

# EURAMET

European Association of National Metrology Institutes



## Foreword from the Chairperson

Dr Kamal Hossain EURAMET Chairperson

The EURAMET agenda in the first half of the year 2013 has been extremely busy.

In my role as EURAMET's Chairperson I was honoured by the invitation to the first Abu Dhabi Quality Forum held by the Abu Dhabi Quality and Conformity Council. The event was attended by more than 500 people from the Business, Government and Science communities and provided an excellent opportunity to talk about the role and benefits of metrology. EURAMET's support to the newly formed Metrology organisation of the Gulf region was recognised and we anticipate this relationship to strengthen significantly over the coming years.

To enhance benefits of metrology to society remains a high priority for EURAMET and its members. One of EURAMET's great success stories is the European Metrology Research Programme (EMRP) with nearly 100 joint research projects so far. The programme contributes significantly to European competitiveness, innovation and growth as well as helping to meet societal challenges in areas such as health, energy and environment. The development of our proposed new European Metrology Programme for Innovation and Research (EMPIR) is progressing well.

To foster EURAMET's success it is important to stay closely connected with our members and for this reason we carried out the first EURAMET Member Survey. We are pleased with the very high overall satisfaction with our work and received valuable feedback for improvements.

Committed people are crucial for the success of a Regional Metrology Organisation so we are happy to welcome five new Delegates, three new Members of the Board of Directors (BoD) and three new Technical Committee Chairs. On behalf of EURAMET I would like to express our gratitude to their predecessors: Joseph Bartolo, Paul Hetherington, Pavel Klenovský (all BoD), Salvador Barrera-Figueroa, Andreas Bauch and Hans Bjerke (all TC Chairs). We offer our warmest thanks for their great contribution and engagement.

EURAMET's Newsletter Issue 8 provides an update on the EURAMET community, our work in research and innovation and our collaboration with stakeholders in politics and industry. I hope that you enjoy reading!

## Measurement and Production – One challenge!



That's the slogan of the 16th International Congress of Metrology, which will be held on 7th to 10th October 2013 in the heart of Paris, France. The event is the place for broad technical exchange - unique in Europe - assembling all major players in the world of measurement: industrial users, technical experts, associations, academics, manufacturers and service providers. Bernard Larquier, BEA Métrologie and Chairman of the Congress, commented: "Measurement plays an essential role in any quality system. It is important to recognize its importance in decision-making, managing risks, indicating performance, meeting specifications and improving quality control. All that will be discussed during the congress." As part of the programme, six industrial roundtables will explore these topics.

For further information go to [www.metrologie2013.com](http://www.metrologie2013.com) or contact the organisation team: Phone + 33 4 67062036 or e-mail: [info@cfmetrologie.com](mailto:info@cfmetrologie.com)

## LATEST NEWS

### Now open: Stage 2 of the EMRP Call 2013

Stage 2 of the European Metrology Research Programme (EMRP) Call 2013 is now open. The call aims to advance measurement science and technology in the areas **Metrology for Energy** and **Metrology for Environment**. If you are a researcher in a European National Metrology Institute, a Designated Institute or another organisation that could participate, please find further details on [www.emrponline.eu/call2013](http://www.emrponline.eu/call2013)  
**Deadline is 1 October 2013, 23:59 CET**

### First calibration guide for volumetric method published

Due to the lack of international documentation on calibration of volume standards using the volumetric method, EURAMET's Technical Committee for Flow decided to create guidelines, to harmonize procedures and concepts in that field of metrology. In 2010 the EURAMET research project 1158 was created. Volume specialists from different European National Metrology Institutes participated in the elaboration of this fundamental document. It provides important information for accredited laboratories, industry and national metrology laboratories that are performing measurements on volume of liquid.

[http://www.euramet.org/fileadmin/docs/Publications/calguides/EURAMET\\_cg-21\\_v\\_1.0\\_Guidelines\\_in\\_volumetric\\_calibrations\\_01.pdf](http://www.euramet.org/fileadmin/docs/Publications/calguides/EURAMET_cg-21_v_1.0_Guidelines_in_volumetric_calibrations_01.pdf)

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## Strategic decisions for EURAMET's future – General Assembly inspired by Iceland



**Iceland was the extraordinary setting for the 7th EURAMET General Assembly. At this amazing and scientifically important location, where Europe meets America geologically, where volcanoes and glaciers belong together and dark winters are followed by midnight sun in summer, the EURAMET Community met to take important strategic decisions to further develop the association.**

For all participants, the week of the General Assembly offered a diverse agenda, starting with a review of achievements and highlights of the last year, and moving on to discussions around structural changes for a proposed new European metrology research programme. A new addition was the first workshop on Impact and Technology Transfer, facilitated by Kamal Hossain, EURAMET Chairperson, and Michael Huch, EURAMET's Joint Programming Coordinator. This workshop provided room for the exchange of experiences on impact

evaluation and for developing ideas on how to foster the impact of metrology in industry. Presentations from representatives of EURAMET and the European Commission completed the session (for details see page 8).

Making use of the considerable expertise offered by its members is essential for EURAMET. The regular exchange of knowledge within bodies such as the Board of Directors is one way to ensure success. The newly elected Members for the Board of Directors were Zijad Džemić (Bosnia and Herzegovina), Jan C. Petersen (Denmark) and Maria Luisa Rastello (Italy), while José Angel Robles (Spain) was re-elected as Member of the Board of Directors. Janko Drnovšek (Slovenia) was re-elected Vice-Chairperson of EURAMET. By extending its network of organisations, EURAMET continues to develop. Therefore, two Designated Institutes, SCK•CEN/LNK (Belgium) and UAL (Turkey) were accepted as EURAMET Associates. EURAMET looks forward to a mutually rewarding collaboration.

The General Assembly was divided up into numerous events, from the Board of Directors Meeting and Working Sessions for the Chairs of EURAMET's Technical

### Neytendastofa - the host of the 7th EURAMET General Assembly

Neytendastofa (NEST) is the Consumer Agency and the National Metrology Institute of Iceland and it hosted this year's EURAMET General Assembly. NEST is entrusted with market surveillance of business operators and the good functioning of the markets. It consists of divisions for Metrology, Product Safety, Consumer legal and contractual rights and Administration. The institution was established eight years ago as a government enforcement agency under the auspices of the Ministry of the Interior. The Metrology Division is responsible for the maintenance and organisation of Icelandic measurement standards and provides accredited calibration services. It ensures that measurements in Iceland fulfil international requirements and that the International System of Units (SI) is used in Iceland.

Committees, to Plenary Sessions for Members, Associates and Liaison Organisations and the EMRP Committee. The meetings and the general programme were competently organised by the Icelandic National Metrology Institute Neytendastofa (NEST). Kamal Hossain expressed EURAMET's appreciation of the support and warm hospitality of the host. "Our heartfelt thanks go to our host, especially Tryggvi Axelsson, Director of Neytendastofa and Gudmundur Arnason, Head of Metrology with his colleagues and to the staff of the EURAMET Secretariat who organised this important event in such a dedicated and professional way."

The General Assembly was a success for the development of EURAMET and its positioning for the future. It enabled a closer look at the needs of the members and the exchange with partner organisations. Kamal Hossain commented: "In addition to our strategic and organisational goals for the next few years, it is important to serve the needs of all our members and to raise the visibility and impact of our work. Our priority is to intensify our collaboration with our stakeholders and liaison organisations."

## Two new DIs join the EURAMET Community

EURAMET welcomes its new Associates, the Nuclear Calibration Laboratory of the the Belgium Nuclear Research Centre (SCK•CEN/LNK) and the Turkish Underwater Acoustics Laboratory (UAL).

### SCK•CEN, Belgium

The Belgian Nuclear Research Centre SCK•CEN, created in 1952, is a Foundation of Public Utility under the tutorial of the Belgian Federal Minister in charge of Energy. It is one of the largest research centres in Belgium. About 700 employees advance the peaceful industrial and medical applications of ionising radiation and contribute to SCK•CEN's overall purpose: to maintain a centre of excellence for research and peaceful applications of nuclear science. The Nuclear Calibration Laboratory (LNK) of SCK•CEN uses several radioactive sources for the calibration of a wide range of dosimetry equipment, from personal dosimeters to ionization chambers used in radiotherapy. The available sources can also be used when very precise dose/dose rate irradiations are needed for research purposes. The laboratory is accredited by the Belgian Accreditation Organisation for its gamma and neutron calibration methods.

Further information can be found on <http://www.sckcen.be/en>

### UAL, Turkey

Established in 2008, the TUBITAK Marmara Research Center Materials Institute Underwater Acoustic Laboratory (UAL) has been built to develop the critical SONAR technologies in the field of underwater acoustic. UAL carries out Research & Development, Production, Test and Characterization activities in the field of underwater electro acoustic transducers.

It is the only Turkish institute that provides infrastructure to characterize Sound Pressure Level (SPL), Transmitting Voltage Response (TVR), Free Field Voltage Sensitivity (M), Directivity Patterns (DI), Linearity, Harmonic Distortion, Hydrostatic Pressure Test, Isolation Resistance Measurements, Impedance Measurements, Mechanic Q Factor Measurements and Mechanic Resonance Frequency Measurements. In 2009 The laboratory was accredited by German Accreditation Body (DAP GmbH) and afterwards it was applied to the Turkish Accreditation Agency for the same scope according to new regulations.

## NMI News: NSAI installs unique robotic mass calibration system



The Irish National Metrology Institute NSAI National Metrology Laboratory (NML) has installed a new robotic

mass calibration system in their E2 Mass Laboratory. The system provides for the calibration of Class E1 and E2 precision mass standards, over the range 1mg to 1kg, using one weighing system.

“Our robotic mass calibration system is unique”, explains Rory Hanrahan. “It is fully automated and it replaces the traditional manual approach to calibrating E2 weights giving a significant increase in capacity and reduction in calibration lead-time.”

The improved efficiency is due to robotic control of the calibration procedure. The mass standards being calibrated are automatically transferred to and from the weighing system without operator intervention.

Furthermore, the automatic operation of the system and the ability to control the ambient temperature during calibration lead to greatly improved measurement repeatability, which results in smaller uncertainties for NML precision mass calibration. This gives NML the opportunity to extend the calibration capability into E1 class calibration.

For more information please contact:  
Rory.Hanrahan@NSAI.ie

## Elections at the 7th EURAMET General Assembly 2013

EURAMET congratulates the new or re-elected office holders and wishes them success in their new roles.

Position	Office Holder	Period
EURAMET Vice-Chairperson (GA)	Janko Drnovšek (Slovenia); re-elected	June 2013 to May 2016
Member of Board of Directors	José Angel Robles (Spain); re-elected	June 2013 to May 2015
Member of Board of Directors	Zijad Džemić (Bosnia and Herzegovina)*	June 2013 to May 2015
Member of Board of Directors	Jan C. Petersen (Denmark)*	June 2013 to May 2015
Member of Board of Directors	Maria Luisa Rastello (Italy)*	June 2013 to May 2015
Chair of Technical Committee Electricity and Magnetism	Francois Piquemal (LNE, France); re-elected	June 2013 to May 2015
Chair of Technical Committee Flow	Elsa Batista (IPQ, Portugal); re-elected	June 2013 to May 2015
Chair of Technical Committee Length	Antti Lassila (MIKES, Finland); re-elected	June 2013 to May 2015
Chair of Technical Committee Mass and Related Quantities	Nieves Medina (CEM, Spain); re-elected	June 2013 to May 2015
Chair of Technical Committee Metrology in Chemistry	Michela Segal (INRIM, Italy); re-elected	June 2013 to May 2015
Chair of Technical Committee Photometry and Radiometry	Marek Šmid (CMI, Czech Republic); re-elected	June 2013 to May 2015

\*For more information on the new BoD Members see page 10.

## Save the Date – 8th EURAMET General Assembly 2014

The 8th EURAMET General Assembly 2014 will be held in Cavtat, Croatia on 2nd to 6th June 2014, hosted by the National Metrology Institute, the Croatian Metrology Institute (HMI). Further information will be available during the year. EURAMET Delegates, TC Chairs, Members and representatives from Liaison Organisations should already save the date.

## Andrea Merlone wins EURAMET Impact Prize 2013

Andrea Merlone, JRP-Coordinator of EMRP Joint Research Project “Metrology for pressure, temperature, humidity and airspeed in the atmosphere” (MeteoMet) and senior researcher at INRIM (Istituto Nazionale di Ricerca Metrologica, Italy) is the winner of the EURAMET Impact Prize 2013.

Metrology and meteorology are two words that are easily confused. One concerns the science of measurement and the other the study of the atmosphere. The MeteoMet project is now bringing these two disciplines together in order to provide better measurements of temperature, pressure, humidity and airspeed, which are vital for our understanding of the Earth's weather and climate.

Jörn Stenger, EURAMET Vice-Chairperson (EMRP), explained the decision of the judges: “Right from the start Andrea integrated metrological competence from all over Europe and liaised with key stakeholders, such as the World Meteorological Organization (WMO). He demonstrated the step change in added value and extra visibility through the joint metrology research under EMRP. This, and his personal enthusiasm, is impressive.”



*Dr Andrea Merlone senior researcher at INRIM and JRP-Coordinator*



*Working in alpine environment for the traceability of automatic weather stations*

**Andrea values the significance the award has for him and the whole project:** “This prize has a deep meaning that even surpasses the great happiness of receiving it. It is the sign of having made it in a new attractive field of metrology. Years ago, as thermal metrologists, we started to think on how our role and experience could be devoted to climate science, with temperature being a key quantity involved in the global warming. We started to establish new collaborations between metrology and meteorology, two disciplines separated by just two letters, but that hardly met in the past. We then drafted ideas, developed prototypes of calibration instruments and organized meetings.” This engagement led to a successful Joint Research Project within EURAMET’s European Metrology Research Programme (EMRP) and makes Andrea the well-deserved winner of the Impact Prize 2013.

## The Project: JRP ENV07 MeteoMet

The cryptic acronym JRP ENV07 MeteoMet stands for “Metrology for pressure, temperature, humidity and airspeed in the atmosphere” and is proof that metrology can be about the weather after all.

Climate change and its consequences require immediate actions in order to safeguard the environment and economy in Europe and in the rest of the world, which is the background of the project. Safe assessment of climate change crucially depends on the robustness of climate data and on the uncertainties associated with measurements. The project is focused on the traceability of measurements involved in climate changes: surface and upper air measurements of temperature, pressure, humidity, wind speed and direction, solar irradiance and reciprocal influences between measurands. MeteoMet will provide the first definition at European level of validated climate parameters with associated uncertainty budgets and novel criteria for interpretation of historical data services. The project started in October 2011 and will be finalised by September 2014.

## What is the EURAMET Impact Prize?

The EURAMET Impact Prize is awarded annually to the individual who has demonstrated the best impact from a Joint Research Project or associated Researcher Excellence Grant. Nomination and selection is carried out by the EMRP Committee and the Research Council. In 2012 the prize was awarded for the first time in EURAMET history. Winner was Oswin Kerhof, JRP-Coordinator of ENG03 LNG “Metrology for Liquefied Natural Gas”.

Andrea Merlone, this year’s winner, sees a trendsetting aspect in the award: “It is my belief that this prize represents how such a new field of metrology is welcomed by EURAMET as a new born collaboration between the meteorology and metrology scientists. EURAMET is creating the basis for a fundamental liaison, the impact of which will surpass the European region, for the benefit of future generations of climatologists.”

## Engagement of international stakeholders in ENV07 MeteoMet



*MeteoMet at the “Night of Research 2012”:  
How well do we measure the weather?*

*Evaluation of  
ageing of solar  
shields effecting  
temperature  
values*



*The MeteoMet automatic weather  
stations calibration chamber will be  
installed in the Everest Pyramid  
laboratory at 5050 m of altitude.*

- Right from the start Andrea Merlone involved key representatives from all relevant stakeholder groups such as the meteorological and metrological communities, industry and even media. In a joint workshop with the World Meteorological Organization (WMO) and the Bureau International des Poids et Mesures (BIPM) the needs of the stakeholders were collected and a bridge between metrology and meteorology was built. “One part of the impact we achieved is the collaboration between metrology and the Meteo and Climate communities. We really took metrology out of the lab.” Andrea has presented project information and results at over ten separate events and his direct contact with the media resulted in coverage of MeteoMet activities in newspaper articles and television broadcasts.
- MeteoMet has one of the biggest JRP consortiums within the EMRP. More than 20 cooperation agreements have been signed since, with universities, research centres, meteorological service providers, instruments manufacturers and international institutions. These include WMO, the Global Climate Observing System (GCOS), the GCOS Reference Upper-Air Network (GRUAN) and the International Surface Temperature Initiative (ISTI). Andrea is chairman of the Consultative Committee for Thermometry Working Group of CIPM (International Committee for Weights and Measures) on secondary thermometry and meeting the needs of stakeholders is now a priority in the Working Group terms of reference.
- Three out of the five researcher excellence grants associated with the MeteoMet project were proposed by Andrea. They delivered significant impact in weather station measurement traceability in extreme environments such as at the Everest base camp; in agricultural meteorology for improving anti-pathogen treatments and in harmonisation of historical temperature series needed due to instrument changes.
- Andrea's efforts have also had a direct impact on EURAMET itself, with the organisation becoming a major partner for the meteorological community for matters related to measurement and data quality. Industry has also been encouraged to take an active role in the project, with major manufacturers such as Vaisala, Rotronic, Lufft and CAE. In addition, a training course has been organised for countries in the South-West Pacific area, further extending the international reach and impact of the project.

In conclusion, the MeteoMet project has achieved significant impact with the science undertaken within it, but also in bringing two scientific communities together to collaborate on problems that have far reaching implications for us all. This success would not have been possible without the hard work and commitment shown by Andrea Merlone.

# Smart, smarter, Smart Grids Meeting Society's Grand Challenges - ENERGY



Learn how EURAMET's Joint Research Project ENG04 SmartGrids "Metrology for Smart Electrical Grids" contributes to meeting the challenges of modern energy supply.

**EMRP**

European Metrology Research Programme  
Programme of EURAMET



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

## Background

Electricity grids are the backbone of our modern society. Environmental issues, reduction of greenhouse gas emissions and diminishing energy supplies are challenging traditional grid systems, which incorporate large fossil fuel plants. Centrally managed grid systems must undergo radical change to assure security and quality of the electricity supply and meet society's energy challenges in the future. The network needs to be capable of giving and taking back energy i.e. to become a 'smart grid'. Smart grids are enablers for the future vision of clean, renewable and locally generated energy. This leads to new instrumentation and control requirements for a stable and high quality electricity supply. "Adding intelligence to our present grids should enable us to better match electricity demand with its generation. But a smart grid is never smarter than the quality of its measurements", notes Dr Gert Rietveld, JRP-Coordinator for the project ENG04 SmartGrids. "Smart grid operation and the management of demand response rely on the availability of reliable measurement data." To solve this dilemma joint research project ENG04 SmartGrids was set up.

## The Challenge

Compared to traditional, centralized grids, smart grids are complex and more vulnerable to instability. Power generation is less predictable due to growing numbers of wind turbines and solar panels, and there is more voltage distortion due to the invertors used by renewable energy sources. To ensure the security and quality of energy delivery at the present high level, development of a metrological measurement infrastructure is required. The metrological challenge consists of developing tools to provide a secure electricity supply, monitor grid stability and determine grid quality, and to further develop revenue metering systems thus ensuring fair trade between commercial parties making use of the grid.

One example is the measurement of power and energy flows in the electrical grid. This is crucial for ensuring fair trade in electrical energy markets, since bills issued between commercial parties are based on the measured amount of power and energy. This requires integrity, authenticity and privacy of measurement data as well as accuracy and reliability in energy measurements throughout the whole grid.

## The project ENG04 SmartGrid

The SmartGrid metrology project started in September 2010, consisting of 17 European National Metrology Institutes and four universities and research centres. The 4.0 million Euro project is part of EURAMET's European Metrology Research Programme (EMRP), which is jointly funded by the European Union and the EMRP participating countries within EURAMET.

**For further information go to**  
[http://www.euramet.org/index.php?id=emrp\\_call\\_2009#c8319](http://www.euramet.org/index.php?id=emrp_call_2009#c8319)

The final workshop for the project took place at the end of June 2013. Attendees were engineers, researchers and manufacturers engaged in Smart Grid measurements. The outcomes of the project and state of the art Smart Grid measurement techniques and applications were presented.

**To find out more about the workshop:** <http://www.smartgrid-metrology.eu/workshop>

## The Solution

EMRP joint research project ENG04 SmartGrid intends to make smart grids smarter, by developing a suitable metrological measurement infrastructure in four steps. The first step was to build a measurement framework for monitoring the stability of smart grids via **Phasor Measurement Units (PMU)**. These units measure the phase between grid nodes.

“PMUs are the thermometers of grid stability. They measure the size of the electricity flow and indicate whether the grid is approaching instability”, explains Dr Rietveld.

“PMUs must be reliable and accurate.” In the project, set-ups were developed for calibration of PMUs, present commercial PMUs were evaluated and field measurements were performed in transport and distribution grids to prove and increase the applicability of PMUs. For ensuring fair energy trade and

maintaining the quality of the electricity supply, traceable **on-site measurement systems** with improved accuracy were developed. This includes next generation smart meters based on non-invasive load monitoring (NILM), a technique with which the energy consumption of individual appliances can be monitored. With increased uptake of renewable energy sources the measurement of power quality received by the customer becomes more and more important. Portable systems and measurement routines for on-site power quality measurement have been developed by Rietveld and his partners. Finally, through the use of laboratories and pilot study grids, testing models of low and medium voltage smart grids were developed. The models serve to optimise controllability, observability and overall design to improve **grid stability**.

## What is a smart grid?

Smart grids are a multi-billion euro engineering enterprise driven by governments and the electricity industry to meet society's energy challenges in the future. They are active systems consisting of multiple bi-directional energy clients. While conventional grids can be thought of as passive one-way bulk energy systems, smart grids are highly complex, difficult to optimise and vulnerable to instability.



*Dr Gert Rietveld, JRP-Coordinator, in front of a high-voltage*

## Impact and Results

Results of the project have or will have direct impact on various parts of society. Here are some examples:

### Metrology and Environment

The results of the project range from increased insight in smart grid observability and design, to new measurement tools for on-site measurements of grid stability, power quality and energy flows. One example are the newly developed 'metrology grade' digitizers. In order to improve the accuracy of on-site measurements for power quality, these digitizers take sample measurements of current and voltage using non-invasive techniques and send the measurements to a digital signal processor. These levels of accuracy were previously restricted to the laboratory, but can now be made out in the field. The findings enable grid planners to anticipate and sidestep potential pitfalls in the design of future grids. This new technology

provides one of the most accurate, portable methods for measuring power quality in smart grids and will contribute to large reduction in carbon emissions. The system developed by the National Physical Laboratory (NPL, UK) is now being used by JRP-Partners in Belgium, Denmark and Turkey, helping scientists assess the impact of renewable electricity on the smart grid and plan for ambitious energy transmission schemes. Two more are being used in Sweden to monitor the power quality of a 255 kilometre submarine cable between Sweden and Poland. The NPL digitizer was shortlisted for Best New Product in the Climate Week Awards.

### Network for future energy supply

The project team built a network with stakeholders most affected by their research. Intensive contacts are kept with transport and distribution system operators, instrument manufacturers and electricity companies and IEC technical experts. This keeps the project focused on genuine customer needs, enables the development of international standards, assures timely and smooth technology transfer and contributes to increased reliability in grid measurement data.

“Additionally we aim to support the harmonisation of present national legislation.” says Dr Rietveld.

The project will also feed into the recommendations made in the 'Final report of the CEN/CENELEC/ETSI Joint Working Group on Standards for Smart Grids' and the project is currently providing input to many working groups and technical committees.

### Industry and consumer

Fair trade, for industry and consumers, is supported by the development of a system for monitoring the accuracy of energy meters in a street or an apartment building. “These energy flows are significant and a measurement error corresponds to a significant financial outlay in the final invoicing”, explains Gert Rietveld.

“Grid control and revenue settlement in electricity trading is impossible without reliable and secure measurements.”

With non-invasive load monitoring (NILM) techniques, insight can be obtained into the individual energy consumption of each appliance in a house. In this way the customer will receive invaluable information on what appliances are the main contributors to his or her energy bill.

Gert Rietveld is convinced that there is a specific reason for the project's success:

“The fact that our SmartGrid metrology project is a European Joint Research Project is crucial.

As a joint activity, we can achieve results that no single institute or country would be able to reach alone.”

# EMPIR – European Metrology Programme for Innovation and Research

So far the current EURAMET European Metrology Research Programme (EMRP) has created almost 100 projects and led to closer cooperation between metrology and industry. This success story just issued its last call for joint research projects. The possible follow-on programme, the European Metrology Programme for Innovation and Research (EMPIR), needs a European Commission proposal to be passed by the European Parliament and Council of the European Union. To support these next steps on the way to the new metrology research programme, EURAMET conducts or takes part in various promotion events such as a workshop on “Impact and Technology Transfer” or meetings with the European Parliament:



MEP Christian Ehler, Jörn Stenger, EURAMET Vice-Chairperson (EMRP), Director-General Robert-Jan Smits, DG for Research & Innovation, Nobel Prize Winner in Physics Klaus von Klitzing, EURAMET Chairperson Kamal Hossain, Elena Santiago Cid, Director General CEN-CENELEC and André H. Boer, Director Krohne Netherlands

## Science for Breakfast

### Nobel Prize Winner supports new European Metrology Programme

Representatives from key European institutions such as the European Parliament, the European Commission and EU member countries met to learn about the future of European metrology research. Dr Christian Ehler, Member of the European Parliament, hosted the breakfast meeting to support EURAMET in its goal to establish a new research programme for European metrology. “Research in metrology is not only a crucial factor for the quality of European production. It supports further development in areas such as health, security and energy.” Speakers at the meeting included Nobel Prize Winner Prof Dr Klaus von Klitzing, who outlined why the proposed European Metrology Programme for Innovation and Research (EMPIR) is essential for Europe’s future. Klitzing, Head of Department at the Max-Planck-Institute for Solid State Research, gave an inspiring speech, “All over the world countries invest a lot of money in metrology. The new programme EMPIR stands for the way modern science works. It ensures international cooperation, excellent science and transfer of technology.” André H. Boer, Director at Krohne Netherlands, is convinced that the results of the new research programme will have a positive impact on European industry. “We often take the achievements of metrology for granted.

But without metrology, a company like Krohne could not exist. Industry needs metrology.” It is not only industry that will benefit from EMPIR as Elena Santiago Cid, Director General of CEN and CENELEC states: “Metrology is really essential for quality in standardisation. We are determined to increase the cooperation between our organisations and to bring the research and standardisation communities closer together.” Robert-Jan Smits, Director-General of the Directorate-General for Research & Innovation has clear objectives for the programme: “With EMPIR we will ensure competitiveness and well-being of the European citizens. This will be achieved through ‘capacity building’, a fast uptake of the results in industry and standardisation processes and the contribution to face the grand societal challenges.” Dr Kamal Hossain, EURAMET Chairperson was impressed by this valuable support: “EURAMET appreciates the true spirit of collaboration, not only in the research projects but also between the European Union and the metrology community.” If approved, EMPIR will be delivered by EURAMET members and partners with substantial financial support from Europe’s forthcoming initiative Horizon 2020.

### EURAMET Workshop on Impact and Technology Transfer

The first EURAMET workshop on Impact and Technology Transfer was part of the General Assembly week in Iceland. Facilitated by Kamal Hossain, EURAMET Chairperson, and Michael Huch, EURAMET’s Joint Programming Coordinator, the workshop aimed at increasing the awareness for achieving strong impact from EURAMET’s current and future European Metrology Research Programmes. The workshop provided room for the exchange of experience on impact evaluation and for developing ideas on how to foster the impact of metrology in industry.

As a result of the workshop, future impact comprise both, quantitative outcomes that can easily be counted as well as qualitative achievements, proofed by statements from beneficiary organisations or end users. Social impact such as improvements in health diagnosis and treatment, consumer protection aspects or an accelerated legislation processes should be taken into account in the same way.

Ideas range from regular customer surveys, early involvement of stakeholders and potential beneficiaries, midterm reviews with external experts or rewarding schemes for employees of metrology institutes and go to the point of further trainings with best practice examples.

Michael Huch commented: “In the future, the impact will be regularly reviewed and communicated even after a research project is completed.” Already agreed between EURAMET and the European Commission are objectives such as a certain European turnover from new or significantly improved products and services that can be traced back to the research activities of EMPIR and its predecessors.

**For further information please contact Michael Huch, EURAMET Joint Programming Coordinator (E-Mail: [Michael.huch@euramet.org](mailto:Michael.huch@euramet.org) Phone: +49 531 592 1966).**

## Where Metrology meets Standardization

Products and services we buy and use in our everyday lives have to meet certain standards of safety and quality. In Europe, these standards are developed and defined by three officially recognised European Standardization Organisations: the European Committee for Standardization (CEN), the European Committee for Electrotechnical Standardization (CENELEC) and the European Telecommunications Standards Institute (ETSI).

Already in 2010 CEN, CENELEC and EURAMET signed a Cooperation Agreement to increase the opportunities for bridging standardization and research in the field of metrology. These three organisations agreed to pursue strategic goals and projects of common interest in the fields of metrology and standardization to support scientific advancement and technological innovation.

The close collaboration developed in the last years and aims common goals such as meeting society's challenges in areas like health, energy and environment, protecting consumers, foster innovation and technological development and enable businesses and industry to grow.

For CEN and CENELEC metrology is important and therefore supports EMPIR, the proposed new European Metrology Programme for Innovation and Research. "We are grateful for this support", commented Kamal Hossain, EURAMET Chairperson. CEN, CENELEC and EURAMET are keen to increase their cooperation to bring research and standardization communities closer together (see also page 8 in this newsletter).

CEN and CENELEC bring together the National Standards Bodies and National Electrotechnical Committees of 33 European countries including all of the EU member states plus 3 EFTA countries (Iceland, Norway and Switzerland) plus 3 EU acceding/candidate countries (Croatia, the former Yugoslav Republic of Macedonia and Turkey). European Standards (ENs) are developed through a process of collaboration among experts nominated by business and industry, research institutes, consumer and environmental organisations and other societal stakeholders. These standards are accepted and recognised throughout all of the 33 countries covered by CEN and CENELEC members.

CEN and CENELEC work to promote the international harmonisation of standards in the framework of technical cooperation agreements with ISO (International Organization for Standardization) and IEC (International Electrotechnical Commission).

**For more information please see:**  
[www.cencenelec.eu](http://www.cencenelec.eu)

## PEOPLE & EURAMET

### New Delegates join EURAMET Community

The General Assembly (GA) is the highest authority and decision making body of EURAMET. Each member is represented by one Delegate. Five new Delegates joined the EURAMET Community in the last months. We wish them all the best and look forward to working together with them successfully over the next few years.

#### Niki Pythara, Delegate – Cyprus

Niki Pythara possesses a Degree in Chemical Engineering and a Postgraduate Diploma in Management. She is a Senior Industrial Extension Officer and as from January 2013 she is the Head of the Weights and Measures Service of the Ministry of Commerce, Industry and Tourism (MCIT) in Cyprus. She joined EURAMET as a Delegate in May this year.

#### Maguelonne Chambon, Delegate – France

Maguelonne Chambon is Director for Research & Development at Laboratoire National de Métrologie et d'Essais (LNE) in France. She is responsible for the scientific and technical programme for the National Metrology System and EMRP projects.

Maguelonne has contributed significantly to the evolution and development of EURAMET. Since 2010 she has been Chair of Technical Committee for Interdisciplinary Metrology, Standing Invitee to the Board of Directors, EMRP Representative and is consequently involved in the JCRB activities.

#### Angelos Tolkas, Delegate – Greece

The President and Managing Director of ESYP (National System of Quality Infrastructure), Angelos Tolkas, is the new Greece Delegate. He joined EURAMET in May this year.

#### Arpad Gonda, Delegate – Slovakia

Arpad Gonda has been the Director General of the Slovak Institute of Metrology (SMU) since December 2012. He joined EURAMET as a Delegate in May of this year.

#### Ulrich Pechstein, Delegate – Luxembourg

Ulrich Pechstein is EURAMET Delegate for the Public Research Centre Henri Tudor (CRP Henri Tudor), Luxembourg. Ulrich is the Contact Person for EURAMET's Technical Committees for Interdisciplinary Metrology and Quality.

## New Members of the Board of Directors

The Board of Directors (BoD) is responsible for the governance and the development of the strategy of EURAMET. It is composed of the three Chairpersons and six elected members. In 2013 the terms of Joseph Bartolo (MCCAA, Malta), Paul Hetherington (NSAI, Ireland) and Pavel Klenovský (CMI, Czech Republic) ended. Congratulations go to three new Members of the BoD, elected by the General Assembly. Find out who they are and which topics they will focus on to serve our members.

### Zijad Džemić, Institute of Metrology of Bosnia and Herzegovina (IMBiH)



As General Manager of IMBiH, Zijad plans and manages the basic developments and activities of the National Metrology Institute of Bosnia and Herzegovina and the international recognition of its capabilities. After his studies, Zijad worked inter alia for the National Metrology Institute of the former Yugoslavia and in 1997 he joined IMBiH as advisor to the General Manager. His successful international collaboration started with developing the first training in measurement uncertainty in Bosnia and Herzegovina in 1997. Today Zijad is the first EURAMET Delegate of Bosnia and Herzegovina. Additionally he is engaged in other international organizations such as WELMEC, which is responsible for the European Cooperation in Legal Metrology. There Zijad is member of the Chairperson Group and the WELMEC Committee.

Being a Member of the BoD, Zijad wants to focus on the support of emerging National Metrology Institutes. "Due to different reasons, emerging National Metrology Institutes are not fully ready to receive and apply the newest developments in metrology. Through EURAMET's European research programmes they can benefit in better utilization of scientific outcomes and newest development results." Zijad is convinced that improvements in metrology will improve the whole quality infrastructure in Europe.

### Jan C. Petersen, Danish Fundamental Metrology (DFM)



Jan is photonics group manager at DFM and as a member of the management team he plays an important role in the strategic development of the institute and in attracting external research funding as well as commercial research. Jan joined DFM in 1990 and was responsible for establishing the radiometric facility including fibre optics metrology. He studied physics at the University of Copenhagen and obtained a PhD degree in physical chemistry from the University of Bristol.

Jan's engagement for EURAMET started in 1990 as Danish Contact Person in the Technical Committee Photometry and Radiometry. Since that time he has been involved in reviewing Calibration Measurement Capabilities, comparison projects and preparing roadmaps for European research programmes. During the period 1994 to 1998 he was EUROMET Secretary. Since 2009 he is the Danish EURAMET Delegate.

As a new Member of the Board of Directors Jan aims to foster an increased sharing of metrology facilities and competences in Europe. "Exploiting research synergies for a stronger and more coherent European metrology system shall contribute to meet the expected metrology needs in a number of new fields, including health, climate and biosciences."

### Maria Luisa Rastello, Istituto Nazionale di Ricerca Metrologica (INRIM)



Maria Luisa is Head of the Optics Division of INRIM, Italy. She started working at INRIM in 1979 after graduating with summa cum laude in physics. Maria conducts research in the fields of metrology, photometry, radiometry, quantum optics and quantum information. Maria Luisa has been engaged in EURAMET since 2001 as Contact Person in the Technical Committee on Photometry and Radiometry and became TC Chair in 2003. She was involved in preparing roadmaps for European research programmes and took over responsibility as Joint Research Project-Coordinator within EURAMET's European Metrology Research Programme (EMRP). As regional and international reviewer she was responsible for peer reviewing Calibration Measurement Capabilities (CMC). Since 2010 she has been the Italian EURAMET Delegate and Contact Person in Technical Committee on Interdisciplinary Metrology

"In my new role as Member of the Board of Directors, I will focus on education, simplification and sustainability." Her ideas are to establish a European PhD Course on metrology, to simplify towards a trustable and sustainable Mutual Recognition Arrangement and to carry out research with smart specialization and networking.

## EURAMET counts on three new TC Chairs

EURAMET's scientific and technical collaboration is organised within twelve Technical Committees. Every two years the Chairs of the Technical Committees are elected by the General Assembly. In 2013 the terms of Salvador Barrera-Figueroa (DFM, Denmark), Andreas Bauch (PTB, Germany) and Hans Bjerke (NRPA, Norway) ended. EURAMET is happy to announce that three new Technical Committee Chairs were elected. They started their work as TC Chairs at the EURAMET General Assembly in May 2013. We wish them all the best and look forward to working together with them.

### Richard Barham – TC Acoustics, Ultrasound and Vibration (TC-AUV)



Richard joined the Acoustics Team at the National Physical Laboratory (NPL), United Kingdom in 1986, where he continued to study for his PhD. He is now a Principal Research Scientist and leads NPL's work on sound-in-air metrology. Richard has been involved in EUROMET and EURAMET projects from the very beginning and has been taking an active role in TC-AUV meetings since 1999. TC-AUV has recently established the strategic direction for research in the fields of sound in air, ultrasound, underwater acoustics and vibration. Richard is keen to foster the development of collaborative projects to realise these objectives and create strong societal impact. "To achieve our goals I look forward to working with other TC Chairs to formulate cross-disciplinary research activity where appropriate." Richard took over from Salvador Barrera-Figueroa (Danish Fundamental Metrology, Denmark) who successfully chaired the TC from 2009 to 2013.

### Ramiz Hamid – TC Time and Frequency (TC-TF)



Ramiz studied physics at the Moscow State University and received his PhD from the Lebedev Physics Institute. In 1993 he started working at the National Metrology Institute of Turkey, Ulusal Metroloji Enstitüsü (UME), and became the leader in development of the Time and Frequency, Wavelength Standards and Electromagnetic Compatibility Laboratories. Today Ramiz is head of the Time, Frequency and Wavelength Laboratory. Since 1995 he has been engaged in EURAMET activities and in the last five years he has played a vital role in Joint Research Projects within the European Metrology Research Programme. Ramiz took over the role as TC Chair from Andreas Bauch (PTB, Germany) who successfully chaired TC-TF from 2009 to 2013. Ramiz is looking forward to tackling multidisciplinary European research projects by cooperating with other TC Chairs and he wants to build up new collaboration channels with National Metrology Institutes all over the world.

### Lena Johansson – TC Ionising Radiation (TC-IR)



Lena has worked at NPL since 2002 and she currently holds the roles of Principal Research Scientist and Science Area Leader in the Radioactivity Group. In the last four years she has been extensively involved with EMRP projects; as Joint Research Project-Coordinator, Work Package Leader and organiser of cross-disciplinary activities and partnering meetings. Lena has also taken a leading role in the development of a new strategy for TC-IR. Lena took over from Hans Bjerke (NRPA, Norway) who successfully chaired TC-IR from 2009 to 2013. In her new role as TC Chair she wishes to engage with stakeholders, academia and colleagues from National Metrology Institutes in European collaboration, implement the newly developed strategy, build up a long-term relationship with important international organisations in relevant areas and promote a multidisciplinary approach to metrological solutions and addressing the so-called "Grand Challenges".



### Silvie Hoffmanová permanent Secretary for TC Quality

EURAMET is pleased to announce the appointment of Silvie Hoffmanová from Czech Metrology Institute (CMI) as permanent Secretary for EURAMET's Technical Committee for Quality.

Silvie studied analytical chemistry and quality engineering at the Institute of Chemical Technology in Prague. After her studies she joined Czech Metrology Institute and was soon appointed as a CMI quality manager.

With the election of Pavel Klenovský, CMI General Director, as Chair of TC Quality in 2010, Silvie took over the task as TC Quality Secretary. The Technical Committee for Quality is the EURAMET operational

instrument to share and develop knowledge on quality management systems (QMS) and their implementation in the National Metrology Institutes. In her role Silvie gives direct assistance to the operation of the Technical Committee and its important tasks such as QMS-reviews of EURAMET Members and Associates. By creating the position of a permanent TC Quality Secretary, EURAMET ensures reliable and ongoing support for crucial topics i.e. documentation, data management and analysis. EURAMET is happy to assign Silvie to the post which she will undertake on secondment from Czech Metrology Institute for a portion of her time.

# Upcoming EURAMET Events

## EURAMET - EMRP - Events

28. July – 02. August 2013	International Conference on Mercury as a Global Pollutant, Edinburgh, Scotland
25. – 30. August 2013	18th International Symposium on High Voltage Engineering, Seoul, Republic of Korea
25. – 29. August 2013	17th Euroanalysis 2013, Warsaw, Poland
01. – 03. September 2013	The 16th International Conference on the Properties of Water and Steam, Greenwich, UK
12. September 2013	Workshop on Traceable Optical Thin Film Characterisation, Berlin, Germany
19. – 20. September 2013	11th International Conference on Manufacturing Research, Cranfield, UK
17. – 20. November 2013	Review Conference, Monte Carlo
25. – 26. November 2013	EMRP Meeting, Berlin, Germany
14. – 18. October 2013	TEMPMEKO 2013, Madeira, Portugal
11. December 2013	Research Council, Zurich, Switzerland

## EURAMET - Meetings

28. – 29. October 2013	20th Board of Directors Meeting, location tbd
04. – 05. November 2013	Focus Group Meeting 2013, Istanbul, Turkey
07. – 08. November 2013	TC Interdisciplinary Metrology Meeting, Istanbul, Turkey

## External Events

18. – 19. July 2013	19th IMEKO TC-4 Symposium Measurements of Electrical Quantities, Barcelona, Spain
18. – 19. September 2013	31st JCRB Meeting by BIPM, Beijing, China
07. – 10. October 2013	International Congress of Metrology, Paris, France

## Let us tell your story!

Has your institute made some interesting progress, like the new robotic mass calibration system at NSAI (page 3 in this newsletter)?

Is your EMRP-Project at an essential stage?

Do you contribute to meet the Grand Challenges of society like the "Metrology for Smart Electrical Grids" project on page 6 of this newsletter?

Are you working on an important topic for the EURAMET community? Or have you cooperated with National Metrology Institutes or industrial partners and want to share the output with others?

We can support you in spreading your story and your story can be a valuable part of our communication. You are welcome to contribute to EURAMET media such as this newsletter or our website. We are here to tell your story!

**Please send us your story or your idea. Or just contact EURAMET's Communications Officer Anne Trumpfheller (E-Mail: [anne.trumpfheller@euramet.org](mailto:anne.trumpfheller@euramet.org), Phone: +49 531 592 1965).**

**Many thanks go to those who contributed to this issue of our newsletter!**

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