



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

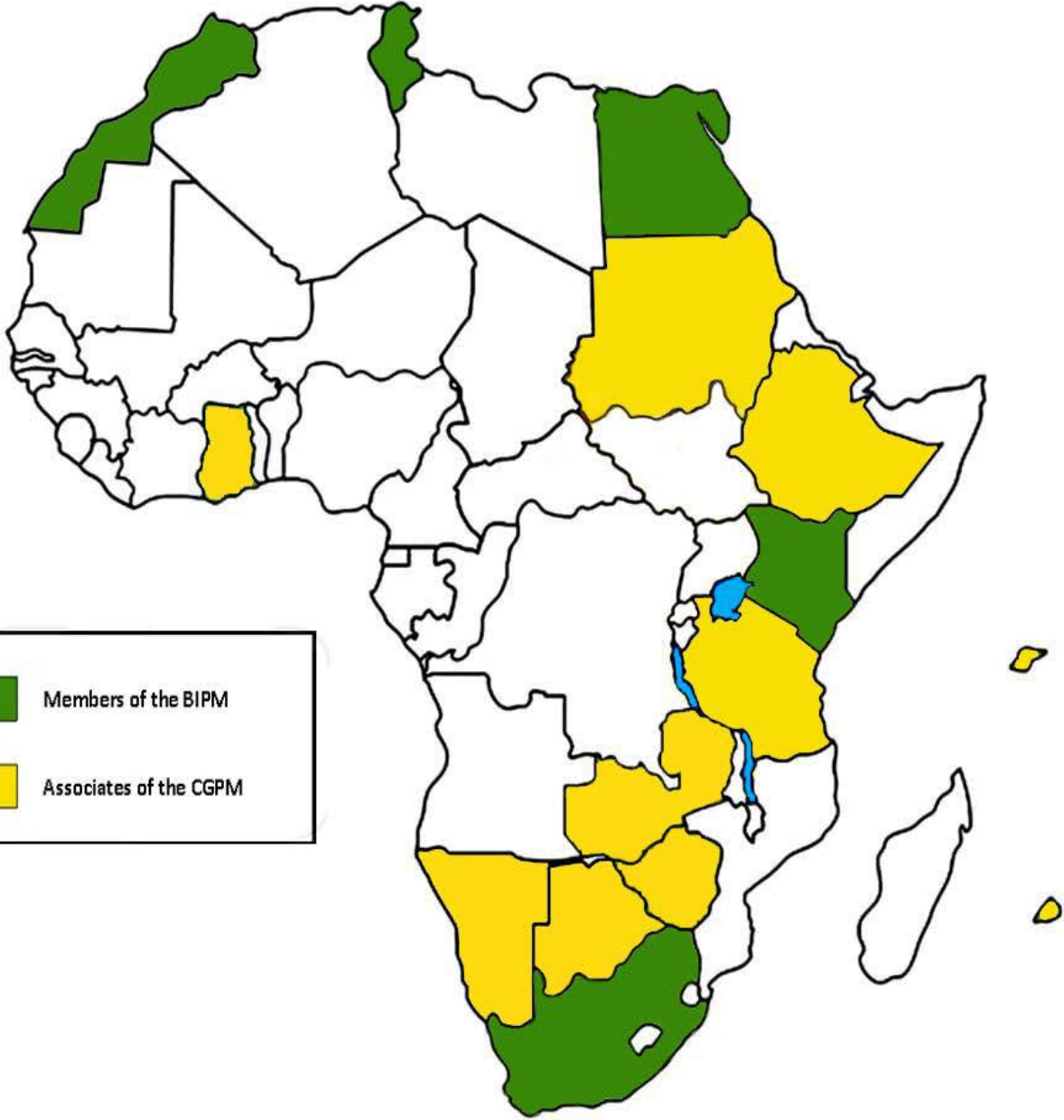
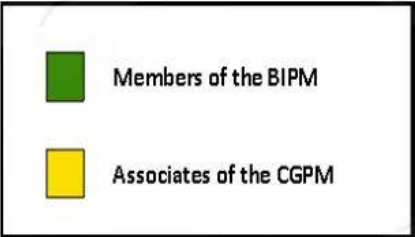


# **AFRIMETS TC-Mass and Related Quantities Report**

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**May 2023**



# Meetings

AFRIMETS TCM – meets annually between July and August

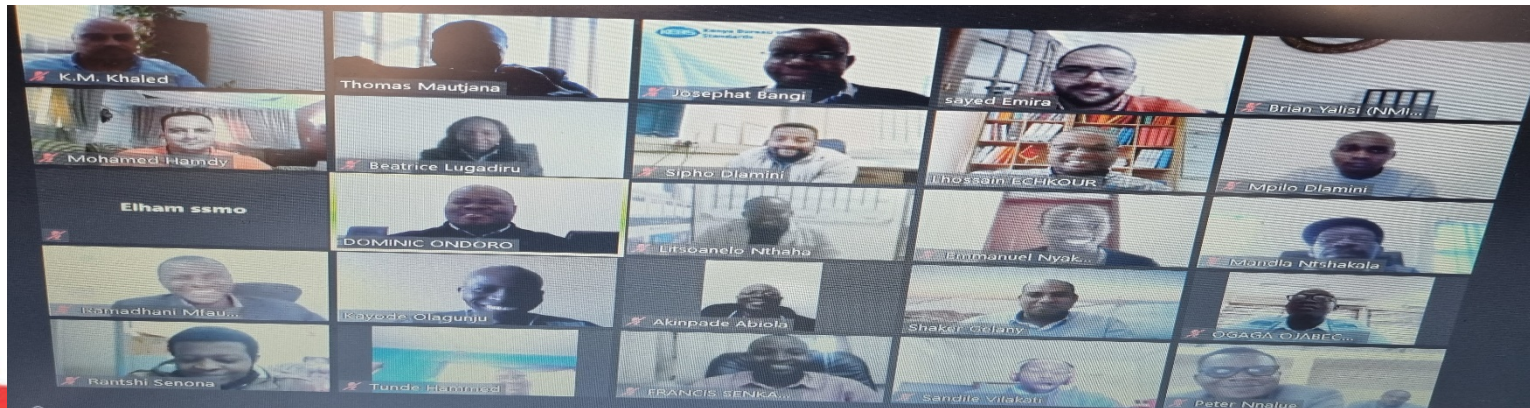
- The last face to face meeting was in 2019 in Egypt, with 19 participants from 14 countries.
- No meetings in 2020

In 2021

- We had an online meeting on the 14<sup>th</sup> July 2021 with 47 participants from 15 countries.

In 2022

- The last TC-M meeting was held on 7 July 2022 online with representation from 13 countries.
- Next meetings will be face to face in Egypt in July 2023



## Update on Comparisons

Identity	Quantity/Range	Field	Status	Pilot
AFRIMETS.M.FF-K4.2015	100 $\mu$ L	Fluid flow (volume of liquid)	Completed 2020	NIS/IPQ
AFRIMETS.M.F-S2	500 kN	Force	Completed 2021	KEBS
AFRIMETS.M.D-S4	(0.65-0.7 & 1.2 -1.25) $\text{kg/m}^3$	Density (Hydrometers)	Completed 2022	NIS
AFRIMETS.M.M-K7	0.5 g - 5 kg	Mass	Completed 2022	NIS
AFRIMETS.M.F-S1	(10 & 100) kN	Force	Completed 2022	KEBS
AFRIMETS.M.T-S1	500 Nm & 1 000 Nm	Torque	Completed 2023	NIS
AFRIMETS.M.FF-S1	(50 -5 000) mL/min	Fluid Flow (gas flow rate)	Results Analysis	NMISA/ INRIM
AFRIMETS.M.P-S2	(10 - 110) kPa	Pressure	Draft A in progress	NMISA

## **NMI's who Published CMCs in KCDB after 18<sup>th</sup> CCM**

### **Egypt (NIS):**

- Density (5) - Density of liquid and Density of solids - Feb/May 2022
- Fluid Flow (Volume of liquid) (3) - September 2021
- Hardness (6) - November 2021
- Torque (2) - November 2021
- Mass standards (4) - October 2022

### **Morocco (LPEE-LNM)**

- Fluid Flow (volume of liquids) (1) - February 2022
- Mass standards (1) – October 2022

### **Kenya (KEBS):**

- Force (7) - July 2021/February 2022

# CMCs Under Review

## **Intra-Review**

- EMI (Ethiopia) – Fluid Flow (volume of liquid)
- NMISA (South Africa) – Mass Standards

## Planned Comparisons

Year	Identifier	Description	Participants	Pilot	Status
2023/24	AFRIMETS.M.P-SX	0 MPa-70 MPa,	NIS,NMISA,TBS,UNBS, KEBS,BOBS,MBS, SON	NIS/EMI	Planned
2023/24	AFRIMETS.M.M-SX	Mass(F1 100mg - 5kg)	NMIE,MBS,GSA,UNBS, SON,TBS,BOBS,KEBS, SIRDC-NMI, RBS	EMI	Planned
2023/24	AFRIMETS.M.T-SX	Torque Wrenches (500Nm)	LPEE/LNM, NIS,KEBS, EMI,TBS, UNBS, GSA, RBS	NIS	Planned
2023/24	AFRIMETS.M.F-SX	Force (100 kN), testing machines	LPEE/LNM,KEBS,NIS	NIS	Planned

## Planned Comparisons

Year	Identifier	Description	Participants	Pilot	Status
2023/24	AFRIMETS.M.T-SX	Torque Transducers	NIS, NMISA, LPEE, KEBS	NIS	Planned
2023/24	AFRIMETS.M.FF-SX	Volume liquid 2L	UNBS, TBC	KEBS	Planned
2024/25	AFRIMETS.M.FF-SX	Volume gas flow rate	TBC	NMISA	Planned



## Training and Workshops

- To improve metrology skills, knowledge, competency and build capacity among member states workshops and training are provided through sub-regional metrology organisations such as SADC MET, EAMET, NEWMET, MAGMET, ECOMET



At GSA, Accra, Ghana  
Sept 2019, Pressure  
Metrology

At MBS, Blantyre, Malawi  
April 2023, Volume Metrology



At SIRDC-NMI, Harare, Zimbabwe  
Jan 2023, SADC MET Mass ILC  
workshop

# Structure of AFRIMETS.TC-M

- TC M – Chair: Mr Thomas Mautjana, NMISA, South Africa  
Vice Chair: Mr Dominic Ondoro, KEBS, Kenya  
Vice Chair: Dr Ahmed Desoski, NIS, Egypt

Working Group	Chair	Vice Chair
Density and Viscosity	Dr Mohamed Hamdy (NIS-Egypt)	Ms Beatrice Lugadiru (KEBS-Kenya)
Force and Torque	Dr Khaled Abdelaziz (NIS-Egypt)	Mr Bangi Josephat (KEBS-Kenya)
Fluid Flow	Dr Mpilo Dlamini (NMISA-South Africa)	Dr Ali Zahran (NIS-Egypt)
Mass	Mr Bongani Ndlovu (NMISA-South Africa)	Mr Lhossain Mechkour (LPEE-LNM –Morocco)
Pressure and Vacuum	Dr Shaker Gelany (NIS-Egypt)	Mr Prince Tawiah (GSA-Ghana)



Thank You