

EURAMET

European Association of National Metrology Institutes

Metrology & Science Diplomacy

Leslie Pendrill, EURAMET Chairperson

Modern society requires precise and reliable measurements that give the same answer wherever they are made. Metrology – especially traceability to the international measurement system SI and uncertainty as a declaration of measurement quality – has of course a long tradition of providing those measurements. This has always been a global undertaking and the support metrology provides to international trade indeed stimulated the first international convention, namely the Metre Convention as far back as 1875. Regional metrology organisations (RMO) such as EURAMET, the European association of national metrology institutes (NMI), coordinate cooperation within their respective regions. But their fields of activity – including mutual recognition of primary calibration resources and knowledge exchange with industry, actors in conformity assessment and policy makers – are not only performed ‘locally’. The NMIs, RMOs and the international metrology organisation of the Metre Convention all act globally. Not only international trade, but the other areas of ‘Grand Challenge’ where metrology can help – since the 20th Century, manufacturing and process industries and in the 21st Century, healthcare, energy, resources and climate change – all refer to global problems.

Metrology can already claim to be engaged in international cooperation in science, technology & innovation, providing some global solutions to these global issues in what has been termed “Science Diplomacy”. This term was very much in my thoughts when I had the privilege of representing EURAMET at the Asia-Pacific-Metrology Programme (APMP) General Assembly held in Pattaya, Thailand last November, chaired by my APMP counterpart, Prof. Yu Yadong (Deputy Director of the National Institute of Metrology (NIM), China). The APMP Symposium held there, hosted by the NMI of Thailand, dealt with “Global and Local Perspectives on Roles and Impacts of Metrology on Global Development and Challenges”. In this EURAMET Newsletter, mention is made of further examples of recent “Science Diplomacy” developments. This includes the formation of a joint focus group Facilitating National Metrology Infrastructure, signed in December 2010 in Budva, Montenegro, between EURAMET and WELMEC (Legal Metrology in Europe). And EURAMET and AFRIMETS (the RMO of Africa) have recently signed a Memorandum of Understanding, as described in this Newsletter. EURAMET looks forward to increased cooperation amongst the RMOs in several of these important areas, be it research, knowledge exchange, or policy making. This is all part of fulfilling our Strategy for 2020 and beyond.



AFRIMETS & EURAMET signing MoU in Sharm-el-Sheikh (Egypt) September 2010

EURAMET General Assembly 2011

The 5th EURAMET General Assembly will be held from 6 to 10 June 2011 in Sarajevo, Bosnia and Herzegovina. The programme will commence with a meeting of the Board of Directors on 6th June. The Plenary session commences on 7th June. The Programme for the meeting includes a Symposium and a visit to the laboratories of iMBiH.

Full details on the General Assembly can be found on the EURAMET website at <http://www.euramet.org/index.php?id=ga-open>

EURAMET GA 2011 Symposium on “Prioritisation in developing metrology infrastructure”

Within the framework of this year’s General Assembly in Sarajevo, Bosnia and Herzegovina, EURAMET will organise a Symposium on “Prioritisation in developing metrology infrastructure” on 8th June 2011.

A series of presentations from EURAMET experts, as well as metrology users and stakeholders will cover topics such as the relevance of a functioning metrology infrastructure for the development of emerging countries and their EU integration process; the efficient and sustainable use of limited resources, and the role of EURAMET in supporting the development of national metrology infrastructure and regional coordination and cooperation, among others.

Registration should be made as soon as possible and by May 16th.

EMRP

European Metrology Research Programme
Programme of EURAMET



The EMRP is jointly funded by the EMRP participating countries within EURAMET and the European Union

EMRP Call 2011 - Health, SI Broader Scope & New Technologies

EURAMET e.V. announces the launch of the EMRP Call for Joint Research Projects, jointly funded by EURAMET and the European Union. The aim of this call is to advance measurement science and technology by providing funding for Joint Research Projects and associated Researcher Grants in the following fields:

- Metrology for Health
- SI Broader Scope
- Metrology for New Technologies

The Stage 1 Call for Potential Research Topics (PRTs) closed on 20 March 2011. The Stage 2 Call for Joint Research Projects (JRPs) will open on 20 June 2011.

For further details please visit
www.emrponline.eu/call2011/

Call for EMRP Researcher Grants

EURAMET e.V. announces the launch of the EMRP Call for Researcher Grants, jointly funded by EURAMET and the European Union.

Applications are invited for:

- **Stage 3** of the Call on behalf of the JRP-Consortia for **Researcher Excellence Grants (REG)** and **Researcher Mobility Grants (RMG)**
- **Open Call** for **Early-Stage Researcher Mobility Grants (ESRMG)**

EMRP Researcher Grant opportunities are linked to Joint Research Projects (JRPs) funded under:

- **EMRP Call 2009 - Energy**
- **EMRP Call 2010 - Industry & Environment**

Applications are subject to eligibility criteria and must be received via www.emrponline.eu.

The Stage 3 of the Call opened on 31 March 2011. Closing date is: **6 May 2011, 23:59 CET**.

Cut-off dates for the Call for Early-Stage Researcher Mobility Grants are: **6 May 2011**

and **17 October 2011**. After the second cut-off date this call remains open until 2017.

Information and details on the modalities are available on www.emrponline.eu/adverts



AFRIMETS and EURAMET Sign New MoU

AFRIMETS (the Regional Metrology Organisation (RMO) of Africa) and EURAMET have recently signed a Memorandum of Understanding.

AFRIMETS was formed as an RMO as recently as 2007 and is the “**Intra-Africa Metrology System**”, whose members are the National Metrology Institutes (NMIs) and Legal Metrology Institutes (LMIs) of Africa. It is organised in sub-regional metrology organisations that coordinates metrology activities of NMIs and LMIs in their respective economic blocks. The main purposes of AFRIMETS are to establish Traceability of measurements to the SI units; International recognition of national measurement standards and of the Calibration and Measurement Capabilities of its members; the Establishment of metrology infrastructure in member NMIs; the promotion of the adoption of International Organisation of Legal Metrology (OIML) technical regulations and the harmonisation of technical regulations amongst member countries; Knowledge exchange and training; to foster Political Awareness of the importance of Metrology; and the Coordination of donor funding.

In the background to the MoU it is mentioned that:

- Both AFRIMETS and EURAMET as RMOs realise the necessity of joint efforts for better visibility and recognition of metrology in Africa and Europe, and in other regions. This includes relations with third parties, including the African Union and the European Union. Pro-active advice is an area of particular interest in support of regional competitiveness, the implementation of regional policies about research, innovation and technical development and for the benefit of all stakeholders including consumers and businesses
- Both organisations also realise the importance of harmonised collaboration with other organisations having interactions with scientific metrology, such as European and other Legal Metrology organisations; African, European and other standards organisations, African, European and other accreditation organisations in the wider quality infrastructure context.

A detailed action plan is now being formulated. In the MoU, activities include plans to establish joint working groups and the facilitation of the exchange of expertise and experts for efficient execution of metrological projects including projects of technical assistance to developing countries. There is a long tradition of individual European NMIs providing support to African countries in developing national metrological infrastructure. Some African countries have participated in individual metrology projects in Europe. AFRIMETS and EURAMET in the framework of the new MoU are now offering to provide regional help in these national initiatives, in collaboration with other organisations active in this area.



AFRIMETS & EURAMET Chairpersons signing MoU in Sharm-el-Sheikh (Egypt) September 2010

EURAMET Comparison 1021

Direct comparison of primary standards of absorbed dose to water in ^{60}Co and high-energy photon beams

The aim of this project was for the direct comparison of primary standards for absorbed dose to water in ^{60}Co and high energy photon beams. The comparison was undertaken between BEV, METAS and PTB. The primary standards for use in this comparison were one graphite calorimeter (BEV) and two water calorimeters (METAS, PTB).

The measurements were carried out in the ^{60}Co and high energy photon beams of METAS and PTB.

This project represented the first primary standard of absorbed dose to water used for direct comparison in high energy photon beams.

The results obtained in the comparison were very satisfactory with the results obtained by the three NMI's in good agreement.

The complete report on the comparison can be viewed on the TC Project Section of the EURAMET Website.



The KCDB in numbers

The principal output of the CIPM Mutual Recognition Arrangement (MRA) is the BIPM key comparison database (KCDB), which is maintained at the BIPM as part of its role to ensure worldwide conformity of measurements and their traceability to the SI.

The BIPM KCDB provides a searchable database of:
1) Results of international (key) comparisons of national standards.
2) Internationally reviewed and recognized capabilities associated with uncertainties of measurement services. The database also lists the national metrology institutes and other designated institutes that participate in the arrangement.

The KCDB is a visible, accessible and active repository of NMI capability evidenced by:

- ~ 23 300 CMCs published in the KCDB, plus several hundred of CMCs that are currently temporarily removed ("greyed-out")
- 719 key comparisons and 250 supplementary comparisons registered in the KCDB: Final Reports posted in the KCDB for 65 % of the comparisons registered – tables of results, degrees of equivalence and graphs of equivalence published in the KCDB for key comparisons only – a total of ~ 1530 graphs of equivalence
- ~ 7200 different visitors open a total of ~ 100 000 KCDB web pages each month. The number of visitors is now nearly constant, but each visitor consults more and more pages and downloads more and more PDF files: lists of CMCs and Final Reports of comparisons
- *KCDB Newsletter* No 14 published in December 2010: very successful activity (Issue No 1 published in June 2004), Issue No 15 to be issued in June 2011.

Access the 14th KCDB Newsletter at
http://kcdb.bipm.org/NL/14/NL_14_Dec10.html



WORLD METROLOGY DAY 2011

Chemical measurements for our life, our future

20 May 2011

World Metrology Day has become an established annual event during which more than eighty States celebrate the impact of measurement on our daily lives, no part of which is untouched by this essential, and largely hidden, aspect of modern society. Previous themes have included topics such as measurements for innovation, and measurements in sport, the environment, medicine, and trade.

UNESCO and IUPAC have decided to designate 2011 as The International Year of Chemistry (IYC 2011), a worldwide celebration of the achievements of chemistry and its contributions to the well-being of humankind.

The World Metrology Day 2011 message Chemical measurements for our life, our future builds upon the IYC 2011 theme. Chemistry and chemicals pose particularly interesting challenges to the measurement community: thousands of compounds must be measured, and the range of concentrations at which some compounds must be reliably detected, quantified, and in some cases regulated can nowadays extend down to parts per billion (or even trillion). Yet the ability to make appropriately accurate and reliable chemical measurements is crucial to our economy, our environment and our personal well being; in short we must not underestimate the importance of Chemical measurements for our life, our future.

This year, in their messages to the world of metrology, Governments, companies, academics, and indeed to the man or woman in the street, the Directors of the International Bureau of Weights and Measures and of the International Bureau of Legal Metrology both highlight the importance of accurate, reliable and internationally accepted chemical measurements in the modern world as it deals with today's grand challenges.

The Director's messages, as well as the posters and other material, may be found at:
www.metrologyinfo.org/worldmetrologyday/directors_messages

Latest News

EURAMET publish new Technical Guide

EURAMET is pleased to announce the publication of a new Technical Guide EURAMET tg-01 "Extrapolation of SPRT calibrations below the triple point of argon, 83.8058 K, and traceability in baths of liquid nitrogen at 77.3 K". The Guide was developed by the EURAMET technical Committee for Thermometry and will be shortly available for download from the EURAMET website.

The Technical Guide is now available on the EURAMET website under:

<http://www.euramet.org/index.php?id=1587>



15th International Congress of Metrology

The 15th International Congress of Metrology will take place between 3 - 6 October 2011 in Paris.

For further information:
www.metrologie2011.com/index_en.php

Upcoming EURAMET Events

18-20 May 2011: Joint Dissemination and EURAMET DC and Quantum Metrology Meeting, PTB Berlin, Germany

6 - 9 June 2011, 5th EURAMET General Assembly, Sarajevo (Bosnia and Herzegovina)

27 June-1 July 2011: Single Photon Workshop 2011, PTB Braunschweig, Germany

EURAMET Chairperson and Secretariat

EURAMET Chairperson: *Prof. Leslie Pendrill*, SP Technical Research Institute of Sweden, SE-50115 Borås, P.O. Box 857, Sweden. Phone: +46 10 5165444 / mobile: +46 76 7885444 E-Mail: chairperson@euramet.org

EURAMET Secretariat: *Dr. Wolfgang Schmid*, EURAMET e.V. Bundesallee 100, 38116 Braunschweig, Germany. Phone: +49 531 592 1960 Fax: +49 531 592 1969 E-Mail: secretariat@euramet.org

Edited by Paul Hetherington, NML Ireland. Tel: +353 1 8082604 E-Mail: paul.hetherington@nsai.ie