

World Meteorological Organization

CIMO/WIGOS EXPLORATORY WORKSHOP: IMPROVING SURFACE-BASED DATA QUALITY THROUGH IMPROVED STANDARDIZATION OF PRACTICES AND PROCEDURES

Langen, Germany, 5-3 December 2014

Regional Instruments Centre RA I- Nairobi

By: Eng. Henry N. Karanja

RAI -Nairobi RIC

STAFF

- Nairobi RIC is part of the Kenya Meteorological Department (KMD).
- At the KMD, Nairobi RIC operates as a division under the Engineering and Technical services branch with an assistant Director as its head.
- Under the assistant Director, there are two engineers and seven technicians.
- The Engineers and technicians are well trained in observations requirements and instruments maintenance and calibration.
- The Engineers and technicians are involved in both maintenance and calibration of the Meteorological instruments.

Calibration equipments

The calibration laboratory was equipped with new calibration equipments in December 2011. The calibration equipments used at the RIC include:

- The Climate Chamber (Humidity and Temperature in air)
- Stirred liquid oil bath for the calibration of thermometers and AWS temperature sensors
- Resistance measuring bridge for calibration of AWS temperature sensors and references
- Primary/Secondary pressure Calibrator
- Reference Pyranometers for calibration of global radiation sensors and data logger
- Tester for mechanical clockworks
- Portable humidity/temperature calibrator
- Precipitation sensors calibrator.





Quality Management System

- The RIC was largely involved with the ISO 9001 certification of the Aeronautical services in Kenya.
- A quality manual was prepared defining the quality assurance procedures in the RIC.
- The Quality manual defines the documentation procedures, and the structure and responsibilities of the staff at the RIC.
- process of seeking accreditation of the RIC by the national standards regulator and the certification of ISO 17025

Recalibration of the standards

- Since the installation of the new calibration equipment in 2011, the equipment have not be recalibrated
- KMD is organizing to have the equipment calibrated by the Manufacturers in the next financial year.

National and Regional Calibration of instruments

- Calibration of the instruments is performed as per manufacturers manuals.
- Most of the calibration is done in the laboratory but some calibration is also done in the field for some instruments.
- Apart from Calibration of instruments from KMD, the RIC calibrates instruments for other institutions.
- Calibration of instruments for other countries in the sub region has not been very rare due to little information about the RIC by other countries.
- However, more and more countries now has been aware of he RIC through the Maintenance and calibration trainings organized by WMO through the Institute of Meteorological Training and Research in Nairobi.

Regional Training

The course is aimed at equipping trainees with knowledge and skills in:

- The science of measurement
- Quality Management Systems (QMS)
- Siting of meteorological instruments
- Care and maintenance of basic and automatic meteorological instruments.
- Calibration of meteorological instruments
- Troubleshooting (default detection) in instruments
- Drawing specification for weather instruments and measurement systems

Regional training

- Twenty three countries in Africa were represented in the 1st training which was completed very successfully.
- A second training took place in october 2014.
- The training attracted 31 participants: 16 being sponsored by WMO, while 5 (five) from Burundi Hydrological institute, 2 (two) from Seychelles, 2 (two) from Namibia and 6 (six) Kenyans were self sponsored. While organizing the training, IMTR- Nairobi MTC considered comments from the previous and made a lot of improvements on the course. The course was also a selling point for the Nairobi RIC.

Instruments inter-comparisons

- Nairobi RIC has been participating in instruments intercomparison where possible.
- In November 2013, thermometer standards from Nairobi were calibrated at the Casablanca RIC in Morocco for purposes of inter-comparison.



FICHE DE DECHARGE DU MATERIEL

EN-S-11-03-02
Version : B
Date : 09-07-13

Type de décharge : Mise à disposition Etalonnage Maintenance
Autres Calibration.....

Désignation	Code : (N°inv -N°série....)	Etat à la décharge	Etat au retour
Resistance thermocouple F 252	015799/111	operational	operational
Accessoires (Certificats, cables...)	Connecteur		
Remarques			

Expéditeur de la décharge : Ric - Nairobi

Destinataire : Ric - Casablanca

Date de décharge : 20/11/2013

Signé Henry Karanja

Date de réception: 20/11/2013

Signé Mounir A2

Date de retour : 22/11/2013

Signé

Received 22/11/2013
Mungai (RIC)

Date de retour : 22/11/2013

Signé Mounir A2

Strengths and Weaknesses

Strengths

- Strong support from the management of the Kenya Meteorological services. Highly qualified, well trained and experienced team of engineers and technicians.
- Well equipped calibration laboratory.

- **Weaknesses**

- Lack of adequate funding from the government
- Lack of policy for calibration of regional instruments
 - Cost recovery
 - Handling of customs issues