



AFRIMETS
Intra-Africa Metrology System
Système Intra-Africain de Métrologie



NEWMET Report to AFRIMETS

Presented by:

Dr. Mohamed A. Amer
Chair of NEWMET

11th July 2019, Egypt

Presentation Overview

- Background and Structure
- Activities undertaken during the reporting period
- Capacity building/Training
- Measurement Comparisons or Legal metrology activities
- CMC Submission Status / Technical Activities
- Future Plans

Background and Members

- Country members to the NEWMET:
 - Egypt, Ethiopia, Ghana, Libya , Nigeria, and Sierra Leone, Sudan
- Members of BIPM / OIML:
 - Egypt is a full member of the BIPM
- Associates/ Corresponding members to BIPM/ OIML
 - Sudan, Ethiopia, Ghana are associate members
 - Nigeria applied for the membership

NEWMET Structure

Position	Country	Name
Chair	Egypt	Prof. Dr. Mohamed A. Amer
Vice-Chair	Ethiopia	Dr. Abdu Abagibe Adem
Past Chair		
Secretariat	Egypt	Prof. Dr. Mohamed Gamal Ahmed
WG 1 – Research and Development	Egypt	Prof. Dr. Khaled El Nagar
WG 2 – Technical and Quality Support	Ethiopia	Mr. Nesredin Nezir Hassen
WG 3 – Awareness and Communications	Sudan	Mrs. Mahasin Elamin
WG 4 – NMIs Development	Nigeria	Eng. Bede Obayi
WG 5 – Legal Metrology	Ghana	Mr. Paul Date

Attendance of NEWMET 8th meeting on July 2019

Name	Organization	Country
Prof. Dr. Mohamed Amer	NIS – National Institute of Standards (Chair)	Egypt
Prof. Dr. Mohamed Gamal Ahmed	NIS – National Institute of Standards (Secretariat)	Egypt
Eng. Bede Obayi	NMIN/SON – /National Metrology Institute/Standards Organization of Nigeria	Nigeria
Mr. Ibrahim Abubakar Issah	LMD/FMITI– Legal Metrology Department	Nigeria
Mrs. Mahasin ElAmine	SSMO – Sudanese Standards and Metrology Organization	Sudan
Mr. Mohammed Abdulrahman Mohamed	NMIE – National Metrology Institute of Ethiopia	Ethiopia
Mr. Tadesse Gergiso Gebrie	NMIE – National Metrology Institute of Ethiopia	Ethiopia
Mr. Dagmawi woldetensi Berhi	NMIE – National Metrology Institute of Ethiopia	Ethiopia
Eng. Maha Ramadan	AA&W	Egypt

Attendance of NEWMET 8th meeting on July 2019

Name	Organization	Country
Eng. Paul Date	GSA – Ghana Standards Authority	Ghana
Mr. Prince Nana Yaw Tansiah	GSA – Ghana Standards Authority	Ghana
Prof. Dr. Khaled Elnagar	NIS – National Institute of Standards	Egypt
Prof. Dr. Noha Emad	NIS – National Institute of Standards	Egypt
Mr. Peter Nnalue	NMIN/SON – /National Metrology Institute/Standards Organization of Nigeria	Nigeria
Mr. Okoye Joseph	NMIN/SON – /National Metrology Institute/Standards Organization of Nigeria	Nigeria
Mr. Olagunju Kayode	NMIN/SON – /National Metrology Institute/Standards Organization of Nigeria	Nigeria
Mr. Emeka Ijomah	AGO/SON – Standards Organization of Nigeria	Nigeria

- Total of 17 attendees from 5 different countries

NEWMET Activities undertaken during the reporting year

Egypt

- Scientific Research: International publication of 94 papers was performed in 2018 and 41 papers 2019. Elevated number of PhD and MSc thesis were obtained by NIS staff.
- International Running Projects;
 - Quality infrastructure for the promotion of trade and consumer protection (regional) - PTB (Germany)
 - Development of RF and Microwave metrology capability (EMPIR) – EURAMET
 - Study of the dosimetric properties of new dosimeter based on nanomaterials using EPR and TL techniques for radiotherapy applications - STDF with ENEA-Italy
 - Flammability limits of vapors and gases - STDF with PTB
 - Characterization and certification of standard reference materials for some flash point apparatus - STDF with PTB
- International Conferences & Meetings:
 - Attendance in CGPM, CCM, CCEM
 - Attendance ARAMET meeting
 - Workshop in “Food Safety” – South Africa
 - Conference in “Revised SI” – South Africa

NEWMET Activities undertaken during the reporting year

Egypt (Cont..)

- Legal metrology in Egypt joined OIML since 2012
- AA&W attended the 2018 AFRIMETS meeting (Nigeria)
- AA&W attended the 53rd CIML 2018 meeting (Germany)
- AA&W Revised and voted for OIML Recommendation and Documents.

Ethiopia

- Scientific metrology director and two experts of NMIE were participated on NEWMET meeting in 2018.

Ghana

- Participated in training for Calidina as a tool in valued chain in October 2018 supported by PTB
- Using the knowledge in Calidina as a tool for the cashew value chain in March 2019.
- Attended Industry 4.0 and the revised SI conference in South Africa from 13 to 16 May 2019.

NEWMET Activities undertaken during the reporting year

Ghana (Cont..)

- Ghana made a presentation during Tempmeko and TempBeijeng 2019 in China from 10 to 14 June 2019.
- Food safety workshop in South Africa – 4 staffs
- Quality system peer review is on going by AFRIMETS TC-QS

Nigeria

- New laboratory:
 - Construction of the laboratory is finished
 - New equipment were on benches
 - Operation is waiting for staff training
 - Metrology Activities are mass, length, pressure, force, temperature, small volumes

Sudan

- Starting implementation of the ISO/IEC 17025:2017 in five calibration laboratories
- Metrology activities; mass, pressure, volume, length, temperature scale, humidity, medical equipment, time and frequency

Capacity Building and Training activities

Egypt

- Training activity: 42 courses for 177 trainees from Egyptian entities. 150 Total number of participants from Egyptian universities. 15 Total number of participants from SSMO-Sudan. Continuous training program has been established for NIS staff in different quality and technical activities. 8 different training courses were conducted. Evaluation of the effectiveness of the training program has been performed.
- One person has selected to Participate on “Fundamentals of Metrology” organized by NIST (August 2019).
- Equipment: An ongoing program for purchasing new equipment’s to enhance the measurement capabilities is maintained.
- International Conferences & Meetings:
 - Attendance in CGPM, CCM, CCEM
 - Attendance ARAMET meeting
 - Workshop in “Food Safety” – South Africa
 - Conference in “Revised SI” – South Africa

Capacity Building and Training activities

Ethiopia

- Participate in the BIPM-TUBITAK UME KTCB (knowledge Transfer and Capacity Building) program (Two Persons)
- One person has selected to Participate on “Fundamentals of Metrology” organized by NIST (August 2019).

Ghana

- Training in Prepackages in April 2018 supported by PTB.
- Training on scales and weighbridges in April 2018 supported by PTB
- Training in Metrology for staff from the medical laboratory in Nigeria in August 2018.
- Transition training from the old standard, ISO/IEC 17025:2005 to new standard, ISO/IEC 17025:2017 in 2019.

Capacity Building and Training activities

Ghana (Cont..)

- Training on Pressure Measurement for staff from DCS Energy, Ghana in 2019.
- Training on Temperature Measurement for staff from DCS Energy, Ghana in 2019.
- Training in Metrology for staff from the medical laboratory in Nigeria in 2019.
- Training on the Revised SI on World Metrology Day in GSA on 17 and 24 May 2019.
- Prepackaged activities started by the Legal Department in May 2019.

Nigeria

- Training on OIML Certification System in 2018
- Training on uncertainty measurements at flow stations 2019
- Developed the Quality Manual, Procedures and Work Instructions required by NIS ISO 17025 for accreditation of the Metrology Laboratories and competency training
- Obtained Traceability for all our reference standards.
- Acquired a 40 ton truck with in-built crane and 30 ton standard weights for improved calibration of weighbridges.
- Obtained a Mobile Calibration Laboratory
- Review of Weights and Measures Act in Nigeria
- **Started the development of the National Metrology Institute (NMI) of Nigeria**

Capacity Building and Training activities

Sudan

- participated in proficiency testing program in the field of mass and temperature measurements which organized by ARAMET/AIDMO in cooperation with the National Institute Standards NIS, Egypt

Measurement Comparisons

Egypt

- Comparison of absorbed dose to water using alanine dosimeters with Co-60 gamma-radiation at high dose level (APMP.RI(I)- S1) Draft B.
- AC power at 50/60 Hz comparisons (COOMET.EM- K5) Draft B.
- Mass standards (GULFMET.M.M- S1) Draft B.
- Comparison of DC Resistance (AFRIMETS.EM- S1) Draft B.
- Calibration of micropipettes (AFRIMETS.M.FF-K4.2) Draft B.
- AC power at 50 Hz/60 Hz (APMP.EM- K5.1) Draft A.
- Pressure measurements in gas - gauge mode (EURAMET.M.P- K1.c)
- Pressure measurements - absolute mode (AFRIMETS.M.P- K12)
- Luminous intensity (APMP.PR-K3.a)

Ethiopia

- Bilateral comparison has been done with TUBTAK UME on mass metrology
 - AFRIMETS ID requested to be registered as supplementary comparison in the BIPM KCDB
- As a co-pilot Laboratory in AFRIMETS Comparison on pressure 1000 bar as it was planned by TC-M in 2017, the draft protocol was prepared and sent to TC-M to disseminate for interested participants.

Measurement Comparisons

Ghana

- Multi-lateral Inter-comparison on climatic chamber in October 2018 with pilot laboratory ZMK, Germany.
- Inter-comparison for small volume – final report expected.
- Sensitization and piloting of the correct use and calibration of Tire pressure gauges in 2019.

Nigeria

- No Participation in Inter- laboratory comparison due to lack of laboratory facilities.

Sudan

- Currently a negotiation has been started to participate in a bilateral comparisons with UME- Turkey

CMC Submission Status

Egypt

- International recognition:
 - (39) Internationally recognized Calibration and Measurement Capabilities (CMCs).
 - (76) Participation in key and supplementary international comparisons.
 - (9) Participation in international proficiency Testing programs
- Accreditation:
 - (37) Accredited Calibration and Testing activities.
 - (30) Accredited Proficiency Testing service.
 - Surveillance visit from Egyptian accreditation body (EGAC) according to ISO 17025-2017 for 8 laboratories

CMC Submission Status

Ethiopia

- NMIE applied its QS document to be evaluated by AFRIMETS TC-QS and get approval of CMC registration in the BIPM KCDB in measurement areas of:
 - Temperature
 - Electrical
 - Pressure and
 - Volume

Ghana

- No CMC`s submitted for period under review
- Scientific Conference at GSA (Internal) – presentation on;
 - Measurement Traceability
 - Prepackaging
 - PT-100

Nigeria

- No CMC's.

Sudan

- No CMC's.

Future Plans

Egypt

- 2020 NMI's directors meeting at BIPM
- 2020 CC's meetings at BIPM
- 2020 NEWMET meeting
- 2020 ARAMET meeting
- AA&W attendance to workshops for global legal metrology
- AA&W training in MID & NAWI & Market surveillance.
- AA&W training in type evaluation and initial verification.

Ethiopia

- GA, workshops, etc.
 - Ethiopia showed its interest to be a backup for the next GA & TC meeting and/or to host 2021 AFRIMETS GA and TC meeting
- Technical activities
 - Upgrading NMIE
 - NMIE is undertaking the construction of new laboratories and administrative buildings (6 buildings) under the NQI development project.
 - Procurement of laboratory equipment for selected laboratories .
 - Revising the organizational structure

Future Plans

Ghana

- a. Develop pH and conductivity laboratory for accreditation.
- b. Preparation of reference solutions for pH and conductivity.
- c. Implement tire pressure calibrations.
- d. Present CMC`s for pressure and temperature.
- e. Follow-up presentation at Tempmeko and TempBeijeng in China.

Nigeria

- Capability/Accreditation in Mass Measurements, F1-20 Kg,
- Capability/Accreditation in Balance Calibration, up to 2000 Kg
- Capability/Accreditation in Temperature Measurements: Chambers (-30 to 400 °C); Digital Thermometers (-30 to 250 °C); LIG Thermometers (-30 to 250 °C)
- Capability/Accreditation in Pressure Measurements (0 bar to 600 bar)

Sudan

- searching for the proficiency testing provider to cover the rest of our scope
- SSMO started the construction of the standards city for all SSMO administrations in Soba, the first building will be completed by the end of this year is the measurement and calibration laboratories building according to the requirements of the world best practice



Thank you

Merci

