **Date:**	**Department /Section**
Nominee's Name:	**Nominee's Department:**
Nominee's Supervisor's Name:	**Supervisor's Signature:**
Description of action(s) worthy of recognition:	
Date and place observed:	
To be completed by the Safety Review Committee:	
Date received:	**Date reviewed:**
Additional information:	
Nomination Accepted: **Yes or No**	**Date:** **Comments:**
Award Granted: **Level**	**Date:** **Comments:**
Chairperson's Approval	**Date:** **Signature:**

SMS FORM 115

DIRECTORATE OF AIR NAVIGATION SERVICES

CHANGE MANAGEMENT FORM

Originator (Name & Title)	System/Equipment Concerned	Date Raised	Reference No.
Change Description			
Change Justification (Attach relevant documents if available)			
Back out Plan (What happens if change cannot be made)			
Areas affected by the change			

Costs (if any)	Time (how long to implement change)	Proposed Implementer

Recommendation and Approval

Recommended by (**Line Manager**):

(Name, Signature and Date)

Accepted by (**MSMS/QA**): (*The proposed mitigations are sufficient to address the identified hazards*)

(Name, Signature and Date)

SMS FORM 116

SITUATIONAL REPORT (SITREP)

Serial Number:					
Occurrence Type:		If other (in brief):			
Place/ Position:		Aircraft Operator:			
Date of occurrence:		Aircraft Owner:			
Time of Occurrence:		Departure Point:			
Aircraft Registration:		Destination:			
Aircraft Type:		Persons on board:			
Aircraft Nationality:		Injuries:			
Brief Notes:					
Action Taken:					
Reported By:		Date:		Time	
Remarks:					
Remarks by:		Date:		Time:	

SMS FORM 120

HAZARD IDENTIFICATION REPORT

Name (optional):	**Department/ Section**
Telephone:	**e-mail (optional)**
The above information is confidential. This portion will be removed from the form and returned to you as a receipt. No record of your identity will be kept. You may be contacted for additional information prior to submitting the information into the SMS process.	
✂ -	
Description of the issue or hazard:	
Date and place observed:	
How do you recommend fixing the problem?	
To be completed by the Safety Manager:	
Hazard Tracking Number assigned:	
Investigator assigned:	**Date assigned:**
Action taken by Internal Operational Department:	
Actions Accepted: Yes or No	**Date: Comments:**
Further Action Required: Yes or No	**Date Comments:**

SMS FORM 122

HAZARD AND RISK MANAGEMENT REGISTER FOR ANS

SN.	**Hazard**	**System state**	**Description of consequences**	**Risk Assessment**					**Evaluation**
				Current Defences	**Current Risk Index**	**Further Actions to reduce the risks**		**Risk Owner**	**Actual Risk Index**
						Technical and Administrative Defences	**Theoretical Risk Index**		

Evaluated by:
Name_____ Signature_____ Date_____

Approved by (Line Manager(s)):
Name _____ Signature_____ Date_____

Next Evaluation Date _____

Next Review Date _____

SMS FORM 121

SYSTEM AND TASK ANALYSIS WORKSHEET

	Task Title:			**Task Location:**	
	Analyst Name:			**Date:**	
Task Step	**Task Step Description**	**Hazard(s)**	**Hazard Category (OSH/Aviation)**	**Hazard Controls**	**Comments**

SMS FORM 123

FOLLOW UP ACTIONS ON SAFETY RECOMMENDATIONS

DATE	SOURCE	ADDITIONAL NOTES/FINDINGS	CATEGORY	CAUSES/SAFETY ISSUES	CAP/ SAFETY RECOMMENDATIONS	ACTION TO PREVENT RECCURANCE	CAP SUBMISSION DATE	CAP ACCEPTANCE DATE	PROPOSED DATE OF COMPLETION	ACTION BY	STATUS	TIME TAKEN	REMARKS

Name **Signature** **Date**

_____ _____ _____

Next Review Date _____

FORM 124

MONITORING EFFECTIVENESS OF SAFETY RISK CONTROLS

#	SOURCE OF FINDING/ SAFETY ISSUE	FINDING / SAFETY ISSUE	CAUSE(S)	CAP / MITIGATION	ACTION TO PREVENT RECURRENCE	CAP / SAFEY ISSUE CLOSING DATE	MONITORING FREQUENCY	RECURRENCE (Y/N)	REMARKS	NEXT MONITORING DATE

Name _____ Signature _____ Date _____

SMS FORM 125

HAZARD REGISTER

SN.	Type of operation or activity	Description of hazard	Description of consequences	Current/Existing Defences to control safety risks	Further Actions to reduce the risks e.g. Technical, Administrative Defences, Training, etc	Responsible Person

Name **Signature** **Date**

_____ _____ _____

Next Review Date _____

SMS FORM 126

UGANDA

DIRECTORATE OF AIR NAVIGATION SERVICES
CORRECTIVE ACTION REQUEST FORM

Department	**Location:**	**Date:**	**File:**
Area Audited/Inspected:			
Auditor/Inspector:		**Signature:**	
Auditee/Representative:		**Signature:**	
Part 1: Non-Conformance/Observation			
Reference:			
Part 2: Cause(s) of non-conformity			
Proposed Corrective Action(s) (*indicate the action office*)			

Proposed date of completion:	**Sign:**
Action(s) to prevent Recurrence (Preventive action)	
Part 3: Corrective Action Evaluation (Inspector)	
SMS Response / Comments: □ CAP Accepted □ CAP Rejected	**Proposed follow Up:** □ On – Site Inspection □ Administrative Action **Proposed follow Up Date: .....** **New CAP Target Date: .....**
Inspectors Name:	**Signature:** **Date:**
Finding Closed by:	

Auditor/Inspector: **Signature:** **Date:**
Comments:

APPENDIX B: Sample SMS Audit and Internal Evaluation Checklist

These checklists are applicable to all internal audits.

Audit Information	
Person /Team undertaking audit	
Department/Section being audited	
Information Sources	
Documents Reviewed	(list all documents reviewed in course of the audit) Note: This includes all Safety Reports and Safety Checklists pertaining to the operator to be audited for the previous 12 months.
Individuals Interviewed	(list all persons interviewed including title)
Operations Assessed	(list all operations that were observed during the course of the audit- e.g. fuelling of a B-747 on air bridge) Note; For the observation phase of the audit use Safety Checklists.

Management

Is senior management committed to the Safety Management Program?	
Is there a formal safety policy statement?	
Is the safety policy statement endorsed by the Board?	
Is the safety policy statement reviewed and revised at suitable intervals	
Is the safety policy publicized within DANS?	
Are safety performance indicators defined?	
Are levels of safety reviewed to check that they are still appropriate?	
Is the Directorate's SMS readily available to staff?	
Does the safety policy state that each individual has a responsibility for safety?	
Does the safety policy state who is ultimately accountable for safety in the Directorate?	
Does the Directorate have a Safety Manager?	
Does the Safety Manager report directly to Top Management?	
How, and by whom, are internal safety standards and procedures developed?	
Are Safety Standards and procedures reviewed regularly?	
How is non-compliance with directorate safety standards and procedures identified and dealt with?	
How is non-compliance with safety standards and procedures identified and dealt with?	
Are safety accountabilities reviewed after a directorate change has taken place?	
Since DANS is a subsidiary or division of a parent organization, is safety accountability and reporting linked into the parent organization? How?	
Does DANS have a safety committee?	
What processes are in place for staff to raise safety concerns with senior management?	
How, and by whom, are safety improvement suggestions investigated?	
How, and by whom, are all proposed changes to operations or equipment assessed to determine their safety impact?	
Are the roles and responsibilities of the personnel in the Safety Management System documented?	
Are sufficient resources (financial, human, hardware) made available for the Safety Management System?	
Is there an appropriate Emergency Response Plan?	

Safety Risk Management

Is there an effective ongoing hazard identification program?	
Does the hazard identification program include a confidential reporting system?	
Are confidential reports properly de-identified?	

Are hazards associated with contracted agencies included in the Hazard Reporting System?	
Is there a procedure established for acknowledging safety-related reports?	
Is there a process whereby the hazards are continuously assessed for their risk potential (probability and severity)?	
Are the defences against the hazards identified?	
Does the process include the identification of the need for further defences or for hazard avoidance?	
Are the results of hazard reports and safety suggestions made available to the initiator?	
Are the results of hazard reports and safety suggestions made widely available within the Directorate?	
Is the process for risk assessment and management fully documented?	
Does the Directorate's Management System require the recording of identified hazards and defences?	

Internal Accident/Incident Investigation

Does a process exist for investigating accidents and/or incidents?	
Is the process investigating safety significant occurrences defined?	
How are accidents/incidents reported? By whom?	
How are reports of Accidents/incidents investigated and recorded? By Who?	
Who decides if corrective action is necessary?	
How are corrective actions monitored to ensure implementation?	
Is there a requirement for safety audits within the Directorate?	
Who determines the need for corrective actions arising from the results of safety audits?	

Training

Is there a supply of safety-related literature (e.g., periodicals, magazines, books, articles, posters, videos) readily available to all staff who have safety responsibilities?	
Are staff encouraged and assisted in attending training courses and seminars related to safety?	
Are staff trained in the procedures and policy of the Safety Management System?	
Are new staff given sufficient training and checking in their technical duties prior to being permitted to operate either supervised or unsupervised?	
Are staff given re-currency training to ensure that they can maintain their competency following periods of significant absence?	
Do staff members receive training prior to the introduction of any new equipment or new procedures?	
Is the continuation of training and checking of all staff adequate?	

Are trainers and checkers adequately trained and checked, both for competence and standardization?	

Supervision

Are safety responsibilities defined for each individual?	
How are the competency requirements determined for safety responsibilities? By whom? Consider equipment operation, driving on airside etc.	
Where are the competency requirements for safety responsibilities recorded?	
How is it decided if a member of staff meets the competency requirements for safety responsibilities?	
How often are staff competencies reviewed to ensure that the staff remains competent for their safety responsibilities?	
What process is followed if it is determined that a member of staff is not fully competent for the safety responsibilities assigned?	
Are practices and procedures that affect safety routinely monitored?	
What arrangements are in place to enable detection of safety deviations from policy, standards and procedures?	
Is sufficient staff available to meet current and future operational requirements?	
Is the supervision proportionate to the safety requirements of the practice or procedure?	
Is the level of supervision proportionate to the safety requirements of the unit?	
Does the unit have adequate operational and supervisory staff to provide safe services?	
Have there been any recent changes to procedures or equipment used to perform employee tasks?	
Are practices and procedures that affect safety routinely monitored?	
Are current procedures appropriate for current workloads?	
Are staff well rested before beginning their work?	
What arrangements are in place to enable detection of safety deviations from policy, standards and procedures?	
Do all personnel have valid licenses and ratings in accordance with ICAO Annex 1 requirements?	
Do all personnel have valid licenses as required by State and local requirements?	

Equipment / Vehicle Maintenance

Is there a procedure for determining if equipment/vehicles meet safety requirements?	
What is the frequency of the equipment/vehicle checks for safety requirements? What is checked?	

What training is given to drivers who operate on airport ramp areas? How is it recorded?	
Who determines the training requirements? What are these requirements based on?	
Who monitors vehicle operation on airport ramp areas to ensure that authorized drivers are following proper safety practices and procedures?	
Do drivers inspect safety systems and equipment in vehicles prior to operation? How is this recorded?	
How are driver reports followed-up? Is a record kept?	
Do staff members have reliable and adequate equipment and systems?	
Is there a procedure for determining if all equipment meets safety requirements?	
Are written records maintained when safety-critical equipment fails? Review all records).	

Engineering & Maintenance

Does the maintenance management system define Critical Systems and equipment that are required for safe operations? Review Maintenance management system documents.	
Are safety critical systems and equipment inspected on a regular basis? How often?	
How are safety critical maintenance deficiencies reported? How are they actioned? How many have occurred in the past 12 months?	
How and who follows up on sub-contractor repairs of safety critical systems and equipment?	
If replacement or major repair of safety critical systems is required how is this programmed?	
What authorities are required for the capital replacement of safety critical systems or equipment?	
Are regular condition reports prepared for mission critical equipment noting any safety deficiencies? How are these reports followed-up? By whom?	
Are risk assessments of identified and potential hazards undertaken/ By whom?	
Have any safety incidents/accidents occurred in the previous 12 months where equipment, systems or infrastructure was determined to be a part of the causal factors? How were these followed –up?	
Are vehicles and equipment subject to a check of safety systems on a regular basis? What is the frequency?	

Contractors

Does the contract state that contractors shall satisfy the safety management standards and procedures?	
How are the safety requirements for contractors determined and by whom?	
How, and by whom are safety requirements communicated to the contractors?	
How, and by whom, is it decided whether the contractor has an acceptable SMS in place?	
What procedures are in place to check that contractors comply with the safety requirements?	
How is the competence of contractors' staff checked? Check records re training to utilize equipment, drive on airside etc.	
What arrangements are in place to enable detection of safety deviations from policy, standards and procedures?	
Is the supervision proportionate to the safety requirements of the practice or procedure?	
Are practices and procedures that affect safety routinely monitored?	

APPENDIX C: Safety Culture Survey Questionnaire

Circle the appropriate number (1 to 5) in its box for each of the 25 questions below. If you **strongly disagree** with DSSER, **circle 1**. If you **strongly agree, circle 5**. If your opinion is somewhere in between these extremes, **circle 2, 3** or **4** (for **disagree**, **unsure** or **agree**)

Please respond to every question. Adding all the responses gives a safety culture score for the Organization, which is checked against known benchmarks.

Question Number	**STATEMENT**	**ORGANIZATION RATING**				
		Strongly Disagree				Strongly Agree
1	Staff are given enough training to do their tasks safely	1	2	3	4	5
2	Managers get personally involved in safety enhancement activities	1	2	3	4	5
3	There are procedures to follow in the event of an emergency in my work area.	1	2	3	4	5
4	Managers often discuss safety issues with staff.	1	2	3	4	5
5	Staff do all they can to prevent accidents.	1	2	3	4	5
6	Everyone is given sufficient opportunity to make suggestions regarding safety issues	1	2	3	4	5
7	Staff often encourage each other to work safely.	1	2	3	4	5
8	Managers are aware of the main safety problems in the workplace.	1	2	3	4	5
9	All new staff are provided with sufficient safety training before commencing work.	1	2	3	4	5
10	Managers often praise staff they see working safely.	1	2	3	4	5
11	Everyone is kept informed of any changes, which may affect safety.	1	2	3	4	5
12	Staff follows safety rules almost all of the time.	1	2	3	4	5
13	Safety within this Directorate is better than in other Directorate.	1	2	3	4	5
14	Managers do all they can to prevent accidents.	1	2	3	4	5
15	Accident investigations attempt to find the real cause of accidents, rather than just blame the people involved.	1	2	3	4	5
16	Managers recognise when staff are working unsafely.	1	2	3	4	5

Question Number	STATEMENT	ORGANIZATION RATING				
		Strongly Disagree				Strongly Agree
17	Any defects or hazards that are reported are rectified promptly.	1	2	3	4	5
18	There are mechanisms in place in my work area for me to report safety deficiencies.	1	2	3	4	5
19	Managers stop unsafe operations or activities.	1	2	3	4	5
20	After an accident has occurred, appropriate actions are usually taken to reduce the chance of reoccurrence.	1	2	3	4	5
21	Everyone is given sufficient feedback regarding this Directorate's safety performance.	1	2	3	4	5
22	Managers regard safety to be a very important part of all work activities.	1	2	3	4	5
23	Safety audits are carried out frequently.	1	2	3	4	5
24	Safety within this Directorate is generally well controlled.	1	2	3	4	5
25	Staff usually report any dangerous work practices they see.	1	2	3	4	5
26	Information about safety is adequate	1	2	3	4	5
27	Safety information communication channels are effective	1	2	3	4	5
28	Staff receive safety information in a timely manner	1	2	3	4	5
29	Staff receive safety information regularly	1	2	3	4	5
	SAFETY CULTURE TOTAL:					

Notes

Several separate results are obtained from a safety culture survey using this form:

1. A 'benchmark' safety culture score that can be compared with similar companies world-wide.
2. A means of comparing the views of management with those of staff regarding the DANS' safety culture.
3. A means of evaluating the results of any changes made to the Directorate's safety management system when a follow-up survey is carried out.
4. Identification of areas of concern, indicated by "1" and "2" responses which can assist in the allocation of safety resources.

5. A means of comparing the safety culture of different departments and/or operational bases.

The higher the value, the better the safety culture rating. Use the following as a guide only but an average DANS safety culture score of 93 is considered a minimum. Anything less would suggest that improvements are needed.

Poor safety culture	25-58
Bureaucratic safety culture	59-92
Positive safety culture	93-125

Organizations with a **poor safety culture** treat safety information in the following way:

Information is hidden
Messengers are shot
Responsibility is avoided
Dissemination is discouraged
Failure is covered up
New ideas are crushed

Organizations with a **bureaucratic safety culture** treat safety information in the following way:

Information may be ignored
Messengers are tolerated
Responsibility is compartmentalised
Dissemination is allowed but discouraged
Failure leads to local repairs
New ideas present problems

Organizations with a **positive safety culture** treat safety information in the following way:

Information is actively sought
Messengers are trained
Responsibility is shared
Dissemination is rewarded
Failure leads to inquiries and reforms
New ideas are welcomed

APPENDIX D: SMS Phased Implementation Plan

Phase 1 (12 months)	**Phase 2 (12 months)**	**Phase 3 (18 months)**	**Phase 4 (18 months)**
1. SMS Element 1.1 (i):	SMS Element 1.1 (ii):	1. SMS Element 2.1 (i):	1. SMS Element 1.1 (iii):
a) Identify the SMS accountable executive;	a) Establish the safety policy and objectives,	a) Establish a voluntary hazard reporting procedure.	a) Enhance the existing disciplinary procedure/ policy with due consideration of unintentional errors or mistakes from deliberate or gross violations.
b) establish an SMS implementation team;	2. SMS Element 1.2:	2. SMS Element 2.2:	2. SMS Element 2.1 (ii):
c) define the scope of the SMS;	a) define safety management responsibilities and accountabilities across relevant departments of the organization;	a) Establish safety risk management procedures.	a) integrate hazards identified from occurrence investigation reports with the voluntary hazard reporting system;
d) Perform an SMS gap analysis.	b) establish an SMS/safety coordination mechanism/ committee;	3. SMS Element 3.1 (i):	b) integrate hazard identification and risk management procedures with the subcontractor's or customer's SMS where applicable.
2. SMS Element 1.5 (i):	c) establish departmental/ divisional SAGs where applicable.	a) establish occurrence reporting and investigation procedures;	3. SMS Element 3.1 (ii):
a) develop an SMS Implementation plan.		b) establish a safety data collection and processing system for high-consequence outcomes;	a) enhance the safety data collection and processing system to include lower consequence events;

3. SMS Element 1.3:	3. SMS Element 1.4:	c) develop high-consequence SPIs and associated targets and alert settings.	b) develop lower-consequence SPIs and associated targets/alert settings.
a) Establish a key person/office responsible for the administration and maintenance of the SMS.	a) Establish an emergency response plan.	4. SMS Element 3.2:	4. SMS Element 3.3 (ii):
4. SMS Element 4.1 (i):	4. SMS Element 1.5 (ii):	a) establish a management of change procedure that includes safety risk assessment.	a) establish SMS audit programmes or integrate them into existing internal and external audit programmes;
a) establish an SMS training programme for personnel, with priority for the SMS implementation team.	a) Initiate progressive development of an SMS document/manual and other supporting documentation.	5. SMS Element 3.3 (i):	b) establish other operational SMS review/survey programmes where appropriate.
5. SMS Element 4.2 (i):		a) establish an internal quality audit programme;	5. SMS Element 4.1 (ii):
a) Initiate SMS/safety communication channels.		b) Establish an external quality audit programme.	a) Ensure that the SMS training programme for all relevant personnel has been completed.
			6. SMS Element 4.2 (ii):
			a) Promote safety information sharing and exchange internally and externally.
SMS Element 1.5: SMS documentation (Phases 1 to 4)			
SMS Elements 4.1 and 4.2: SMS training, education and communication (Phases 1 and thereafter)			
Note 1. — The implementation period indicated is an approximation. The actual implementation period is dependent on the scope of actions required for each element allocated and the size/complexity of the organization.			
Note 2. — The SMS element numbers indicated correspond to the ICAO SMS element numbers. Suffixes such as a), b) and c) indicate that the element has been subdivided to facilitate the phased implementation approach.			

APPENDIX E: Gap Analysis

A gap analysis is conducted against generally accepted SMS concepts and components. This model form provides, in checklist format, information to assist the evaluation of the components of a safety system presently in place, and the identification of those components of an SMS that will need to be developed.

Gap Analysis Form

No.	***Aspect to be analysed or question to be answered***	***Answer***	***Status of implementation***
Component 1 — SAFETY POLICY AND OBJECTIVES			
Element 1.1 — Management commitment and responsibility			
1.1-1	Is there a safety policy in place? [5.3.7 to 5.3.15; 5.5.3]	☐☐Yes ☐☐No ☐☐Partial	
1.1-2	Does the safety policy reflect senior management's commitment regarding safety management? [5.3.7 to 5.3.15]	☐☐Yes ☐☐No ☐☐Partial	
1.1-3	Is the safety policy appropriate to the size, nature and complexity of the organization? [5.3.7 to 5.3.15]	☐☐Yes ☐☐No ☐☐Partial	
1.1-4	Is the safety policy relevant to aviation safety? [5.3.7 to 5.3.15]	☐☐Yes ☐☐No ☐☐Partial	
1.1-5	Is the safety policy signed by the accountable executive? [5.3.7 to 5.3.15; 5.5.3]	☐☐Yes ☐☐No ☐☐Partial	
1.1-6	Is the safety policy communicated, with visible endorsement, throughout the [Organization]? [5.5.3]	☐☐Yes ☐☐No ☐☐Partial	
1.1-7	Is the safety policy periodically reviewed to ensure it remains relevant and appropriate to the [Organization]? [5.5.3]	☐☐Yes ☐☐No ☐☐Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
Element 1.2 — Safety accountabilities			
1.2-1	Has [Organization] identified an accountable executive who, irrespective of other functions, shall have ultimate responsibility and accountability, on behalf of the [Organization], for the implementation and maintenance of the SMS? [5.3.16 to 5.3.26; 5.5.2]	□ □Yes □ □No □ □Partial	
1.2-2	Does the accountable executive have full control of the financial and human resources required for the operations authorized to be conducted under the operations certificate? 5.3.16 to [5.3.26]	□ □Yes □ □No □ □Partial	
1.2-3	Does the Accountable Executive have final authority over all aviation activities of his organization? [5.3.16 to 5.3.26]	□ □Yes □ □No □ □Partial	
1.2-4	Has [Organization] identified and documented the safety accountabilities of management as well as operational personnel, with respect to the SMS? [5.3.16 to 5.3.26]	□ □Yes □ □No □ □Partial	
1.2-5	Is there a safety committee or review board for the purpose of reviewing SMS and safety performance?[5.3.27 to 5.3.33; Appendix 4]	□ □Yes □ □No □ □Partial	
1.2-6	Is the safety committee chaired by the accountable executive or by an appropriately assigned deputy, duly substantiated in the SMS manual? [5.3.27 to 5.3.33; Appendix 4]	□ □Yes □ □No □ □Partial	
1.2-7	Does the safety committee include relevant operational or departmental heads as applicable?	□ □Yes □ □No □ □Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
	[5.3.27 to 5.3.33; Appendix 4]		
1.2-8	Are there safety action groups that work in conjunction with the safety committee (especially for large/complex organizations)? [5.3.27 to 5.3.33; Appendix 4]	□ □Yes □ □No □ □Partial	
Element 1.3 — Appointment of key safety personnel			
1.3-1	Has [Organization] appointed a qualified person to manage and oversee the day-to-day operation of the SMS? [5.3.27 to 5.3.33; 5.5.2; Appendix 2]	□ □Yes □ □No □ □Partial	
1.3-2	Does the qualified person have direct access or reporting to the accountable executive concerning the implementation and operation of the SMS? [5.3.27 to 5.3.33; 5.5.2; Appendix 2, 6.1]	□ □Yes □ □No □ □Partial	
1.3-3	Does the manager responsible for administering the SMS hold other responsibilities that may conflict or impair his role as SMS manager? [Appendix 2, 6.4]	□ □Yes □ □No □ □Partial	
1.3-4	Is the SMS manager's position a senior management position not lower than or subservient to other operational or production positions? [Appendix 2, 6.4]	□ □Yes □ □No □ □Partial	
Element 1.4 — Coordination of emergency response planning			
1.4-1	Does [Organization] have an emergency response/contingency plan appropriate to the size, nature and complexity of the organization? [Appendix 3]	□ □Yes □ □No □ □Partial	
1.4-2	Does the emergency/contingency plan address all possible or likely emergency/crisis scenarios relating to the	□ □Yes □ □No □ □Partial	

No.	Aspect to be analysed or question to be answered	Answer	Status of implementation
	organization's aviation product or service deliveries? [Appendix 3, 4 f)]		
1.4-3	Does the ERP include procedures for the continuing safe production, delivery or support of its aviation products or services during such emergencies or contingencies? [Appendix 3, 4 e)]	□ □Yes □ □No □ □Partial	
1.4-4	Is there a plan and record for drills or exercises with respect to the ERP? [Appendix 3, 5 c)]	□ □Yes □ □No □ □Partial	
1.4-5	Does the ERP address the necessary coordination of its emergency response/contingency procedures with the emergency/response contingency procedures of other organizations where applicable? [Appendix 3, 4 d)]	□ □Yes □ □No □ □Partial	
1.4-6	Does [Organization] have a process to distribute and communicate the ERP to all relevant personnel, including relevant external organizations? [Appendix 3, 5 d)]	□ □Yes □ □No □ □Partial	
1.4-7	Is there a procedure for periodic review of the ERP to ensure its continuing relevance and effectiveness? [Appendix 3, 5 f)]	□ □Yes □ □No □ □Partial	
Element 1.5 — SMS documentation			
1.5-1	Is there a top-level SMS summary or exposition document which is approved by the accountable manager and accepted by the CAA? [5.3.36 to 5.3.38]	□ □Yes □ □No □ □Partial	
1.5-2	Does the SMS documentation address the organization's	□ □Yes □ □No	

No.	Aspect to be analysed or question to be answered	Answer	Status of implementation
	SMS and its associated components and elements? [5.3.36 to 5.3.38; 5.4.1; Appendix 4]	□ □Partial	
1.5-3	Is [Organization] SMS framework in alignment with the regulatory SMS framework? [5.3.36 to 5.3.38; 5.4.1; Appendix 4]	□ □Yes □ □No □ □Partial	
1.5-4	Does [Organization] maintain a record of relevant supporting documentation pertinent to the implementation and operation of the SMS? [5.3.36 to 5.3.38; 5.5.5]	□ □Yes □ □No □ □Partial	
1.5-5	Does [Organization] have an SMS implementation plan to establish its SMS implementation process, including specific tasks and their relevant implementation milestones? [5.4.4]	□ □Yes □ □No □ □Partial	
1.5-6	Does the SMS implementation plan address the coordination between the service provider's SMS and the SMS of external organizations where applicable? [5.4.4]	□ □Yes □ □No □ □Partial	
1.5-7	Is the SMS implementation plan endorsed by the accountable executive? [5.4.4; 5.5.2]	□ □Yes □ □No □ □Partial	
Component 2 — SAFETY RISK MANAGEMENT			
Element 2.1 — Hazard identification			
2.1-1	Is there a process for voluntary hazards/threats reporting by all employees? [5.3.42 to 5.3.52; 5.5.4]	□ □Yes □ □No □ □Partial	
2.1-2	Is the voluntary hazard/threats reporting simple, available to all personnel involved in safety-related duties and commensurate with the size of the service provider?	□ □Yes □ □No □ □Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
	[5.3.42 to 5.3.52]		
2.1-3	Does [Organization] SDCPS include procedures for incident/accident reporting by operational or production personnel? [5.3.42 to 5.3.52; 5.5.4; Chapter 4, Appendix 3]	☐ ☐Yes ☐ ☐No ☐ ☐Partial	
2.1-4	Is incident/accident reporting simple, accessible to all personnel involved in safety-related duties and commensurate with the size of the service provider? [5.3.42 to 5.3.52; 5.5.4]	☐ ☐Yes ☐ ☐No ☐ ☐Partial	
2.1-5	Does [Organization] have procedures for investigation of all reported incident/accidents? [5.3.42 to 5.3.52; 5.5.4]	☐ ☐Yes ☐ ☐No ☐ ☐Partial	
2.1-6	Are there procedures to ensure that hazards/threats identified or uncovered during incident/accident investigation processes are appropriately accounted for and integrated into the organization's hazard collection and risk mitigation procedure? [2.13.9; 5.3.50 f); 5.5.5]	☐ ☐Yes ☐ ☐No ☐ ☐Partial	
2.1-7	Are there procedures to review hazards/threats from relevant industry reports for follow-up actions or risk evaluation where applicable? [5.3.5.1]	☐ ☐Yes ☐ ☐No ☐ ☐Partial	
Element 2.2 — Safety risk assessment and mitigation			
2.2-1	Is there a documented hazard identification and risk mitigation (HIRM) procedure involving the use of objective risk analysis tools?	☐ ☐Yes ☐ ☐No ☐ ☐Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
	[2.13; 2.14; 5.3.53 to 5.3.61]		
2.2-2	Is the risk assessment reports approved by departmental managers or at a higher level where appropriate? [2.15.5; 5.3.53 to 5.3.61]	□ □Yes □ □No □ □Partial	
2.2-3	Is there a procedure for periodic review of existing risk mitigation records? [5.5.4]	□ □Yes □ □No □ □Partial	
2.2-4	Is there a procedure to account for mitigation actions whenever unacceptable risk levels are identified? [5.5.4]	□ □Yes □ □No □ □Partial	
2.2-5	Is there a procedure to prioritize identified hazards for risk mitigation actions? [5.5.4]	□ □Yes □ □No □ □Partial	
2.2-6	Is there a programme for systematic and progressive review of all aviation safety-related operations, processes, facilities and equipment subject to the HIRM process as identified by the organization? [5.5.4]	□ □Yes □ □No □ □Partial	
Component 3 — SAFETY ASSURANCE			
Element 3.1 — Safety performance monitoring and measurement			
3.1-1	Are there identified safety performance indicators for measuring and monitoring the safety performance of the organization's aviation activities?	□ □Yes □ □No □ □Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
	[5.3.66 to 5.3.73; 5.4.5; 5.5.4; 5.5.5; Appendix 6]		
3.1-2	Are the safety performance indicators relevant to the organization's safety policy as well as management's high-level safety objectives/goals? [5.3.66 to 5.3.73; 5.4.5; Appendix 6]	☐ ☐Yes ☐ ☐No ☐ ☐Partial	
3.1-3	Do the safety performance indicators include alert/target settings to define unacceptable performance regions and planned improvement goals? [5.3.66 to 5.3.73; 5.4.5; 5.5.4; 5.5.5; Appendix 6]	☐ ☐Yes ☐ ☐No ☐ ☐Partial	
3.1-4	Is the setting of alert levels or out-of-control criteria based on objective safety metrics principles? [5.3.66 to 5.3.73; 5.4.5; Appendix 6]	☐ ☐Yes ☐ ☐No ☐ ☐Partial	
3.1-5	Do the safety performance indicators include quantitative monitoring of high-consequence safety outcomes (e.g. accident and serious incident rates) as well as lower-consequence events (e.g. rate of non-compliance, deviations)? [5.3.66 to 5.3.73; 5.4.5; 5.5.4; 5.5.5; Appendix 6]	☐ ☐Yes ☐ ☐No ☐ ☐Partial	
3.1-6	Are safety performance indicators and their associated performance settings developed in consultation with, and subject to, the civil aviation authority's agreement? [5.3.66 to 5.3.73; 5.4.5.2; 5.5.4; 5.5.5]	☐ ☐Yes ☐ ☐No ☐ ☐Partial	
3.1-7	Is there a procedure for corrective or follow-up action to be taken when targets are not achieved and alert levels are exceeded/ breached?	☐ ☐Yes ☐ ☐No ☐ ☐Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
	[5.4.5; Appendix 6, Table 5-A6-5 b)]		
3.1-8	Are the safety performance indicators periodically reviewed? [5.4.5; Appendix 6]	☐ ☐Yes ☐ ☐No ☐ ☐Partial	
Element 3.2 — The management of change			
3.2-1	Is there a procedure for review of relevant existing aviation safety-related facilities and equipment (including HIRM records) whenever there are pertinent changes to those facilities or equipment? [5.3.74 to 5.3.77; 5.5.4]	☐ ☐Yes ☐ ☐No ☐ ☐Partial	
3.2-2	Is there a procedure for review of relevant existing aviation safety-related operations and processes (including any HIRM records) whenever there are pertinent changes to those operations or processes? [5.3.74 to 5.3.77; 5.5.4]	☐ ☐Yes ☐ ☐No ☐ ☐Partial	
3.2-3	Is there a procedure for review of new aviation safety-related operations and processes for hazards/risks before they are commissioned? [5.5.4]	☐ ☐Yes ☐ ☐No ☐ ☐Partial	
3.2-4	Is there a procedure for review of relevant existing facilities, equipment, operations or processes (including HIRM records) whenever there are pertinent changes external to the organization such as regulatory/industry standards, best practices or technology? [5.5.4]	☐ ☐Yes ☐ ☐No ☐ ☐Partial	
Element 3.3 — Continuous improvement of the SMS			
3.3-1	Is there a procedure for periodic internal audit/assessment of	☐ ☐Yes ☐ ☐No	

No.	Aspect to be analysed or question to be answered	Answer	Status of implementation
	the SMS? [5.3.78 to 5.3.82; 5.5.4; 5.5.5]	☐☐Partial	
3.3-2	Is there a current internal SMS audit/assessment plan? [5.3.78 to 5.3.82; 5.5.4; 5.5.5]	☐☐Yes ☐☐No ☐☐Partial	
3.3-3	Does the SMS audit plan include the sampling of completed/existing safety risk assessments? [5.5.5]	☐☐Yes ☐☐No ☐☐Partial	
3.3-4	Does the SMS audit plan include the sampling of safety performance indicators for data currency and their target/alert settings performance? [5.4.5; 5.5.5]	☐☐Yes ☐☐No ☐☐Partial	
3.3-5	Does the SMS audit plan cover the SMS interface with subcontractors or customers where applicable? [5.4.1; 5.5.5]	☐☐Yes ☐☐No ☐☐Partial	
3.3-6	Is there a process for SMS audit/assessment reports to be submitted or highlighted for the accountable manager's attention where appropriate? [5.3.80; 5.5.5]	☐☐Yes ☐☐No ☐☐Partial	
Component 4 — SAFETY PROMOTION			
Element 4.1 — Training and education			
4.1-1	Is there a programme to provide SMS training/familiarization to personnel involved in the implementation or operation of the SMS? [5.3.86 to 5.3.91; 5.5.5]	☐☐Yes ☐☐No ☐☐Partial	
4.1-2	Has the accountable executive undergone appropriate SMS familiarization, briefing or training? [5.3.86 to 5.3.91; 5.5.5]	☐☐Yes ☐☐No ☐☐Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
4.1-3	Are personnel involved in conducting risk mitigation provided with appropriate risk management training or familiarization? [5.3.86 to 5.3.91; 5.5.5]	□ □Yes □ □No □ □Partial	
4.1-4	Is there evidence of organization-wide SMS education or awareness efforts? [5.3.86 to 5.3.91; 5.5.5]	□ □Yes □ □No □ □Partial	
Element 4.2 — Safety communication			
4.2-1	Does [Organization] participate in sharing safety information with relevant external industry product and service providers or organizations, including the relevant aviation regulatory organizations? [5.3.92; 5.3.93; 5.5.5]	□ □Yes □ □No □ □Partial	
4.2-2	Is there evidence of a safety (SMS) publication, circular or channel for communicating safety (SMS) matters to employees? [5.3.92; 5.3.93; 5.5.5]	□ □Yes □ □No □ □Partial	
4.2-3	Are [Organization] SMS manual and related guidance material accessible or disseminated to all relevant personnel? [5.3.92; 5.3.93; 5.5.5]	□ □Yes □ □No □ □Partial	

APPENDIX F: Emergency Response Plan Coordination.

1.0 Purpose

The purpose is to ensure that the emergency response/contingency plan for the Directorate of Air Navigation Services (ANS) is properly coordinated with the emergency response plans of those organizations it must interface with during the provision of its services so that emergency operations are smooth both during and after the emergency.

Responsibility

The operational departments' heads in the directorate of ANS shall develop and implement emergency response/contingency plans in line with guidelines in appendix 3 to chapter 5 of Doc.9589 3rd Edition. The Manager SMS or his/her designee shall ensure that the emergency response plans are adhered to as published and are comprehensive, commensurate to the level of their operations, regularly reviewed, distributed, communicated to all relevant personnel including external organisations and take into consideration emergency response plans of those organizations they must interface with. The SMS department shall review the performance of the emergency response system after a real or mock emergency so as to make recommendations for improvement.

Scope

The procedure covers the coordination of emergency response /contingency plans of ANS with the plans of other aviation stakeholders that are not under jurisdiction of ANS but impact on safety of ANS operations.

References:

i. Annex 19
ii. Applicable edition of Doc.9859
iii. Annexes applicable to the Services provided by departments in ANS

Steps

The heads of operational departments shall;

1. Review the outline of the ERP related to the delegation of authority and assignment of emergency responsibilities.
2. Establish coordination procedures for action by key personnel during the emergency and the return to normal operations.

3. List all stake holder organisations/agencies whose operations affect safety of their operations
4. Obtain copies of the emergency response/contingency plans of all stakeholders in 3 above.
5. Review copies of the emergency response/contingency plans to determine the emergency notification needs (which type of emergency is notifiable, when it shall be notified, by and to whom shall the notification be made , which mechanisms/channels shall be used for notification) and what is expected of the respective department
6. Determine the contact persons for each organisation that are to be involved in the emergency response exercise and identify the lead coordinator.
7. Identify the critical resources required for their departments to accomplish '5' and '6' above
8. Document and display a summary of the stakeholders, corresponding emergencies they may notify, contact persons, critical resources and their role for each emergency that may be notified
9. Perform annual emergency drills to determine emergency preparedness.
10. Document and submit emergency exercise reports for every real or mock emergency exercise to the Manager SMS

NB. A department may adopt alternative mechanism/approach instead of steps (2) – (6) above to accomplish the desired outcome

APPENDIX G: SMS Calendar of Regular Scheduled Events

This table will help to organize those recurring aspects of the SMS that shall be accomplished on a regular basis.

No	Item	Manual Section	Scheduled frequency	Dates to accomplish
1	Internal audits by SMS department	4.8.1	Annual	July
2	Internal safety inspections		Bi-annually	April and November
3	Internal Evaluation of SMS	4.8.2	Annual	November
4	External Audit of SMS	4.8.3	Annual	October
5	System Assessment	4.4	Bi-annually	June, and December
6	Management Review of SMS Outputs	4.8.6	Quarterly	June, March, September and December
7	Emergency Response exercise	Appendix F	Once every two years	Combined with Airports
8	Directorate Safety Review committee Meetings	2.4.7	At least once a month	Continuous
9	Corporate Safety Review committee Meeting	2.4.8	Quarterly	
10	Safety Action Group meetings	2.4.6	Weekly	Continuous
11	Updating hazard register	3.2	Annual	June
12	SMS workshops	5.3	Monthly	Last working day of the month
13	Follow up of implementation of safety recommendations	Chapter 4	Quarterly	June, March, September and December
14	Annual Safety Survey	4.2.4	Annual	February
15	System and Task Analysis	3.3	Continuous	Continuous
16	Emergency response table top/simulations exercises	2.5 and Appendix H	Annually	July

Appendix H: SMS Training Programme

Level	Specific Positions	Category of SMS Accountabilities	Required Competences	Required SMS Courses/Trainings	Desirable Competences	Desirable Courses
Top management	MD, DMD, Corporation Secretary	Top Management Commitment Safety performance review	The Civil Aviation legislations and management obligations Safety as a strategic business need Safety Culture Risk Tolerance	Safety Management for Senior Executives Civil Aviation Chief Executives Programme	Understand the context and drivers of a Safety Management System Differentiate the existing safety management organisation and the new elements of a SMS Be able to assess the return on investment for a functioning SMS Be able to make the proper decisions when allocating resources to safety	1. Integrated Aviation Management System – IAMS 2. Any specially customized program or training for executives by the industry
Directors	DANS	1)Top Management Commitment 2)Safety Review Committee	a. Legal implications of SMS (organizational safety standards and national regulations) b. Safety Assurance	1. Air Law and Regulations 2. Quality Assurance	a. SMS overview and Policy formulation b. Safety culture and value c. The push for change d. Front line involvement and committee process e. Response to events and emergencies (i.e. safety decision making that may require accepting financial loss for benefit	1. Safety Oversight 2.Accident/Incident Investigation Management 3. Emergency Management

Level	Specific Positions	Category of SMS Accountabilities	Required Competences	Required SMS Courses/Trainings	Desirable Competences	Desirable Courses
					of Facility/Organization) f. Implementing change (and the obstacles to change) g. Safety promotion h. Safety Communication	
Managers	MSMS/QA, MATM, MAIM, MCNS	1)Top Management Commitment 2)Safety Review Committee	a. Advanced SMS and Policy –the safety process b. The push for change c. Operation of safety management systems d. Crisis management and emergency response planning e. Accident and incident investigation f. Safety promotion g. Investigating safety occurrences h. Monitoring safety performance i. Performing safety assessments j. Performing safety audits	1. Integrated SMS or its equivalent 2. Emergency Response Planning & Crisis Management 3. Accident and Incident Investigation 4. Change Management 5. Hazard and Risk Management	a. Safety culture and value b. Familiarization with aircraft, fleets, types of operations, routes, etc. c. Managing safety databases* d. Legal implications of SMS	1. Corporate Safety Culture and Safety Communication 2. Safety Oversight

Level	Specific Positions	Category of SMS Accountabilities	Required Competences	Required SMS Courses/Trainings	Desirable Competences	Desirable Courses
Principals	PATMO, PTO, PAIMO	1)Safety Review Committee 2)Safety Action Group	a. Investigating safety occurrences b. Identifying hazards c. Performing safety assessments d. Performing safety audits e. Operational data collection	1. Hazard Identification & Risk Management 2. Safety Investigations 3. Safety Audits 4. Integrated SMS 5. SMS Train the Trainer 6. Safety performance Monitoring and Measurement 7. Root Cause Analysis 8. Safety Oversight Managers Course 9. Operational Risk management 10. State safety Program 11. SMS and QMS processes in ANSPs and CAAs	a. Monitoring safety performance b. Managing safety databases* c. SMS implementation d. Managing Risks in operations e. Internal safety oversight in operational departments f. Maintaining Acceptable level of safety g. Integration of QMS with SMS in ANS operations	1. Supervisory Leadership and Management Course 2. Database Management and Reporting

Level	Specific Positions	Category of SMS Accountabilities	Required Competences	Required SMS Courses/Trainings	Desirable Competences	Desirable Courses
Seniors and Supervisors	SATMO, SAIMO, STO and Supervisors	Safety Action Group	a. Human Factors and Organizational Factors b. Safety audits. c. Performing safety assessments d. Operational data collection e. Identifying hazards	1. Human Factors except for ATM 2. SMS Course 3. Safety Risk Assessment and Investigations 4. Root Cause Analysis ~~5.~~ Operational Risk management ~~6.~~	a. Monitoring safety performance b. Investigating safety occurrences c. Performing Safety Assessment d. Development of corrective action Plans ~~e.~~ Managing Risks in operations	1. Operation Supervisory Course 2. Safety Audits
Officers	ATMO, TO, AIMO	Safety Reporting and Promotion	a. Basic principles of safety management b. Overview of this SMS manual c. Proper safety culture d. Importance of complying with the safety policy and procedures that comprise the SMS e. DANS's past safety record, including areas of systemic weakness	ICAO/IATA Basic SMS Course or equivalent	j. Safety promotion and dissemination of Organization information l. Safety awards programs n. Familiarization of the layout and operations o. Emergency procedures, assembly points, and escape routes p. First aid facilities q. Fire safety	
Trainees and New Staff	ATMO, TO, AIMO trainees and DANS new staff	Safety Reporting		SMS Sensitization		a. SMS Overview and Policy b. SMS Manual c. Safety Reporting d. Safety Culture
Support Staff	Contractors	Safety Reporting		Local SMS Workshop		a. SMS Policy b. Safety Hazards & Reporting c. Safety Culture d. Fire Safety & First Aid

Level	Specific Positions	Category of SMS Accountabilities	Required Competences	Required SMS Courses/Trainings	Desirable Competences	Desirable Courses
			f. the safety goals and objectives; g. the voluntary and mandatory reporting systems h. Requirement for ongoing internal assessment of organizational safety performance (e.g. employee surveys, focus groups, safety audits and assessments) i. Reporting accidents, incidents and perceived hazards			

* Specifically for SMS Safety staff

Appendix I: SMS Procedures

1. Incident investigation procedure

Purpose:

To systematically guide the process of establishing root cause(s) of ATC incidents then developing mitigation measures with a goal of preventing recurrence.

Mechanism:

1. Notification of the incident: Shall be by ATC log, Report from pilot/air operator, SITREP, Hazard identification form,
2. Assignment of the investigation team: The respective Head of Department shall conduct or assign a team of competent investigators to conduct the preliminary investigation. MSMS/QA shall conduct or assign a team to conduct the final investigation.
3. Data collection: The PATMO/O'C ANS shall immediately:
   a) Organize for the transcript to be prepared within utmost 48 hours from the time of notification.
   b) Properly and fully complete the safety occurrence data form
   c) Get copies of all flight progress strips
   d) Require all controllers in the ATC units that handled the traffic to submit reports describing what happened within 48 hour of the occurrence or from the time of notification of the occurrence.
   e) Where necessary conduct interviews with affected controllers
   f) Keep a record of the weather report at the time of occurrence.

4. Establishment of the factual data: The investigation team shall sort the factual data relevant to the investigation.
5. Analysis of the facts: The investigation team shall use the factual information to analyze the circumstances that led to the incident.
6. Conclusion citing the root cause and other contributing factors including system deficiencies and flaws cited.
7. Drafting of recommendations to address items identified in 5 and 6.

8. A preliminary report shall be prepared within three days from the time of completion of the transcript and copies shall be forwarded to DSSER, MFSS(as appropriate), MATM, MANSAS and MSMS/QA plus the following action:
   - PATMO/O'C ANS to conduct a debrief involving all controllers on the shift/units at the time of occurrence. A copy of the debrief report signed by all participants to be forwarded to MSMS/QA.
   - PATMO/O'C ANS to implement recommendations of the preliminary report that are of operational nature and likely to directly impact on the ATC operations/safety of aircraft.
   - Safety office to further review the preliminary report and prepare the draft final report within 20 days.
9. MSMS shall meet with the department within 5 days after the draft final report to agree on;
   a) The recommendations,
   b) The responsible duty officers per recommendation, and
   c) The deadlines for implementation of the recommendations.
10. Compilation of final incident report as per guidance in Annex 13 within 5 days after the date of agreement in 9 above.
11. Distribution of the report to MATM and DANS with a copy retained in the safety office.

Note:

- All reports/information shall be handled with utmost confidentiality at all levels
- Debriefs shall be conducted at a time other than at a time when participants are on duty as per roster to ensure the presence of all controllers on the affected shift.

Checklist A: Identifying deficiencies with respect to organizational and management factors

Issue	Probes
Practices: Were activities observed in occurrence investigation consistent with DANS's philosophy, policies, and procedures with respect to safety?	a) How consistent were practices with safety philosophy, policies, procedures and desired practices? b) How does management ensure that all employees implement procedures (safety and operational) in the same manner? c) What does management do to ensure that procedures are being correctly and consistently used (e.g. recurrent training, supervised work, feedback from information gathered)?
Procedures: Has management developed clear procedures on how tasks will be accomplished?	1. Has management developed procedures relating to safety (in all departments including operations, training, and maintenance)? 2. Are safety procedures in concert or conflict with DANS's philosophy and policies? 3. How does management implement these procedures? 4. How does management communicate these procedures? 5. Are the procedures documented? 6. Are the procedures current and complete? 7. Are the procedures readily available? 8. Are these procedures in concert or competition with production goals (schedules, etc.) 9. Are procedures revised to ensure they reflect operational changes (new equipment, new regulations etc.)? 10. Is there a feedback loop to inform management on difficulties with procedures?
Policies: How does management expect tasks to be accomplished?	1. What are DANS's policies relating to safety? 2. Are company policies documented through procedures, checklists, manuals, and instructions? 3. Are employees required to attend educational and training programs that foster safety? 4. Has management set clear safety objectives? 5. Are these policies in conflict or competition with production goals? 6. How are these conflicts resolved? 7. Are company policies in concert or conflict with DANS's safety philosophy?
Philosophy: How does management want	1. Are there full-time resources dedicated to safety

DANS to run?	issues (e.g. safety officer, budget)? 2. How does senior management communicate its philosophy of operations? 3. Are there well-documented and widely distributed mission statements pertaining to safety? 4. Are there clear lines of authority (safety officer directly reporting to CEO)?

Checklist B: Explaining the gaps/deficiencies

Condition	Probes
Knowledge and training	1. Is there a strategic plan for training that meets individual and organizational needs? 2. What is the training budget? 3. What type of training programs are in place? 4. Are safety skill audits and needs analyses performed? 5. Are safety critical task components sufficiently trained during initial and regular refresher training?
Priorities	1. Do employees perceive that they are genuinely involved in decision making in respect of management action affecting them? 2. Are systems designed to allow employees to express safety concerns without fear of consequences (e.g. are accidents and mistakes punished, or are they examined as learning experiences and there is joint problem solving)? 3. Are employee motivations towards taking specific risks understood by management, and is management developing strategies to reduce these pressures? 4. Are there inconsistent or conflicting messages on safety (management turning a blind eye, or incentives for behaviour that is not in line with official policy)? 5. Are management decisions motivated by a reasonable balance between safety and production?
Practices and adaptations	1. What information has been gathered from management and employees which suggests practices are not consistent with procedures? 2. Does management have a reliable and valid method for observing actual practice? 3. Is adaptation observed an individual occurrence or is it consistent with group norms (common practice)? 4. Are there sanctions for non-compliance or does management turn a blind eye? 5. What mechanism is in place for assessing the validity of the adaptation? Are changes made to procedures to incorporate

	adaptations where appropriate?
Perception of risk	1. Are management and employees educated on risk perception and risk management? 2. Is full and understandable information about risks communicated to employees (e.g. safety campaigns, use of case studies, sharing of all information on risk between employees and management)?
Safety critical jobs	1. Has management determined which positions within DANS are critical to safety (i.e. carry greater risk of harm in the event of poor performance)? **2.** Is specific training and monitoring in place to ensure that individuals in safety critical positions are capable of performing at an acceptable level?
Understanding and mitigation of human error	1. Is management educated about the concept of "latent errors" (i.e. their own role in safety and risk factors)? 2. Is user feedback used in the design of new systems? 3. Is there a systematic approach to the identification of human error in work systems (are human error data collected, analysed, controls implemented, and their effectiveness monitored?) 4. Does risk management incorporate human error (ergonomic design or strategies to reduce the impact of error) 5. Are resources (time, people, and money) devoted to user acceptability trials?
Risk management	1. Is the risk management function integrated within the overall management structure, with a status commensurate with other management functions? 2. Are upcoming changes (technology, staffing levels, mergers, equipment, regulations, etc) considered in terms of risk management?
Communication	1. Does DANS structure permit good flow of information? 2. Is there a feedback system where information can go up, down, and across all layers of DANS? **3.** Are perceptions of safety and risk management from senior management, line management, and employees consistent?
Organizational structure	1. Are lines of authority, responsibility, and accountability clear? **2.** Does the structure permit good flow of information?

Supervision	1. Is there a documented supervisory program and is it workable? 2. What are the supervisory duties? 3. What is the supervisor-worker ratio and is it reasonable? 4. How often does a supervisor discuss performance with an employee? 5. What percentage of time is the supervisor performing "supervisory duties"? 6. Do supervisors encourage or turn a blind eye to practices that are not in conformance with procedures and policies?
Staffing and work schedules	1. What amount of overtime is accrued? Is this within reasonable expectations for a safe workplace? 2. Are any positions unfilled or being combined with another job? If so, what is the impact on safety? **3.** What are the work schedules? How do these schedules compare to best practices with respect to safety?
Near-miss reporting system	1. Is there a near-miss incident reporting system which involves everyone in DANS? 2. Is anyone using it? 3. Is it making any impact (has anything changed because of it)? 4. What barriers exist to people using it? How are these being addressed? **5.** What is DANS's response to issues raised in accident or incident investigations - denial, repair or reform?

2. Mechanism for coordination between ANS SMS and SMS of External organizations

Purpose
To streamline the application of effort and resources to achieve common safety objectives

Scope
The mechanism shall apply to the external organisations specified in the SMS implementation plan appendix 3 and the areas of coordination shall be the safety interfacing areas applicable to specified external organization.

Mechanism steps

i) Determine the external organizations SMS that shall interface with the ANS SMS.
ii) Determine the safety interface areas applicable to each specified external organization SMS.
iii) Notify them of any of our activities or operations that may affect safety of their operations
iv) Request the External organisations to share information regarding their activities or operations that may affect safety of ANS operations
v) Document all correspondences, minutes of coordination meetings and issues coordinated.

3. Mechanism of establishing a coherent set of objectives

Purpose
To guide the development of safety objectives in line with the organizational policy, aspirations, regulatory requirements and global/regional trends.

Scope
The process shall apply to establishment of ANS safety objectives, CAA Uganda.

Process

i) Review the regional/international trends.
ii) Review organizational objectives and initiatives.
iii) Develop SMART objectives basing on the results from (i) and (ii) above.
iv) Document the set of objectives developed.
v) Develop the distribution list for the set of objectives.

4. Mechanism to ensure safety objectives are published and distributed

Purpose
To disseminate a common safety direction for consideration of synergies towards improving safety.

Scope
Applies to all safety objectives and shall be communicated to all personnel in the ANS directorate.

Steps

i) Ensure that the SMS manual has been approved by the Accountable executive.
ii) Ensure that copies of the SMS manual are distributed as per the distribution list in the manual distribution list
iii) Determine the other audiences to which the safety objective may apply
iv) Determine the other means (other than the manual) of dissemination of the safety objectives to target audiences.
v) Disseminate the objectives using the alternatives in (iv) above and use a checklist to confirm receipt of the objectives.
vi) Where possible obtain evidence of receipt of disseminated safety objectives.
vii) Maintain records of receipt of safety objectives.

5. **Mechanism to ensure the setting of alert levels/out of control criteria is based on objective safety metrics**

Purpose
To develop alert levels based on objective safety metrics

Scope
Shall apply to all safety performance indicator alert levels applicable to ANS SMS

Steps

i) Determine the safety performance indicators
ii) Define appropriate objective safety metrics to be used in determining the alert levels.
iii) Define alert levels for each performance indicator using the chosen objective metrics (e.g. standard deviation, variance etc)
iv) Document the alert levels defined in (iii) above and maintain records.
v) Determine the review period for alert levels for each performance indicators.

6. **Mechanism to ensure periodic review of safety performance indicators**

Purpose
To maintain safety performance indicators appropriate to the operations which help in determining the level of safety at any given time.

Scope
The mechanism shall be applicable to the safety performance indicators related to ANS operations during a defined period of time.

Steps

i) Determine the safety performance indicators for ANS operations for a given period of time.
ii) Determine the maturity period of each safety performance indicator or as appropriate.
iii) Assign a review period for each safety performance indicator
iv) Pin-up a chart indicating the review due dates for each performance indicator for the entire period in (i) above.
v) Review safety performance indicators on dates in (iii) above.
vi) Document the reviews and indicate the new dates for the review of each safety performance indicator.
vii) Repeat (v) and (vi) for the entire period set in (i) above.
viii) Assign a safety performance indicator or a set of them to an individual who shall monitor and ensure that review is done.
ix) Repeat (i) – (Viii) at the end of the period in (i) above.

7. **Procedure for corrective or follow up action to be taken when targets are not achieved and alert levels are breached.**

Purpose:
To ensure prompt and appropriate action is taken wherever alert levels are breached or safety targets not achieved.

Scope:
Applicable to inspection/audit findings, recommendations from incident investigations, unachieved targets, breached alert levels and all the occurrences that require remedial action to maintain the acceptable level of safety.

Steps:
i) Document all issues/safety concerns that require remedial action to be taken to return to acceptable levels.
ii) Develop corrective action plan for each of the issues in (i) above
iii) Attach achievement time lines for each of the corrective action plan in (ii) above.
iv) Assign individuals responsible for implementing the CAPS
v) Assign dates/time lines for reviewing progress of implementation of CAPS
vi) Attach evidence/method of verification of effective implementation of the CAPS and how the issue shall be closed.
vii) Assign an individual to monitor the effective implementation and follow up the CAPS
viii) Develop an escalation plan in case the initial level of implementation is not achieved or ineffective.
ix) Document the CAPS implementation and monitoring with all evidences.

8. **Mechanism for development of safety performance indicators and associated performance settings.**

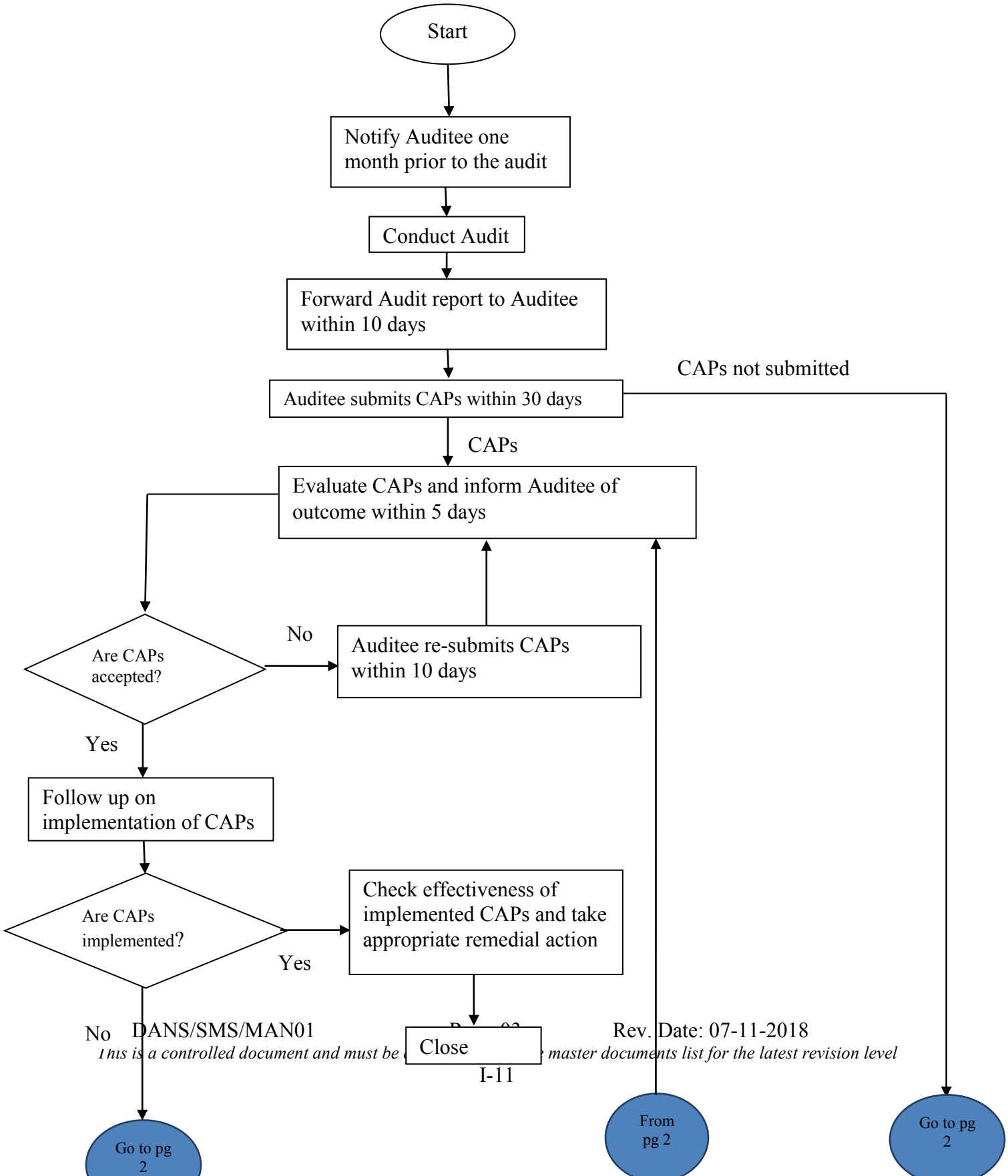
Purpose:
To determine the safety performance and implementation levels at any time basing on the agreed targets.

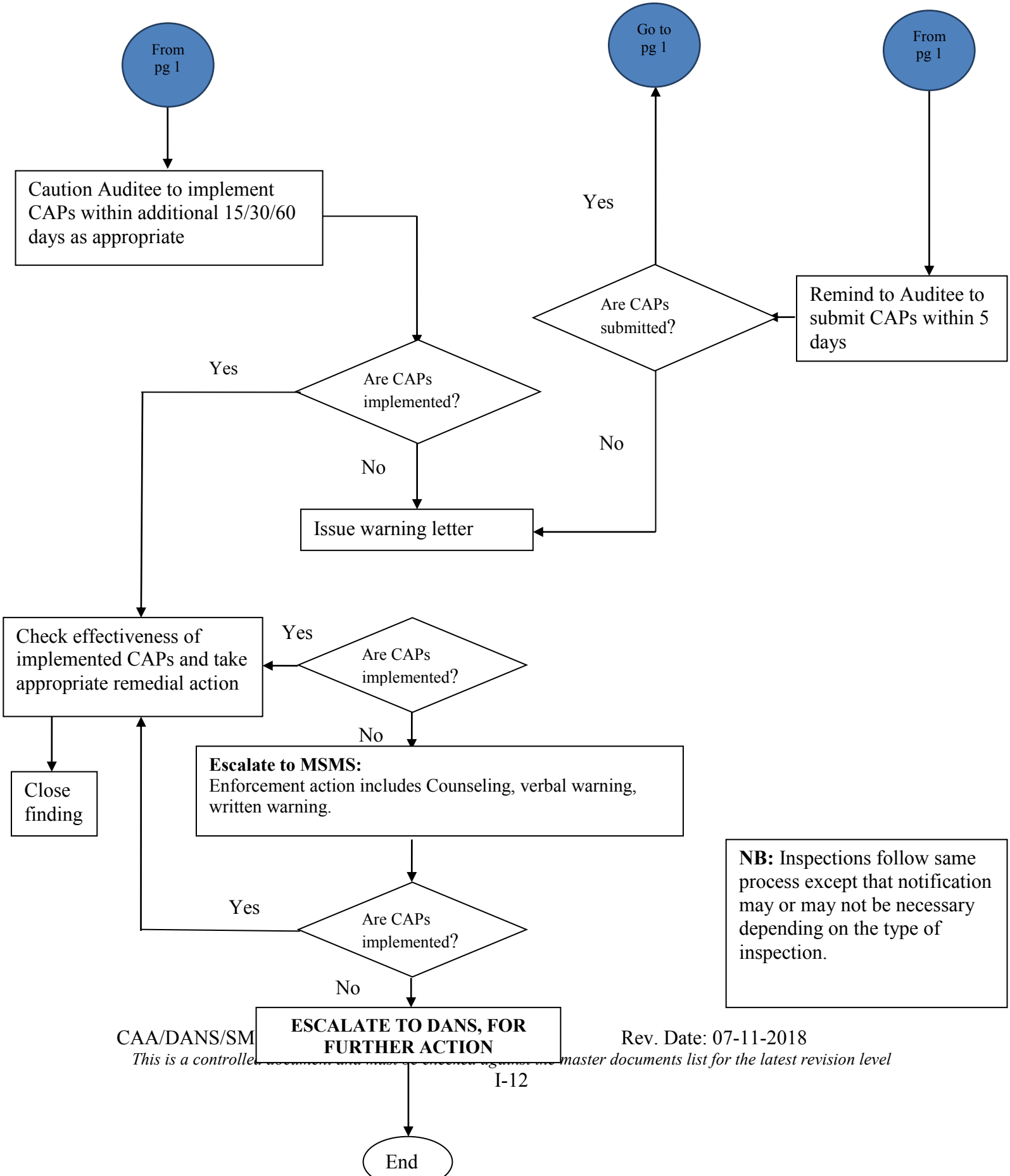
Scope:
Applies to all safety performance indicators and performance targets associated with safety activities.

Steps:

i) Develop safety database/records structure described in SMS manual section 4.2.
ii) Determine the safety data metrics that may be applied to analyse and assess the system.
iii) Analyse the data to determine the areas of improvement.
iv) Determine/define improvement objectives/goals.
v) Define safety improvement activities.
vi) Develop safety performance indicators for each of the activities.
vii) Determine the method of verification of each of the performance indicators.
viii) Determine the time frame and the measurable output for each of the activities.
ix) Assign a responsibility to an individual to ensure that the targets are achieved.
x) Develop an escalation plan in case the targets are not achievable within the means of the department.

9. Procedure for conducting internal audits




From pg 1
Caution Auditee to implement CAPs within additional 15/30/60 days as appropriate
Go to pg 1
From pg 1
Yes
Are CAPs submitted?
Remind to Auditee to submit CAPs within 5 days
Yes
Are CAPs implemented?
No
No
Issue warning letter
Check effectiveness of implemented CAPs and take appropriate remedial action
Yes
Are CAPs implemented?
No
Close finding
Escalate to MSMS:
Enforcement action includes Counseling, verbal warning, written warning.
NB: Inspections follow same process except that notification may or may not be necessary depending on the type of inspection.
Yes
Are CAPs implemented?
No
ESCALATE TO DANS, FOR FURTHER ACTION
End

10. Mechanism to ensure implementation of SRC decisions and recommendations

i) Develop a task and action table appended to the SRC minutes.
ii) The SRC secretary follows up with action points/persons before the next SRC.
iii) Review and update tasks during SRC meetings.
iv) Append updated task and action table to the SRC minutes.

11. Mechanism for implementation and validation of effectiveness of safety risk controls

Purpose
To guide the follow up on implementation, modification and effectiveness of safety risk controls developed during safety investigations, safety review meetings and as corrective action plans (CAPS).

Scope
The procedure covers the all safety mitigations/remedies recommended during safety review meetings, safety investigations, development of CAPS from audits and inspections

Responsibility
The manager safety management systems DANS or his/her designated representative shall be responsible for monitoring the appropriateness, implementation and effectiveness of the safety risk controls.

Steps

1. Obtain risk controls from incident investigations, hazard management work sheet, audit/inspection reports, and SRC/SAG minutes.
2. Fill the SMS form 123 as appropriate
3. Update the follow up excel form
4. Arrange monthly meetings with appropriate department or section to provide update on status of implementation on each risk control
5. Prepare follow up report and present it to the SRC
6. Capture data on a daily basis, or as frequently as possible for monitoring purposes
7. Review the potential cause for each safety concern/or issue reported/notified, trace back through the potential causes of the issues and corresponding mitigations being monitored to determine whether the new issue is a recurrence or not .

8. If the issue in (7) above is a recurrence, review the safety risk control that was developed and implemented else complete step (1) to step (6)
9. Complete a monitoring and evaluation report regularly to SRC to update on implementation and effectiveness of the risk controls.

12. Mechanism for Management of Hazards

PURPOSE

The purpose of this plan is to document the process of hazard management so that hazards are identified and evaluated using an identical criterion.

SCOPE

This plan covers all hazards that arise due to operations of the Air Traffic management, Aeronautical Information Management, Communications, Navigation and surveillance within the Entebbe Flight Information Region. The category scope of hazards shall include but not limited to aviation hazards, Occupational Safety and Health and Environment (OSHE) hazards

SOURCES OF HAZARDS

The hazards shall be determined from the following sources.

1. Incident analyses
2. Issue and hazard report forms
3. Situational reports
4. Client /customer complaints
5. Operational safety logs
6. Specialist advice
7. Audit, Inspection, and survey reports
8. Monitoring of “day-to-day” normal operations and environment reports
9. Industry reports

HAZARD CATEGORIES

The following hazard/issue categories shall be adopted for now;

1. Aviation hazards (AV)

Any hazard/issues that can have an impact (whether directly or indirectly) on the operational safety of aircraft or aviation safety-related equipment, products and services should be deemed pertinent to an aviation SMS.

2. Occupational Safety Health and Environment (OSHE) Hazards

Hazards/issues related to the safety, health and welfare of people engaged in work or employment. The purpose of reviewing occupational safety and health issues/hazards include fostering a safe and healthy work environment.

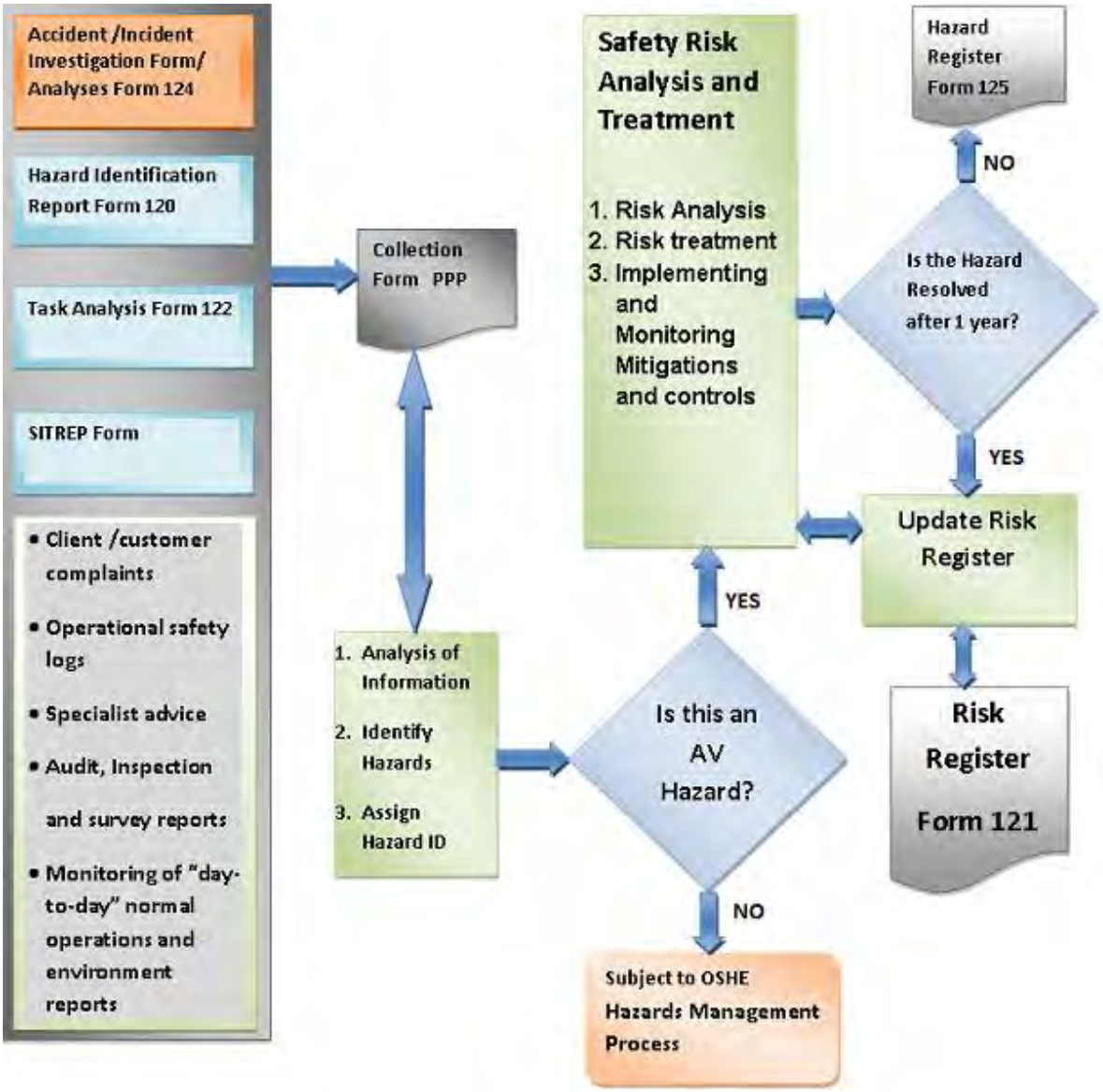
STEPS FOR HANDLING HAZARDS/ISSUES

1. Collect information from all available sources of hazards.
2. Send acknowledgement of receipt of information to the source as appropriate.
3. Analyse collected reports/information and identify hazards.
4. Categorise hazards and assign hazard tracking number for each hazard identified (**HZD/A-001/14** for aviation (AV) hazard number 001 in 2014 or **HZD/O-001/14** for Occupational Safety, health and environmental (**OSHE**) hazard number 001 in 2014).
5. OSHE hazards shall be forwarded to appropriate offices for further action while the AV hazards shall be subjected to the SRM process
6. The AV Hazards shall be ranked according to urgency for purposes of determining the order in which they are taken thro ugh the Safety Risk Management process.
7. Complete the Safety Risk management Process for each AV hazard using a pre-determined methodology (Complete SMS FORM 121) that shall be conspicuously be pinned on the notice board in the SMS office.

8. The risk register shall be reviewed regularly to determine the continuous effectiveness of the mitigation controls.

9. All AV hazards that still appear at the close of the year in the risk register will be transferred to the hazard register(SMS FORM 125)

SCHEMATIC FLOW OF THE HAZARD MANAGEMENT PLAN



13. Procedure for change management before introduction of new technologies, new procedures or system changes that affect aviation operations

Purpose

The purpose of this procedure is to guide the change management process whenever there are pertinent changes to operations/processes, facilities/equipment/software, key safety personnel or pertinent changes external to DANS such as regulatory/industry standards, best practices or technology.

Responsibility

The department head where the change is to take place shall be accountable for implementation of this procedure.

The unit heads shall monitor and recommend changes to the safety manager or his/her designee for approval prior to implementation.

Guidance

i. The departmental heads shall identify any proposed new technologies, procedures or system changes and notify the safety manger accordingly.
ii. The departmental heads shall then delegate a team to carry out a safety review of the proposed new changes using SMS form 121 to identify all potential hazards to the system introduced by the change.
iii. The identified hazards shall then be broadly categorised into Safety hazards and Enterprise risks.
iv. The Aviation hazards shall then be extracted from the form 121 and subjected to a Safety Risk Assessment using SMS form 122 in which the actual risk index column shall be left blank and filled at step (xi).
v. Appropriate mitigations shall be proposed to ensure that the risk is acceptable to the system in accordance to the ICAO risk ratings.
vi. The Enterprise risks will be subjected to the Enterprise risk assessment procedure stipulated in the Corporate Enterprise Risk Manual.
vii. After the Safety assessment, the team shall fill the change management form 115 describing the change, justification, areas affected by the change and back out plan if the change is unsuccessful.
viii. The draft forms 121, 122 and 115 shall then be presented to the Safety Action Group (SAG) for review prior to endorsement by the department Manager.
ix. After endorsement by the department manager, the change management forms 121, 122 and 115 shall then be submitted to the Safety manager for approval.
x. The original copy shall be kept in the department and duplicate copy with the SMS office.
xi. The actual risk index column in form 122 shall be filled at the stipulated next evaluation conducted before commissioning of the change and a copy submitted to the safety office.

The safety assessment review shall be one of the formal post implementation monitoring of the impact of the change.

APPENDIX J: Key Job Functions for Elements of the SMS Functional Chart

1 Accountable Executive

The Accountable Executive's authorities and responsibilities include, but are not limited to:

a. provision and allocation of human, technical, financial or other resources necessary for the effective and efficient performance of SMS;
b. direct responsibility for the conduct of the organization's affairs;
c. final authority over operations under the certificate/approval of the organization;
d. establishment and promotion of the safety policy;
e. establishment of the organization's safety objectives and safety targets;
f. acting as the organization's safety champion;
g. having final responsibility for the resolution of all safety issues; and
h. Establishing and maintaining the organization's competence to learn from the analysis of data collected through its safety reporting system.

2 Accountable Manager

The Accountable manager's authorities and responsibilities include, but are not limited to:

a. Deputy chairperson of directorate SRC
b. Define the SMS policies and objectives
c. Communicate to the organization the importance of SMS
d. Provide the resources (personnel, funding and support) necessary to fulfil SMS requirements
e. Facilitate implementation of the SMS across the organization
f. Foster a strong safety culture within DANS
g. Promote awareness of safety requirements throughout DANS
h. Develop safety targets and measures
i. Review safety data reports to determine the safety status of DANS
j. Chair Safety Review Committee of DANS
k. Conduct periodic observations, evaluations and assessments of safety practices of all DANS' operations, equipment, and facilities.

3 Safety Manager

The duties and responsibilities of Manager Safety Management Systems/Quality Assurance shall include, but not necessarily limited to:

a. Managing the SMS implementation plan on behalf of the accountable executive;
b. Performing/facilitating hazard identification and safety risk analysis;
c. Monitoring corrective actions and evaluating their results;
d. Providing periodic reports on the organization's safety performance;
e. Maintaining records and safety documentation;
f. Planning and facilitating staff safety training;
g. Providing independent advice on safety matters;
h. Monitoring safety concerns in the aviation industry and their perceived impact on the DANS operations aimed at service delivery;
i. Coordinating and communicating (on behalf of the accountable manager) with the State's oversight authority and other State agencies as necessary on issues relating to safety; and
j. Coordinating and communicating (on behalf of the accountable manager) with international organizations on issues relating to safety.

4 Safety Personnel

Duties of the safety personnel, include but not limited to the following:

a. Receive reports from the voluntary employee reporting system.
b. Receive hazards identified from audits and operational data.
c. Log and track all identified hazards.
d. Assist operational departments to identify risks associated with hazards.
e. Assist operational departments to assess risks and develop risk controls.
f. Provide communication to all staff on safety issues.

5 The Safety Services Office.

In an SMS environment, the safety services office fulfils four essential corporate functions:

a. Manages and oversees the hazard identification system;
b. monitors safety performance of operational units directly involved in service delivery;
c. Advises senior management on safety management matters; and

d. Assists line managers with safety management matters.

6 Safety Action Group

The duties and responsibilities of Safety Action group (SAG) shall include, but not necessarily limited to;

a. oversees operational safety performance within the functional areas of the organization and ensures that appropriate safety risk management activities are carried out with staff involvement as necessary to build up safety awareness;
b. coordinates the resolution of mitigation strategies for the identified consequences of hazards and ensures that satisfactory arrangements exist for safety data capture and employee feedback;
c. assesses the safety impact related to the introduction of operational changes or new technologies; coordinates the implementation of corrective action plans and ensures that corrective action is taken in a timely manner;
d. reviews the effectiveness of previous safety recommendations;
e. oversees safety promotion activities as necessary to increase employee awareness of safety issues and to ensure that they

7 Directorate SRC (DSRC)

The duties and responsibilities of Directorate Safety Review Committee (CSRC) shall include, but not necessarily limited to; at Directorate level;

a. Monitors the effectiveness of the SMS in DANS
b. Monitors that any necessary corrective action is taken in a timely manner;
c. Monitors safety performance against the organization's safety policy and objectives;
a. Monitors the effectiveness of the organization's safety management processes which support the declared corporate priority of safety management as another core business process;
d. Monitors the effectiveness of the safety supervision of subcontracted operations; and
e. Ensures that appropriate resources are allocated to achieve safety performance beyond that required by regulatory compliance.
f. Act as a source of expertise and advice on safety matters to the SRC.
g. Accept risk control strategies that affect multiple departments

h. Review safety reports to be presented to CSRC.

8 Corporate Safety Review Committee (CSRC)

The duties and responsibilities of Corporate Safety Review Committee (CSRC) shall include, but not necessarily limited to; at organizational level,

b. monitors the effectiveness of the SMS in CAA;
c. monitors that any necessary corrective action is taken in a timely manner;
d. monitors safety performance against the organization's safety policy and objectives;
e. monitors the effectiveness of the organization's safety management processes which support the declared corporate priority of safety management as another core business process;
f. monitors the effectiveness of the safety supervision of subcontracted operations; and
g. ensures that appropriate resources are allocated to achieve safety performance beyond that required by regulatory compliance.

9 All Staff

All staff shall be responsible for safety and are thus required to:-

a. Participate in all safety activities
b. Report actual and/or potential hazards in their area of operation.
c. Report deficiencies in deviations in operational procedures.
d. Participate in the safety risk management activities when called upon.
e. Safety promotion activities e.g. Development of safety bulletin/magazine

The generic safety accountabilities and responsibilities of each of the staff at DANS are stipulated in their respective job descriptions in the applicable operational manuals

10 Contractors [Service Providers and Suppliers]

Specifically the Contractor's role in SMS will include the following:

a. Understand the organization safety policy and objectives and adhere to all the applicable requirements established under them in the course of executing their contractual duties.
b. Identify and report any potential/actual hazard while executing the contractual duties.
c. Report any incident/accident while executing contractual duties.

d. Get acquainted with the Emergency procedures.
e. Participate as may be required in the conduct of safety assessment of the contracted work/project and follow recommendations of the assessment in the course of executing the contract.