

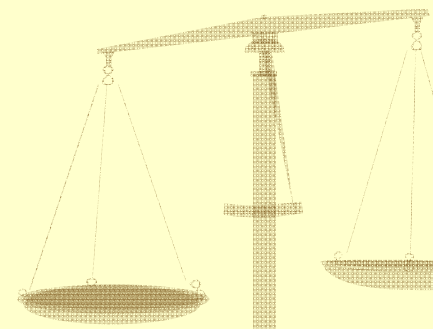


# *AFRIMETS TC1 Update*

*July 2013*

Dr Wynand Louw

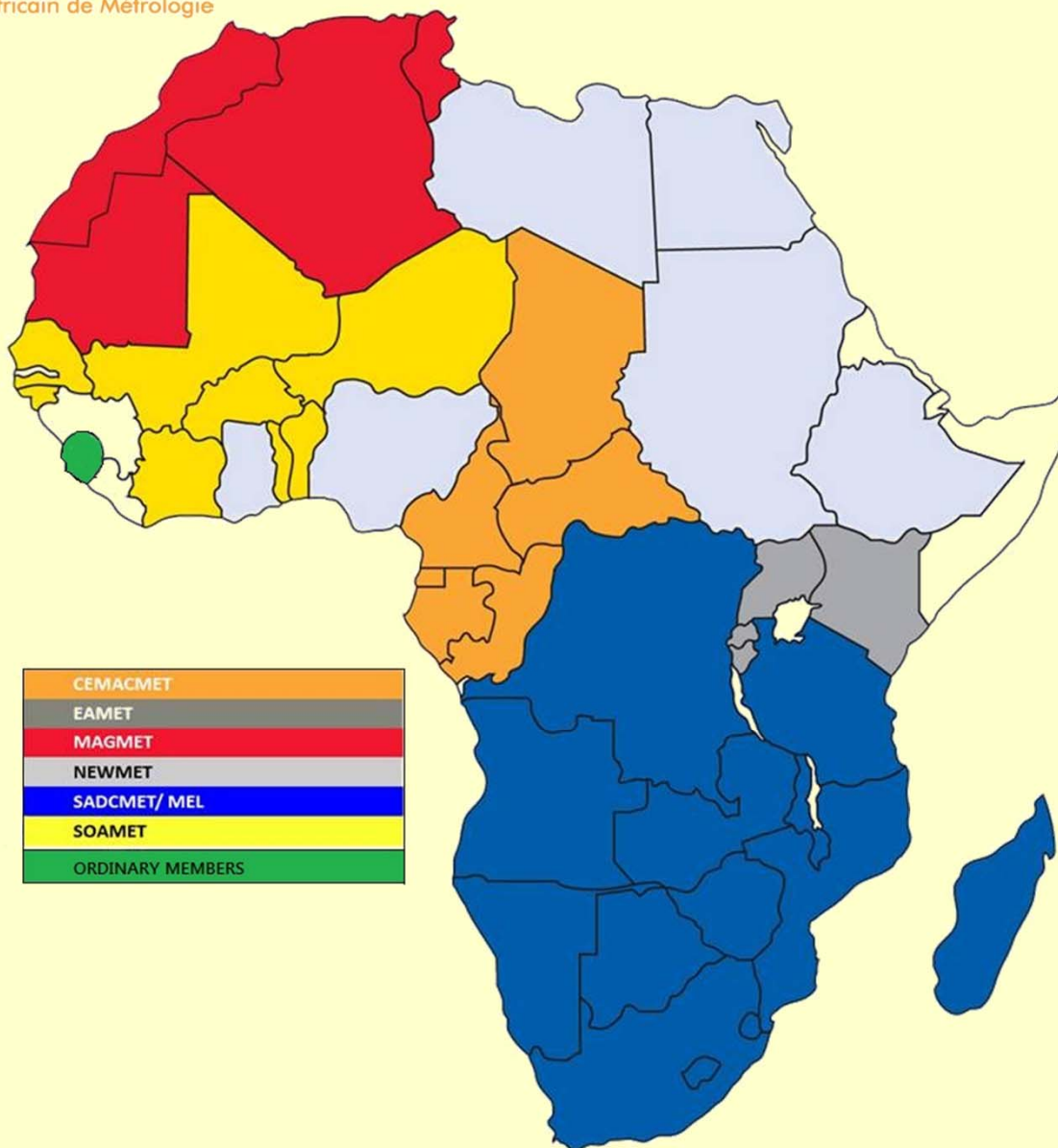
On behalf of TC1-A



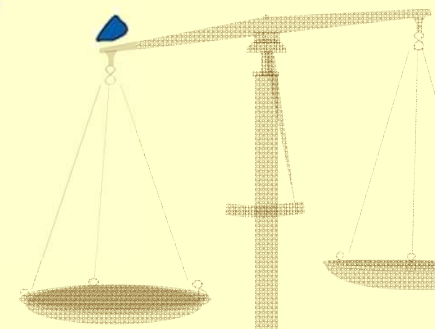


**AFRIMETS**  
Intra-Africa Metrology System  
Système Intra-Africain de Métrologie

## the members (2012)



|                  |
|------------------|
| CEMACMET         |
| EAMET            |
| MAGMET           |
| NEWMET           |
| SADC/MET         |
| SOAMET           |
| ORDINARY MEMBERS |

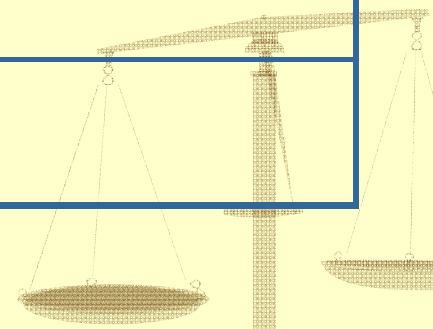




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## the members (2011)

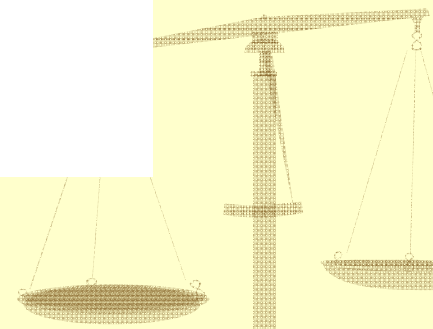
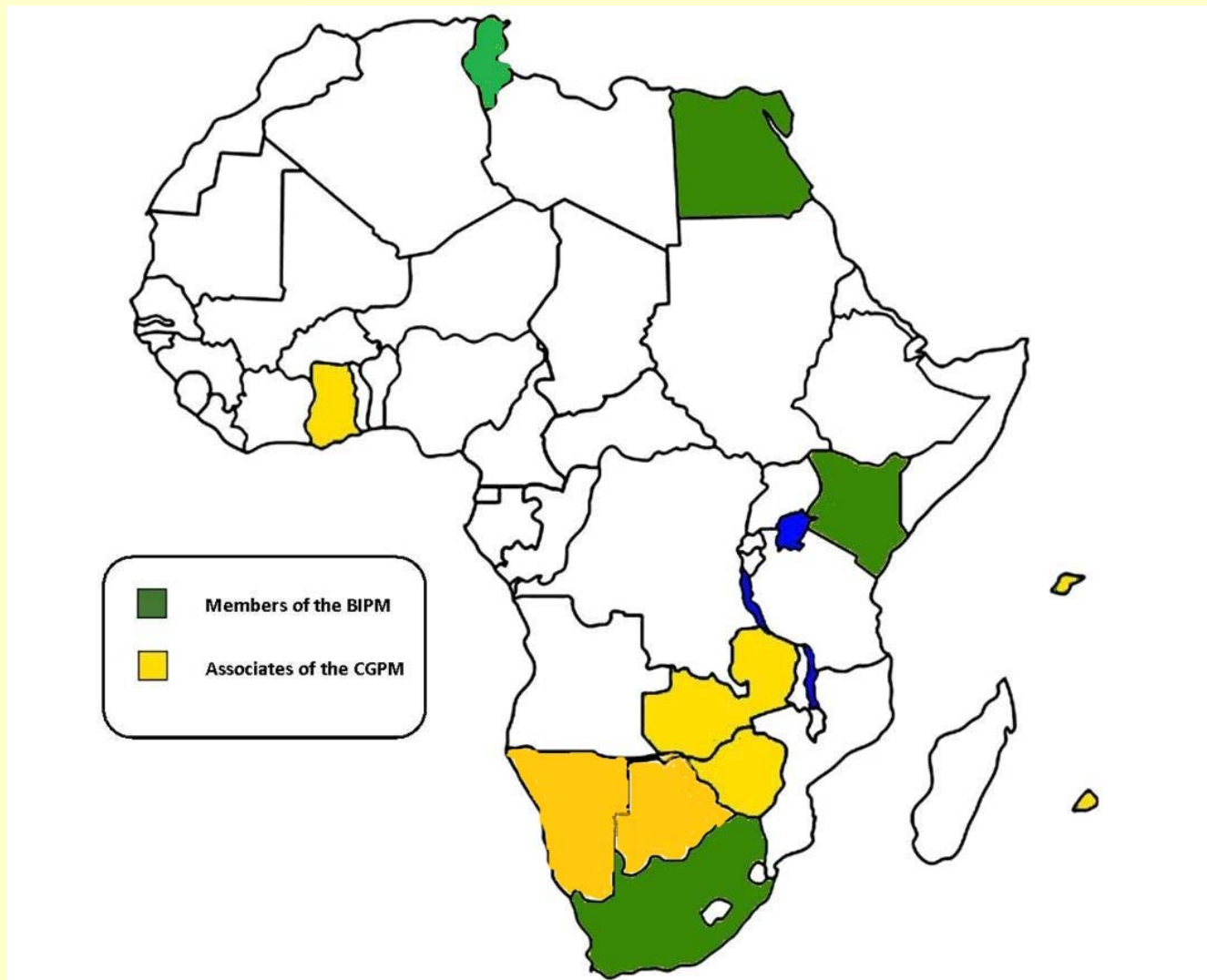
|                       |   |
|-----------------------|---|
| Associate Members (7) | <ul style="list-style-type: none"><li>■ LNE, France</li><li>■ PTB, Germany</li><li>■ <i>NIRPS (National Institute of Radiation Protection and Research (Nigeria))</i></li><li>■ <i>GRPI (Ghana Radiation Protection Institute)</i></li><li>■ <i>TAEC (Tanzania Atomic Energy Commission)</i></li><li>■ <i>Madagascar-INSTN</i></li><li>■ <i>IAEA</i></li><li>■ <i><u>Sudanese nuclear agency (requested)</u></i></li><li>■ <i><u>Arab Gulf countries invited to participate</u></i></li></ul> |
| Observers (4)         | <ul style="list-style-type: none"><li>■ EURAMET</li><li>■ CAFMET (Comité Africain de Métrologie)</li><li>■ AFM (Arab Federation for Metrology)</li><li>■ AFSEC (African Electrotechnical Standardization Commission)</li></ul>  |
| Ordinary Members      | <ul style="list-style-type: none"><li>■ The Gambia</li><li>■ Sierra Leone</li></ul>   |





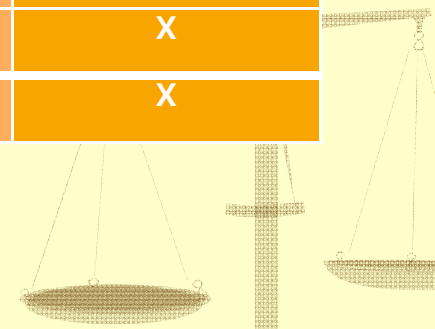
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# the members of the BIPM, Associates of the CGPM (2012)



## Members/Associates/CIPM MRA

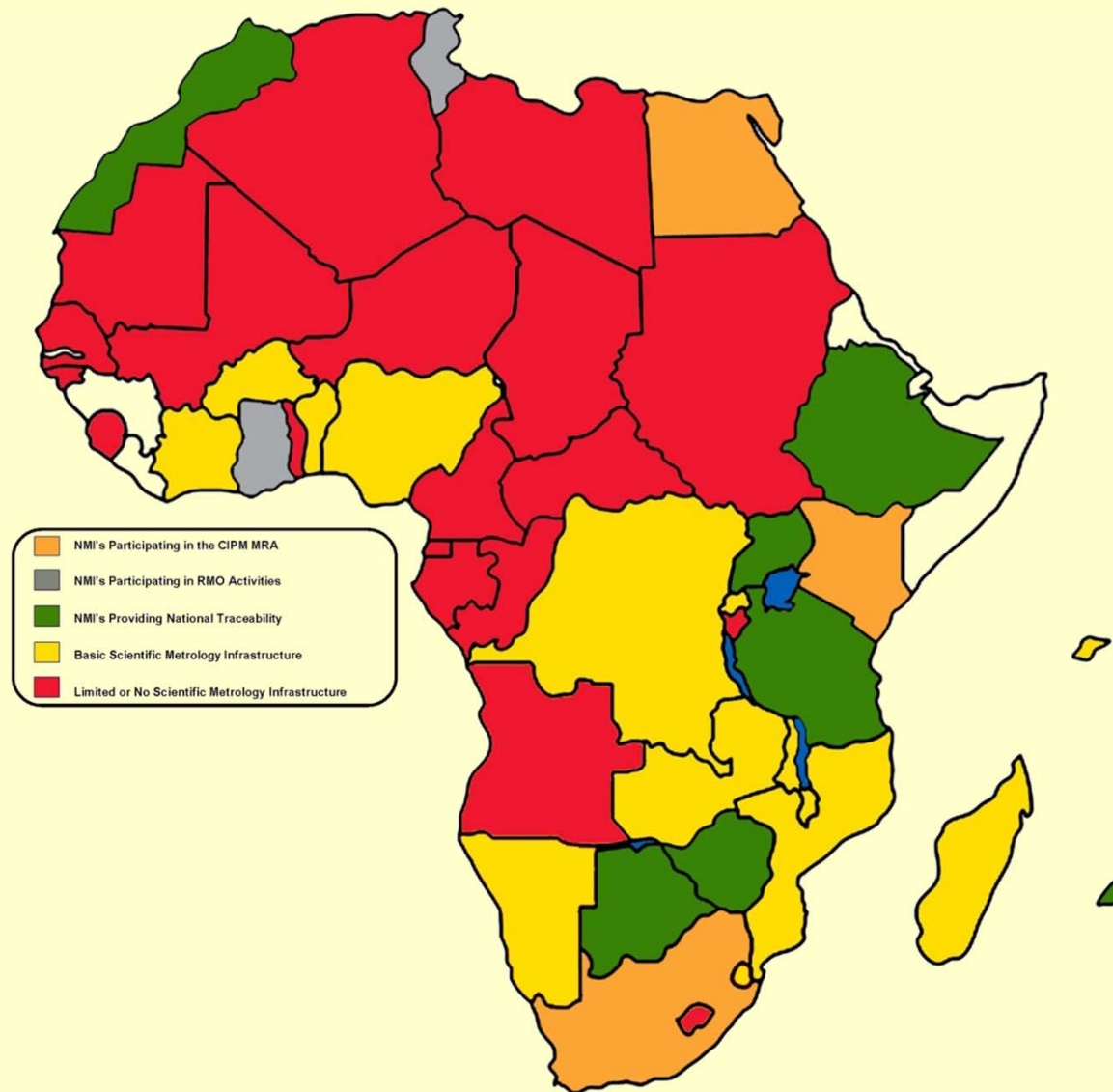
| Member Country | Members of the BIPM | Associates of the CGPM | Signatories to CIPM MRA |
|----------------|---------------------|------------------------|-------------------------|
| Egypt          | X                   |                        | X                       |
| South Africa   | X                   |                        | X                       |
| Kenya          | X                   |                        | X                       |
| Tunisia        | X                   |                        | X                       |
| Botswana       |                     | X                      | X                       |
| Ghana          |                     | X                      | X                       |
| Mauritius      |                     | X                      | X                       |
| Namibia        |                     | X                      | X                       |
| Seychelles     |                     | X                      | X                       |
| Zambia         |                     | X                      | X                       |
| Zimbabwe       |                     | X                      | X                       |



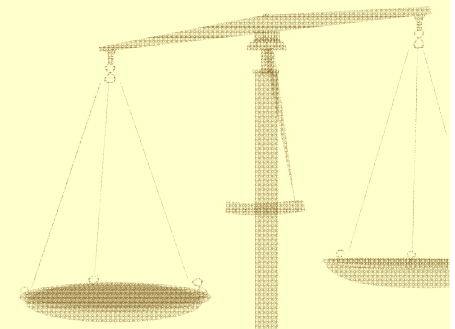


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# Scientific Metrology Capabilities



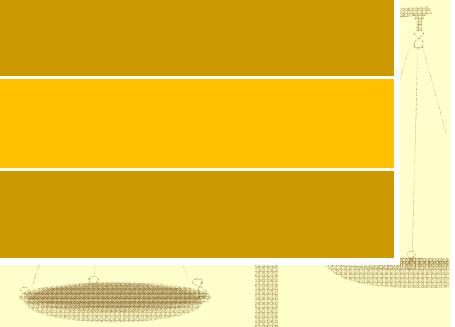
- 15 Key and Supplementary comparisons in progress
  - TC-Mass and Related Quantities Meeting in Progress
  - TC-T Meeting in progress
  - TC-AUV held WG meeting with CC-AUV
  - TC-IR held WG meeting with IAEA meeting
  - TC-QM held workshop with T&M conference





## The TC 1A-Working Groups

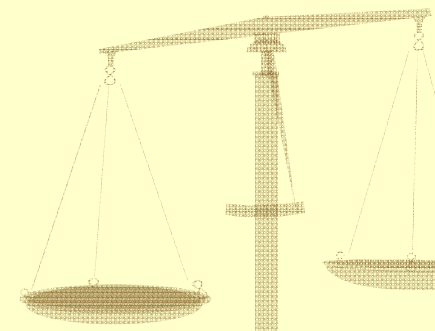
|  |  |
|--|--|
| TC-Mass and Related Quantities<br>(TC-M) | Mass   |
|  | Flow   |
|  | Pressure   |
|  | Force, Torque and Hardness                                   |
| TC-L                                     | Dimensional (Length)   |
| TC-AUV                                   | Acoustics, Ultrasound and Vibration                          |
| TC-T                                     | Temperature  |
| TC-TF                                    | Time and Frequency, Fibre Optics                             |
| TC-EM                                    | Voltage, Resistance, AC power and energy,<br>Radio Frequency |
| TC-PR                                    | Photometry and Radiometry                                    |
| TC-RI                                    | Ionising Radiation   |





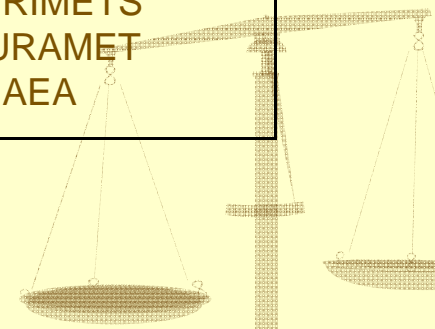
## The TC Working Groups cont.

|   |                              |
|---|------------------------------|
| <b>TC-QM</b><br><b>Metrology in Chemistry</b> | Organic and Bio Analysis     |
|   | Inorganic                    |
|   | Gas                          |
|   | Testing Laboratories         |
| <b>TC-QS</b>                                  | <b>Quality Working Group</b> |
| <b>TC 1B Working Groups</b>                   |                              |
| <b>TC-WM</b>                                  | <b>Weights and Measures</b>  |



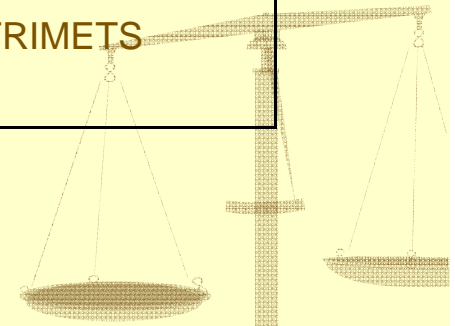
# AFRIMETS Comparisons

| <u>No.</u> | <u>Comparison</u>  | <u>Status</u>  | <u>No of Participants</u>       |
|------------|--|--|---------------------------------|
| 1          | <b>AFRIMETS.T-S1</b> (Industrial PRTs from -50 °C to 450 °C )  | Report draft B: feedback received from CCT WG7. Participants asked to do final corrections. Publication expected middle 2013 | 8 AFRIMETS<br>1 APMP (NIMT)     |
| 2          | <b>AFRIMETS.T-S2</b> (Industrial PRTs from -50 °C to 450 °C )  | Started in 2012. In progress, artefacts with NIS and CME, next Morocco   | 6 AFRIMETS                      |
| 3          | <b>AFRIMETS.T-S3</b> (Industrial PRTs from -50 °C to 450 °C )  | Started in 2012. In progress. ZABS, SIRDC , BOBS and INNOQ completed , next NSI  | 9 AFRIMETS                      |
| 4          | <b>AFRIMETS.RI(1)-S1</b><br>Measurement of Air Kerma (covering $^{137}\text{Cs}$ , $^{60}\text{Co}$ and/or x-ray beam) | Started in March 2011, in progress   | 9 AFRIMETS<br>2 EURAMET<br>IAEA |



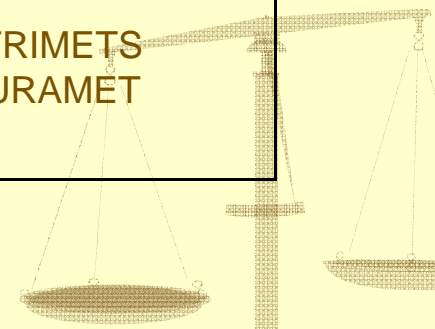
# AFRIMETS Comparisons

| <u>No.</u> | <u>Comparison</u>   | <u>Status</u>  | <u>No of Participants</u>                  |
|------------|---|--|--|
| 5          | <b>AFRIMETS.PR-K3a</b><br>Luminous intensity                                  | Links to CCPR-K3.a and CCPR-K4. Protocol approved by CCPR. Measurement dates being finalised. Completion expected 2013 | 3 AFRIMETS<br>2 APMP<br>1 EURAMET          |
| 6          | <b>AFRIMETS.AUV.V-S3</b><br>Vibration acceleration, 10 Hz to 10 kHz           | In progress, last laboratory completing measurements   | 2 AFRIMETS<br>3 EURAMET<br>1 SIM           |
| 7          | <b>AFRIMETS.QM-K27</b><br>Ethanol in Aqueous matrix                           | Draft B report approved  | 4 AFRIMETS<br>2 APMP<br>4 EURAMET<br>1 SIM |
| 8          | <b>AFRIMETS.L-S3</b><br>End standards. Gauge blocks by mechanical measurement | Finished. Draft A report in progress   | 8 AFRIMETS                                 |



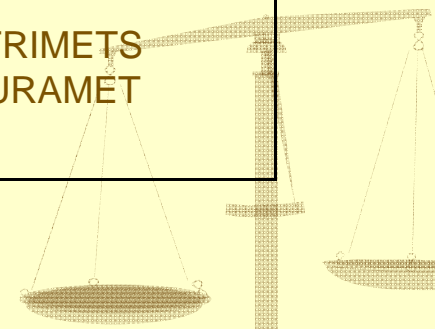
# AFRIMETS Comparisons

| <u>No.</u> | <u>Comparison</u>  | <u>Status</u>   | <u>No of Participants</u> |
|------------|--|---|---------------------------|
| 9          | <b>AFRIMETS.L-S4</b><br>End standards. Gauge blocks by mechanical measurement          | Protocol being drafted                                      | tba                       |
| 10         | <b>AFRIMETS.AUV.A-S1</b><br>Acoustics  | Registration requested, due to start in 2013 quarter 2 or 3 | tba                       |
| 11         | <b>AFRIMETS.M.FF-S4</b><br>Volume comparisons  | Draft A report available. Draft B report in progress        | 8 AFRIMETS                |
| 12         | <b>AFRIMETS.M.P.-K2</b><br>Pressure, (10 to 110) kPa absolute, Hydraulic up to 100 MPa | In progress   | 6 AFRIMETS<br>1 EURAMET   |

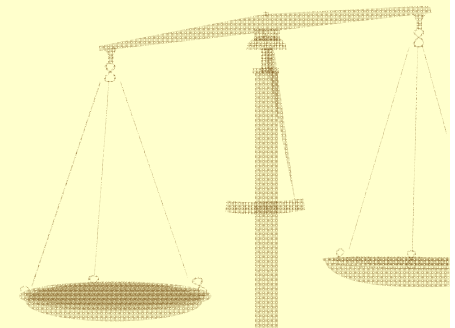


# AFRIMETS Comparisons

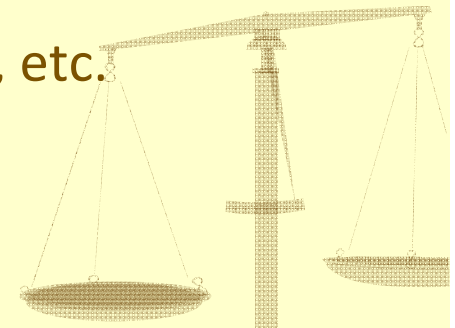
| <u>No.</u> | <u>Comparison</u>  | <u>Status</u>                                  | <u>No of Participants</u>       |
|------------|--|--|---------------------------------|
| 13         | <b>AFRIMETS.M.M-S2</b><br>100 g, 2 g, 20 g, 500 g<br>and 1 kg                                | In progress                                    | 3 AFRIMETS<br>3 Gulf state NMIs |
| 14         | <b>AFRIMETS.M.M-K2.1</b><br>100 mg to 10 kg  | Planned (Protocol<br>complete)                 | 8 AFRIMETS                      |
| 15         | <b>AFRIMETS.M.M-S6</b><br>Weights at OIML F1<br>level  | Planned (Currently<br>finalizing the protocol) | 10 AFRIMETS                     |
| 12         | <b>AFRIMETS.M.P.-K2</b><br>Pressure, (10 to 110) kPa<br>absolute, Hydraulic up to<br>100 MPa | In progress                                    | 6 AFRIMETS<br>1 EURAMET         |



- Requested 3-5 year plan from each TC-WG
  - Current Comparisons
  - Future comparison plan
  - Training and workshops
  - Funding requests
  - How to link the AFRIMETS WG strategy plan to the CC strategy plan
- Election of TC-WG Chairs and vice-chairs
  - Chair must be from laboratory member of CC or CC-WG
    - Crucial for communication between CC-WGs, especially key comparison

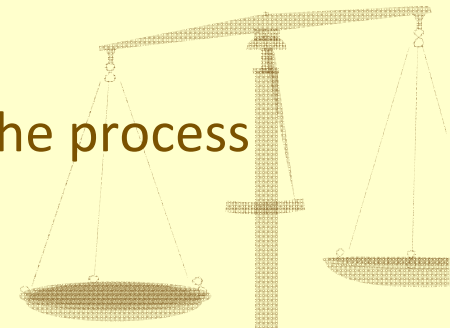


- Temperature
  - Noble Thermocouples; NIS to pilot
  - Electrical simulation; LCAE to pilot
  - Standard PRTs at fixed points; NMISA and LCAE
  - Mr Victor Mundembe will present at GA
- Mass and Related Quantities; Meeting in progress
  - Chairs and vice-chairs confirmed
- Length / Dimensional; Meeting in progress
- Chemistry
  - Planning extension of SADC water PT –pesticide
  - Bilateral training –KEBS / NMISA, pesticides, PCBs, etc.
  - Inorganic elements in grain





- CMCs published in the KCDB by NMISA and NIS:
  - NIS = 29
  - NMISA = 386
  - Kenya = 1
- Kenya QS approved by AFRIMETS TC-QS
- NIS QS accepted as approved by EURAMET
- Kenya currently participated in their first AFRIMETS comparisons and has submitted their second CMC (chemistry)
- Egypt submitted CMCs in Torque, QM, Acoustics, Electricity, IR
- Tunisia preparing to submit QS for approval
- Ghana preparing to submit QS for approval
- Information requests from Ethiopia and Tanzania on the process





Thank you!!

