



**G11.06.02**

**CIPM MRA related matters**

**EURAMET's support to  
Members & TCs**

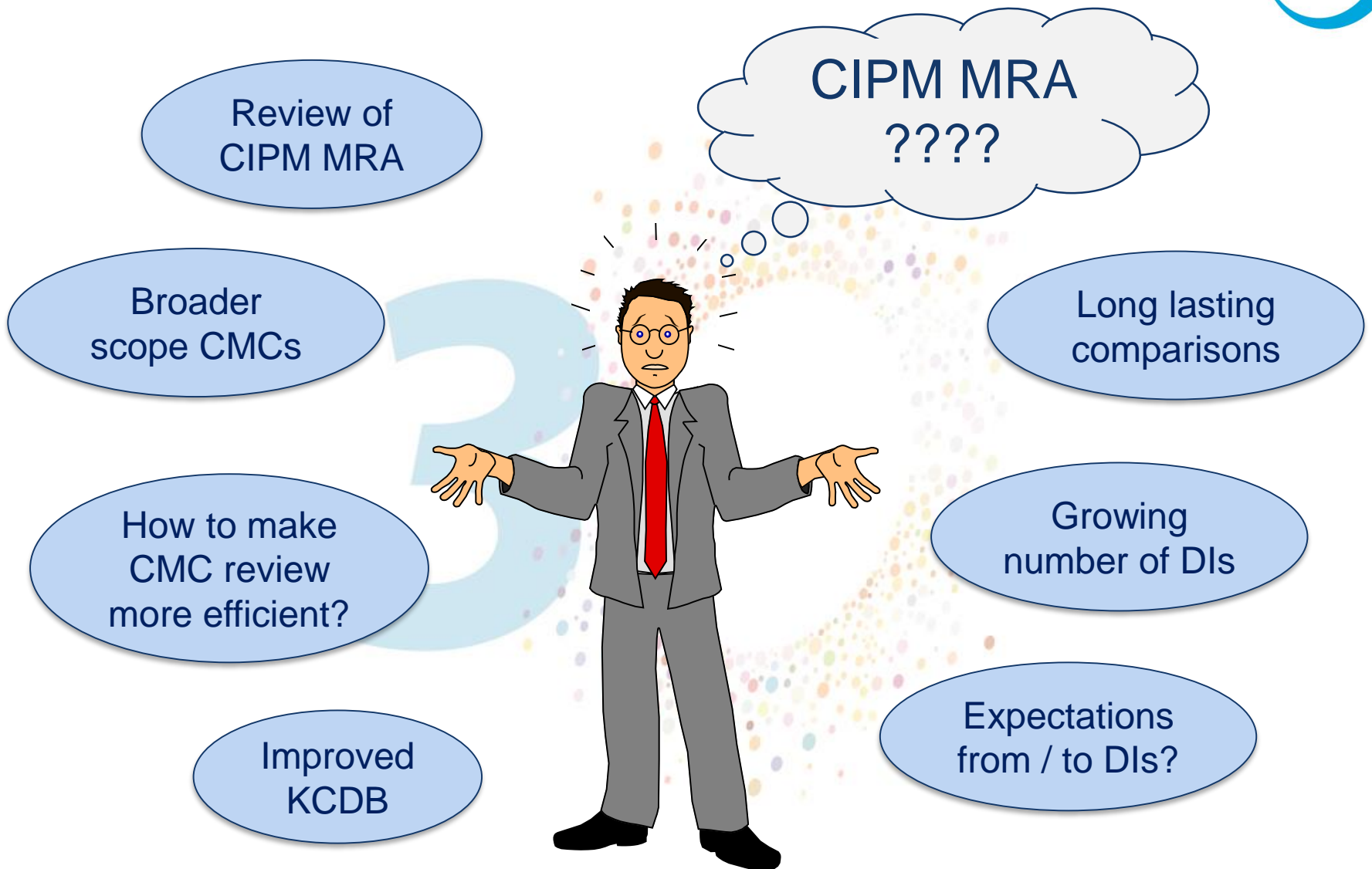
Wolfgang Schmid  
Member Service Manager

Madrid and Tres Cantos, Spain  
15 – 18 May 2017



# Hot topics of CIPM MRA

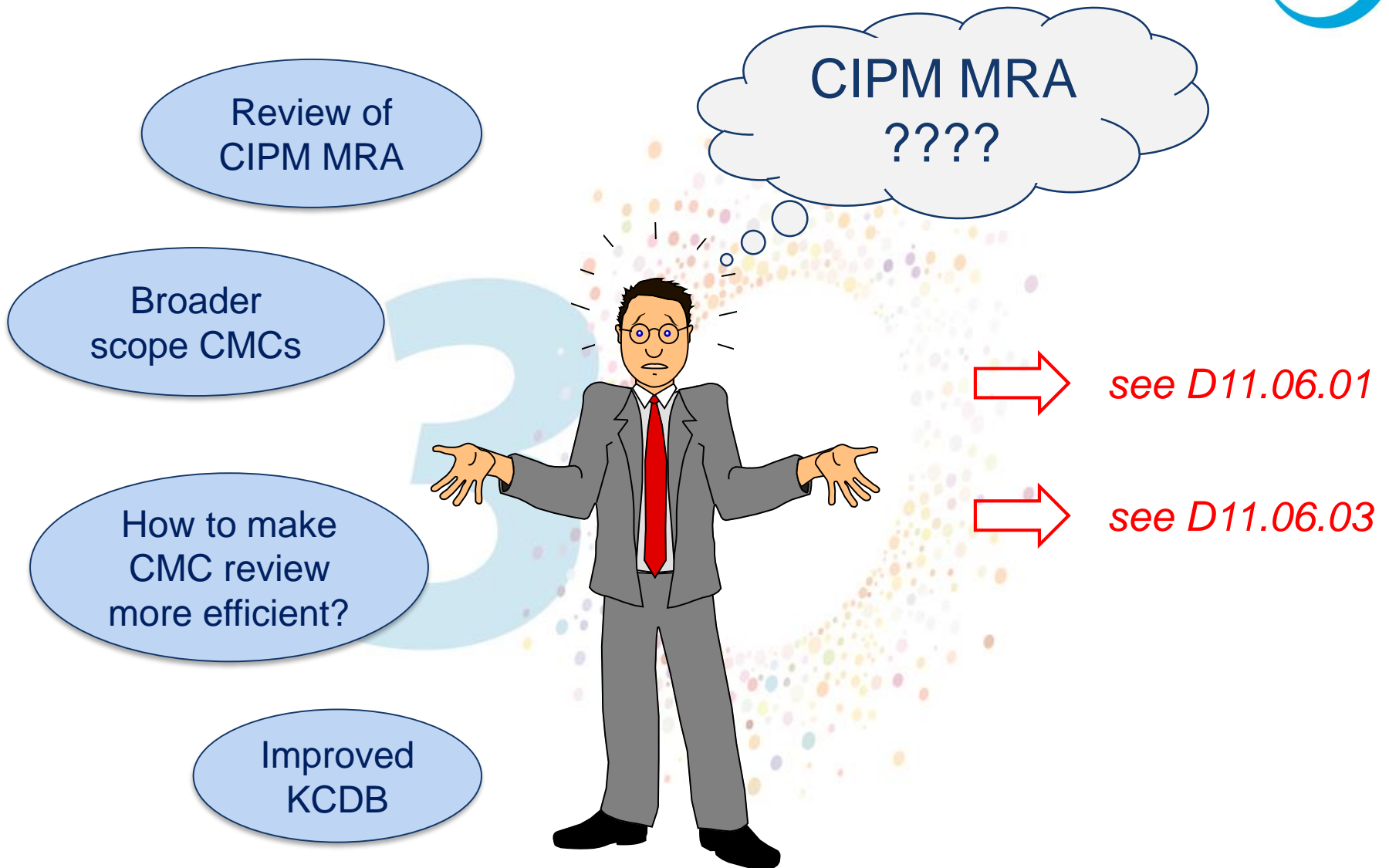
... at least for EURAMET





# Hot topics of CIPM MRA

... at least for EURAMET



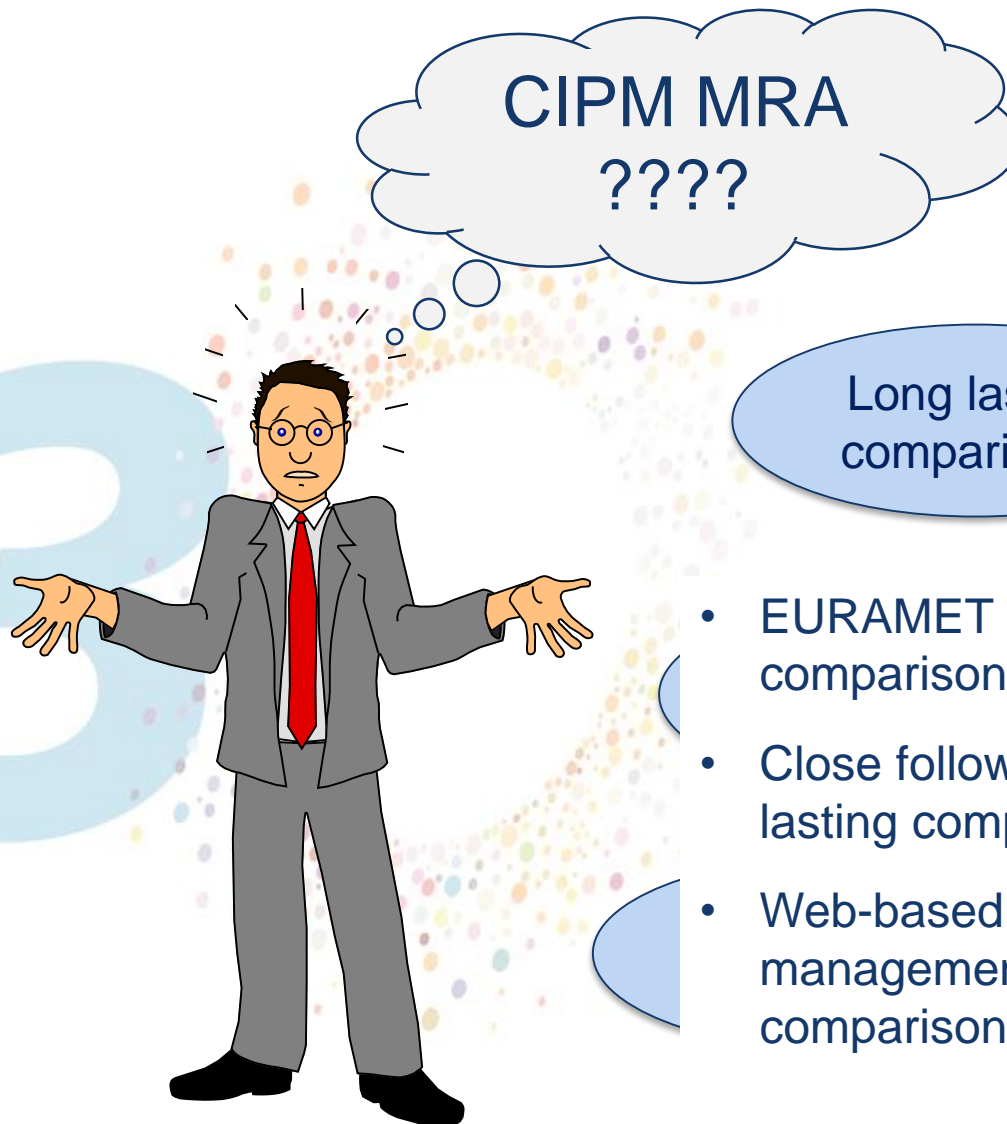


# Hot topics of CIPM MRA

... at least for EURAMET



- Guidance documents
- Close follow up on new A-DIs, roadmaps towards CMCs
- Establishment of a working group for DIs (BOD-WGDI)



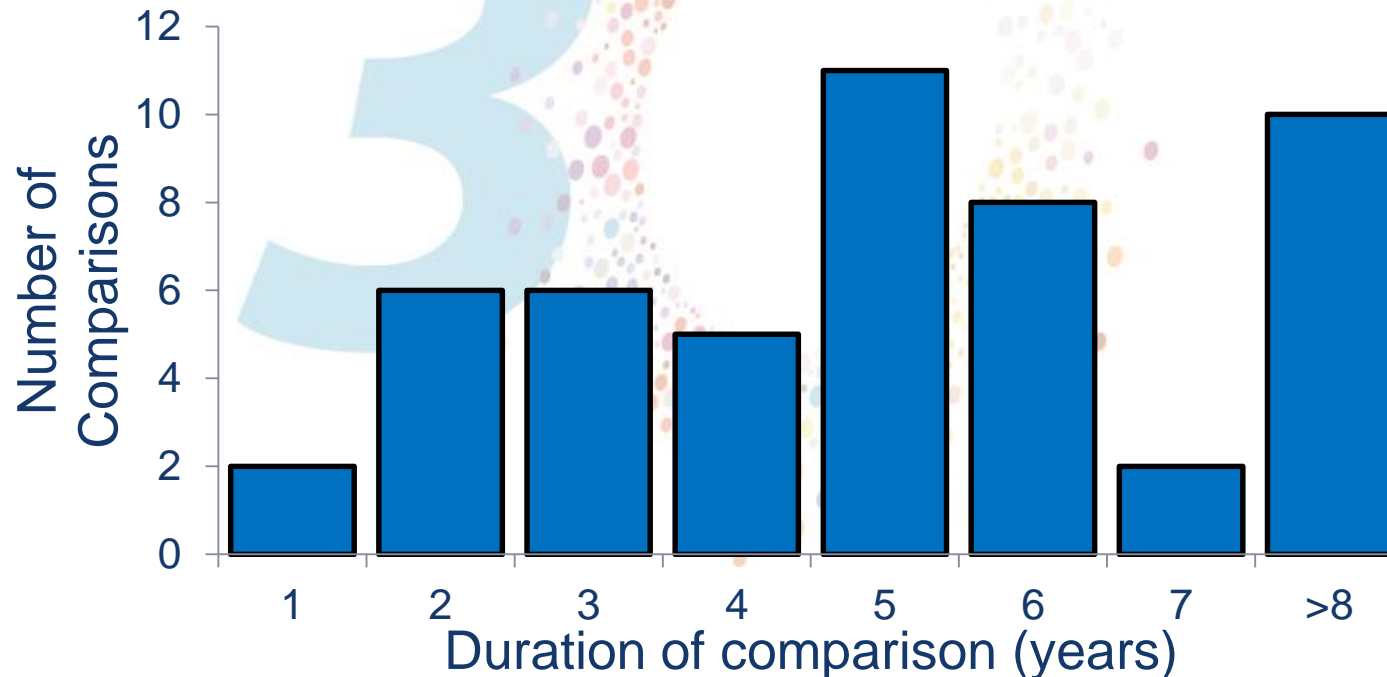
- EURAMET Guide on comparisons
- Close follow up on long-lasting comparisons
- Web-based toolbox for management of comparisons



# Comparisons: What is the problem?



- What is the relevance of the result of a comparison published 5 or 10 years after measurements?
- New laboratories (e.g. DIs) require comparison to support their CMCs.
- Sometimes there are good reasons for the delay, but in general it does not make EURAMET look very professional.
- It is frustrating for participants of the comparison.





## Comparisons:

# Some typical (?) observed issues



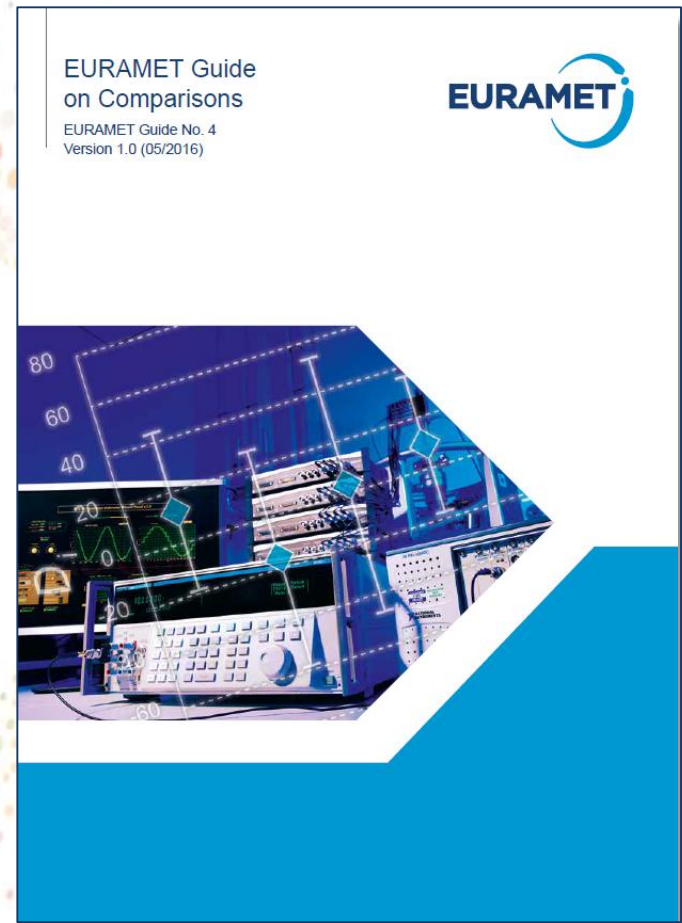
- Measurements start years after agreement on comparison (and registration in KCDB)
- Measurements concluded more or less in time, but preparation of report is very slow
- Unexpected issues with measurement or travelling standards arise
  - > new and valuable scientific insight, but sometimes enormous delay
- Coordinator overloaded by work, or has other priorities than preparing report
- Coordinator retires – nobody takes over
- Work comes to a standby – but nobody is pushing to take up again
- CC-WG for KCs need >> 6 weeks for review



# Comparisons: How to overcome these issues?



- Making rules clear and transparent  
*e.g. EURAMET Guide on Comparisons*
  - *published in May 2016*
  - *describes EURAMET specific aspects in planning, initiating and conducting inter-laboratory comparisons.*





# Comparisons: How to overcome these issues?



- Making rules clear and transparent  
*e.g. EURAMET Guide on Comparisons*
- Reminding people on importance to conclude comparison in time;  
offering support in case of issues  
*e.g. JCRB reporting on KCs/SCs in KCDB > 5 years without conclusion  
follow-up from Secretariat + TC-Chairs*





# Comparisons: How to overcome these issues?



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*e.g. EURAMET Guide on Comparisons*
- Reminding people on importance to conclude comparison in time; offering support in case of issues  
*e.g. JCRB reporting on KCs/SCs in KCDB > 5 years without conclusion follow-up from Secretariat + TC-Chairs*
- Increase commitment and support from NMI management:  
*Template to be signed by representative of NMI committing resources*
- Support management (administration) of comparisons  
*EURAMET “comparisons toolbox”*

A template document titled "Participation in EURAMET comparison" and "Commitment from the representative of the NMI". It includes a header with the EURAMET logo, a section for "Participation from the representative of the NMI" with a table for listing comparison projects, and a section for "Commitment from the representative of the NMI" with a table for listing comparison projects. The document is designed to be signed by a representative of the NMI committing resources.



# Comparisons: What is the toolbox?



Web-portal for

- management of the comparison,
- collation of all relevant data, and
- keeping online control of its status.

Comparison Toolbox

Welcome,  
Wolfgang Schmid -  
Administrator

Home

User Profile

All Comparisons

Core Data

Userlist

User Log's

Access Log's

Messages

Information

## All Comparisons

Create a new Comparison

#	Comparison Name	Team Members
9	EURAMET L-S26 Created 2016-08-12 Pilot Uwe Brand	
10	EURAMET T-S5 Created 2016-04-01 Pilot Dolores del Campo	
14	EURAMET EM-S42 Created 2016-11-24 Pilot Alf-Peter Elg	
1	EURAMET EM-K11 Created 2005-07-01 Pilot Karl-Erik Rydler	
8	EURAMET EM.K999 Created 2016-03-22 Pilot Oliver Power	

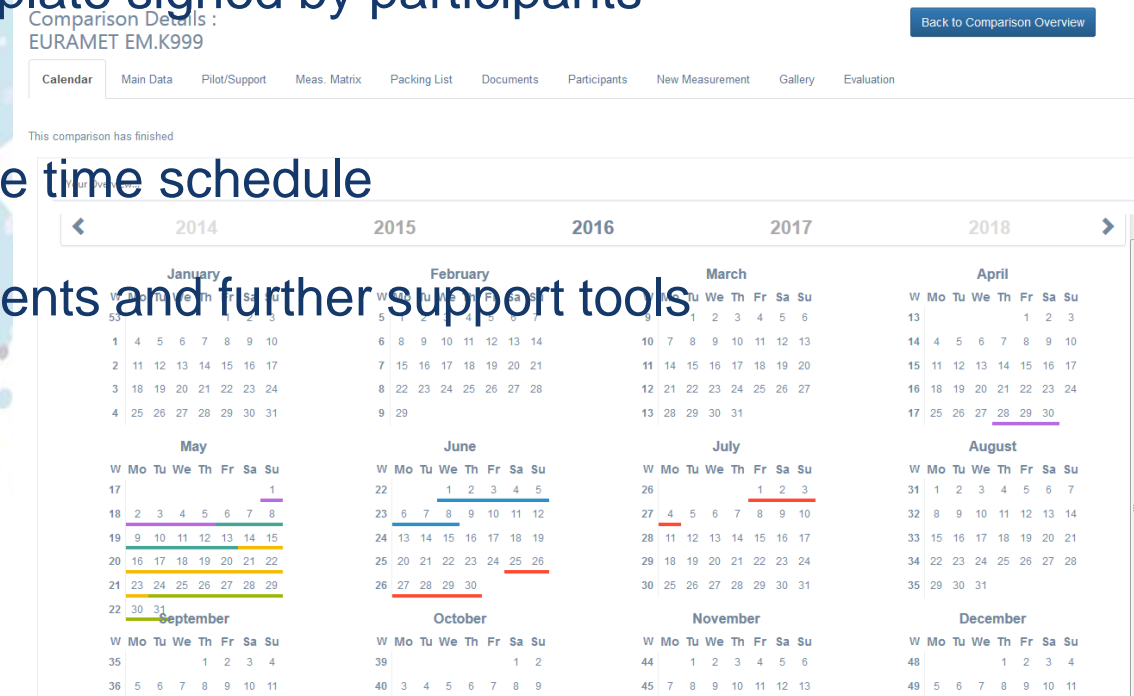
- *Initiative of TC-EM:  
First version developed at PTB*
- *Concept was presented to TC-Chairs  
and considered as a useful tool for EURAMET*
- *EURAMET took over responsibility for toolbox*
- *Currently test with real comparisons  
+ further developments / amendments*
- *Next steps: - validation of software  
- further tests with comparisons*
- *General use in EURAMET envisaged for 2018*



# Comparisons: How does the toolbox support?



- Invites labs to participate
- Knows the eligible institutes for KCs, SCs, PS (NMIs/ DIs of KCDB are stored; expert labs may be added)
- Sends and receives template signed by participants (commitment)
- Supports in setting up the time schedule
- Provides related documents and further support tools



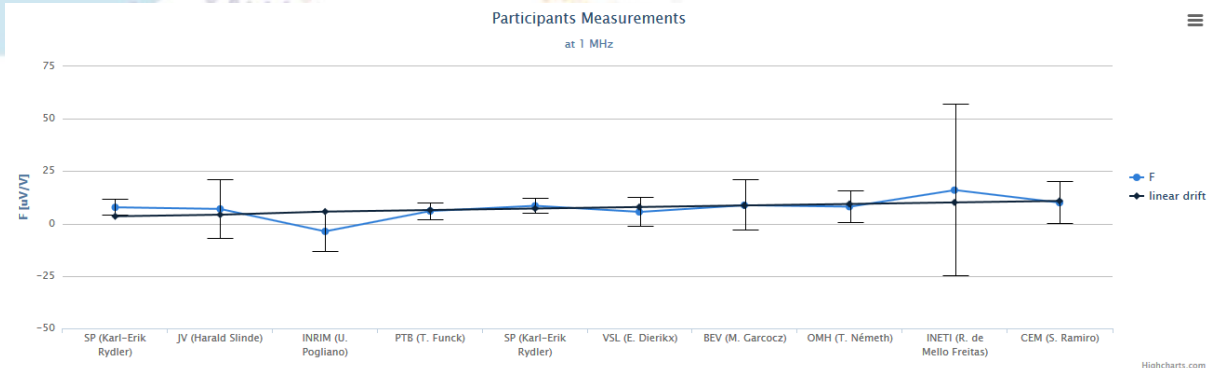


## Comparisons:

# How does the toolbox support?



- **Takes control on running comparison,**
  - sending reminders when the participating lab has to do something
  - may automatically block participants having passed the deadlines
  - knows where the travel standard is at the moment
- **Collates measurement results**  
to be provided by the participants directly on the webportal
- Provides some **basic evaluation** ( $E_n$ ,  $\chi^2$ ),  
and correction for drift of standard

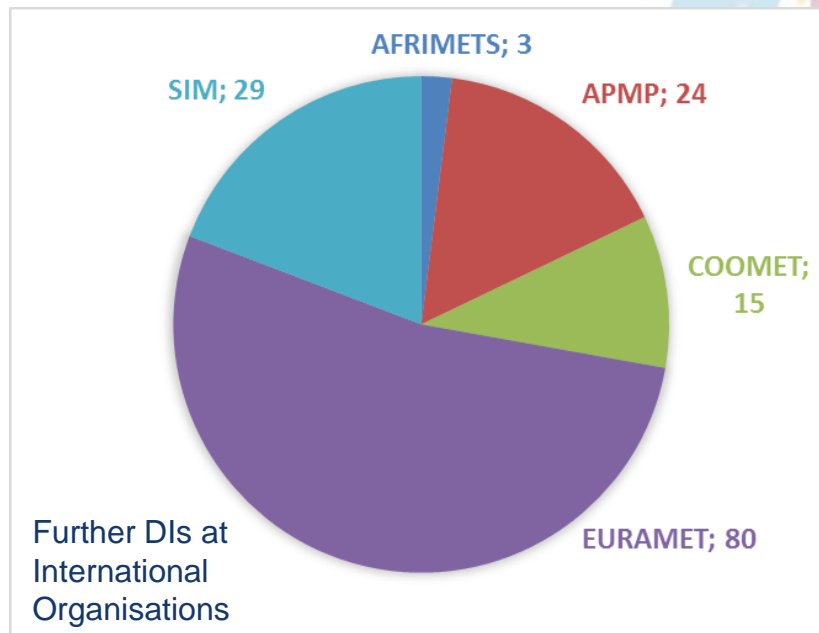
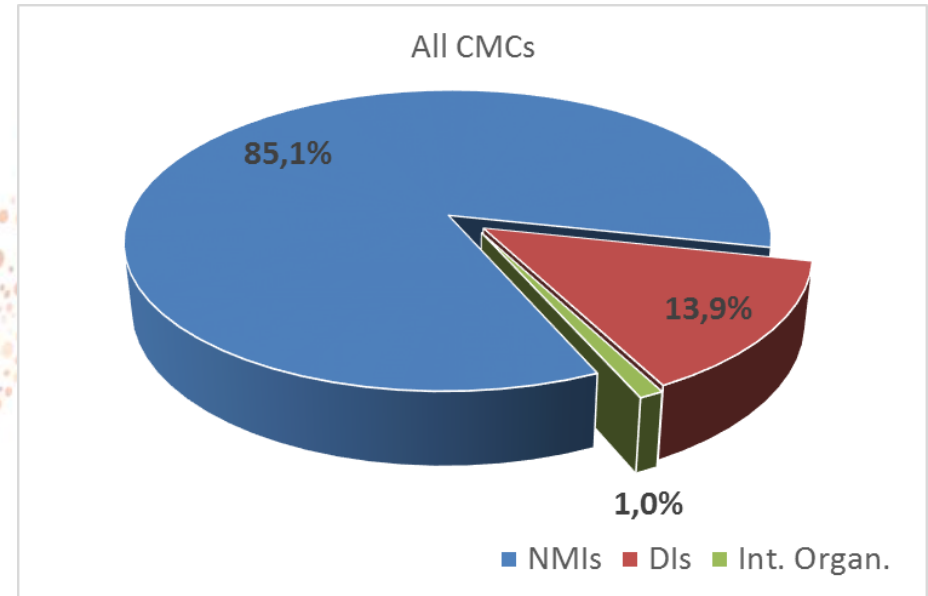




# Designated Institutes and CMCs Worldwide



156 Designated Institutes among 102 signatories to the CIPM MRA



Economies with DIs	
AFRIMETS	15 %
APMP	68 %
COOMET	57 %
EURAMET	68 %
SIM	50 %

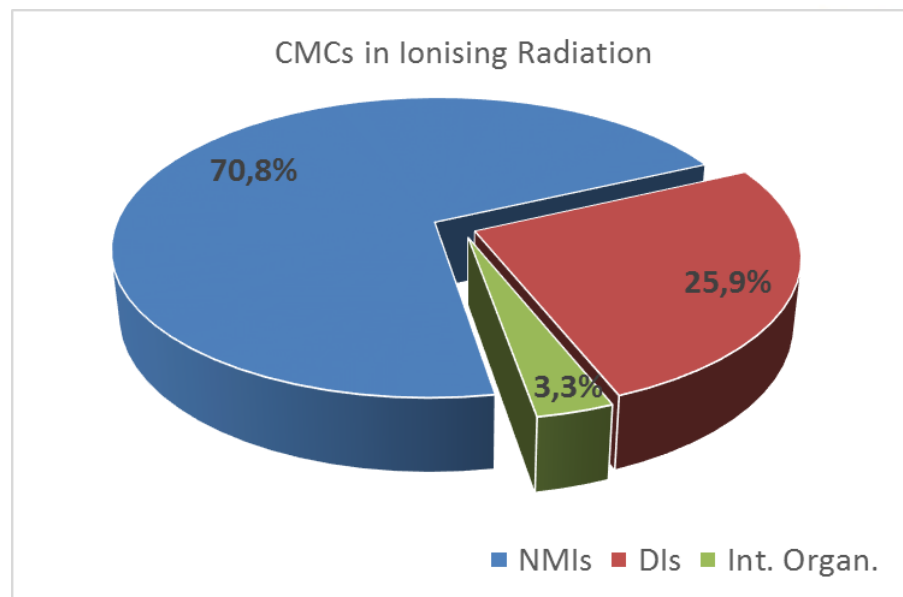
Highest number of DIs	
(CARICOM	11)
France	9
Slovenia	9
Chile	8
Thailand	7



# Designated Institutes and CMCs Worldwide



## Ionising Radiation

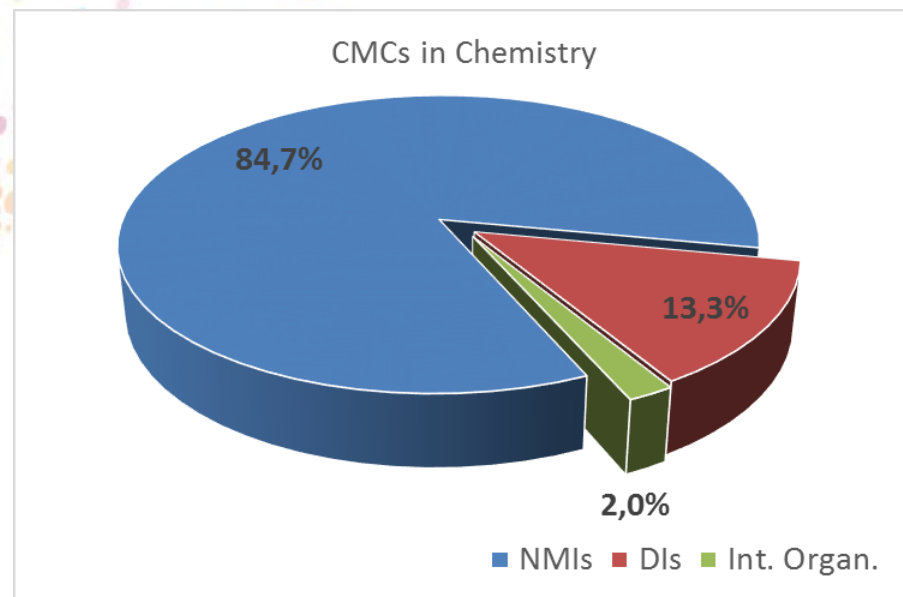


Countries with CMCs at	
NMIs only	17
NMIs & DIs	0
DIs only*	21

established  
area

\* There are 2 countries with dominated by DIs, with a small number of CMCs at NMIs

## Metrology in Chemistry



Countries with CMCs at	
NMIs only	32
NMIs & DIs	5
DIs only	9

evolving  
area

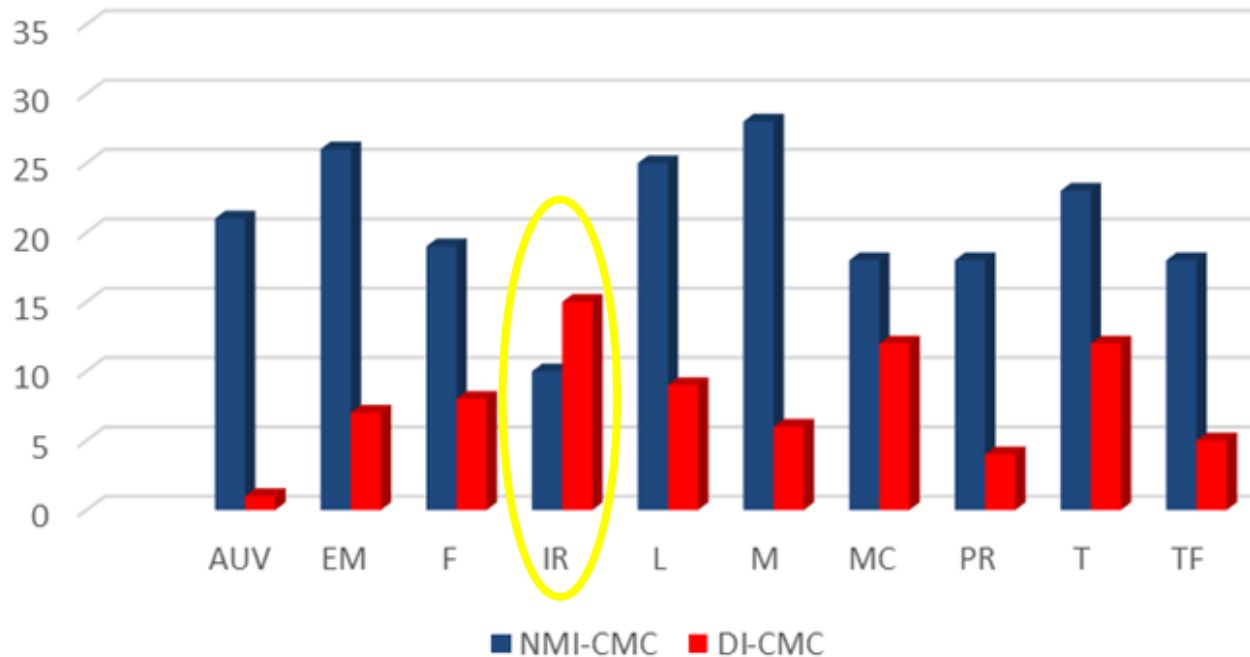
Status: September 2015



# Designated Institutes in EURAMET



NMIs and DIs with CMCs



**Fields with highest DI participation:**

IR, MC  
(same as NMI)

In IR there are more DIs than NMIs with published CMCs



# EURAMET's engagement for better Integration of DIs



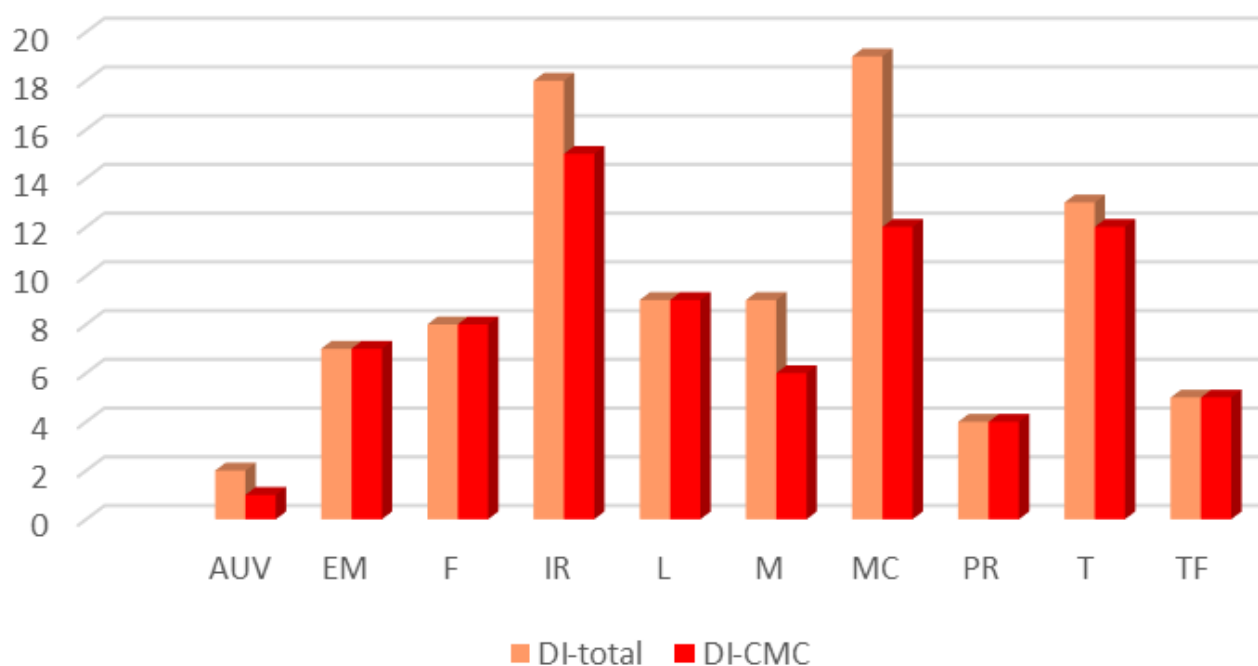
- Clear **procedures for registration** and formal integration of DIs into EURAMET + close information exchange with BIPM
- Facilitate **participation of DIs in TCs and SCs**
- Analysis how national metrology infrastructure (composed by NMI + DIs) is organized in EURAMET member countries (2011)
- Preparation of **EURAMET Guide 2 on “Role of DIs within the CIPM MRA”**
- Guide 2 was the basis for CIPM MRA-D06 on “DIs participating in the CIPM MRA - Expectations and nomination form”
- **Workshop** on “New challenges for full integration of DIs within EURAMET”  
Lyngby, Denmark, 18 – 19 February 2016 (*presentations on EURAMET website*)
- Close follow-up on DIs not having CMC's published after 5 years being EURAMET Associate (A-DI)
- BoD Working Group for DIs (**BOD-WGDI**) established





# DIs and publishing of CMCs

DIs per area: totally / with published CMCs



## Observation:

- Differences mainly due to DIs recently designated
- In fields where DIs are designated since long time, most of them have actually CMCs published



# DIs without CMCs after > 5 years



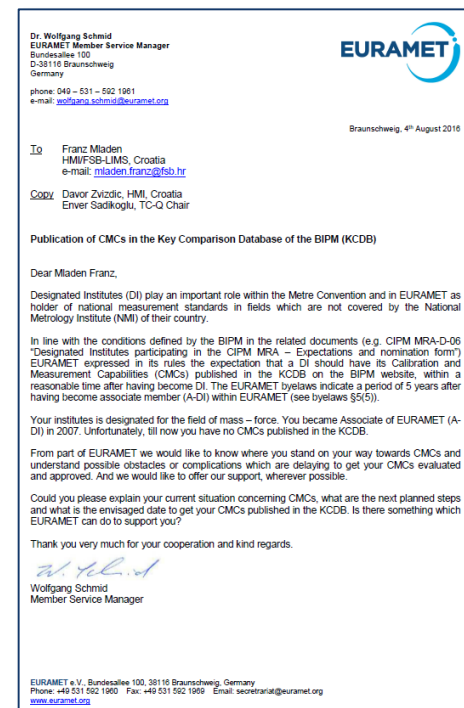
EURAMET rules express the expectation that a DI should have CMCs published in the KCDB after 5 years of being Associate (A-DI)

## Current situation:

- 8 DIs not fulfilling this expectation (5 of them in MC)
- further 9 DIs without CMCs, which became A-DI more recently

Secretariat approached A-DIs without CMCs after 5 years, asking for explanations and offering support

TC-MC Chair organised workshop for DIs from MC searching solutions and preparing roadmaps towards CMCs





# Possible issues for new A-DIs



1. New A-DI is not aware of expectations to a DI within CIPM MRA (even if they get letters from BIPM and EURAMET)
2. New A-DI is not aware of possible issues:
  - dissemination of the unit & calibration vs. testing
  - comparison needed which may take time
  - annual cycle of CMC-review
3. New A-DI has no contact person or observer in the TC
4. New A-DI is not aware of TC-Q and CIPM MRA requirements
5. Others?

## **Suggestion:**

TC-Chair of designation area and TC-Q Chair should contact new DI immediately after being accepted as A-DI.

Analyse situation, discuss issues and prepare a roadmap towards CMCs.



# BOD-WGDI

## BoD Working Group for DIs



Established in January 2017

Advisory group to

- BoD in strategic matters related to DIs
- DIs, TCs and Secretariat in practical issues of DIs

First meeting on 17 May

### Members of the BOD-WGDI

<b>DIs</b>	<u>Janko Drnovsek</u> , MIRS/UL-FE/LMK (SI) Mike Sargent, LGC (UK) Robert Benyon, INTA (ES)
<b>NMIs</b>	Jan Petersen, DFM (DK) Maguelonne Chambon, LNE (FR)
<b>BoD</b>	Maria Luisa Rastello, Vice-Chair(GA)
<b>Sec.</b>	Wolfgang Schmid, MSM

### Objectives are to support

- EURAMET members in the development of a stable national framework of metrology by appropriate involvement of key metrology players as well as supporting metrology excellence as a driving force;
- an effective integration of DIs in EURAMET activities;
- DIs in achieving full acceptance of their Calibration and Measurement Capabilities in the framework of the CIPM MRA.



# EURAMET support objectives of BIPM CB&KT programme



## 2017 BIPM-EURAMET TC leadership course

2017 BIPM-EURAMET "TC Leadership" course		
RMOs	Countries	Participants
EURAMET	Austria (1 NMI, 1 DI)	2
	Bosnia & Herzegovina	2
	Spain (2 NMI, 1 DI)	3
	Turkey	1
	Belgium	1
	Germany	2
	Czech Republic	1
	Sweden (1 NMI, 1 DI)	2
	Romania	1
	Poland	1
	Slovakia	1
	Switzerland	1
Total 12 countries		18



*'Hands-on' discussion on how metrologists around the world can work together with the aim of ensuring the reliability of CMCs published in the KCDB.*

**Course dates:**

7 – 10 February, 2017

**Location:**

BIPM, Sevres



*Dr Andrew Lewis (NPL) coaching participants during a group working session*

The BIPM–EURAMET "TC Leadership" course was focused on the scientific and technical staff members of EURAMET's NMIs and DIs who are active in the EURAMET Technical Committees and have shown potential for TC leadership.

[www.bipm.org](http://www.bipm.org)

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**Thank you for your attention!**

**[secretariat@euramet.org](mailto:secretariat@euramet.org)**