RWANDA AIRPORTS COMPANY

AERONAUTICAL METEOROLOGICAL OFFICE

AERONAUTICAL METEOROLOGICAL QUALITY MANUAL

Doc. No:	Issue No:	Revision No.:
RAC-KIA-ANS-MET-000	03	02

KIGALI INTERNATIONAL AIRPORT

Doc. No. 000	JULY 2020
Reference	RAC-ANS-MET-000
Title	AERONAUTICAL MET QUALITY MANUAL
Revision 02	Issue 03

Authority of the Quality Manual

RWANDA AIRPORTS COMPANY LTD is the sole authority of this 'Quality Manual'. All information contained in this manual is, proprietary. Therefore copying and / or communicating full or part of the information in this manual without written permission of RWANDA AIR PORTS COMPANY LTD, is hereby prohibited. RWANDA AIR PORTS COMPANY LTD, Aeronautical Meteorological Office or its Representative reserves absolute responsibility and authority for distribution, maintenance and recall of this manual.

Correspondences should be addressed to:

Aeronautical Meteorological office,
RWANDA AIR PORTS COMPANY LTD,
Kigali International Airport
P.O. Box 1171
Kigali
Rwanda
Tel: (+250) 252 585555, +250724123155
E-mail: kia.met@rac.co.rw, aero_meteo@yahoo.com
AFTN: HRYRYMYX

Endorsement

This Aeronautical Meteorological Quality Manual completely depicts the Quality Management System that has been implemented at RWANDA AIRPORTS COMPANY LTD, Aeronautical Meteorological Office. I confirm that the Management System described in these procedures meets the requirements of the establishment of RWANDA AIRPORTS COMPANY LTD, Aeronautical Meteorological Office and its customers and is in fulfilment with the ISO 9001:2015.

All staff of Meteorological Office engaged within the scope of the Certification must be conversant with, and comply with, all procedures and practices detailed in the Aeronautical Quality Manual.

APPROVAL PAGE

Approved by :

.....

Charles HABONIMANA

Managing Director,

Rwanda Airports Company Ltd

JULY 2020

FOREWORD

This Quality Manual contains the quality management procedures implemented at RWANDA AIRPORTS COMPANY LTD, Aeronautical Meteorological Office. The procedures described in this manual are intended to fulfil with the specific clauses outlined in the following standard: ISO 9001:2015 International Standard.

This quality manual communicates the quality management system of the meteorological department of RWANDA AIRPORTS COMPANY LTD. This office shall consistently provide aeronautical meteorological services for national and international air navigation that meet customer satisfaction.

For the effective application and implementation of the procedures in quality management system, Aeronautical meteorology office has put in place standard equipment like AWOS, SADIS, lightning detector, Doppler weather radar and other more that will facilitate to provide accurate weather information that meet conformity and customer requirements.

The information contained herein seeks to guide meteorological personnel in ensuring quality aeronautical meteorological services that meet and supersede the regulatory and customer requirements.

DISTRIBUTION LIST

Serial No.	Issued to	Date
	MANAGING DIRECTOR RAC	
	DIRECTOR GENERAL RCAA	
	D/ANS	
	D/FSS RCAA	
	MANAGER/MET	
	MANAGER/ATM	
	MANAGER/CNS	
	MANAGER/AIM	
	MET Inspector RCAA	
	MET office	
	FSS Library RCAA	

RECORD OF AMENDMENTS

Latest issue date	Description of changes	Reviewed by QMS Officer	Approval date
	Initial Issue		
JULY 2020	Page 5		
	Page 7		
	Page 23		

TABLE OF CONTENTS

Authority of the Quality Manual ii

Endorsement iii

FOREWORD ii

DISTRIBUTION LIST iii

RECORD OF AMENDMENTS iv

1.1 DEFINITIONS 1

1.2 ABBREVIATIONS AND CODES 3

2. QUALITY POLICY AND QUALITY OBJECTIVES 5

2.1 QUALITY POLICY STATEMENT 5

2.2 QUALITY OBJECTIVES 5

2.3 Commitments 6

3. VISION 6

3.1 MISSION 6

4. ORGANIZATION AND ITS CONTEXT 7

4.1 Understanding the organization and its context 7

4.2 Understanding the Needs and Expectations of the Interested Parties 8

4.3 scope of the QMS 9

4.4 CLAUSE EXCLUSION 9

4.5 QUALITY MANAGEMENT SYSTEM AND ITS PROCESSES 10

PROCESS 11

Management review 11

ANS director 11

-reports from various department processes 11

Improvement in the Qms 11

Management reviews conducted as planned 11

PROCESS 12

Appropriate number of TAFs transmitted per day. 12

PROCESS 13

PROCESS 14

4.5.1 RISKS VERSUS MITIGATIONS 14

5. LEADERSHIP AND COMMITMENT 15

5.1 CUSTOMER FOCUS 16
5.2 POLICY 16
5.2.1 Developing Quality the Policy 16
5.2.2 Communicating the Quality Policy 16
5.2.3 Organizational Roles, Responsibilities and Authorities 16
6. PLANNING 17
6.1 Actions taken to address Risks and Opportunities 17
Quality Objectives and Planning to Achieve Them 17
6.2 Planning for achieving Quality Objectives 17
6.3 Planning of Changes 17
7. SUPPORT 18
7.1 Resources 18
7.1.1 General 18
7.1.2 People 18
7.1.3 Infrastructure 18
7.1.4 Environment for the Operation of Processes 18
7.2 Monitoring and measuring resources 18
7.2.1 General 18
7.2.2 Measurement Traceability 18
7.2.3 Organizational Knowledge 18
7.3 Competence 19
7.4 Awareness 19
7.5 Communication 19
7.6 Control of Documented Information 20
8. OPERATION 20
8.1 Operational Planning and Control 20
8.2 Requirements for services 21
8.2.1 Customer communication 21
8.3 Design and development of products and services 21
8.4Control of Externally Provided Processes, Products and Services 21
8.5 Type and extent of control 21
8.6 Information for external providers 22
8.7 Production and service provision 22

8.8.1PROCEDURE FOR THE CONTROL OF NON-CONFORMING 22
PRODUCTS/SERVICES 22
9. Monitoring, measurement, analysis and evaluation 22
9.1 Internal Audit 23
9.1.1 Procedures for planning Internal Audit 23
9.1.2 Procedures for selecting internal Auditors 23
9.1.3 Methods of Auditing 23
9.1.4 Audit reporting 23
9.2 Management Review 23
10 IMPROVEMENT 24
10.1General 24
10.1 Nonconformity and corrective action 24
10.2 Continual Improvement 25
APPEX 1: ORGANISATIONAL STRUCTURE 26
APPENDIX 2: JOB DESCRIPTIONS AND RESPONSABILITIES 27
1.2 Duties and Responsibilities for Head of Aeronautical Meteorological Office: 27
2 Meteorological Forecasters 27
2.1 Duties and Responsibilities of Forecasters 28
3 Meteorological Technicians (OBSERVERS) 29
3.2 Duties and Responsibilities of Meteorological Technician (Observers) 29
4 Quality Management Systems Officer 30
4.2 Duties and Responsibilities 30
APPENDIX3: SOME MODELS USED IN AERONAUTICAL METEOROLOGY 31
1. Regional Specialized Meteorological Centre (RSMC) Model 31
2. UK Met Office Africa LAM (Limited Area Model) 32
4.EUMETSAT Satellite Imagery –Central Africa 35
5. SADIS (Satellite Distribution System) Model 35
APPENDIX 4: AERONAUTICAL METEOLOROGICAL FORMS 38
APPENDIX 5: REFERENCES 57

1. DEFINITIONS, ABBREVIATIONS AND CODES

1.1 DEFINITIONS

Aeronautical information: The result of gathering, analysing and formatting aeronautical data.

Audit: A systematic, independent and documented process for obtaining evidence from the audit and objectively assessing it in order to determine the extent to which audit criteria are met

Corrective action: Action taken to eliminate the cause of an identified non-conformity or other undesired condition.

Improvement: An action aimed at eliminating or reducing a condition identified as weak following an assessment process. Corrective and preventive action would fall under this concept.

Top management: An individual or group of individuals who direct or control an Organization at the highest level.

Quality: Extent to which a set of inherent characteristics meets the requirements.

Capacity: The capability of an organization, system or process to generate a product that meets the requirements for such product.

Customer: An organization or individual receiving a product.

Competence: Personal attributes and ability shown in the application of knowledge and skills.

Empowerment: In relation to leadership management, this practice encourages subordinates to take on more responsibilities, which requires prior education, training and information. This practice results in an improvement in organizational performance.

Document: Information and its support medium.

Efficacy: Extent to which planned activities are carried out and planned results obtained.

Efficiency: Relationship between outcome and resources used.

Objective evidence: Data supporting the existence or accuracy of something.

Quality management: Coordinated activities for directing and controlling an organization in relation to quality

Indicator: Data or set of data that help to measure the evolution of a process or activity in an objective manner.

ISO 9001:2015: An international standard that specifies quality management requirements, and whose final objective is customer satisfaction. This standard was last updated in 2015, and is applied in more than 140 countries. It is universally used for assessing providers and showing conformity (certification).

Quality manual: A document that specifies the quality management system of an Organization.

Process: A set of interrelated or interacting activities that turns input into outcome.

Approval: The formal acceptance of a document, product, service, item or activity.

Data: Any formal knowledge used as process input, serving in general as a basis for drafting controlled documents. Controlled data include, inter alia, drawings and external standards.

Efficacy: Extent to which planned activities are carried out and planned results obtained.

Efficiency: Relationship between outcome and resources used.

Management: Coordinated activities for managing and controlling an organization.

Work instructions: A procedure that describes the activities carried out by organic units.

Quality management manual: A document containing the technical-administrative structure of the quality management system, which:
- Defines the scope of the system and top management commitment to the quality of its established processes, products and services.
- Provides for control tools through the development and application of procedures or work instructions, documents, formats, records, and documents related to the management of the organization.
- Serves as a guide for customer satisfaction and process optimization.

Quality policy: Action criterion or guideline chosen as a guide for decision-making when implementing strategies, plans, programmes and specific quality projects within the meteorological service for national and international air navigation, formally expressed and disseminated by top management.

Procedure: A specified way of carrying out an activity or process.

Process: A set of interrelated or interacting activities that turn input into outcome.

Revision: The current status of the document, sequentially numbered in increasing order, starting with 00 (e.g., Revision 00, Revision 01...). An activity carried out to check the convenience, suitability and efficacy of the subject matter for the attainment of the established objectives.

Records: They are established and kept for demonstrating compliance with requirements and the effective operation of the quality management system. Records must be easily identifiable and retrievable.

Requirement: An established need or expectation, generally implicit or mandatory.

Quality Management System (QMS): A management system for directing and controlling an organization with respect to quality. A group of human and material resources, coordinated through the structured documents and referenced to the Safety Manual, aimed at ensuring process compliance with the recommendations of ISO 9001:2000.

1.2 ABBREVIATIONS AND CODES

List of abbreviations and Codes used in the Aeronautical Meteorological Quality Manual.

Aero	Aeronautical
ANS	Air Navigation Services
AFTN	Aeronautical Fixed Telecommunication Network
AMO	Aeronautical Meteorological office
AMOS	Aerodrome Meteorological Observation System
ANS	Air Navigation Services
ASHTAM	A special series NOTAM notifying by means of a specific format change in activity of a volcano, a volcanic eruption and/or volcanic ash cloud that is of significance to aircraft operations.
ATC	Air Traffic Control
AWOS	Automatic Weather observing system
AWS	Automatic Weather Station
CAA	Civil Aviation Authority
DATIS	Digital-Automatic Terminal Information Service
ECMWF	European Centre for Medium-range Weather Forecast
hPa	Hectopascal
ICAO	International Civil Aviation Organization
ISO	International Organization for Standardization
KIA	Kigali International Airport

MET	Meteorology / Meteorological
METAR	Meteorological Aviation Routine Weather Report
MWO	MET Watch Office
NMC	National Meteorological Centre
NOTAM	Notice to Airmen
QMS	Quality Management System
RAC	RWANDA AIR PORTS COMPANY
RCAA	Rwanda Civil Aviation Authority
RCC	Rescue Coordination Centre
RSC	Rescue Sub Centre
RVR	Runway Visual Range
SADIS	Satellite Distribution System
SIGMET	Information concerning en-route weather phenomena, which may affect the safety of aircraft operations
SPECI	Aerodrome special meteorological report *(in meteorological Code)*
SYNOP	(Surface Synoptic Observations). A numerical code used for reporting weather observations made by manned and automated weather stations.
TAF	Terminal Aerodrome Forecast
VAAC	Volcanic ash advisory centre
WMO	World Meteorological Organization
WX	Weather

2. QUALITY POLICY AND QUALITY OBJECTIVES

2.1 QUALITY POLICY STATEMENT

The continuing Policy of aeronautical meteorology office is to provide a high quality, professional and efficient aeronautical meteorological information to ensure the safety for national and international air navigation services.

2.2 QUALITY OBJECTIVES

Aeronautical MET quality objectives is incorporated into RAC Quality objectives and is communicated through the departmental regular meetings and is also displayed on notice board. This office ensures that the quality objectives is understood by all staff and it is applied within the department.

The quality objectives to be achieved by Aeronautical Meteorological office are specified here below:

a) Satisfaction level of different customers, operators and airlines on Aviation Meteorological Service provided should be 95 percent and above by June 2022.
b) Inaccuracy Terminal Aerodrome Forecasts (TAF) will be less than 2% by June 2022
c) Number of correction/amended messages after issuance will be less than 1% by by June 2022
d) Number of retard messages will be nil by June 2022
e) More than 95 percent of hourly and half hourly METAR reports in coded form should be filed and transmitted within 5 minutes before time.

f) Accuracy of METAR/SPECI Observations, Synoptic Observations will be 90% by June 2022.
g) Number of corrections made in the Monthly Climatological summary is less than 2% by July 2022.
h) CLIMAT message sent to WMO centres should be prepared and transmitted before 10days of the following month.
I) Fog analysis at Kigali international Airport and New Bugesera International airport will be carried out during rain seasonal and every year.
J) Strong winds at Kigali international Airport will be analysed and keep records for better understanding the climatology of the area and enhance safety measures.

2.3 Commitments

Aeronautical meteorological office is committed to:

a) Prepare and disseminate accurate aviation meteorological reports to operators.

b) Understand our customer challenges and identify their requirements
c) Develop and equip a team of competent staff
d) Provide capabilities that meet or exceed our customers' expectations
e) Comply with quality management system requirements
f) Continuously improve our QMS processes and its effectiveness
g) Ensure that quality objectives associated with quality policy are established and reviewed.

3. VISION

To be a core of excellence in the field of Aviation Industry by providing world class Aeronautical Meteorological Services to the customers.

3.1 MISSION

To provide quality and timely Aeronautical Meteorological services to the aviation operators, and other customers.

4. ORGANIZATION AND ITS CONTEXT

Aeronautical meteorology office has emphasized Quality service as one of the most important factors in order to ensure high level of customer satisfaction, different issues have been analyzed and summarized as the main effects that influence aeronautical met office to achieve its intended results of quality management system

4.1 Understanding the organization and its context.

INTERNAL ISSUES	ISSUES	IMPACT ON QMS
STRENGTH	-since aeronautical met office is working under RAC, and the top management is responsible to fund all aeronautical meteorology activities.	Positive impact that enables Met office to accomplish its action plan.
	-having in place infrastructure and standard equipment	Positive impact that enables to perform met daily operation and keep historical data.
	-having in place professional management	Positive impact that enables to implement effective and efficient met technical operations.
WEAKNESS	-shortage of staffs	Opportunity to learn from the guidance provided through QMS requirement procedures.
	-Irregular calibration of sensors	QMS will assist in auditing quality of sensors and quality of data.
	-lack of refresher courses	QMS will assist to implement training programs
OPPORTUNITIES	- Being a member of both ICAO ,WMO and other international and regional organizations	Obligation to fulfil and comply to international standards

	- Modern Equipment - Qualified personnel -Staff motivated - Strong internet connectivity	-Improving the accuracy -Compliance with the requirements. -Retention of staff -Timely service delivery
THREAT	-Weather keeps on changing in time and space	Improve accuracy and regularity of weather forecasting through improved techniques.
	-COVID -19	QMS will assist to put in place the preventive methods of COVID-19
EXTERNAL ISSUES	-political factors -social factors -economic factors	

4.2 Understanding the Needs and Expectations of the Interested Parties

Interested party	**Needs and Expectations**	**How these shall be addressed in the QMS**
Customers/End Users	-Provision of weather observation (METAR, SYNOP, SIGMET) - Provision of Terminal Aerodrome Forecast (TAF) - provision of Aerodrome warning -provision of data for research	The QMS enable to put in place processes and procedures to produce and provide accurate weather information and provision of low data for research purposes.
ICAO	- Provision of standards aeronautical information	Benchmarking QMS processes against standards and recommended practices
WMO	- Provision of global and regional observation	Benchmarking QMS processes against standards and recommended practices

4.3 scope of the QMS

The Aeronautical meteorological office is working under the directorate of Air Navigation Services in RWANDA AIR PORTS COMPANY and is responsible to provide aviation weather services within Kigali FIR and Dar es Salaam when necessary.

The delivery of aviation weather services is based on the processing and analysis of observational data obtained from automatic observing system (AWOS) and information generated by an array of numerical models. in order to ensure the provision of weather information necessary for flight safety, the weather services provided is based on aviation industry requirements and meet the National and International requirements.

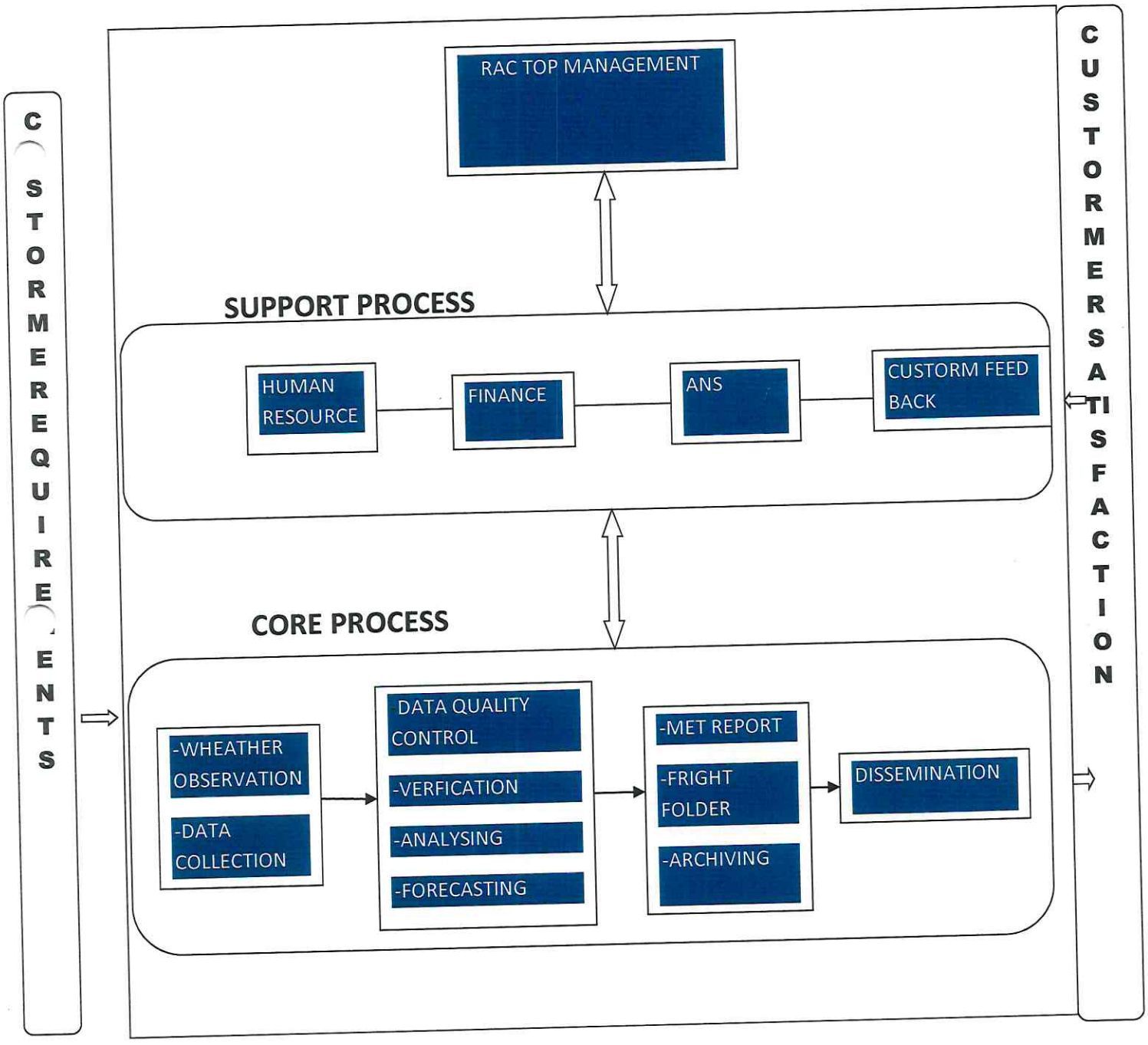
4.4 CLAUSE EXCLUSION

RWANDA AIR PORTS COMPANY, Meteorological Department's quality management system has the following exclusions:

- Clause 8.3.2 to 8.3.6 of ISO 9001:2015– Design & Development

- RWANDA AIR PORTS COMPANY, Aeronautical Meteorological Department does not design the equipment used to observe weather parameters.
- RWANDA AIR PORTS COMPANY, Aeronautical Meteorological Department does not design or develop models used to assist in the forecasting weather conditions. Examples of some models used are at Appendix 3.

4.5 QUALITY MANAGEMENT SYSTEM AND ITS PROCESSES



PROCESS	PROCESS OWNER	INPUT	OUTPUT	RISK assessment	OBJECTIVES	MONITORING
Management review	ANS director	-reports from various department processes -minutes of previous management review -Qms internal documented processes	Improvement in the Qms Implement previous CAP	Not having management review as planned Previous CAP not being implemented	To ensure that Qms is still suitable, adequate, effective & aligned with the overall strategic direction of the institution.	Management reviews conducted as planned
Human Resource Management	Human Resource	Organizational structure, Job assessment, Budget, Staff management System, and capacity building.	-Staff in place -Salary paid -Staff files -Training reports -Performance evaluation reports	-Inappropriate job requirements -Poor working environment Rare skills on the Labour market -Poor retention of trained staff -Unfair performance appraisal	The objective is to employ the right people with the right skills, at the right time while complying with recommended practices to ensure the availability of an optimum human resource that enables the institution to achieve its goals. -To increase the knowledge, skills and motivation enabling employees' performance.	-Filled Organizational structure -Employees' files -Capacity building plan -Capacity building implementation report -Staff performance report

PROCESS	PROCESS OWNER	INPUT	OUTPUT	RISK assessment	OBJECTIVES	MONITORING
Weather observation and data collection process	Aeronautical met observer	WMO guideline and technical notes, timely weather observation and radar information. -automatic weather observing system (AWOS).	Met reports: Metar,Speci,synop Decadal,climat, And climatological summaries.	Poor collection of data, wrong interpretation of present weather information, lack of quality control &data analysis. Dissemination of wrong information.	Accurate and timely meteorological reports, transmission of climat message before 10 days of each month. Keep records of climatological summaries.	-number of Metar,Speci &synop reports transmitted to end users per day -availability of monthly climatological summaries. Verification whether climat message is sent on time.
Weather forecasting and analysis process	Aeronautical met forecasters	-WMO guideline and technical notes, -Global and Regional weather forecasting models (ECMWF, ALAM, & EUMETSAT). -Analysis of Met observed data. -analysis of satellite images	-Terminal aerodrome forecast at six hour interval. -landing and take of forecasts -aerodrome warning and sigmet message -preparation of flight folders	-Slow /poor internet connectivity to update forecasting models. -Accuracy of forecast is less. -poor dissemination systems in place.	To ensure the accuracy & timely weather forecasting. To ensure the number of retarded TAF& TAF correction/amended is less than 1%	Appropriate number of TAFs transmitted per day. -Monitor number of complaints rose from customers.

PROCESS	PROCESS OWNER	INPUT	OUTPUT	RISK assessment	OBJECTIVES	MONITORING
Meteorological instrument maintenance &calibration	CNS Engineers	-Maintenance schedules, -Instruments Manuals, -Maintenance tools, - -spare parts, - Calibration manuals & guidelines.	Maintenance Reports, Failure report forms, logbook, well maintained met instrument - Calibrated instrument reports. Instrument commissioning& decommissioning	- Lack of enough spare parts. -Lack of calibration skills. - Buying poor quality parts.	To ensure that all meteorological instruments are fully operational.	-Timely Maintenance and calibration of met instrument -Number of met instruments that are fully operational.
Internal audit Process	QMS Internal Auditor	-Internal audit annual plan. -Previous audit recommendations, findings.	internal audit reports	-Lack of documentation - Availability of the auditee - Not responding to the queries.	To define how the internal audit is conducted in RAC.	Internal Auditor report and previous finding report.
Control of Non-Conformity outputs process	QMS officer	Service requirements & proposed correction measures	Corrected output	-NCs detected but not reported - Outputs reaching customers and reported to others and not to the organization	To ensure that outputs that do not conform to customer requirements are identified and controlled.	Number of NCs closed

PROCESS	PROCESS OWNER	INPUT	OUTPUT	RISK assessment	OBJECTIVES	MONITORING
Planning, monitoring and Evaluation	MANAGER MET &DANS	Plans and reports from the Department.	- Approved plans and - Reports	-Limited capacity to plan - Late reports - Poor implementation	Set up the activities needed and follow up their implementation.	Available plans and progress reports

4.5.1 RISKS VERSUS MITIGATIONS

RISKS	MITIGATIONS
1. Not having management review as planned	-Good arrangement and early communication
2. Previous CAP not being implemented	--M/Met shall give a review on CAP implementation steps
3. Poor collection of data, wrong interpretation of present weather information, lack of quality control &data analysis. Dissemination of wrong information	-Training, refresher courses, purchasing modern equipment
4. Slow /poor internet connectivity to update forecasting models. -Accuracy of forecast is less. -poor dissemination systems in place.	-Using Advanced Networks, purchasing super computers
5. Lack of enough spare parts, calibration skills, buying poor quality parts	-having back up for each instrument in place, conducting training on calibration and verification of manufactory test report.

6. Lack of documentation, availability of the auditee	-all documented records should be kept in a manner that is easy to retrieve access and distribute for different purposes.
7. Limited capacity to plan, Late reports, poor implementation	- improve planning skills through capacity building - Implement Performance evaluation contract (IMIHIGO)
8. Non-conformities detected but not reported	-QMS shall verify all MET report transmitted to the end users.

5. LEADERSHIP AND COMMITMENT

A Leadership principle is a fundamental rule for leading, operating, supporting and developing an organization with the objective of continually improving performance over the long term through a focused approach to all stakeholders, employees and customers in particular.

The RAC top management through its directorates is committed towards fully implementation of quality management system and takes full accountability for its effectiveness.

The directorate of Air Navigation Services is to establish the quality policy. The quality objectives are established by the Head of aeronautical meteorological department. While doing so they ensure that the quality policies and quality objectives are compatible with the context and strategic direction of RWANDA AIRPORTS COMPANY.

For all of aeronautical meteorological operations are conducted as per QMS requirements and for each core process of our operations a plan – do – check - act approach is adopted. Risk based thinking is applied at each of these steps.

For effective implementation of QMS, the RAC top management is responsible for allocation of budget, the Financial, human & other physical resources as & when required.

The importance of QMS requirements to the RAC and its processes are communicated through regular meetings, outlooks, website, advisory circulars and AIP (aeronautical information publication).

Aeronautical meteorological department has identified the inputs to its operation processes and defined responsibilities for achieving conformity of services. Different forms are put in place to check whether our daily activities comply with intended results of the QMS.

The RAC is engaged, in directing and supporting all employees to contribute to the effectiveness of the quality management system for the growth and improvement of Rwanda aviation industry.

All directors, heads of departments are responsible to demonstrate their leadership in their units and departments and keep entire staffs engaged in achieving organizational objective

5.1 CUSTOMER FOCUS.

The RAC, aeronautical met department has put in place an adequate compliant environment to identify the needs and expectations of our customers through use of customer satisfaction feedback forms and use of recordable telephone.

Different issues that can affect conformity of services and the ability to enhance customer satisfaction are determined and addressed through quality management system. Customer satisfaction feedback is considered in order to enhance and maintain customer satisfaction.

5.2 POLICY

5.2.1 Developing Quality the Policy

RAC management has established a quality policy that is appropriate to the purpose and context of the organisation and supports its strategic direction. See the quality policy 2.1

5.2.2 Communicating the Quality Policy

The Aeronautical Met quality policy shall be communicated through RAC management meetings, memos to heads of departments, the departmental regular meetings and shall also displayed on notice board. This office shall ensure that the quality policy is understood by all staff and it is applied within the department.

The refresher workshops and internal audit checks on QMS shall be conducted within the department to verify the understanding and compliance.

5.2.3 Organizational Roles, Responsibilities and Authorities

Air navigation services directorate has appointed the QMS Manager in addition to Manager MET as indicated in organization structure refer to appendix 1 of this manual. All staff have assigned and approved QMS responsibilities as indicated in their job descriptions. Therefore, each staff ensures quality management conforms to this quality manual refer to the appendix 2"job description and responsibilities.

6. PLANNING

6.1 Actions taken to address Risks and Opportunities

Aeronautical meteorology department has identified and assessed different issues that can impact QMS, and hence developed a mitigation plan which is documented against each process. i.e., the risks and opportunities are documented in each of the QMS processes.

Aeronautical meteorology department has developed mitigation plans against each risk that it is anticipated and this is evidenced in item 8 of quality management system and its processes. Accordingly, mitigation options identified are tried and tested and adopted if successful

Quality Objectives and Planning to Achieve Them

The quality objectives have been established and are referenced in section 3 above.

6.2 Planning for achieving Quality Objectives

The plan to achieve quality objectives is contained in individual processes approved by the management for operationalization.

Quality Objectives	**Actions to be taken**	**Responsible Person**	**Resources Required**	**Expected Completion Date**	**How Results Evaluated**
To increase customer satisfaction level	Enhance &improve the use of customer feedback forms	Manager MET/Quality officer	Adequate Budget	End of fiscal year of 2021/2022	Survey and collect feedback from customers.
Improved Weather forecasting accuracy	-conduct trainings on advanced aeronautical forecasting courses -continual Improve models analysis & Imagery interpretation	HR/Manager MET Meteorological forecasters	Adequate Budget	continuous	-Performance evaluation
Accurate &timely weather observations	-use of AWOs -conduct weather observation on time and every time	Met observers	At least 2 Met staff per shift	continuous	Monitoring Met reports per shift
Transmission of met reports	-Every met report shall be issued on time	All met staffs	At least 2 met staff per shift	continuous	-Monitoring Met reports per shift -Performance evaluation

6.3 Planning of Changes

Air Navigation Directorate and heads of department basing on reports from performance evaluation, management reviews and internal audits will initiate changes in the quality objectives. Any need for change in the QMS is carried out in a planned manner keeping in view of the following;

i. Purpose of the change and its consequences
ii. Availability of resources
iii. Defining responsibility and authority
iv. Maintaining the integrity of the QMS

7. SUPPORT

7.1 Resources

7.1.1 General

RWANDA AIR PORTS COMPANY has provided resources needed for the establishment, implementation and continual improvement of the QMS.

7.1.2 People

All needed staff have been availed for the implementation of the QMS and for the operation and control of its processes. When shortage MET staff is identified on RAC structure, Manager MET prepares staff request and forward to Human Resource department for new recruitment. Refresher Courses for both Forecasters and Observers will be done once per two years either in-house and lead by Manager Met and Quality officer alternatively externally for some courses.

7.1.3 Infrastructure

RWANDA AIRPORTS COMPANY has provided necessary infrastructures (conducive working environment, utilities, machines, equipment, software, IT hardware & software, IT services for communications, etc.,) for the operation of QMS processes in order to facilitate the achievement of conformity of services and services sustainability.

7.1.4 Environment for the Operation of Processes

RWANDA AIRPORTS COMPANY has modern offices and support equipment necessary for good conduct of QMS processes and shall achieve conformity of services as planned. The interactive policy within the organization ensures smooth flow of information, instructions, guidance and thus addressing all social, psychological and physical issues among the organization has become easy.

7.2 Monitoring and measuring resources

7.2.1 General

Aeronautical Met department is responsible for the quality control of all Met reports produced and ensuring the meteorological data collected are accurate and comply with National and International requirements.

7.2.2 Measurement Traceability

Aeronautical Met department is responsible for all meteorological data records and all met data shall be available in both hard and soft copy depending on purpose of request.

7.2.3 Organizational Knowledge

Aeronautical Meteorological office has both forecasters and observers that complement each other in fulfilling the objectives of the MET Office. Specific knowledge as it applies to the operation of processes has been given in AERO-MET MANOPS chapter 11.

7.3 Competence

In the process of providing quality services for international air navigation, all aeronautical Meteorological staff have to be trained in their respective fields so that they cope-up with changing technology and operating procedures, this will therefore increase their confidence towards achieving ICAO standards (Refer to CAA(MET) Regulations 2018 or RCATs) in as far as operation processes are concerned.

Training will not only add competence to the technical staff, but also will equip them with sufficient skills concerning communication so that any necessary meteorological reports done at Kigali aeronautical meteorological office is disseminated to national and international institutions responsible for aviation operations including other designated centres for provision of air navigation services. The necessary of Aeronautical Personnel has been given in AERO – MET MANOPS under chapter 13.

7.4 Awareness

The quality policy, quality objectives and employee contribution to the effectiveness of the QMS is communicated through regular meetings and sharing of the documented information to all concerned.

The employees are also made aware of the benefit of their improved performance and the implication of not conforming to the QMS requirements. The QMS Manager is responsible for implement this process.

7.5 Communication

Aeronautical Met has established the following channels to communicate both internally and externally.

Entity	What to Communicate	When to Communicate and/ Frequency of Communication	To whom communication should be sent	Method Used for Communication	Responsibility for Communication
Customers	Aeronautical Meteorological services.	Regularly on time and in lead-time depending on customer requirement.	Air lines and all end users	Print out hard copies, recordable telephone, web site and links. Through ATIS	Manager MET/Any staff on duty

Entity	What to Communicate	When to Communicate and/ Frequency of Communication	To whom communication should be sent	Method Used for Communication	Responsibility for Communication
Staff	QMS operational processes	Monthly and when necessary	Manager MET	Meeting, emails, internal memos	QMS Officer
Regulators	Progress of conforming / Non-conforming processes and corrective action Plan (CAP)	Twice per year	International consultant and RAC regulators.	Official communication	Manager MET / QMS officer
ICAO/WMO	Commitment and progress of implementing QMS	Regularly	Manager MET	Official communication	DANs/ Manager MET

7.6 Control of Documented Information

All documented information regarding to aeronautical meteorology is controlled by Rwanda AIR PORTS COMPANY. Any enquiry for Aeronautical Met document/records shall be addressed to Rwanda AIR PORTS COMPANY Authority and this authority shall therefore authorise Manager Aeronautical Met to release the requested documents/records. Aeronautical Met Department shall create and update all useful documents to its operation process, copy of each document shall be kept to Rwanda civil aviation library while met office also retaining copy for its daily operation references.

8. OPERATION

8.1 Operational Planning and Control

Aeronautical Met office has developed the relevant plans and controls of the processes to ensure effective implementation of the activities for service realization.

The plan procedures of our daily operation activities are documented in aeronautical manual of operation (RAC-KIA-MANOPs-MET001)

8.2 Requirements for services

8.2.1 Customer communication

Aeronautical Met Department has put in place different ways to communicate to customers, interested parties and other end users through:

- -Recordable telephone
- Use of D-ATIS
- Workshops
- E-mails and Website links
- Customer feedback forms

Any complain a raised by any mean above shall be received and analysed for its merits, Constructive criticisms are encouraged in the service as a matter of policy.

8.3 Design and development of products and services

This clause was excluded from the scope of QMS because:

-RWANDA AIR PORTS COMPANY, Aeronautical Meteorological Department does not design the equipment used to observe weather parameters.

- RWANDA AIR PORTS COMPANY, Aeronautical Meteorological Department does not design or develop models used to assist in the forecasting weather conditions. Models used can be seen from appendix 3

8.4Control of Externally Provided Processes, Products and Services

Aeronautical Meteorological office is an integral part of RWANDA AIR PORTS COMPANY. As a private entity, procurement of products and services that forms part of its processes is governed by RAC Procurement manual. Ref to Rwanda Airports Company Procurement Manual Vision II

8.5 Type and extent of control

The Manager of MET is responsible for ensuring that all products and services conform to the specified requirements. Once a purchased product has been delivered, the procurement department in consultation with the Head of MET will arrange for control and verification. The control will be done by a team constituted by staff from the procurement department and Meteorological office. The control team will verify whether the product meets the specifications in the contract. Once the control has been confirmed the purchased product will be released to the Manager of MET.

The Manager MET and the QMS officer will confirm if the product conforms to the meteorological quality requirements before put in use.

8.6 Information for external providers

A list of required items, articles and their specifications is made by Head Aeronautical Met department and the list is forwarded to the Director ANS for approval of the purchase, the letter bearing the approval signature of the Director ANS, is then sent to the procurement section of Rwanda Airports Company. The procurement section forwards the approved list to the Managing Director for final approval.

8.7 Production and service provision

Aeronautical meteorology office provides information about actual weather conditions at an aerodrome through its scheduled hourly& half hourly observations and forecasts at six hours' interval. Different reports are made available at aerodrome Meteorological office and disseminated as appropriate to aeronautical users including: operators, flight crew members, air traffic services, search and rescue, airport management, and others concerned with the conduct of aviation services. See (Ch. 3&4) of MANOPs-MET001.

8.8 Control of Nonconforming Outputs

8.8.1PROCEDURE FOR THE CONTROL OF NON-CONFORMING PRODUCTS/SERVICES

Any Forecaster/Observer on duty shall be responsible for all Non-conforming service that occur on her/his shift and therefore will have authority for:

- Identifying non-conformities
- Correction
- Amendment
- Separation of conforming and non –conforming reports
- Verify and Send the conforming report to the end users
- Inform end users and H/Met
- Describe the nonconformity and action taken
- Retain the records

9. Monitoring, measurement, analysis and evaluation

Aeronautical Meteorological Department will plan and implement the monitoring, measurement, evaluation and analysis of the Aeronautical operation processes in order to improve the effectiveness of the system.

To this end it will:

a) Conduct and make analysis of customer satisfaction feedback.
b) Count the number of retard messages issued per shift.

c) Evaluate supplier performance records
d) Address customer complaints and document them.
e) Count the number of corrected and amended messages/reports per shift.

9.1 Internal Audit

9.1.1 Procedures for planning Internal Audit

Internal quality auditing of our operation process is planned and conducted at least once a year to determine if our QMS conforms to:

a) Our own requirements for the QMS
b) The requirements of ISO 9001:2015.

This is also done to determine whether the QMS is effectively being implemented and maintained.

9.1.2 Procedures for selecting internal Auditors

Criteria for selecting internal auditors are as follows:

-Internal audit should be carried out by any staff from Rwanda Air Ports Company who has gone under the following trainings:

a) On Current ISO standards and has Certificate

b) On current Guidelines for Auditing management system and has certificate

Auditor team is selected and officially informed by Quality and safety Manager

9.1.3 Methods of Auditing

The team of Auditors shall decide on which method to use among the following:

- Checklist
- Sampling
- Interviewing

9.1.4 Audit reporting

The internal auditors will prepare an audit report and proposed Corrective Action Request (CAR) and submit the report to the Quality Officer. The Quality Officer shall take appropriate measures without undue delay and complete report of CAR and Corrective Action Plan (CAP) is submitted to the Head of Aeronautical Meteorological Department.

9.2 Management Review

At planned intervals during the year, Top management review the Quality Management System to ensure its continuing suitability, adequacy, effectiveness and alignment with the strategic direction of our organisation. The Quality System is monitored, measured, evaluated and enhanced regularly under the Top Management's ultimate responsibility, with regular reporting and communication of the status and effectiveness at all levels.

10 IMPROVEMENT

10.1General

Aeronautical meteorology department has selected risks and opportunities in its operation process system that can affect intended results of its quality management systems. The RAC top management is committed to implement all necessary actions to meet customer requirements and enhance customer satisfaction. These include:

a) Improving products and services to meet requirements as well as to address future needs and expectations.

b) Correcting, preventing or reducing undesired effects.

c) Improving the performance and effectiveness of the quality management system.

10.1 Nonconformity and corrective action

The Aeronautical Met Department shall consider any nonconformity occurs, including complaints from customer feedback forms, and we do the following:

a) React to the nonconformity and, as applicable:
   1) Take action to control and correct it;
   2) deal with the consequences;

b) Evaluate the need for action to eliminate the cause(s) of the nonconformity, in order it does not repeat or occur elsewhere, by:

   1) Reviewing and analysing the nonconformity;

   2) Determining the causes of the nonconformity;

   3) Determining if similar nonconformities exist, or could potentially occur;

c) Implement any action needed;

d) Review the effectiveness of any corrective action taken;

e) Update risks and opportunities determined during planning, if necessary;

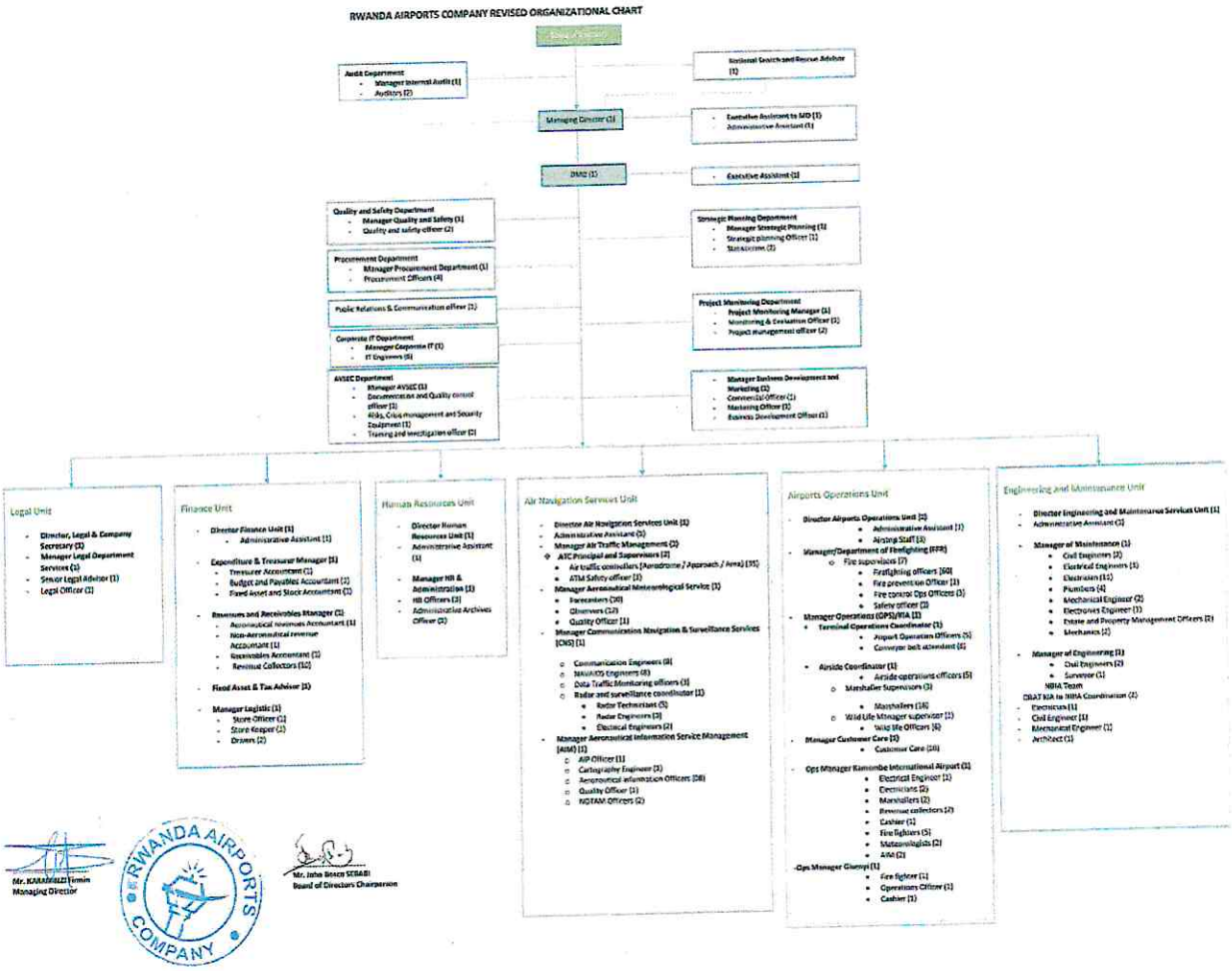
f) Make changes to the quality management system, if necessary.

The aeronautical Met department is to make sure that Corrective actions taken are appropriate to the effects of the nonconformities encountered.

10.2 Continual Improvement

RWANDA AIR PORTS COMPANY, aeronautical meteorology department shall continually improve the suitability, adequacy and effectiveness of the QMS. Improvement initiatives are based on the results of analysis, audit reports, evaluation and the outputs from Management review to determine if there are needs or opportunities that are addressed as part of continual improvement.

APPEX 1: ORGANISATIONAL STRUCTURE



APPENDIX 2: JOB DESCRIPTIONS AND RESPONSABILITIES

1. Manager Aeronautical Meteorological Office

In the performance of his duties the Manager Aeronautical Meteorological Office will report to the Director Air Navigation Services.

1.2 Duties and Responsibilities for Manager of Aeronautical Meteorological Office:

a) Overall administration of Aeronautical Meteorological Office; control and monitor the deployment of resources.
b) To oversee provision of quality and effective aviation weather services and to liaise with the aviation community.
c) Supervise and lead staff. Identify forecasting problems and take charge of development of forecasting techniques
d) To keep abreast of RCAA regulations 2018, part 24 matters in respect of aviation weather services and implementation of new standards, recommended practices and systems
e) To keep abreast of international trends in respect of aviation weather service provision and map out strategic Aerodrome Meteorological Department development plan.
f) To anticipate future trends in respect of user needs.
g) To promote self-development of meteorological staff, with a view to better use of resources and enhancing efficiency and effectiveness.
h) Ensure that the quality of data collected are authentic and maintains all international standards so that it can be used for present and future analysis and research works and studies.
i) Preparation of duty and leave roster of staff.
j) Clarify technical and legal doubts of staff as and when they arise.
k) Refer matters of concern to higher authorities, with remedial suggestions.
l) Carry out all the steps required towards the implementation of QMS for aeronautical meteorology.
m) Carry out any other duties as assigned by the Director, ANS

1.3 Qualifications

✓ At least Bachelor degree of science in Meteorology (BIP-M) and 5 years of experience in Meteorology.

2 Meteorological Forecasters

In the performance of their duties the Meteorological Forecasters will report to the Manager Aeronautical Meteorological services.

2.1 Duties and Responsibilities of Forecasters

a) Analysis pressure tendency and surface observations
b) Checking numerical models for the significant weather elements.
c) Checking the past and present weather and predict for the future.
d) Analyse the METLAB Products for regional and global forecasting model
e) Look at the different models products and Satellite imagery for analysis
f) Prepare Meteorological flight folder for departing aircraft
g) Prepare TAF and transmit to ***WMO Centres***
h) Prepare take-off and landing forecasts
i) Prepare Climatological summaries and submit to the Head of Aeronautical Meteorology.

2.3 Qualifications

✓ Bachelor degree of science in Meteorology (BIP-M) and or Meteorological Technician (BIP-MT) with experience of 5 years.

3 Meteorological Technicians (OBSERVERS)

3.1In the performance of their duties, the Meteorological Technicians (Observers) will report to the Supervisor Observer.

3.2 Duties and Responsibilities of Meteorological Technician (Observers)

a) Assisting Met Forecaster in his daily routine work.
b) Plotting of synoptic met observations in charts (if required).
c) Taking Aeronautical Met. Observations in every half an hour and recording it in registers.
d) Prepare SYNOP/SPECI messages with help of AWOS.
e) Taking synoptic observations in every three hours and prepare SYNOP messages.
f) Dissemination of MET messages to various destinations
g) Keep records for all the meteorological information passed to various destinations.
h) To keep a watch over weather, change and to report the significant change to the MET Forecaster.
i) To keep a watch over all instruments and report the faulty functioning if any.
j) Enters Meteorological data for analysis
k) Collecting Meteorological Data from the MET garden when is required
l) Replacing Meteorological Charts i.e. thermograph charts, hygrograph chart,
m) Cleaning MET instruments every Monday morning and any other time when necessary.

3.3 Qualifications

- ✓ At least Meteorological Technician (BIP-MT).

4 Quality Management Systems Officer

4.1In the performance of his duties the Quality Management Systems Officer will report to the Manager safety/Quality and give a copy to the Manager MET.

4.2 Duties and Responsibilities

a) Establishment and institutionalization of QMS in the Aeronautical Meteorological department as a member of Quality Management Team.

b) Ensure that the QMS processes are implemented updated and maintained.

c) Advise MET management team on the performance of QMS and any need for improvement.

d) Ensuring the promotion of awareness of customers' requirements at MET offices in collaboration with the Manager safety/Quality

e) Liaison with external organizations on matters relating to QMS

4.3 Qualifications

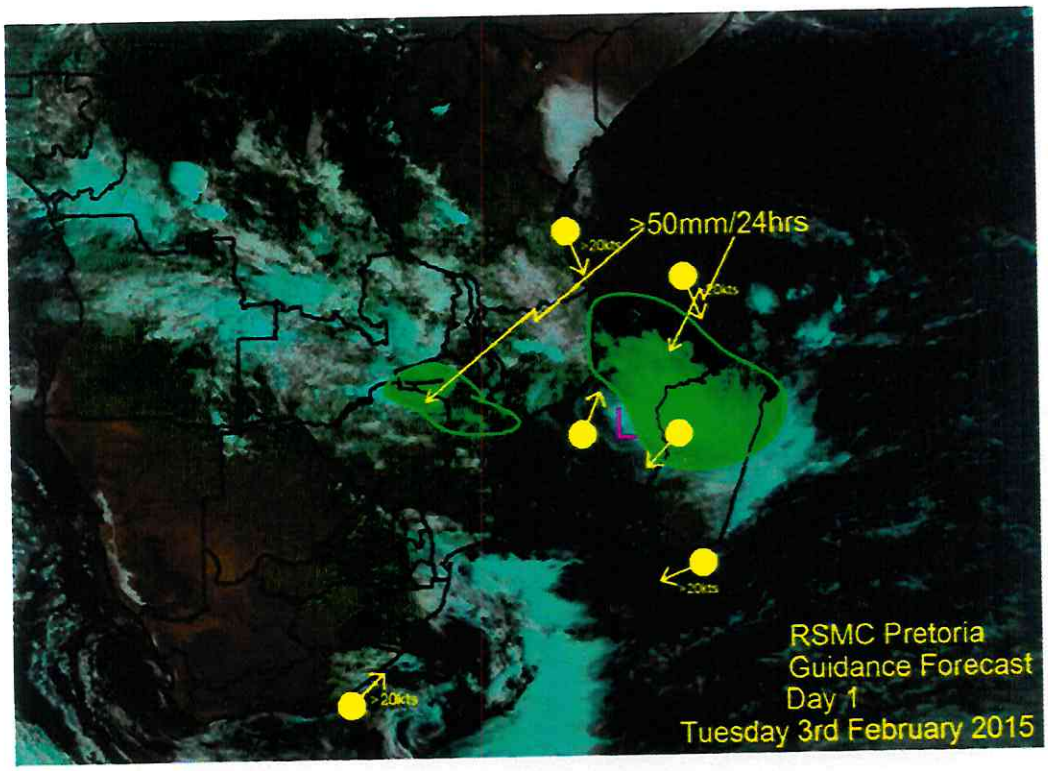
a) At least Bachelor degree in Meteorology (BIP-M).
b) Training in Safety Management Systems or Quality Management Systems

APPENDIX3: SOME MODELS USED IN AERONAUTICAL METEOROLOGY

1. Regional Specialized Meteorological Centre (RSMC) Model

East Africa regional guidance production is being developed under the SWFDP (Severe Weather Forecasting Demonstration Project). This website provides guidance on model output in the short and medium range, it also acts as a portal for various model and observed data.
Website: http://www.meteo.go.ke/rsmc/login.php

Regional guidance and the regional and global model data links shown here should be referred to every day. The map based guidance imagery should be read in conjunction with the risk tables and discussions which provide further detail. Clarification can be sought from RSMC Nairobi as required. Links to other forecast centres-provides additional information to supplement regional guidance



2. UK Met Office Africa LAM (Limited Area Model)

This model provides forecasts from a few hours ahead to projections more than a century into the future. The timescale of each forecast greatly determines the level of detail we can give. Here's a guide to each type of forecast and what you can expect from it.

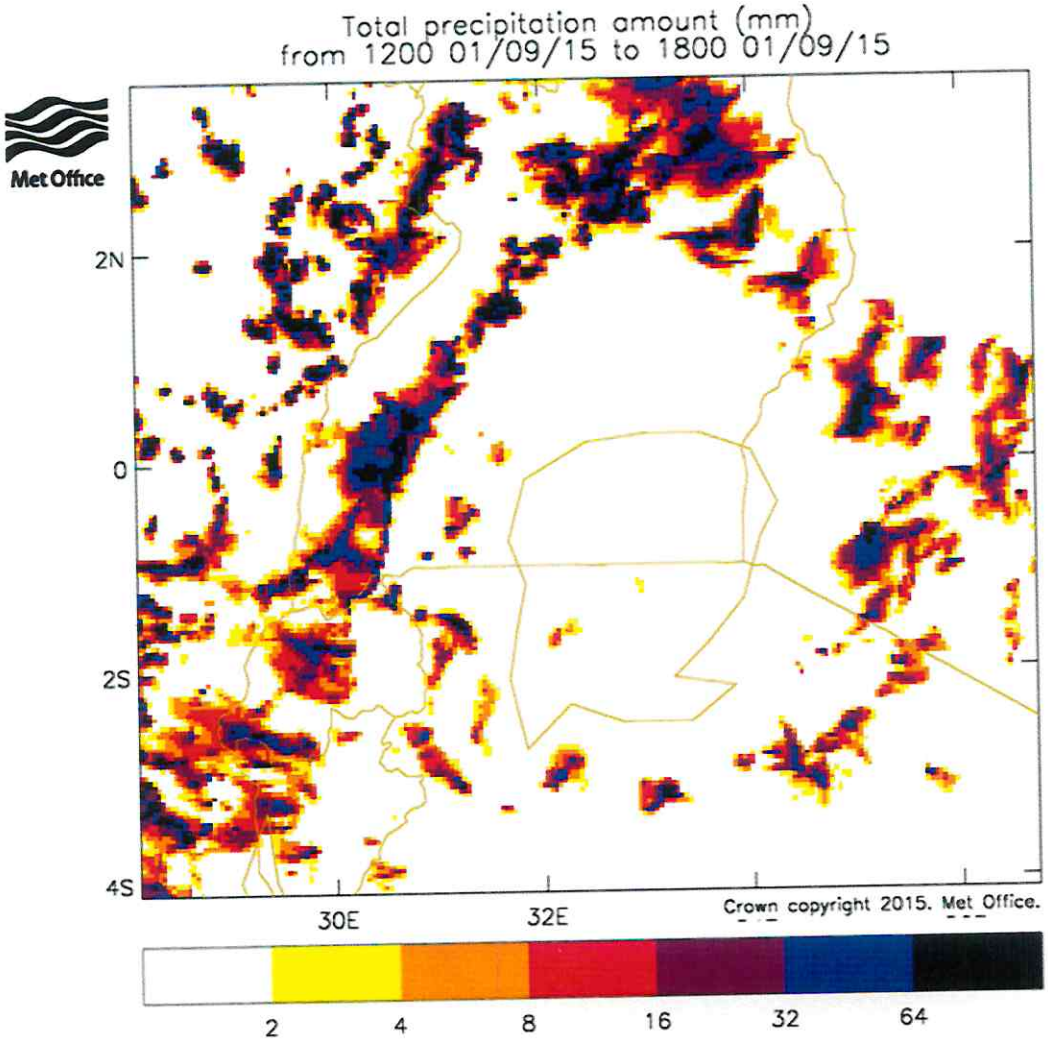
2.1 One- to two-day forecast

A detailed forecast of what's to come today and tomorrow, for regions, towns and cities describing the expected weather, temperatures and wind speeds along with detailed and timely warnings of severe weather. It is not yet possible to pinpoint exactly where and when localized weather, such as showers or fog patches, will happen, though we are able to identify the likelihood of this type of weather occurring.

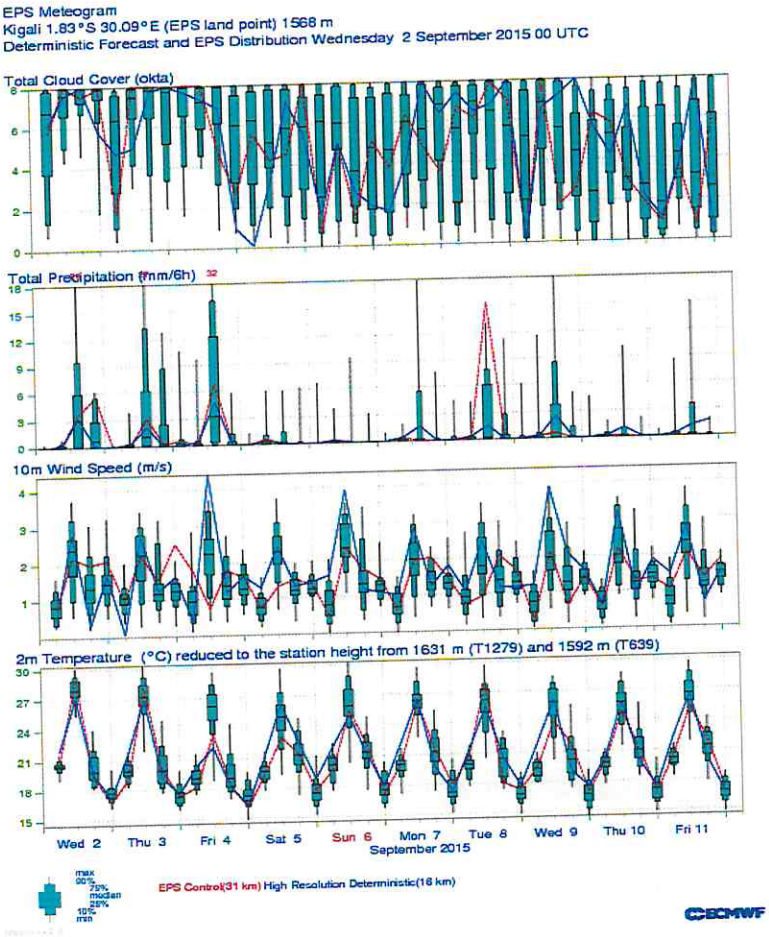
2.3Three- to five-day forecast

A general picture of the weather on a day-by-day basis, with the main regional variations identified. We have a good track record in advising on any significant risk of severe weather in this period.

http://meteoffice.gov.uk/weather/africa/lam/



3 European Centres for Medium Range Weather Forecasts (ECMWF) Model Data

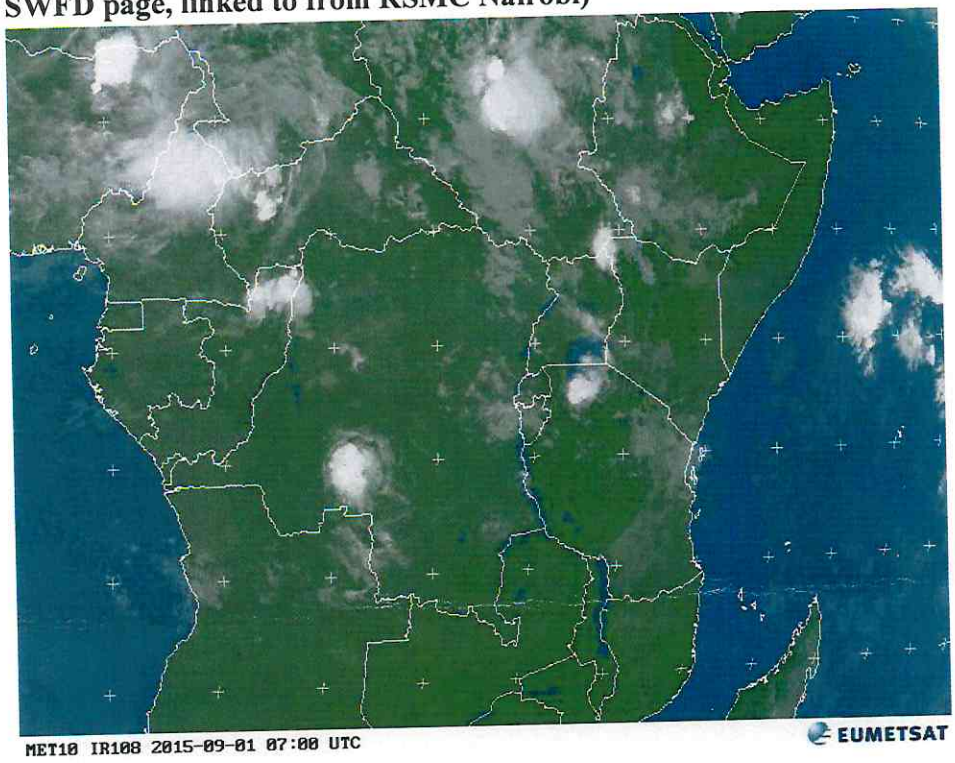


http://old.ecmwf.int/products/forecasts/d/charts/medium/epsgramswmo/R/Rwanda/

4.EUMETSAT Satellite Imagery –Central Africa

http://oiswww.eumetsat.org/IPPS/html/MSG/IMAGERY/IR108/BW/CENTRALAFRICA/index.htm

(Available as link from Lake Victoria basin products on the Tanzania SWFD page, linked to from RSMC Nairobi)



5. SADIS (Satellite Distribution System) Model

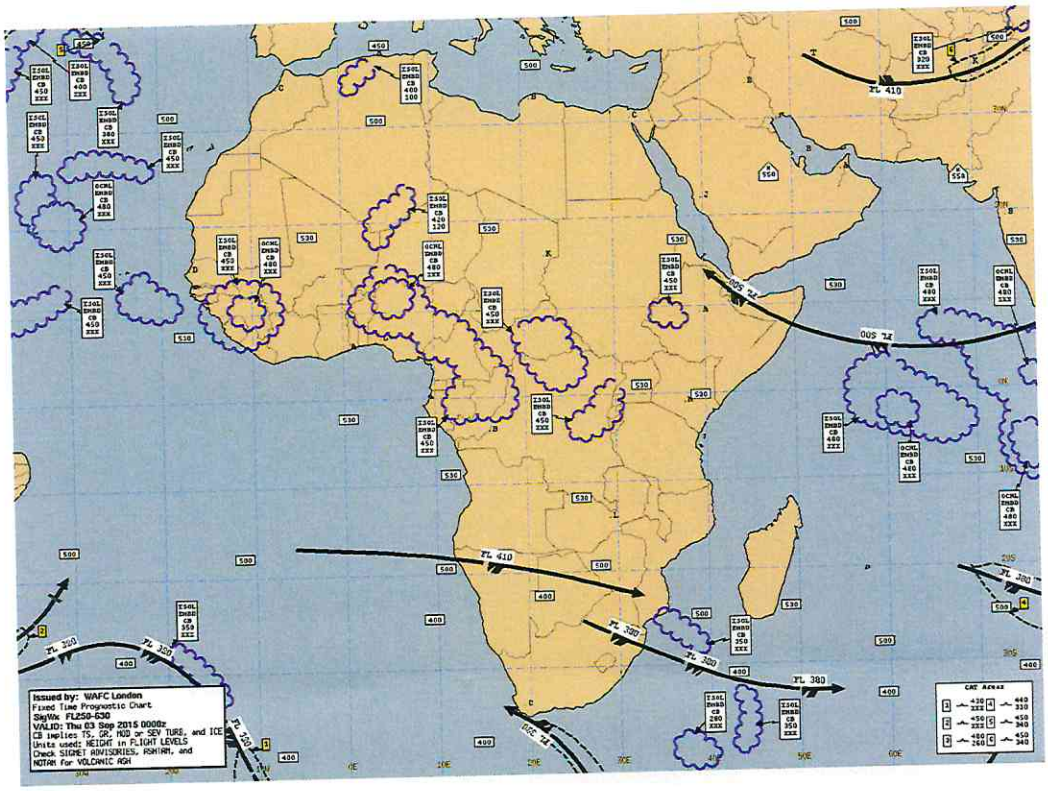
SADIS is a high quality and cost-effective satellite data distribution system that brings vital flight information to aviation users around the world. It provides a point to multi-point service, via satellite in real-time, on a 24-hour basis.

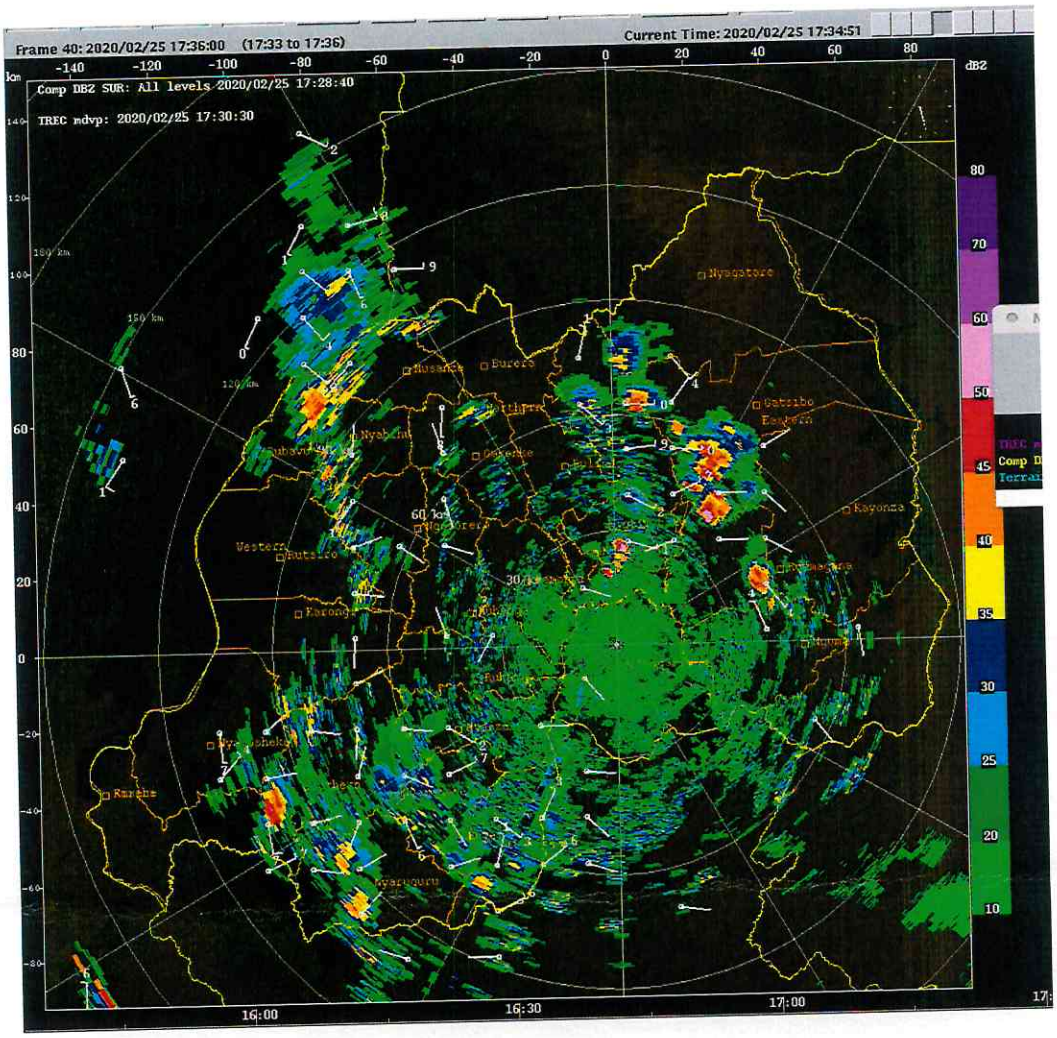
- Distributes World Area Forecast System (WAFS) products and global OPMET
- Enables WAFC London to distribute data to ICAO contracting states

All these satellite information (data) are well distributed to reach to different ICAO member states through Briefnet window for easy and convenient graphical display. The link is below **http://197.243.5.38:3330/weather**

Briefnet is an advanced weather briefing system that simplifies the process of creating and distributing current weather products and notices to pilots.

- Provides pilots and weather professionals with quick access to weather information.
- Information is available from any PC or mobile device on your network.
- Integrate with GST WAFS-METLAB workstations or operate as a stand-alone web application.





6. Doppler weather Display at Kigali International Airport

APPENDIX 4: AERONAUTICAL METEOLOROGICAL FORMS

The following are some samples of meteorological forms used at Kigali international Airport.

RWANDA AIRPORTS COMPANY	**AERONAUTICAL METEOROLOGICAL SERVICES**	**AVIATION FORECAST** **ANS-AMS-FOR001A**

Form Nº 001A
Check Nº

TAF TRANSMISSION IDENTIFICATION	YEAR.....Month..... ... Date.....
ICAO PRIORITY INDICATOR AND ADDRESS OF DESTINATION: **GG HKNAYPYX**	
DATE AND TIME OF FILLING AND ORIGINATOR:.....HRYRYMYK (filled in blue ink by Forecaster)	
WMO ABBREVIATIATED HEADING: FTRW 32 HRYR..... (filled in blue ink by Forecaster)	
TAF MESSAGES (s) (Filled by the FORECASTER)	
TAF HRYR .... NNN TAF HRZA ....NNN	

Forecaster's name	Forecaster's Signature	Time of Transmission

Explanation regarding delays, etc. to be noted on back of this form in the remarks box

ISSUED REV: 1 DATE OF ISSUED: July 2018

	AERONAUTICAL METEOROLOGICAL SERVICES	AVIATION FORECAST ANS-AMS-FOR001A

Form № 001A
Check №

30-HOURS TAFs should be issued at interval of six hours, with the period of validity beginning at one of the main synoptic hours (00, 06, 12, 18 UTC), as shown in the table below.

Synoptic hours (UTC)	**30- hour TAF**	
	Period of validity	**Filling time**
00	00-0 6(+1)	22(-1)*
06	06-12(+1)	04
12	12-18(+1)	10
18	18-24(+1)	16

*Note "-1" indicate the previous data and "+1" indicate the next day

REMARKS

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

ISSUED REV: 0 DATE OF

ISSUED: July 2018

AERODROME WARNING

	AERONAUTICAL METEOROLOGICAL SERVICES	AERODROME WARNING ANS-AMS-FOR002

Form Nº 002

TIME (LOCAL)	WIND DIR AND SPEED	HORIZONTAL VISIBILITY	CLOUDS AMOUNT	WEATHER PHENOMENA	REMARKS

ISSUED REV: 0 DATE OF ISSUED: July 2018

	AERONAUTICAL METEOROLOGICAL SERVICES	SIGMET WARNING ANS-AMS-FOR003

Form Nº 003
Check Nº

SIGMET TRANSMISSION IDENTIFICATION	YEAR……Month…… … Date……
ICAO PRIORITY INDICATOR AND ADDRESS OF DESTINATION: HTDA,	
DATE AND TIME OF FILLING AND ORIGINATOR:……HRYRYMYX (filled in blue ink by Forecaster)	
WMO ABBREVIATIATED HEADING: HRYR… ……..(filled in blue ink by Forecaster)	
SIGMET MESSAGES (s) (Filled by the FORECASTER)	
SIGMET HRYR …… …… …… …… …… …… …… …… …… …… ……NNN	

Forecaster's name	Forecaster's Signature	Time of Transmission

ISSUED REV: 0 ISSUED: July 2018

	AERONAUTICAL METEOROLOGICAL SERVICES	COMFORMITY&NON-COMFORMITY MESSAGE ANS-AMS-FOR004

Form Nº 004
Check Nº

DATES	SERVICES	NAMES	COMFORMITY MESSAGE(S)	NON-COMFORMITY MESSAGE(S)	SUPERVISOR FORECAST	COMMENTS

EVALUATED BY MANAGER MET

ISSUED REV: 0 ISSUED: July 2018

	AERONAUTICAL METEOROLOGICAL SERVICES	ROUTINE MET OBESERVATION&SPECIAL REPORT FORM ANS-AMS-OBS001

Form Nº 001
Check Nº

STATION: ... **YEAR: ...** **MONTH: ...**

METAR/SPECI REPORT

DATE	ICAO LOCATION INDICATOR	HOURS(UTC)	WIND (KNOTS)	VISIBILITY	PRESENT WEATHER	CLOUD LAYERS	TT	T_dT_d	QNH/QNE	TREND

ISSUED 2 REV: 1 ISSUED: July 2018

RWANDA AIRPORTS COMPANY	**AERONAUTICAL METEOROLOGICAL SERVICES**	**SYNOP MESSAGE FORM** **ANS-AMS-OBS002**

Form Nº 002
Check Nº

STATION: .... INDICATOR: .... YEAR: ... MONTH... DATE...

SYNOP MESSAGE

AAXX	YYGG iw	Iliii	333	...00....	64387	333				
		ir ixhvv	0$T_gT_gR_eR_t$		iRiXhVV	0//....	QNH =	8.....	7.....	6.....
		Nddd ff	1$S_nT_xT_xT_x$		Nddff	58/9.....		8.....	9.....	48.....
		00fff	2$S_nT_nT_nT_n$		10.....	8.....		8.....	8.....	3.....
		1snTTT	5EEEiE		20.....	8.....		8.....	9.....	20.....
		2$S_nT_dT_dT_d$	55sss		3.....	8.....				
		3$P_oP_oP_oP_o$	58/9$p_{24}P_{24}P_{24}$		48.....	8.....				
		4a_3hhh	6RRRt_R		6.....	9.....				
		6RRRtR	8N$_s$Ch_sh_s		7.....	9.....				
		7$w_ww_1w_2$	9SSss		8.....					
		8$N_hC_LC_MC_H$	QNH=							

		QNH =
	8……..	9……..
	7……	9…….
	48…..	8…….
	3……	8……
	20…..	8……
	10….	8……
	Nddff	6…….
	iRiXhVV	58/9…..
..03…	64387	333

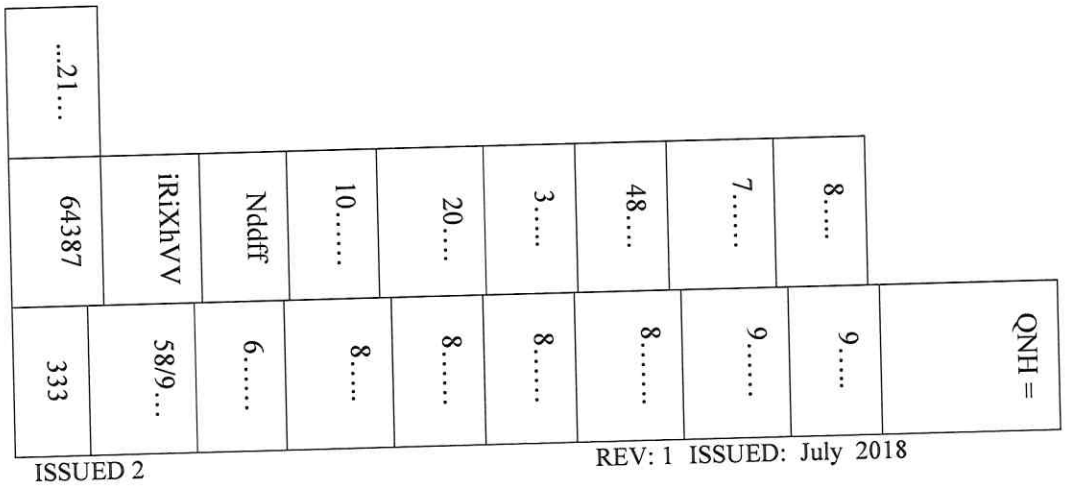
		QNH =
		9….
		9……
		8…….
	8……	8…….
	7……	8….
	6…….	8……
	48….	58/9…
	3 …..	55…
	20….	5…..
	10…..	20……
	Nddff	10….
	iRiXhVV	0……
… 06….	64387	333

		QNH =
	8……	9…..
	7……	9……
	48……	8…
	3….. ….	8…..
	20…..	8……
	10….	8……
	Nddff	6…….
	iRiXhVV	58/9…
...09...	64387	333

8….	QNH =
7…….	9…….
6…..	9……
48……	8……
3…….	8……
20……	8….
10……	8….
Nddff	58/9….
iRiXhVV	0//…
64387	333
…12….	

8	QNH =
7	9……
48……	8….
3 ….	8….
20….	8….
10…	6…
Nddff	58/9…
iRiXhVV	10….
64387	333
…15…	

8…….	9…….	QNH =
7……..	9…..	
6……..	8	
48	8	
38……	8	
20…..	8	
10…..	58/9…	
Nddff	10…	
iRiXhVV	0//	
64387	333	
…18…		



ISSUED 2

REV: 1 ISSUED: July 2018

	AERONAUTICAL METEOROLOGICAL SERVICES	CLIMATOLOGY SUMMARIES ANS-AMS-OBS003

Form Nº 003

STATION NAME: ..... MONTH: ..... YEAR:.....

EXTREME VALUES OF PRESSURE, RELATIVE HUMIDITY & TEMPERATURE

DATE	PARAMETERS RELATING TO THE MAXIMAM TEMPERATURE (T_X)				PARAMETERS RELATING TO THE MINIMUM TEMPERATURE (T_N)			
	HOUR. T_X	VAL. T_X	VAL. PPP	VAL. UU	HOUR. T_N	VAL. T_N	VAL. PPP	VAL. UU
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
TOTAL								
MEAN								

DONE BY.....

RWANDA AIRPORTS COMPANY	**AERONAUTICAL METEOROLOGICAL SERVICES**	**CLIMATE MESSAGE** **ANS-AMS-OBS004**

Form Nº 004
Check Nº CLIMAT MESSAGE

64387					

ISSUED REV: 0 DATE OF ISSUE: July 2018

RWANDA AIRPORTS COMPANY	**AERONAUTICAL METEOROLOGICAL SERVICES**	**COMFORMITY&NON-COMFORMITY MESSAGE** **ANS-AMS-OBS005**

Form Nº 005 **Check Nº**

DATE	SERVICES	NAME	COMFORMITY MESSAGE(S)	NON-COMFORMITY MESSAGE(S)	SUPERVISOR FORECAST	COMMENTS

EVALUATED BY MANAGER MET.

RWANDA AIRPORTS COMPANY	**AERONAUTICAL METEOROLOGICAL SERVICES**	**SHIFT BRIEFING FORM** **ANS-AMS-SBF-001**
Form Nº 001		**Check Nº**

Date	svc	Full Names	H.A	Signature	Shift Briefing

A1-Forecaster (07-1300)	**A2-Forecaster (13-1800)**	**A3-Forecaster (18-0700)**
O1-Observer (07-1300)	**O2-Observer (13-1800)**	**O3-Forecaster (18-0700)**

ISSUED REV: 0 DATE OF ISSUED: July 2018

RWANDA AIRPORTS COMPANY	**AERONAUTICAL METEOROLOGICAL SERVICES**	**SHIFT DE-BRIEFING FORM** **ANS-AMS-SDF002**
Form Nº 001		**Check Nº**

dates	svc	Full Names	H.A	Initials	Shift De-Briefing

A1-Forecaster (07-1300)	**A2-Forecaster (13-1800)**	**A3-Forecaster (18-0700)**
O1-Observer (07-1300)	**O2-Observer (13-1800)**	**O3-Forecaster (18-0700)**

ISSUED REV: 0 DATE OF ISSUED: July 2018

	AERONAUTICAL METEOROLOGICAL SERVICES	CUSTOMER SATISFACTION FORM ANS-AMS- CUS001

Form № CUS001

The following questionnaires have been made to assess Meteorological Service performances on various Aviation services provided to its stakeholders. Please take time and click on the check box that best describes the service provided to you or to your organization. This will help MET OFFICE in improving its service delivery. Please feel free to write your suggestions where required. We thank you in advance. We also have a service email which is aero_meteo@yahoo.com. TEL +250724123135	VERY SATISFIED	SATISFIED	FAIRLY SATISFIED	DISSATISFIED
1. How satisfied are you with the Quality/ accuracy of the Products issued by RCAA Met Services.	○	○	○	○
TAF	○	○	○	○
SIGMET	○	○	○	○
TREND FORECAST	○	○	○	○
2. How satisfied are you with the quality of customer service you receive from the MET Briefing office?	○	○	○	○
3. How satisfied are you with time delivery of met Services/products?	○	○	○	○
4. How satisfied are you with the **contents** of the flight Documentation package? (METAR, TAFS,SIGMETS,SIGWX CHARTS, WIND AND TEMP CHARTS)	○	○	○	○
5. How satisfied are you with the Dispatch **Time** of the flight Documentation packages? (*2hs before ETD*)	○	○	○	○

6. How are you satisfied with the weather warnings issued in regarding to wind shear, lightning and thunderstorm within aerodrome vicinity	○	○	○	○

07.. What are other services/products do you need from Met office to be included in your flight folder?

8) OPTIONAL (if you wish us to contact you on any adjustments made or for further clarifications). ***Please note that information will remain confidential.***

NAME..... SIGNATURE.....

ADDRESS..... TELEPHONE.....

EMAIL..... DATE.....

RWANDA AIRPORTS COMPANY	**AERONAUTICAL METEOROLOGICAL SERVICES**	**CUSTORMER COMPLAINT FORM ANS-AMS- CC001**

CUSTORMER COMPLAINT FORM

Check №

COMPLAINT FROM: .....
COMPLAINT DETAILS: ....
MET STAFF NAME ON DUTY: .....

RWANDA AIRPORTS COMPANY	**AERONAUTICALMETEOROLOGICAL SERVICES**	**CORRECTIVE ACTION REQUEST (CAR) FORM** **ANS-AMS-CAR001**

CAR NO._____OF_____

REQUIREMENT: RS ISO 9001:2015 Quality Management Systems	
ORGANIZATION:	Audit No:
Organization representative:	Audit date:
Details of nonconformity: Signed ..... signed..... Org. Representative Audit team leader	Category (Major or Minor):
Correction to be taken to restore normal conditions:	
Corrective action to be taken to prevent recurrence: Signed..... Date of Completion..... Org. representative	
Follow up action (to be completed by the auditor) Action fully completed ☐ Action partially completed ☐ Reason No action taken ☐	
Signed..... .... Auditor Name Date	
Signed..... .... Org. representative Name Date	

APPENDIX 5: REFERENCES

1	Manual of Standards (MOS) for Air Navigation Services (ANS) Part I Section 3 – Meteorological Service for Air Navigation; Second Edition, 2015
2	Advisory Circular RAC-AC-MET001A: Guidance on Developing of Job Description for Technical Staff Providing Meteorological Services for Air Navigation
3	Advisory Circular RAC-AC-ATM002A: Technical Specifications Related to the Provision of Meteorological Information to Air Traffic Services, Search and Rescue Services and Aeronautical Information Services
4	Advisory Circular RAC-AC-MET003A: Development of Training Programme for Technical Staff Providing Meteorological Services for Air Navigation
5	Advisory Circular RAC-AC-MET004A: Quality Management System for the Provision of Meteorological Services to Air Navigation
6	The Civil Aviation (Air Navigation Services) Regulations, 2018
7	ICAO Annex 3 - Meteorological Service for International Air Navigation, 18th edition,2013
8	ICAO. Doc.8896, Manual of Aeronautical Meteorological Practice.
9	ICAO.Doc 9873, AN/465 - Manual on the Quality Management System for the Provision of Meteorological Service for International Air Navigation.
10	ICAO Doc 9377 - Manual on Coordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services.
11	ICAO Doc 9837 - Manual on Automatic Meteorological Observing Systems at Aerodromes.
12	WMO Tec. No. 49, General Meteorological Standards and Recommended Practices,
13	WMO Tec. No. 258 Guidelines For The Education And Training Of Personnel In Meteorology And Operational Hydrology Volume I: Meteorology, 4th Edition, 2001.
14	*AIP GEN 3.5 AIP Rwanda 6th Edition 11 Dec 2014.*
15	WMO Tec. Note 1018: Commission for Aeronautical Meteorology - Thirteenth Session (2006)
16	CNS/MET SG/16 - WP/47 Sixteenth Meeting of the Communications/Navigation/Surveillance and Meteorology Sub-Group (CNS/MET SG/16) of APANPIRG -Bangkok, Thailand, 23 – 27 July 2012

17	Document No: TCAA/QSP/SR/AC/ANS-17 Title: Quality Management System for The Provision of Meteorological Services for Air Navigation, 4 October 2010.
18	AERMETSG/11-WP/06, Guide To Support The Implementation of the Quality Management system in Aeronautical Meteorology Services (MET/QMS) in the CAR/SAM Regions, ICAO, November 2011 (Draft)
19	Quality Manual, Aviation Weather Service, Bureau of Meteorology, Australia, Aug 2010.
20	Kenya Civil Aviation Authority: Advisory Circular CAA-AC-AIS 002A AIS/MAP Quality Management System; November, 2009
21	ICAO's new Universal Safety Oversight Audit Programme Methodology – the Continuous Monitoring Approach (CMA), February 2012.
22	Implementation of Quality Management System (QMS) by Aeronautical Meteorological Service Providers, Neil Halsey (TO/MET), ICAO, October 2011
23	**Operational Forecasting in Africa**: Advances, Challenges and Users , Aida Diongue Niang, Senegal Meteorological Agency