

EURAMET

Work programmes in support of small, emerging and developing economies

Wolfgang Schmid, Head of Secretariat

Inter-RMO workshop

Ulaan Baatar, Mongolia, 29 June – 1 July 2011

OUTLINE:

- ❑ **Introduction to EURAMET**
- ❑ **Focus Group (FG) on
“Facilitating National Metrology Infrastructure Development”**
- ❑ **Other KT and infrastructure development activities**

Milestones in the cooperation of NMIs in Europe



1988 Establishment of EUROMET

“European Collaboration in Measurement Standards” (MoU)



2003 MERA Project

Feasibility study on future development of European metrology

2005 iMERA Project

“Implementing the Metrology European Research Area”
Design and establishment of EURAMET as legal entity



2007 Inauguration of EURAMET e.V.

European Association of National Metrology Institutes”



2007 Launch of the EMRP

“European Metrology Research Programme”



EURAMET e.V.



- Inaugurated in 2007
- Successor of EUROMET
- Legal Entity: German non profit association

□ Members:

37 European NMIs

□ Associates:

IRMM (EC)

72 DIs (Designated Institutes)

□ Liaison Organisations:

4 RMOs, BIPM

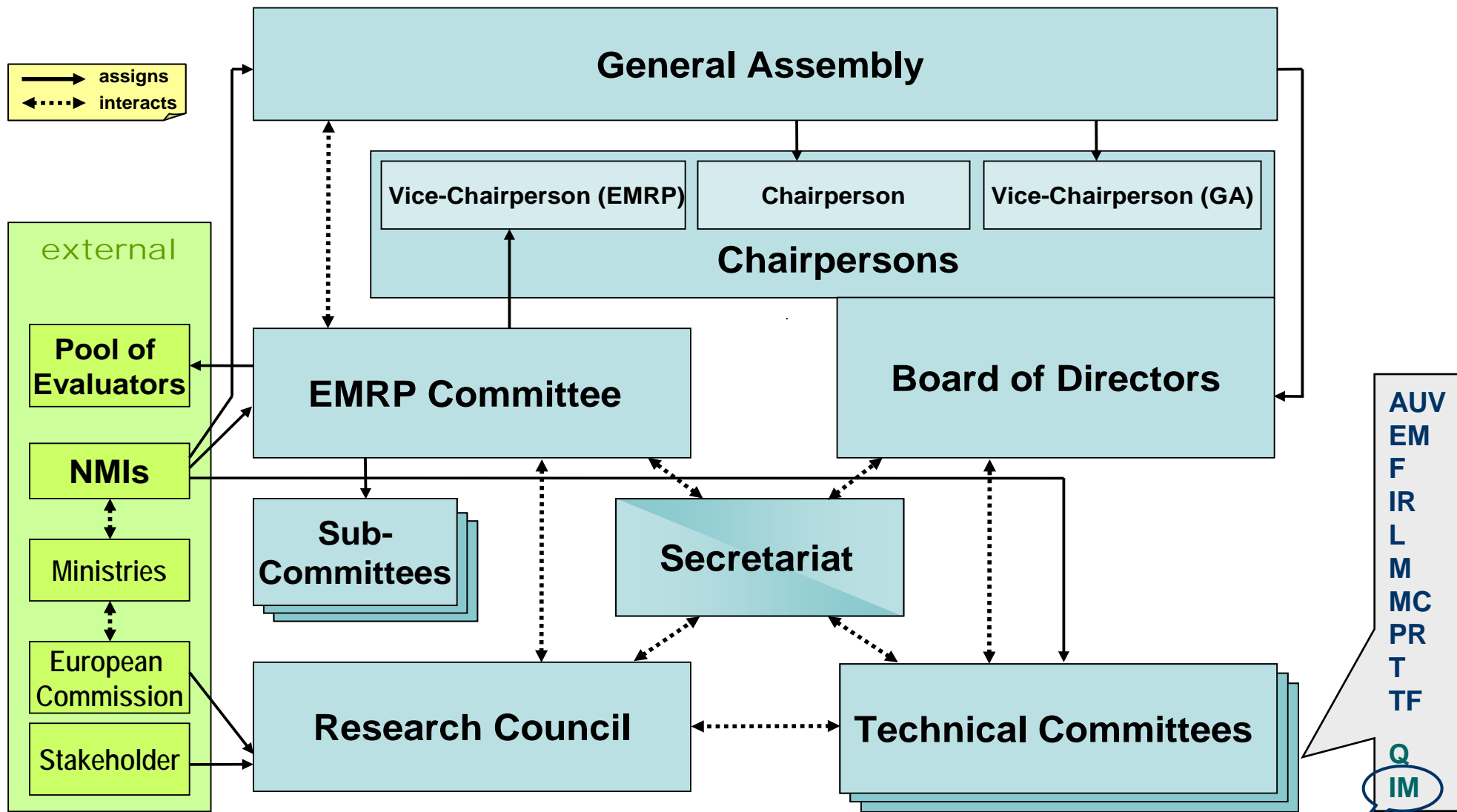
3 NMIs beyond Europe

KDM (Kosovo under UNSCR 1244)

6 regional/international Organisations



Internal Organisation



Secretariat: Structure and Staff

Head of Secretariat:

Wolfgang Schmid

Quality Manager:

Enver Sadikoglu
(seconded / UME, 10%)

Legal Advisor:

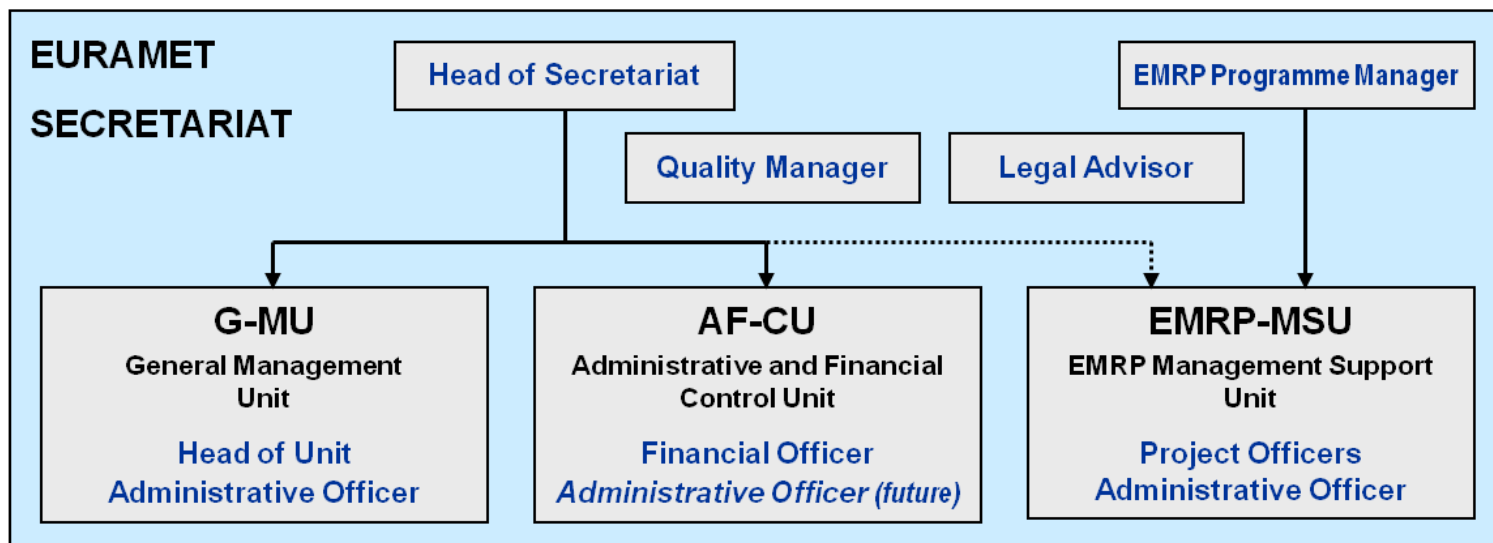
Barbara Tafel
(seconded / PTB, 10%)

G-MU:

Jutta Bender
Kerstin Royss (50%)

AF-CU:

Jane Welsch (50%)



Secretariat was supported by further secondments:

Silvie Hoffmanova, CMI (Czech Rep.)
TC-Q & DI landscaping

Haris Memic, IMBiH (BiH):
FG-FNMID, website

EMRP Programme Manager: Duncan Jarvis

EMRP-MSU (Teddington)

Fiona Redgrave

Val Ralph

Christine Reilly

Deborah Lea

Kaiken Mähl

Nikos Skizas

Gill Money

Lucy Buckby

Secondments in 2010 /2011

Majlinda Hoxha, DPM, Albania:

- Preparation of a training course

April 2010

Chris Noble, NPL, UK

- EMRP website & promotion

Jan. / Febr. 2011

Željko Stijepović, MBM, Montenegro:

- Barriers to cross-frontier provision of services

July 2011

Continuous support:

Haris Memic, IMBiH, Bosnia and Herzegovina:

- Follow-up of FG-FNMID activities

Silvie Hoffmanova, CMI, Czech Republic:

- TC-Q Secretary
- Analysis of the registration information of A-DIs

Enver Sadikoglu, UME, Turkey:

- EURAMET Quality Manager



❑ Cooperation in National Measurement Standards:

- Facilitating traceability to the SI
- International recognition: CIPM MRA

❑ Cooperation in R&D in Metrology:

- Research projects of the TCs (“ad-hoc”)
- Coordinated research programmes co-financed by the EC: EMRP

❑ Infrastructural Support & Knowledge Transfer:

- FG on “Facilitating national metrology infrastructure development”
- Cooperation with EC in development programmes
- Development of KT material

❑ Policy Advice, Liaison Activities, Publicity:

- Cooperation with European organisations in Q-Sector: EA, WELMEC, CEN, ...
- Strengthening links to the European Commission (EC)
- Metrology congresses: participation / co-organisation

Financing of EURAMET Activities



<u>Source</u>	<u>Use</u>	<u>Budget 2010</u>
1. Membership fees (Members + Associates)	General operation of EURAMET + Support to FG activities	230 k€
2. EMRP management fees	Coordination of EMRP	1,6 M€
3. Research funds EC	Joint Research Projects + researcher grants	16,4 M€
4. Technical assistance funds of PTB	Support to FG activities (development cooperation)	~ 150 k€
5. EURAMET Members BEV, MIRS, UME, EIM	Support to FG activities in kind and cash support	

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Large NMI

PTB, Germany: > 1900 employees

Focus on R&D

Participation in EMRP

Long experience in metrology

PTB, NPL more than 100 years

Centralised system (only the NMI)

Netherlands: VSL

Bulgaria: BIM-NCM

Small NMI

MNS-NMS, Malta: 4 employees

Focus on services

Develop capabilities for calibrations and KT

In process of establishment

Cyprus, Luxembourg, ...

Network of laboratories

France: LNE + 9 DIs

Slovenia: MIRS + 9 DIs

Challenge for EURAMET:

- Provide a forum for an effective participation of all Members
i.e. offer a variety of activities: each Member should find activities of interest
- Support emerging members in the establishment of an appropriate metrology infrastructure

Do we need an NMI in each European country?

Scenarios for the future European metrology infrastructure

MERA Project, Feasibility Study 2002/2003
(funded by the European Commission)

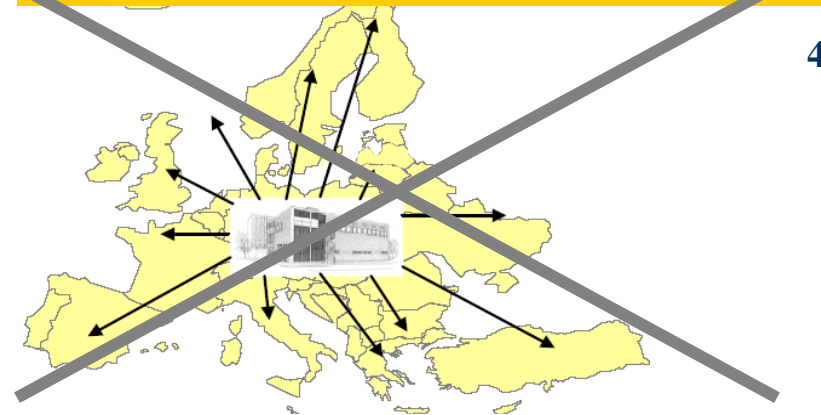
MERA-Study:

Scenarios for the future European metrology infrastructure

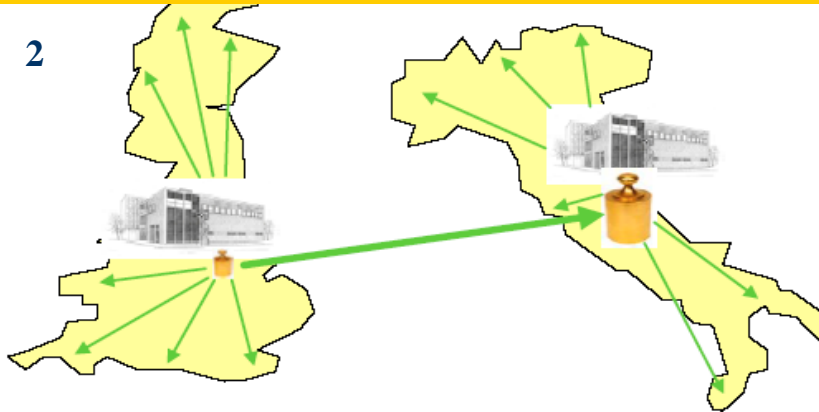
Comprehensive national provision



Single European Institute



Selected standard holders



Specialized centers of excellence



Future development of European metrology infrastructure

- Evolution not Revolution
- **Local delivery of services** and expertise is **valued**
- devolution not an issue for most NMIs
- **High potential** for increasing efficiency and efficacy
via closer cooperation in R&D
- Arrangements are needed to enable
strategic planning of longer term R&D collaboration
- Scope for improved planning and sharing of facilities
- **EUROMET to evaluate its own structures**

Complete report available:
<http://www.euramet.org/index.php?id=documents>

Establishment of TC-IM Focus Group on “Facilitating National Metrology Infrastructure Development”



First meeting:

Skopje

FYR Macedonia

27/28 Nov. 2008

Chairperson:

Arnold Leitner

BEV, Austria

Co-Chair for

Organisation:

Gledjon Rehovica

DPM, Albania



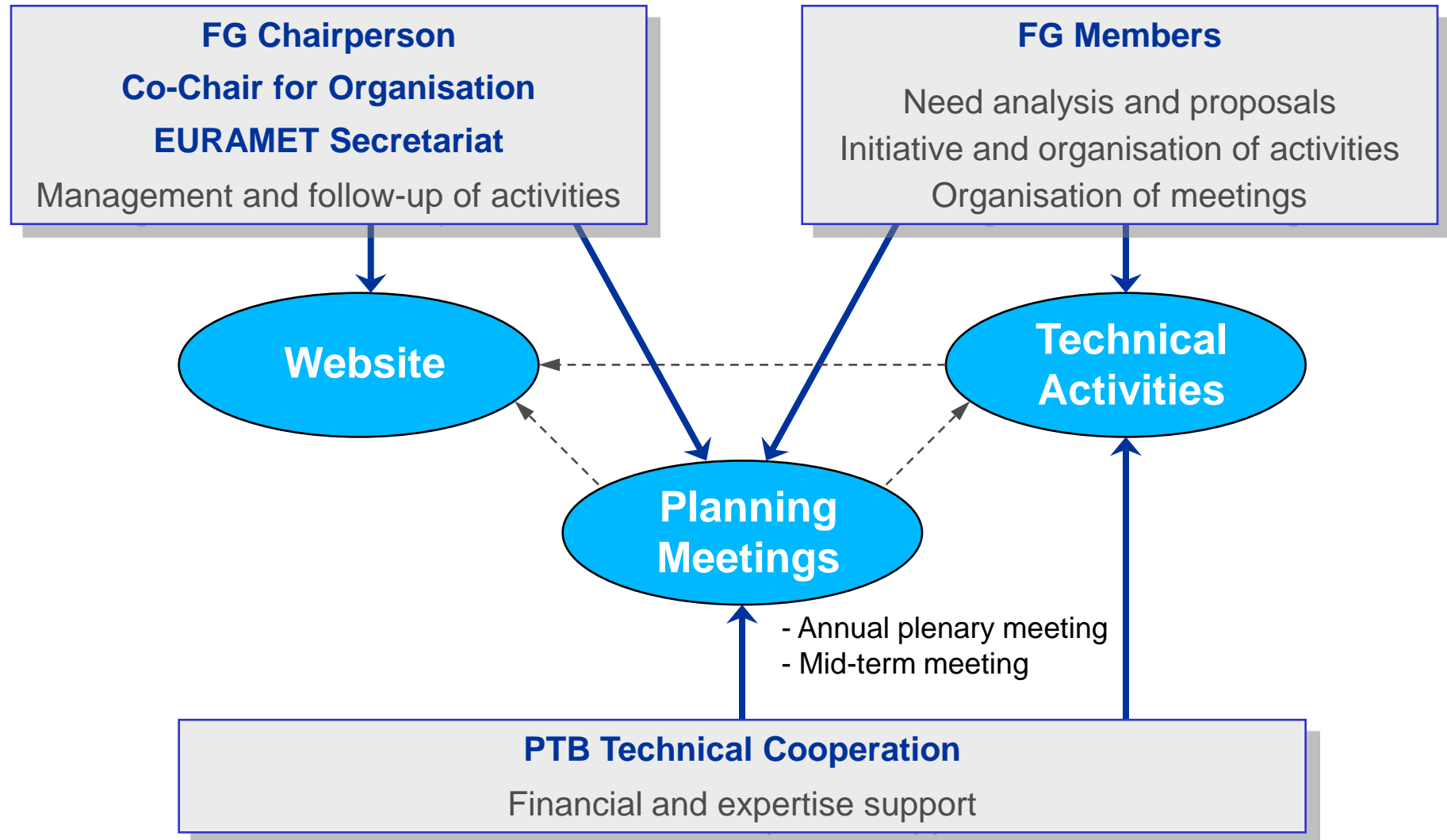
Joint Focus Group WELMEC – EURAMET



Goals of the Focus Group:

- promotion and development of the metrology infrastructure by **increased cooperation**
- facilitation and acceleration of the **integration**
of its member NMIs **into EURAMET activities**
and of WELMEC Associates into **WELMEC activities**
- **raising awareness** about the development in metrology and quality infrastructure

Coordination and Management of the FG



... oriented to “emerging” members

- **Training Courses**
- **Inter-Comparisons**
- **Elaboration of guidance documents and training material**
- **Awareness Raising and Joint Networking**
- **Coordination of Metrology Services**

Training Courses 2009 and 2010

2009
WELMEC Software Guides (train-the-trainers)
Precious metal testing
Pre-packages control
Liquid Volume
QM System / ISO 17025
Electrical Quantities (DC Voltage)
Calibration of NAWI
Pressure
Temperature
Vacuum

2010
Dimensional Metrology
Legal Metrology & EU directives, New Legislative Framework
Measurement Uncertainty (2 Courses)
Metrology in Chemistry (basic)
Traceability Routes and Interlaboratory Comparisons with focus on Metrology in Chemistry



Pilot activity:

GUM training material

EURAMET training material prepared and offered to Members

GUM course hold:

- Albania, June 2010
- BiH, September 2010



Training Course:

**Determination of Measurement Uncertainty
according to the GUM**

**Sarajevo, Bosnia and Herzegovina,
29th September to 1st October 2010**

Lecturers:

**Stephan Mieke, PTB, Germany
Wolfgang Schmid, EURAMET**

Expression of Measurement Uncertainty according to GUM
Bosnia and Herzegovina, 29th September to 1st October 2010
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Training Courses

CIPM MRA workshop: Peer-Review of QMS, CMC preparation, comparisons



Training on AC/DC current and resistance

Time & frequency

Humidity (basic)

Advanced training on measurement uncertainty

Specific issues related to implementation of MID
Workshop/round table (exchange of experiences)

Workshop on CIPM-MRA

Objective: Facilitating the participation in the CIPM MRA in particular of EURAMET members which are preparing for CMC entries

Activities:

- Lectures
- Exercises
- Preparation of „roadmaps to CMCs“, identify obstacles and solutions



26 participants from:
DPM, Albania
IMBiH, Bosnia-Herzegovina
CRP Henri Tudor, Luxembourg
MBM, Montenegro
BoM, FYR Macedonia
DMDM, Serbia
IRB, Croatia
KDM, Kosovo UNSCR 1244/1999

Lecturers:
Omer Altan, BIPM
Silvie Hoffmanova, CMI
Enver Sadikoglu, UME
Wolfgang Schmid, EURAMET

Common situation:

- NMIs need comparisons for supporting their CMC claims
- Some NMIs have never participated in a comparison before

Step 1: Comparison Exercise ("proficiency test")

- Training course
- Preparation workshop on the protocol
- Measurements
- Workshop on results and evaluation
- Implementation of improvements
in the labs of the participants

Step 2: Regional Key-Comparison (or Supplementary Comparison)

- following the protocol of the respective
CC comparison
- supporting CMC claims

EURAMET Project 1096:

"SEE exercise comparison of mass standards of 1 kg and submultiples of the kilogram"

- 7 participants
- Carried out in 2008

EURAMET Project 1120:

"Comparison of mass standards for South East Europe (SEE)"

- 7 participants
- Draft B existing, publishing planned in 05/2011

FOCUS GROUP
ON FACILITATING NATIONAL METROLOGY INFRASTRUCTURE
DEVELOPMENT



VISION 2015

REGIONAL COORDINATION OF SERVICES IN
SOUTH-EAST EUROPE

Development of a regional vision
for South-East Europe (09/2010)

Vision:

Metrology users can satisfy their
needs for metrology within the
region (SEE) in the most efficient
way.

Mission:

The regional cooperation
mechanism for the development
of metrology infrastructure is
based on an agreed strategy.

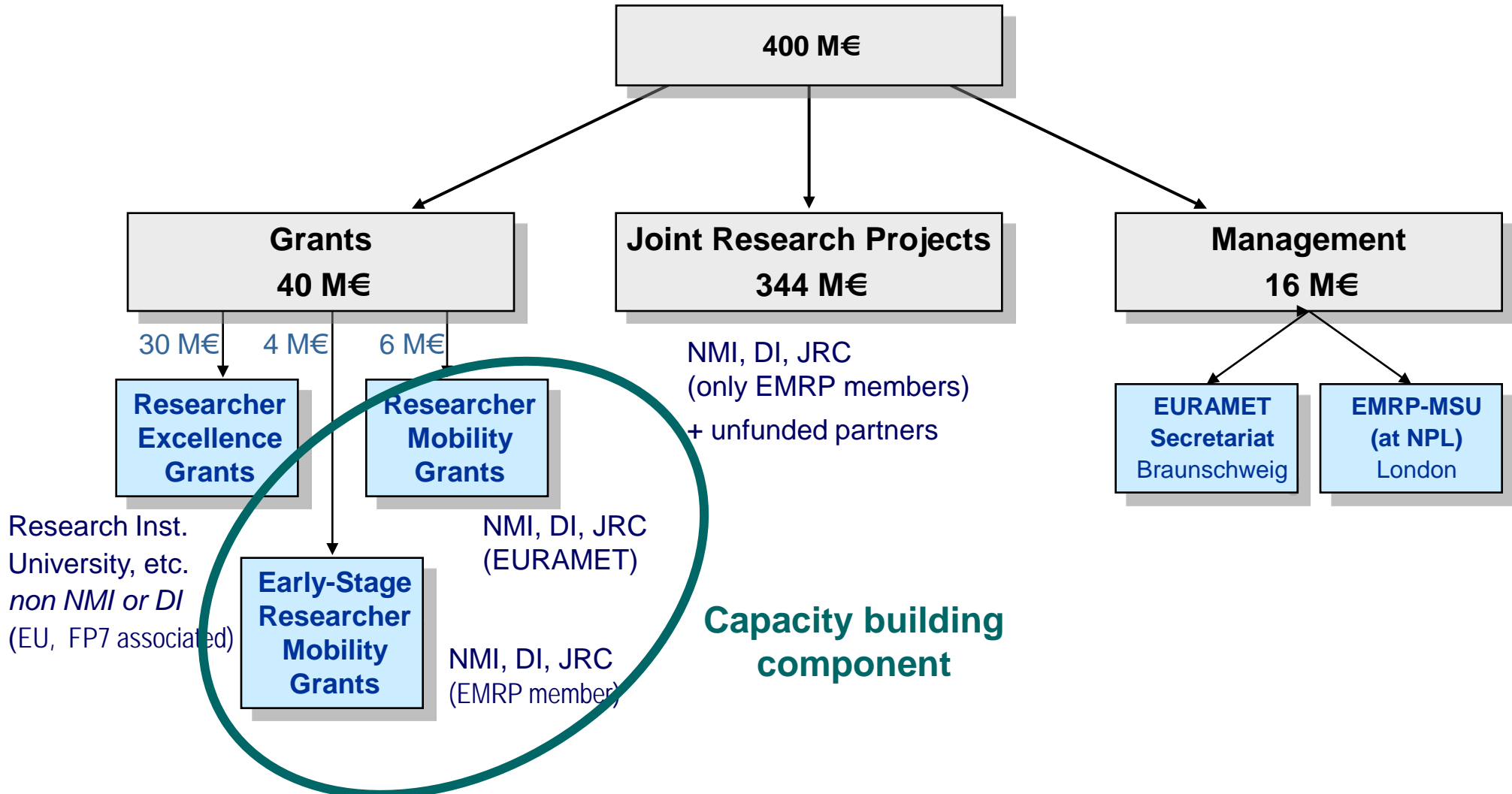
VISION 2015: Strategic Objectives

- ❑ Agreement on a **demand-driven regional strategy** to guide national infrastructure development.
- ❑ Staff **trainings** are organized and carried out **on a regional scale**
- ❑ Ensuring the continuous generation and **exchange of information** among FG members
- ❑ Development of toolkits to implement **awareness raising** campaigns for various target groups
- ❑ Securing of **financial resources** for the development of national metrology infrastructure and FG activities
- ❑ Identify **barriers to cross-border** provision of metrology services

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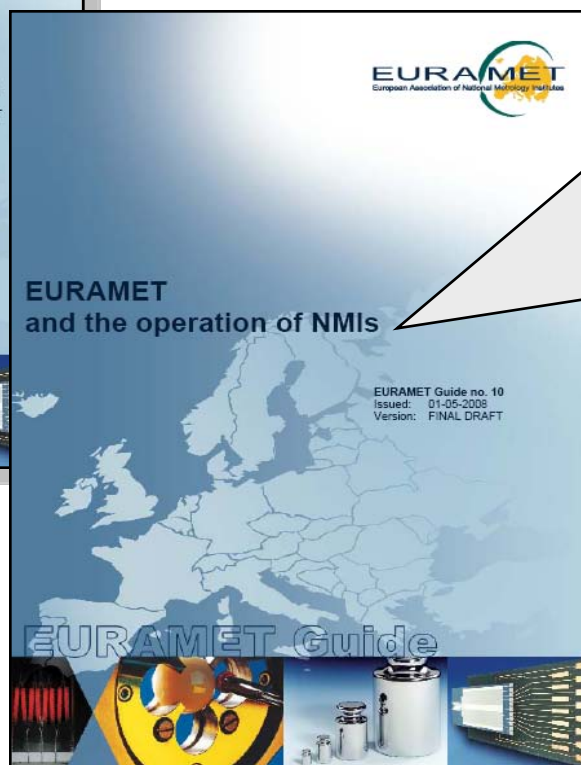
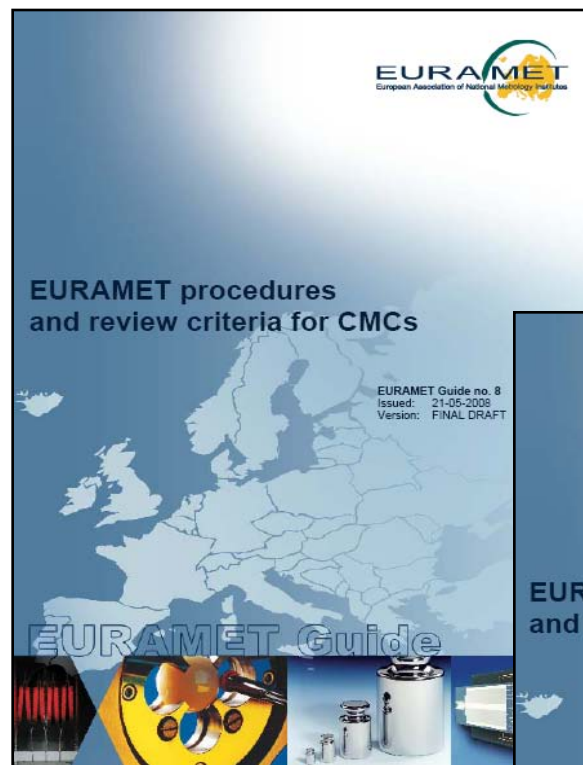
Financed Activities of the A-169 EMRP (7 years)



Better integration of DIs into EURAMET

- 1) **Development of acceptance criteria for Associates (2008)**
- 2) **Registration of DIs as EURAMET Associates A-DIs (2009 – 2010)**
- 3) **Survey among Delegates (2010)**
 - to obtain a better understanding on National Metrology System
 - to learn from positive experiences,
 - to serve as basis for recommendations to the EURAMET members
 - to serve EURAMET as a tool for more efficient management of it's membership
- 4) **Analysis and recommendations**
 - Document is in preparation





This document has been prepared by EURAMET as a [guide to the operation of National Metrology Institutes](#) (NMIs). It aims to provide information for the top level management of a NMI and those persons who are responsible in the respective ministry for the national metrological infrastructure.

Depending on the size of a country and the specific metrological needs of industry, society and the scientific community, the scope of a NMI will vary, but [key elements for the structure and the operation can be identified](#). The information contained in this guide reflects the experience of larger and smaller European NMIs obtained over recent years and reflects the growing need for European and international cooperation.

Available
on website



Guidelines on the determination of uncertainty in gravimetric volume calibration

EURAMET/cg-19/v.01

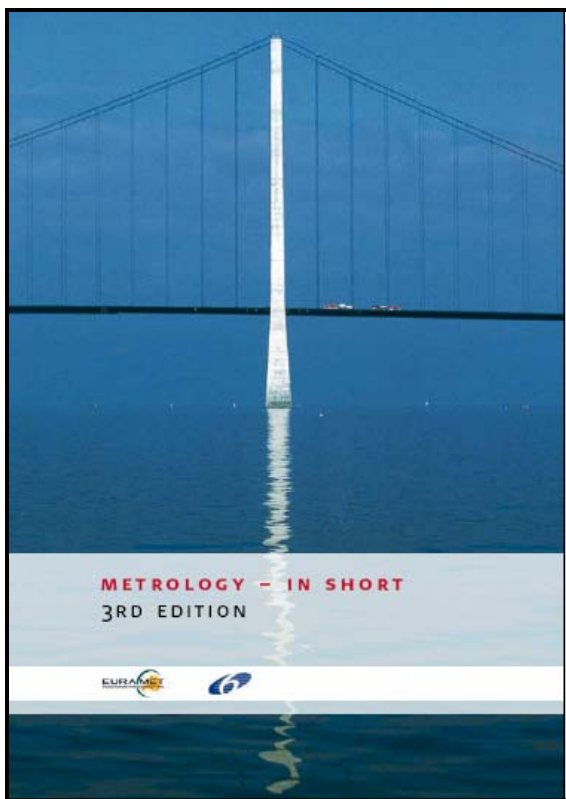
September 2009

Calibration Guide

N°	Calibration Guides	TC
01	Calibration of Stylus Instruments for Measuring Surface Roughness *	L
02	Calibration of Gauge Block Comparators	L
03	Calibration of Pressure Balances *	M
04	Uncertainty of Calibration Results in Force measurements	M
05	Co-ordinate Measuring Machine Calibration **	L
06	Extent of Calibration for Cylindrical Diameter Standards	L
07	Calibration of Oscilloscopes *	EM
08	Calibration of Thermocouples	T
09	Measurement and Generation of Small AC Voltages with Inductive Voltage Dividers	EM
10	Determination of Pitch Diameter of Parallel Thread Gauges by Mechanical Probing	L
11	Guidelines on the Calibration of Temperature Indicators and Simulators by Electrical Simulation and Measurement	T
12	Guidelines on the Evaluation of Vector Network Analysers (VNA)	EM
13	Guidelines on the Calibration of Temperature Block Calibrators	T
14	Guidelines on the Calibration of Static Torque Measuring Devices	M
15	Guidelines on the Calibration of Digital Multimeters	EM
16	Guidelines on the Estimation of Uncertainty in Hardness Measurements	M
17	Guidelines on the Calibration of Electromechanical Manometers	M
18	Guidelines on the Calibration of Non-Automatic Weighing Instruments	M
19	Guidelines the Determination of Uncertainty in Gravimetric Volume Calibration	F
20	Calibration of Climatic Chambers, Requirements for the Accreditation of Calibration Laboratories	T

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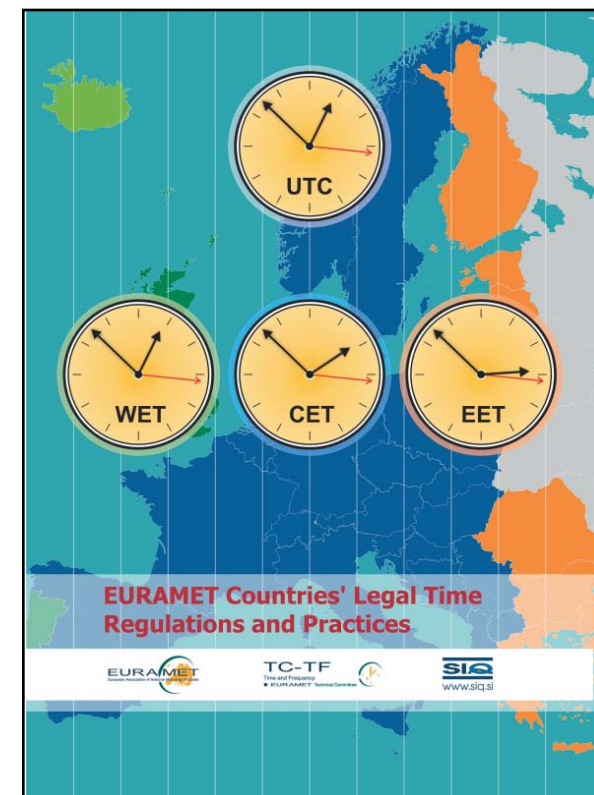


Metrology – In Short

- 3rd edition was published in July 2008
 - Translations available:
 - Bosnian
 - Bulgarian
 - Croatian
 - Japanese
 - Serbian
 - Spanish
 - Thai
- ... and others

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Booklet on legal time



Cooperation with the EC in Technical Assistance Programmes

Pilot-Project: PROINVEST CAR/6348 (March 2011)

“Capacity Building in Metrology for Caribbean Regional Organisation for Standards and Quality (CROSQ) and National Standards Bureaus”

Training for 15 metrologists
from Caribbean NSBs
in EURAMET NMIs and DIs

- BEV (Austria)
- CEM (Spain)
- CMI (Czech Republic)
- LNE (France)
- MIRS/UL-FE/LMK (Slovenia)
- SMD (Belgium)
- ZMK (calibration lab Germany)

Final evaluation workshop
+ GUM trainings course

Project management by

- PTB Technical Cooperation &
- EURAMET Secretariat



THANK YOU FOR YOUR ATTENTION

**Wolfgang Schmid,
Head of EURAMET Secretariat**

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