



# CIPM, EURAMET & national responsibilities & authorities

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Challenges for full integration of Designated Institutes within EURAMET 18 & 19 February 2016, Lyngby, Denmark

## Introductory remarks



Janko presentation

- Designation of NMI and DI is sole sovereingty of a country
- RMOs (EURAMET) and CIPM have no real influence on designation processes
- $\Rightarrow$  Strong responsibilities of national authorities on the designations of NMI and DIs
  - Metrology fields
  - ✤ Scope (quantities, ranges, …)
  - International representation (EURAMET TCs, CIPM CCs, ..)

## **Final objectives**



- To provide references (measurement standards) for a national metrology system recognised at national & international levels
- To provide traceability to the SI (with participation to comparisons at the highest level of uncertainties for the country)
- To participate to R&D programmes (EMRP, EMPIR)
- To present CMC claims
  - Clear identification of DI perimeter and its capabilities
  - No overlap (measurand and range) complementarity to the NMI or other DIs

This also implies a clear service categories and CMC classification (KCDB)

## Designation



- Authorised body by State government
  - Responsible ministry
  - Organisation in charge of national metrology system
  - NMI

## CIPM MRA-D-06



- The "authorized body" shall confirm that it has the authority to designate the NMI/DI within the meaning of the CIPM MRA and this designation is compatible with the spirit, rights and obligations of the CIPM MRA
- The "authorized body" shall confirm that the organization being designated understands and accepts the rights and obligations of designation.
- Within the meaning of the CIPM MRA only one institute per State or Economy can be designated for any given metrology area\*\*

\*\*The metrological responsibilities of Signatory NMIs and other designated institutes of the same State or Economy must always be clearly differentiated. If within a State the Signatory NMI and a DI both have responsibilities within the same metrology area, the designation scope must be specified in sufficient detail to distinguish their responsibilities. This should be done using the classification of services as available on the BIPM website at <a href="http://www.bipm.org/utils/en/pdf/CMCs-Classification-of-services.pdf">http://www.bipm.org/utils/en/pdf/CMCs-Classification-of-services.pdf</a>

## CIPM MRA-D-06



- Name of State/Economy: \_\_\_\_\_
- Name of body that has the authority to designate: \_\_\_\_\_
- Name of the institute to be designated (DI): \_\_\_\_\_
- DI legal entity (if different from above) :\_\_\_\_\_\_
- DI Acronym: \_\_\_\_\_\_
- Contact Person at DI: \_\_\_\_\_\_

\* Chemistry, photometry, force, flow, volume, radioactivity, etc.

Sometimes too wide !!

## Conrete example



In certain circumstances, the NMI and DIs distribute work can be complicated to list them all by measurement range. Whatever, differentiation has to be done

## France example

- 1 NMI + 9 DIs
- Designation authority => NMI (LNE)
- In flow : 3 DIs
  - LNE-CETIAT (anemometry, liquid low water)
  - LNE-LADG (gas flow)
  - LNE-Trapil (liquid flow oil)
- In time and frequency : 2 DIs
  - ✤ LNE-SYRTE
  - ✤ LNE-LTFB

## Conrete example



To be clarifed

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#### **BIPM/KCDB classification**

#### Time and frequency / frequency / (LNE-LTFB)

→frequency meter

- →general frequency source
- →standard frequency source

#### Time and frequency /Time scale difference/ (LNE-SYRTE)

- →local clock
- →remote clock

#### Time and frequency / Time interval/ (LNE-LTFB)

- →period meter
- →period source
- →time interval meter
- →time interval source

#### Electricity-magnetism / RF / (LNE-LTFB)

→ noise – phase noise

#### Mass and related quantities / Torque, viscosity, hardness and gravity / (LNE-SYRTE)\* → gravity

## **Clarification done**



### **LNE-SYRTE**

Realisation of the SI units in time and frequency (primary and secondary standards) and gravimetry, elaboration and dissemination of time scale

### **LNE-LTFB**

Time interval and frequency calibrations, and phase noise calibration in the RF domain







