



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



# **AFRIMETS and the CIPM MRA**

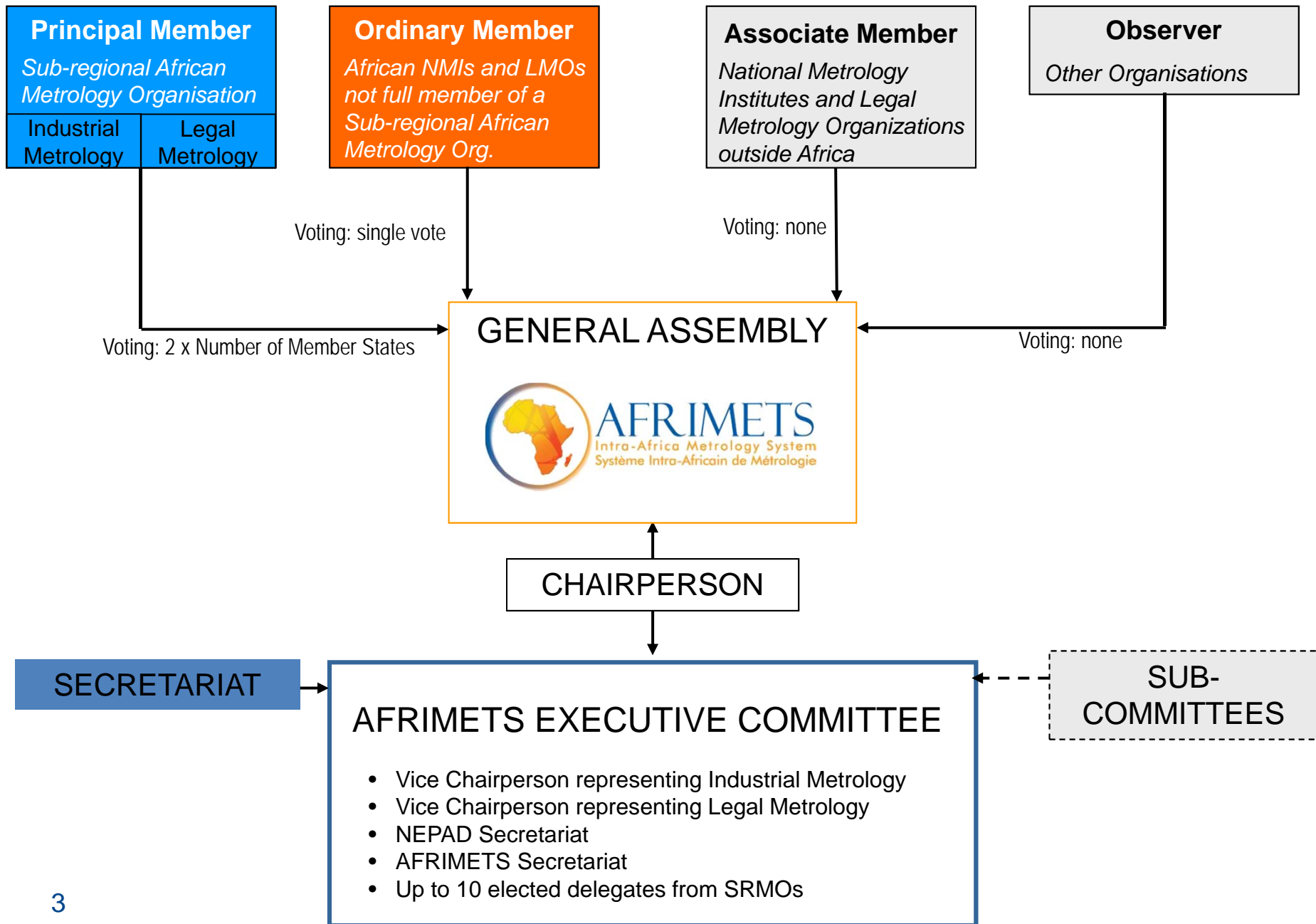
**Presented by: Dr Wynand Louw  
CIPM Member**

## Background

- The African continent, the World's second largest and second-most-populous, has 54 fully recognised states and two de facto independent states
- It has abundant natural resources
- The continent is believed to hold 90% of the world's [cobalt](#), 90% of its [platinum](#), 50% of its [gold](#), 98% of its [chromium](#), 70% of its [tantalite](#), 64% of its [manganese](#) and one-third of its [uranium](#).
- It remains the World's poorest and most underdeveloped continent
- In recent years the growth rate of some Sub-Saharan countries have been amongst the highest in the world (Angola, DRC, etc.)
- It arguably has the most to gain in future from a proper measurement system linked to the international measurement system –in support of both internal issues (EHS, etc.) and trade
- The CIPM MRA is the most important driver of measurement development in Africa



# the structure



# the structure

## AFRIMETS structure

TC's have Scientific & Industrial and Legal Metrology sub sections

- TC1:           Metre Convention, CIPM MRA and OIML (RMCO)
- TC2:           Metrology Education and Training (RET)
- TC3:           Metrology Infrastructure Development (RID)
- TC4:           Metrology Legislation (RLEG)
- TC5:           Metrology Awareness (RMA)  
                  (replaces Support to SMEs)

- Under TC1A for Scientific Metrology, Technical Working Groups (TC-WGs)
- Main aims of the AFRIMETS TC-WGs are to;
  - Foster technical development in NMIs,
  - organise benchmarking of NMI capabilities and get Calibration and Measurement Capabilities (CMCs) accepted in the International Key Comparison Database (KCDB)
- Under TC1B, TC for Legal Metrology
  - Development of Metrology Laws
  - Development of Verification and Inspection capabilities
  - Adoption of OIML standard regulations
  - Harmonisation of Regulations in Regional Economic Blocks

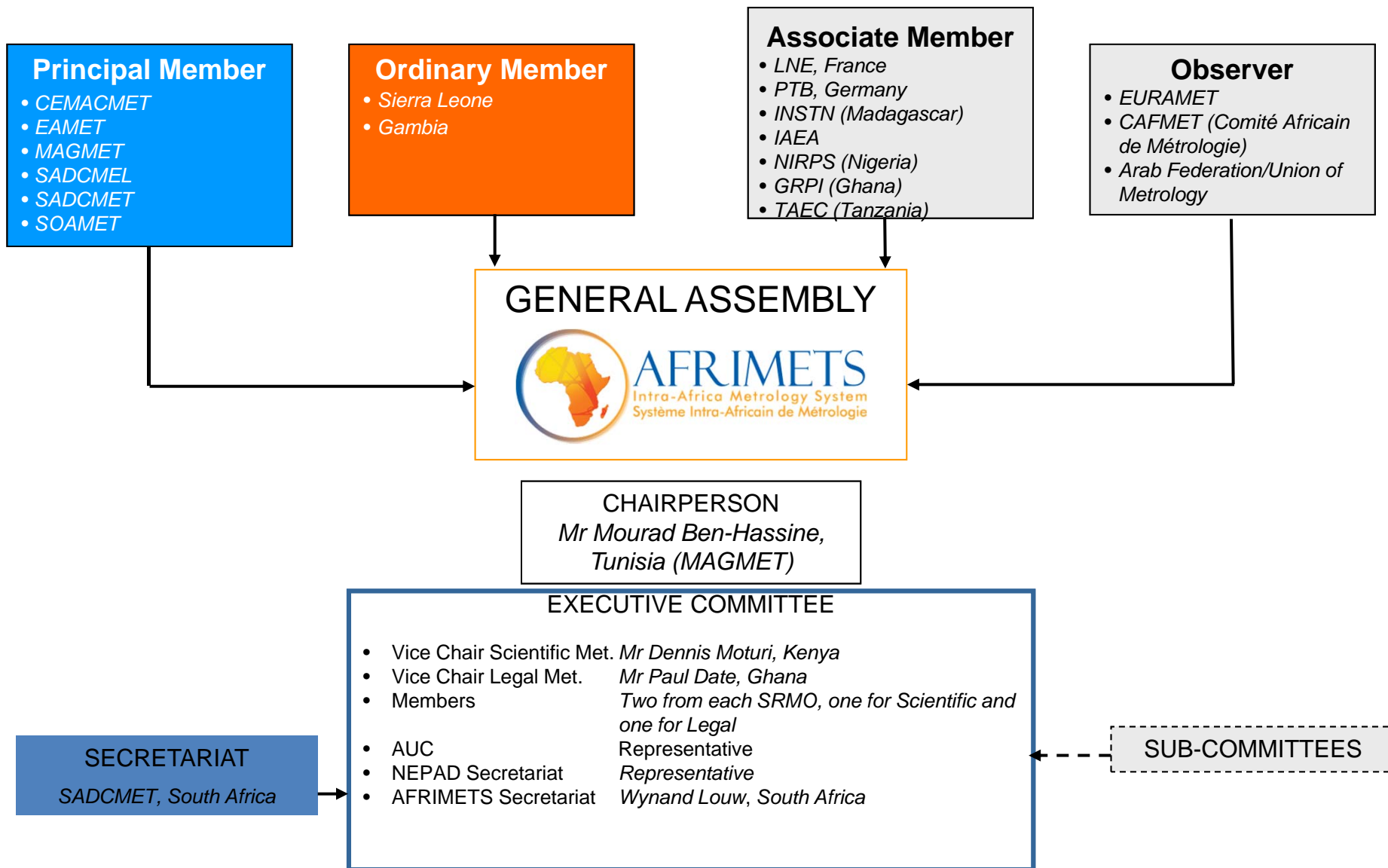
- Each TC-WG appoints a TC-WG Chair
- Chairs are elected from Institutes/laboratories that have Membership or at least Observer status of the CIPM CC and are participating in WG activities
  - Ensures proper communication with CC Chair
  - Benchmarking (comparisons) mostly organised by these institutes/laboratories
  - Chairs able to co-ordinate CMC reviews
- A Vice-chair is appointed from the REB/SRMO WG chairs
- For CMC reviews, technical experts will be added from other RMOs (where necessary)

# the structure – Technical Committees

- REB/Sub-Regional Metrology Chairs:
- Under the SRMO committee, WG for each parameter or group of parameters, for example (mirror CC WGs);
  - Regional Committee for Mass, Amount of Substance (QM), P&R etc., 9 in total
  - SRMO QM (Chair, Vice-chair)
    - Organic chemistry (Regional contact person)
    - Inorganic chemistry (Regional contact person)
    - Gas (Regional contact person)
    - Bio Analysis (Regional contact person)
    - Etc.
  - SRMO Mass and Related Quantities (Chair, Vice-chair)
    - Mass (Regional contact person)
    - Force (Regional contact person)
    - Etc.



# the members







# the members

## Principal Members (42)

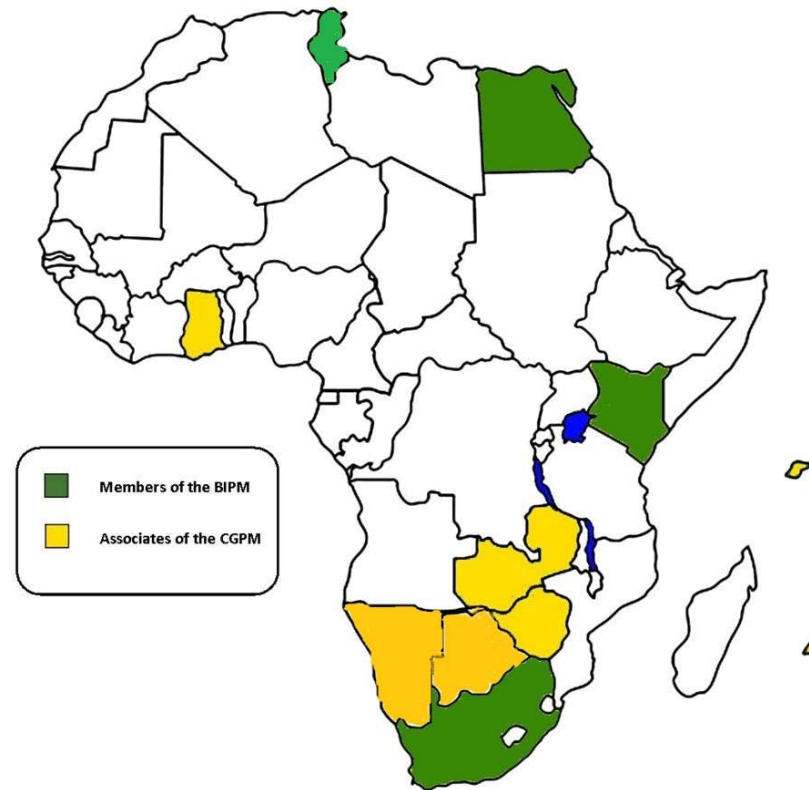
CEMACMET	Cameroon, Central African Republic, Chad, Equatorial-Guinea, Gabon, Republic of the Congo
EAMET	Kenya, Uganda, (Tanzania), Rwanda, Burundi
MAGMET	Algeria, Morocco, Tunisia, Mauritania
NEWMET	Egypt, Ethiopia, Ghana, Nigeria, Sudan, Libya
SADCMEL	Angola, Botswana, DRC, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe and Seychelles
SADCMET	(see SADCMEL)
SOAMET	Benin, Burkina Faso, Guinea-Bissau, Mali, Niger, Senegal, Togo, Cote d'Ivoire

# the members

<p>Ordinary Members (1)</p>	<ul style="list-style-type: none"> <li>■ Sierra Leone;</li> <li>■ The Gambia</li> </ul>
<p>Associate Members (7)</p>	<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>IPQ (discussions underway)</u></i></li> </ul> <div style="text-align: right;">  </div>
<p>Observers (4)</p>	<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 Standardisation Commission)</li> </ul> <div style="text-align: right;">  </div>

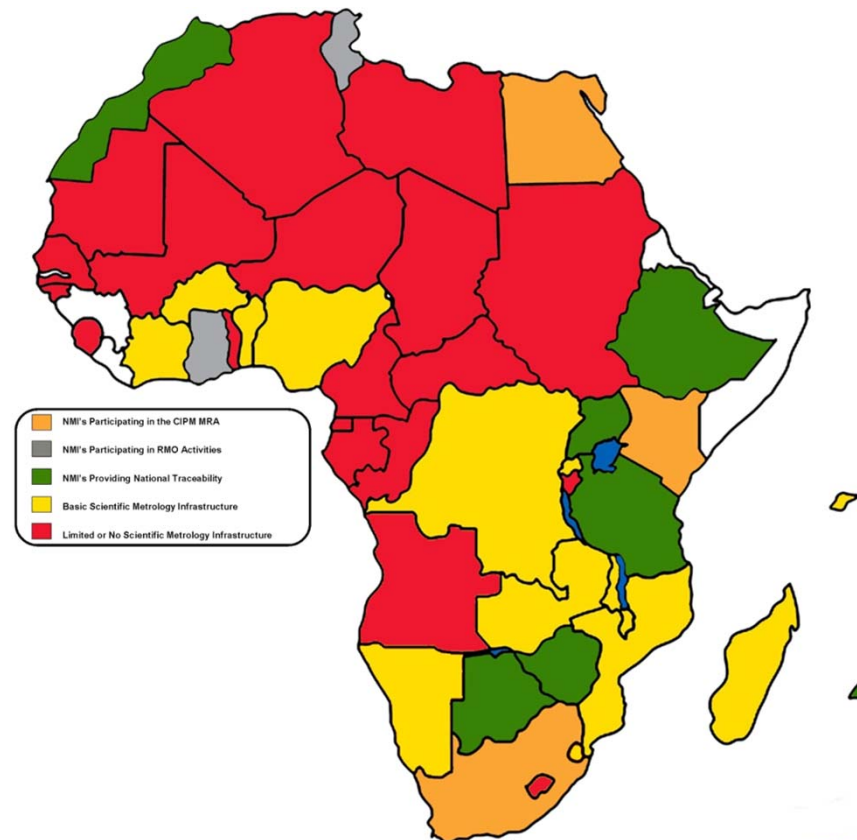
## Successes of the CIPM MRA: Membership of the BIPM

- Pre-CIPM MRA there were 1 (active) full member of the BIPM
- Currently there are 4 full members of the BIPM and 7 Associates of the CGPM



## Successes cont. On-going comparisons

- 4 Key Comparisons have been completed and 11 Key and supplementary comparisons are in progress
- More than 22 different institutes participated in the comparisons
- At least 26 countries have Scientific Metrology capabilities



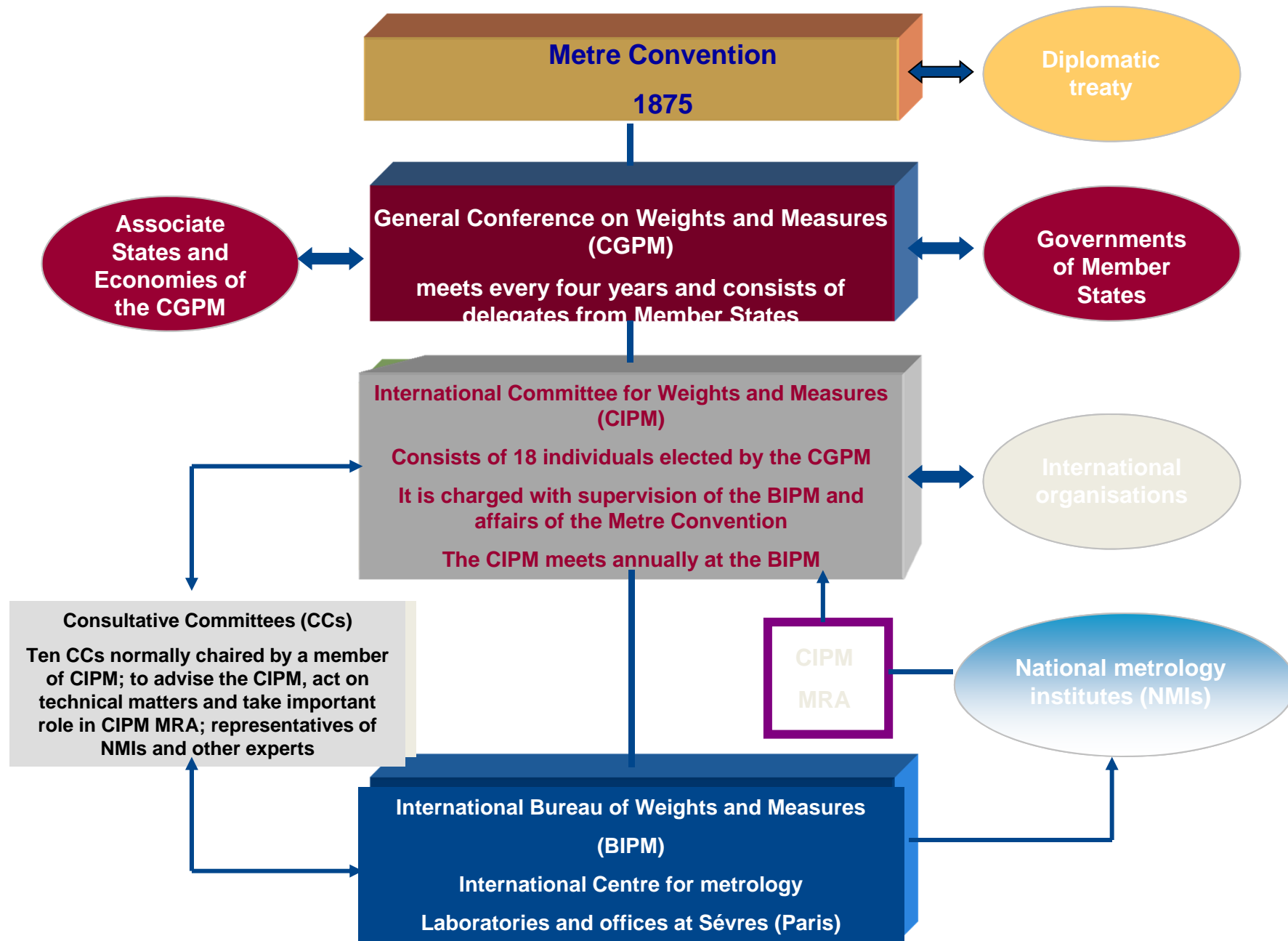
# the current situation

- Working Programme for 2014-2015 includes:
  - 14 Regional comparisons
  - 4 Regional Proficiency Testing scheme
  - Legal Metrology work and action plan
  - Fund raising activities
  - Sub-regional metrology workshops
- 428 Calibration and Measurement Capabilities recognised Internationally (SA, Egypt and Kenya)
- Substantial support to continental exports

# the RMOs



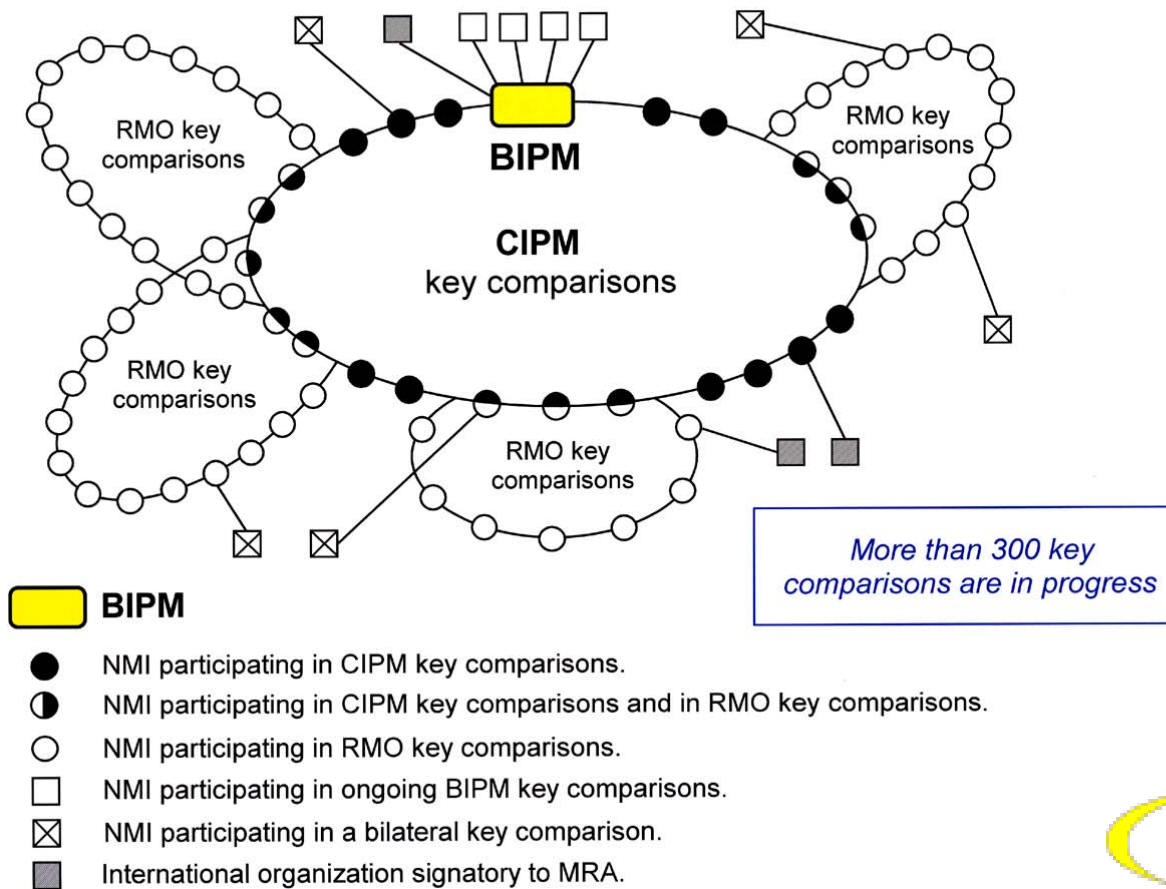
**AFRIMETS** is ready to take over the role of RMO for Africa



# the international CC and WG structure

Internationally, the metrology world is organised in regional metrology organisations

## Scheme for key comparisons







## How can AFRIMETS further implement the CIPM MRA?

- KCDB
  - The KCDB Appendix C provided an internationally accessible repository of the calibration and measurement capabilities of NMIs, as well as of higher order CRMs.
  - But, what about SRMO NMIs not at the level of CMCs?
  - Should we cater for ILCs for Accreditation purposes?
- Regional repository for ILC and pilot study data?

