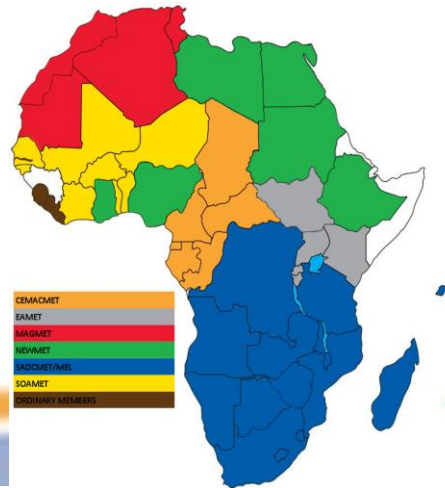




**AFRIMETS**  
Intra-Africa Metrology System  
Système Intra-Africain de Métrologie



# AFRIMETS TECHNICAL COMITEE FOR THERMOMETRY (TC-T) REPORT

**Efrem K Ejigu**  
**TC-T Chair**  
**15<sup>th</sup> AFRIMETS GA**  
**Venue: Virtual**  
**Date: 21 July 2022**

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# AFRIMETS TC-T MEETINGS

- AFRIMETS TC-T 2022 is conducted on 05 July 2022 on ZOOM virtual media
  - Morocco (LPEE/LNM)
  - Ethiopia (EMI)
  - Egypt (NIS)
  - Kenya (KEBS)
  - Botswana (BOBS)
  - Nigeria (SON)
  - South Africa (NMISA)

# CURRENT INTER-COMPARISON

## AFRIMETS. T-S3

- Supplementary comparison of Industrial PRT calibration capability
- Range: -50 °C to 450 °C
- Started: May 2012, postponed & re-started in 2022
- Status: Initial measurement at NMISA, ZMA & SIRDC-NMI is completed, now at BOBS
- Participating NMIs:  
South Africa, Zambia, Zimbabwe, Botswana, Namibia, Mozambique, Democratic Republic of the Congo

## AFRIMETS. T-S7

- Supplementary comparison of noble metal thermocouple
- Range: 0 °C to 1200 °C
- Started: June 2019
- Pilot/coordinator: NMISA/NIS
- Status: measurement at SIRDC-NMI. Initial measurement at NMISA and measurement at NIS & KEBS is completed.
- Participating NMIs:  
South Africa, Egypt, Kenya, Zimbabwe, Zambia, Botswana, Ghana, Morocco, Ethiopia.

# PLANNED INTER-COMPARISON

- SPRT (Hg - Zn)(AFRIMETS TS-6)
  - Pilot: NIS/South africa
  - Reference: South Africa
  - Participants: South Africa, Egypt, Zambia, Morocco, Zimbabwe, Tunisia, Kenya
  - Status: Planned
- Radiation Thermometer (600 °C to 1100 °C)
  - Pilot: NIS/South Africa
  - Reference: South Africa
  - Participants: South Africa, Egypt, Zambia
  - Status: Planned
- Humidity: Dew point (-20 °C – 30 °C)
  - Pilot: NIS/South Africa
  - Reference: South Africa
  - Participants: South Africa, Egypt, Morocco, Kenya
  - Status: Planned
- AFRIMETS TK9.x (ITS-90 key comparison)
  - Pilot: TÜBİTAK UME
  - Linking Lab: TÜBİTAK UME
  - Status: Planned
  - Participants: South Africa, Turkey, Egypt
- AFRIMETS TK9.xx (ITS-90 key comparison)
  - Pilot: CEM
  - Linking Lab: CEM
  - Status: Planned
  - Participants: South Africa, Spain

# AFRIMETS PARTICIPATION IN CCT/APMP etc... INTER-COMPARISONS

- CCT K7 2021
  - Key comparison of water triple point cells
  - Range: water triple point
  - Started: 2021
  - Status: Measurement completed, Report writing (pilot)
  - Participating AFRIMETS NMIs: **South Africa**
- APMPT-K4.2
  - Key comparison of local realizations of aluminium (Al) freezing-point temperature
  - Range: Al fixed point
  - Started: 2018
  - Status: Measurement completed, Report writing (pilot)
  - Participating AFRIMETS NMIs: **South Africa**
- APMPT-S11/S12
  - Local realization of radiation thermometer scale from Indium point to 2800 °C
  - Range: 156 °C to 2800 °C
  - Started: 2013
  - Status: Measurement completed, Report writing (pilot)
  - Participating AFRIMETS NMIs : **South Africa**

- APMP.T-S16
  - Supplementary comparison of noble metal thermocouple
  - Range: 1000 °C to 1560 °C
  - Started: 2017
  - Status: Measurement completed, Report writing (pilot)
  - Participating AFRIMETS NMIs: **South Africa**
- APMP.T-S13
  - Supplementary comparison of humidity
  - Range: -60 °C, -70 °C, -80 °C, (-90 °C)
  - Started: 2014
  - Status: Measurement
  - Participating AFRIMETS NMIs : **South Africa**

- APMPT-S17
  - Supplementary comparison of Air Thermometers
  - Range: -70 °C to 90 °C
  - Status: Protocol approved, measurement to start soon
  - Participating AFRIMETS NMIs: **South Africa**
- CCT K11
  - Key comparison of blackbodies for infrared ear and forehead thermometers
  - Range: 34 °C to 43 °C
  - Status: Protocol approved, Rescheduled due to Ukraine Russia incidence
  - Participating AFRIMETS NMIs: **South Africa**



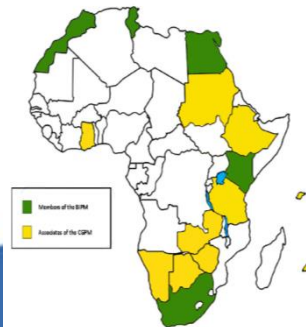
# CMC submission

- ❑ Laboratoire Public d'Essais et d'Études, Laboratoire National de Métrologie(LPEE/LNM) (Thermometry Service classification 2.2.2 & 2.7.1)
  - Platinum resistance thermometer (-40 °C – 260 °C)
  - Temperature sensor with display unit (-40 °C – 260 °C)

Status: CMC published (May – October 2021)

- ❑ National Institute of Standards (NIS) (Thermometry Service classification 2.2.2 & 2.3.3)
  - Platinum resistance thermometer (-50 °C – 550 °C)
  - Pure-metal thermocouple at fixed points Zn, Al, Ag, Co-C, Pd-C

Status: CMC submitted for **Inter-RMO** review  
CMC at **Al** point is published (Nov 2021), the rest is still under review



- ❑ Kenya Bureau of Standards (KEBS) (Thermometry Service classification 2.2.2)

- Platinum resistance thermometer (-10°C – 200 °C)

Status: Inter-RMO Review process started

- ❑ Ghana Standards Authority(GSA)

- Status: Quality system peer-review (Date unknown)

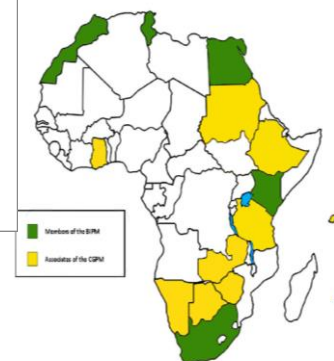
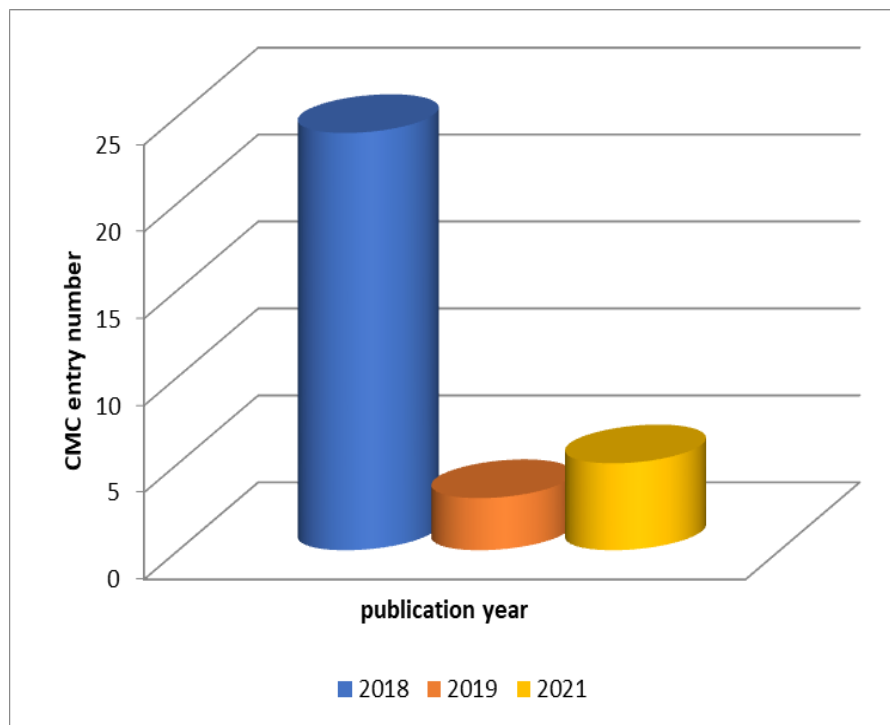
- ❑ Ethiopian Metrology Institute (EMI)

- Status: Quality system peer-review scheduled for 29 July 2022



# Approved and published CMC in the past five years

Member country	No. of CMC
Zimbabwe (SIRDC-NMI)	13
Zambia (ZMA)	11
Botswana (BOBS)	3
Morocco (LPEE/LNM)	4
Egypt (NIS)	1
Total	32



# Inter-RMO CMC review

- AFRIMETS TC-T is actively participating in inter-RMO CMC reviewing.



# Chair Selection

The current chair and vice-chairs are re-elected to continue to serve in their current respective positions.

Chairman: Dr. Efrem Kebede Ejigu (NMISA)

Vice-Chair: Mr. Richard Odak (KEBS)

Prof. Dr. Mohamed Gamal Ahmed (NIS)





Thank you