

Developing the future of European Metrology

Foreword from the
EURAMET Chairperson
Dr Beat Jeckelmann

The last weeks and months have been a period of new achievements and change for the EURAMET Community and European Metrology. In my new role as EURAMET Chairperson I am happy to present Issue 9 of our Newsletter which provides an insight into important activities and results.

The essential step for the realisation of the European Metrology Programme for Innovation and Research (EMPIR) was achieved: the signing of the Delegation Agreement by the European Union, represented by the European Commission, and EURAMET.

EMPIR and its predecessor, the European Metrology Research Programme (EMRP), focus on research in metrology to address society's Grand Challenges in areas such as energy, environment and health. With EMPIR there is an increased focus on innovation activities to target the needs of industry and accelerate the uptake of research outputs. In addition, the programme has a stronger focus on capacity building in emerging National Metrology Institutes with limited or no metrology research capability. The

first 19 EMPIR projects have started now, as EMPIR's Delegation Agreement was signed, and there are many more to come in the upcoming years.

To meet the major challenges of European metrology a strategic research agenda (SRA) was developed by the EURAMET community and our stakeholders during the last year. The document will provide strategic guidance to European and national metrology research programmes, and will inspire new ways of thinking in important policy areas. A public consultation on the draft is currently being carried out and your feedback is highly appreciated.

As an association we count on the commitment and involvement of our members. During our recent General Assembly we were happy to welcome six new Technical Committee Chairs. At the same time, we offer our warmest thanks to their predecessors for their great contribution and engagement to EURAMET.

Being the new chairperson I am looking forward to the exciting developments lying ahead of us. I am honored and privileged to serve the association in the coming three years. I would like to take the opportunity to express our sincere gratitude to Kamal Hossain, my predecessor as Chairperson. Thanks to his leadership and strong commitment, he has initiated many new developments during his term of office.

We hope you enjoy reading this issue and we look forward to receiving your feedback.

LATEST NEWS

Don't miss our new Guides

 The new EURAMET Guide No. 2 on the **Role of Designated Institutes within the CIPM MRA** is available for download: www.euramet.org/publications-media-centre/documents-and-publications/

The new EURAMET Technical Guide No. 2 on **Lifetime and Drift/ Stability Assessment of Industrial Thermocouples** is now available for download: www.euramet.org/publications-media-centre/calibration-guides-and-technical-guides/

Now Open

 **Public consultations on measurement research**

EURAMET appreciates very much the feedback and input of its stakeholders such as international organisations, governments, metrology communities or the broad public.

Currently we are running two public consultations. Take the chance and have your say in EURAMET's research strategy.

Take part in the **Public consultation on EURAMET's 'Strategic Research Agenda for Metrology in Europe'** (see page 4) and **Public consultation on 'Challenges in flow measurement in Europe'** (see page 11).



Research & Innovation

METROLOGY FOR INDUSTRY

PREVENTING THE SPREAD OF RADIATION IN EUROPEAN STEEL – MEASURING RADIATION IN SCRAP METALS



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Millions of tonnes of scrap steel are produced each year that could potentially be contaminated by radioactive sources - for example, demolition material from hospital radiotherapy facilities or dismantled nuclear facilities, which can be hidden in scrap metal loads. The accidental contamination of scrap metal loads can result in the subsequent contamination of furnaces, metal by-products and the environment, leading to human health risks and international trade disputes.

The EMRP project 'Ionising Radiation Metrology for the Metallurgical Industry' (number: IND04; short name: MetroMetal) has successfully set the metrological basis for establishing common standards for radioactivity monitoring in steel mills and the certification of the non-radioactivity of scrap metals. This was achieved by producing SI-traceable reference standards and methods for radioactivity measurements, as well as the construction and end-user validation of two prototype detectors for radioactivity monitoring.

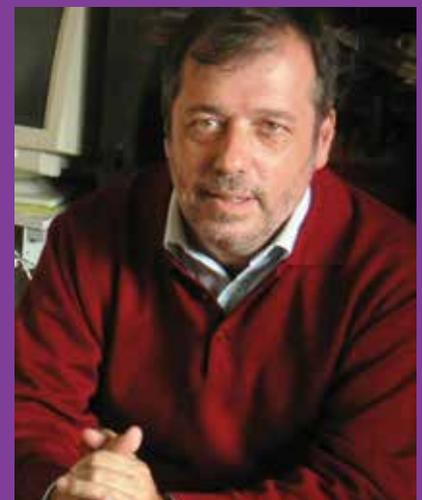
Project IND04 MetroMetal

The MetroMetal project started in December 2011 with a consortium of 14 participating institutes from all over Europe. The project coordinator was Dr Eduardo Garcia-Toraño from CIEMAT in Spain: "The close cooperation with end-users and stakeholders such as regulatory bodies, large enterprises or industrial companies played an essential role in the success of the project." The project was supported by four researcher grants.

The 3 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/research-innovation/search-research-projects/details/?eurametCtcp_project_show\[project\]=1104](http://www.euramet.org/research-innovation/search-research-projects/details/?eurametCtcp_project_show[project]=1104)

A list of all 17 Metrology for Industry projects from the 2010 call can be found here <http://www.euramet.org/research-innovation/emrp/emrp-calls-and-projects/emrp-call-2010-industry-and-environment/>



MetroMetal coordinator, Dr Eduardo Garcia-Toraño from CIEMAT in Spain

Background

Every year, more than 500 steel production sites in the European Union produce 190 million tonnes of steel and on average 43 % of these are produced by recycling scrap materials. The scrap material is tested for the presence of radioactive sources by passing the scrap containers under radiation detection portals. However, under certain circumstances, this approach can fail and a radioactive source is smelted. This results in radioactive contamination, expensive clean-up costs - typically between 1 and 10 million Euros - and possible leakage of radioactive substances into the environment.

“Although the frequency of radioactive incidents of this kind has been significantly reduced over the few last years, recent incidents have demonstrated that these risks still exist across Europe. Therefore improved monitoring of scrap materials before melting is as important as additional measurements after melting to ensure and certify the absence of radioactive contamination in steel, slag and fumes dust”, explains MetroMetal coordinator, Dr Eduardo Garcia-Toraño from CIEMAT in Spain.



Composite steel source produced by the project containing a mixture of three radionuclides

Measurement challenges

Prior to the MetroMetal project, radioactivity surveillance in the European steel industry was carried out by a number of different detection systems, primarily on scintillator/gamma detection systems. These detection systems have differences in their geometry, energy resolution and sensitivity levels of detection, which makes it difficult to compare their performance. There are also differences between the national standards and regulations in different EU countries on radioactivity monitoring. The consequence of this is that radiation detection from different steel mills and companies cannot be compared across the EU, which often leads to disputes and difficulties in trading.

Additionally, a recent European Directive (Council Directive 2013/59/EURATOM) has set more demanding limits on the measurement of radioactivity in this context, thus calling for even more efficient and reliable methods, which was hindered by the fact that SI (International System of Units) traceable methods for measuring radioactivity in scrap and industrially relevant reference materials were lacking.

Results

After analysing the available detection systems, the MetroMetal project made recommendations of best-practice methods and developed and tested alternative prototype devices for monitoring radioactivity. Traceable reference standards made of typical materials encountered in steel mills were also produced and characterised to support better industrial measurements.

- The project produced a set of SI traceable reference standards for composite steel, cast steel, slag and fume dust that went beyond the current state-of-the-art, containing known activity of radionuclides considered as potential contaminants. The reference standards were certified by the joint work of a large number of national European metrology laboratories and are now available for use by end-users.
- Inter-laboratory tests were carried out with reference materials.
- New gamma ray spectrometric devices using either a Germanium (Ge) detector or BeCr3 scintillator for the measurement of radioactivity in cast steel, slag and fume dust were developed. Two portable prototype devices based on Ge detectors

and a third prototype system, based on a BeCr3 scintillator were produced as well as specific software for all three prototypes. The Ge-based prototype spectrometric devices were then taken to three end-user facilities (steel mills) in Portugal, the Czech Republic and Spain and successfully tested.

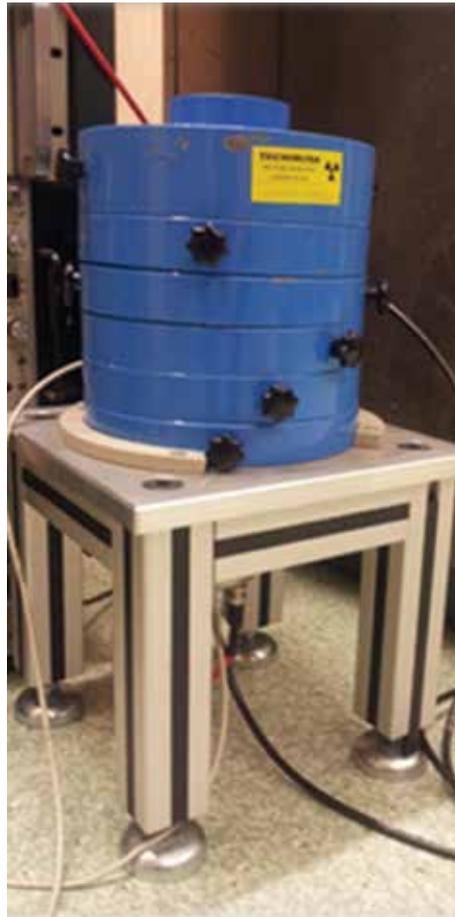
- Detailed numerical models to simulate Ge detectors by Monte Carlo methods, developed in the project, have been made freely available for download on the project website.
- An exchange on the results was initiated with expert groups such as the Division of Radiation, Transport and Waste Safety of IAEA, EURAMET's Technical Committee for Ionising Radiation or the Group of Experts established under Article 31 of the EURATOM Treaty.

“The joint research performed in the MetroMetal project allowed the consortium to achieve goals that could not have been accomplished by the work of individual NMIs. The preparation and inter-comparison of reference sources, detector design and Monte Carlo evaluations are key examples of this.”

Research impact

By improving measurement techniques for radioactivity in scrap loads the MetroMetal project supports the further reduction of the risks of irradiation and radioactive material at end-user facilities, thus saving costs and contributing to better protection against the dangers arising from exposure to ionising radiation. "Given the economic and social impact of any contamination problem at end-user facilities, it is likely that the project's results will be, to a major extent, incorporated into the technical procedures of according facilities."

- The new SI traceable reference materials and methods and the new prototypes developed for the improved detection and measurement of radioactivity will lead to better and more consistent certification of steel batches and a reduction in the costs arising from disputes. The reference materials are already in use in five steel mills across Europe. Certification of non-radioactivity of iron and steel will become a key aspect in the near future from the safety and economy points of view. Procedures and prototypes developed in the project will help to implement an efficient system for this purpose.



Testing of a prototype based on a CeBr3 detector at CIEMAT

Take part in the Public Consultation on EURAMET's 'Strategic Research Agenda for Metrology in Europe'

The *Strategic Research Agenda for Metrology in Europe (SRA)* is being developed to provide a high-level strategic view of measurement capability requirements which may be delivered not just by the European Metrology Programmes, EMRP and EMPIR, but by the wider research community involved in measurement-related programmes regionally, nationally and internationally.

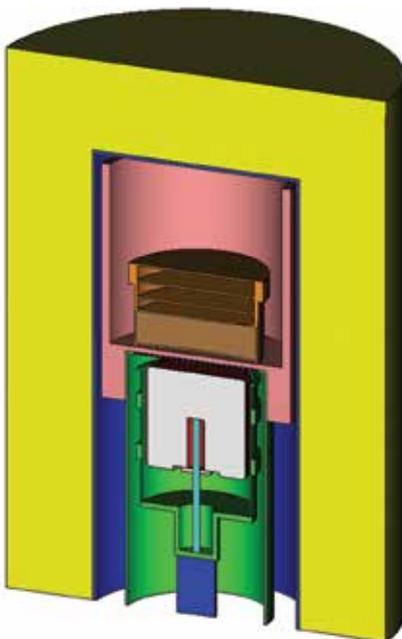
The SRA has been prepared by EURAMET with inputs from the EURAMET Technical Committees and Task Groups in consultation with their stakeholders.

EURAMET is keen to engage the broader stakeholder communities in the further development of the SRA. The document is now being published for open, public consultation.

All are invited to provide feedback on the document. The latest version of the SRA and a short survey can be accessed at www.euramet.org/research-innovation/sra-survey/

Your views and comments will be most welcome!

The public consultation will close on 28 September 2015.



A visual model of the PTB prototype spectrometric device including a typical fume dust source

- The technical recommendations developed in the project can support national regulatory bodies and international institutions and committees competent in ionisation radiation measurements. The impact of this will be that both intra-European and external markets benefit from a reduction in the number of trade disputes.
- Publication of new Calibration and Measurement Capabilities (CMCs) will allow National Metrology Institutes and Designated Institutes to offer new calibration services for the standardisation of reference samples of steel, slag and fume dust.

Collaboration & Network

STANDARDS AND METROLOGY: ENABLING INNOVATION

For the benefit of industrial stakeholders, authorities, consumers and research organisations, the European Commission considers the contribution of metrology research to standardisation work to be of paramount importance. EURAMET's two programmes, the European Metrology Research Programme (EMRP) and its successor the European Metrology Programme for Innovation and Research (EMPIR) support collaborative research and development projects in measurement science. These programmes enable standards and metrology professionals to work together to support European innovation and address global challenges.

Interactions between metrology and standardisation have been part of existing EMRP projects as they have or will disseminate their results to standardisation bodies and contributed to documentary standards. The challenge within EMPIR is to develop an extensive interaction with standardisation bodies at an earlier stage to facilitate pre- and co-normative research projects that allow the expertise of the metrology institutes in Europe to contribute to the needs of the standardisation bodies.

To address this challenge the STAIR EMPIR working group was established in July 2014. This was made possible due to the close cooperation between CEN and CENELEC, two European Standardization Organizations, and EURAMET. The objective of STAIR EMPIR is to facilitate the dialogue and communication between the metrology research community in Europe and members of CEN and CENELEC.

The first STAIR EMPIR meeting took place in November 2014 with representatives of standardization bodies and metrology institutes attending. "It was our aim to support networking activities, for example to connect researchers with relevant standardisation groups, and to prepare for the 2015 EMPIR pre- and co-normative call", explains Eveline Domini (LNE, France), facilitator for this call.



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Following the meeting, STAIR EMPIR ran a formal consultation process among the CEN-CENELEC technical committees to collect their priority research needs. As a result, twenty one standardisation priorities were identified and published on the EMPIR Participant Portal in January 2015. These priorities were addressed in eleven of the pre- and co-normative potential research topics (PRTs) within the call 2015 and of these eleven, the EMPIR Committee selected seven research topics (SRTs).

Currently different consortia are preparing project proposals to meet the needs described in these SRTs and are supported by EURAMET who provides advice on possible project impact and the interaction with standardisation bodies. "We are happy that we already received so many ideas in the first pre- and co-normative EMPIR call. Further opportunities in various technical areas will occur in the future as from 2015 onwards an annual pre- and co-normative call is planned."

To prepare for the 2016 EMPIR pre- and co-normative call, STAIR EMPIR launched a new consultation process among CEN-CENELEC technical committees in July 2015. Additionally a STAIR EMPIR meeting is scheduled for December 2015 in Brussels. A new initiative between EURAMET and the third European Standardization Organization, ETSI (European Telecommunications Standards Institute), is under discussion to collect the research needs of ETSI by the end of 2015 and strengthen the preparation of the pre- and co-normative projects.

If EURAMET representatives, or others are interested in participating in the STAIR EMPIR meeting, would like general information on standardization topics or connect with

standardization groups, please send an e-mail to Eveline Domini:
Eveline.Domini@lne.fr

For questions regarding the pre- and co-normative projects, opportunities and participation in future calls please go through <http://msu.euramet.org/calls.html> or http://msu.euramet.org/pre_norm_2015/index.html

More information on standards and metrology can be found at www.euramet.org/index.php?id=512

About Eveline Domini



Eveline Domini works as standardisation manager in the research division of LNE, the French National Metrology Institute. Since 2013, she has worked part-time as a consultant for EURAMET to support the development of the standardisation activities in the EMRP and EMPIR metrology research projects.

Community News

NEW CHAIRS AND FURTHER STAKEHOLDER INVOLVEMENT – EURAMET's General Assembly 2015



Participants of EURAMET's General Assembly week 2015

The 9th EURAMET General Assembly took place in the former Polish capital, seat of kings and UNESCO World Heritage Site – the heart of the historical city of Krakow. "The General Assembly week is one of the most important events of our organisation and a perfect platform to exchange knowledge and ideas between EURAMET bodies such as the Board of Directors or the Technical Committee Chairs and our Members, Associates and Liaison Organisations," said Kamal Hossain (NPL, UK), now EURAMET's Past-Chairperson.

There was a rich and varied agenda from 1st to 5th June 2015 as the organisation combined its General Assembly, the EMPIR Committee Meeting, the meeting of EURAMET's Research Council and a scientific symposium. The achievements and highlights of the last year were presented in plenary sessions, round table discussions and working sessions, and decisions on the further development of the organisation were taken.

One of the central goals of EURAMET is to increase and simplify the involvement of stakeholders to better understand their needs with respect to metrology and metrology research. At the General Assembly, one measure to meet this objective was the EURAMET symposium 'Metrology meeting the challenges in energy, environment and health', with distinguished speakers and a question and answer session. Another expression of the close collaboration with stakeholders is the EURAMET document 'Strategic Research Agenda for Metrology in Europe', which was presented at the General Assembly and to which stakeholders are invited to contribute (see page 4).

Personnel changes took place at this year's General Assembly according to the EURAMET rules. Six Technical Committee (TC) Chairs concluded their mandate and six new TC-Chairs took over (see page 9). EURAMET expressed its sincerest thanks to the six departing TC-Chairs: Elsa Batista (IPQ, Portugal), Antti Lassila (MIKES, Finland), Nieves Medina (CEM, Spain), Francois Piquemal (LNE, France), Michela Segal (INRIM, Italy) and Marek Smid (CMI, Czech Republic). At the end of the General Assembly, Kamal Hossain handed over the position of Chairperson to Beat Jeckelmann (METAS, Switzerland) (see page 8). The participants welcomed Beat Jeckelmann as new Chairperson, and he expressed his sincerest thanks to Kamal Hossain on behalf of the EURAMET community for his strong leadership and achievements during his term.

With 100 participants, this year's General Assembly was the best attended yet. The meetings and the general programme were hosted and organised by GUM, the Central Office of Measures of Poland, and the Regional Office of Measures in Krakow. Janina Maria Popowska, President of GUM and EURAMET Delegate, and her team promoted metrology so successfully that the event was recognised by senior politicians, such as the Polish Deputy Prime Minister and the Minister of Economy, and the media. Grażyna Henclewska, the Polish Deputy Minister of Economy, personally attended the meeting and the welcome reception was chaired by the Mayor of Krakow, Professor Jacek Majchrowski. Beat Jeckelmann commented: "It was most kind of GUM to offer us the use of their infrastructure and their help, which gave us the opportunity of having productive meetings in a pleasant atmosphere in the heart of Krakow. We are grateful for the support which cannot be overstated."

GUM – host of the 9th EURAMET General Assembly

This year the Polish National Metrology Institute, the Central Office of Measures - GUM, was the host of EURAMET's General Assembly. The President of GUM, Janina Maria Popowska, and her dedicated team organised the one week event with great hospitality and professionalism.

GUM is the authority of governmental administration in Poland which is responsible for tasks related to scientific, legal or industrial metrology and hallmarking and celebrated its 95th anniversary last year. Its President is appointed by the Prime Minister and supervised by the Minister of Economy. GUM participates in various joint research projects within EURAMET's European Metrology Research Programmes.

Save the Date – 10th EURAMET General Assembly in 2016

The city of Oslo in Norway will be the location for EURAMET's 10th General Assembly. The event will take place on 23rd to 27th May 2016 and will be hosted by Justervesenet, the Norwegian Metrology Service (JV). Further information will be available end of the year.



Meeting at the General Assembly week: Kamal Hossain (EURAMET Past-Chairperson), Janina Maria Popowska (President of GUM) and Beat Jeckelmann (EURAMET Chairperson).

MEASUREMENTS AND THE INTERNATIONAL YEAR OF LIGHT

The United Nations has declared 2015 to be the International Year of Light and Light-based Technologies, reminding us of the central role of light to life, whether as a source of energy, as the basis for photonic technologies or as being a source of wonder and excitement. World Metrology Day was aligned with this event because metrology, the science and application of measurement, plays a central role in enabling the application and advancement of light-based technologies, whether for more efficient energy production, a better understanding of climate change, or optimal lighting of our cities and towns. We asked Marek Smid (CMI, Czech Republic) about EURAMET's role in this field. Marek was Chair of EURAMET's Technical Committee for Photometry and Radiometry from 2011 to June 2015.

EURAMET: Marek, the Year of Light emphasises the key role of light and optical technologies in our daily lives. Do you have some examples where these technologies have an effect on all of us?

Marek Smid: I guess truly the most visible example is the technology of LED-based lamps and luminaires, replacing all traditional light sources in Europe in the last couple of years. Their application both for interior lighting and street lighting makes our houses and streets less energy demanding and more comfortable from a visual perception point of view. The second example are visual displays. The incredibly advanced specifications found in each smart phone and new TV were hardly achievable 10 years ago. But these two examples are only tip of the iceberg: the global communications network, including the World Wide Web, wouldn't work without optical cables and fibre optics technology. Satellite-based earth observation systems bringing key data for mathematical weather models receive almost 80 % of measured parameters via optical measurements. Emerging technologies of optical quantum communication and optical quantum computation have got the potential to change our world completely. Maybe it would be difficult to find an aspect of our lives completely untouched by light and optical technologies.

EURAMET: Why is metrology important for light-based technologies?

Marek Smid: For many of these technologies accurate knowledge of the absolute power of applied optical radiation and its spectral composition is crucial. That is why almost all optical technology systems are equipped by numerous transfer standard detectors, standard optical materials or standard optical radiation sources which all need metrological traceability. The role of metrology is not only to provide traceability at the current state-of-the-art level but to develop, characterise and optimise new optical standards and further refine the measurement procedures.

Mark Smid
from CMI,
Czech Republic



And, believe me, the impact of better metrology here can be really significant.

EURAMET: What is EURAMET doing to support further development in that area?

Marek Smid: EURAMET's contribution in this area is coordinated by our Technical Committee for Photometry and Radiometry, now chaired by Jarle Gran from JV, Norway. Its long term strategy is systematically investigated in the Sub-Committee for strategic planning. These bodies help to direct research to the most relevant topics. To tackle the urgent metrology problems in this field inevitably leads to very narrow cross-NMI collaboration and smart specialisation.

This trend, largely supported by the European Metrology Research Programmes, concluded almost naturally in forming six cross-NMI consortia dealing with research in, for our field, the most relevant directions: Quantum optics, optical metrology for earth observation and meteorology, SI oriented basic research, energy conservation and efficient production and innovation for visual appearance measurement.

14 completed or currently running joint research projects reflect the global character of research in our field by broad intercontinental collaboration with our partners in the US and Asia-Pacific area. Research in metrology for Optical Technologies is one of the most dynamic fields and EURAMET is supporting the leading edge.

For further information visit EURAMET's TC for Photometry and Radiometry or www.light2015.org and www.worldmetrologyday.org

People & EURAMET

EURAMET's NEW CHAIRPERSON: BEAT JECKELMANN FROM SWITZERLAND

EURAMET is delighted to announce that Dr Beat Jeckelmann, the Delegate of METAS (the Federal Institute of Metrology of Switzerland), has taken over the position of EURAMET Chairperson. He was elected by the General Assembly in 2014 and started his three year term in June 2015.

EURAMET: Beat, what is your vision for EURAMET during your term and what are the biggest challenges?

Beat: My vision is that the Metrology Research Programmes (EMRP and EMPIR) bring us closer to sustainable, coordinated and integrated metrology research in Europe. This is a prerequisite to meet the challenges lying ahead of us. Coordinated research is the basis for the development of a coordinated metrology landscape which will naturally lead to distributed centres of excellence for metrological services and expertise. It is also equally important to support the EURAMET members and associates in the development of an appropriate metrology infrastructure in their countries and to support especially new and evolving National Metrology Institutes (NMIs).

EURAMET: What is, in your view, the importance of metrology?

Beat: Lord Kelvin is quoted as saying "If you cannot measure it, you cannot improve it". Metrology is an essential tool for scientific research and development and for technological innovation. It underpins modern industrial competitiveness and

supports the development of new products and processes. Accepted measurements and standards are essential for global trade and regulations. In summary, metrology is an indispensable part of the foundation of a modern state. Sometimes the importance of metrology is not fully recognized by the public and by policy makers. It is, thus, a priority for EURAMET to make the benefits of metrology better known.

EURAMET: What are you most excited about and looking forward to in your term?

Beat: EURAMET membership spans the whole continent. The diversity of cultures is huge, as is the range of capabilities and development status of the NMIs. It is a challenge but at the same time a great enrichment to work in such an environment. I am looking forward to working with many highly committed colleagues and to spread the word about metrology throughout our stakeholder groups. With our metrology research programmes we have a unique opportunity to fundamentally change the metrology landscape in Europe and this is very exciting.

EURAMET: Being EURAMET's Chairperson in addition to your role as Chief Science Officer of METAS is a challenging task. How do you find a personal balance?

Beat: It is very important to be well organized and to have good collaborators. I can count on a dedicated team of professionals in the EURAMET Secretariat and the MSU who do all the operational work. In my private life, I am fortunate to live in a beautiful area. I enjoy my free time with my family: cooking, gardening and hiking give a good balance to the professional activities.



About Beat

In his early career Beat studied physics at the University of Fribourg in Switzerland and having obtained a PhD in experimental particle physics he worked at the Federal Institute of Technology (ETH) Zurich and the Massachusetts Institute of Technology (MIT), USA. Beat joined the Electricity Sector of METAS in 1989 and became Head of the department in 1999. Since 2011 to the present he has had the role of Chief Science Officer and member of the extended management board where he is responsible for the research and development programme of METAS.

Beat has around 25 years' experience working within the EURAMET community: Beat has been the Chair of the Technical Committee (TC) for Electricity and Magnetism, TC Contact Person and Subcommittee Convenor. He is currently a Representative in the EMRP and EMPIR Committees and the Research Subcommittee and since 2010 has been a Member of EURAMET's Board of Directors.

Beat is well known on the international circuit, being not only a Swiss representative in the Consultative Committee for Electricity and Magnetism of the Metre Convention but also a technical expert, peer reviewer, referee, speaker and lecturer.

**“I enjoyed the job and the challenge”
Kamal Hossain - EURAMET’s Past-Chairperson**



Highly committed, focused and visionary. This is how Beat Jeckelmann described, Kamal Hossain, his predecessor as EURAMET Chairperson, when taking over the mandate in June 2015.

Kamal is the International Director at the National Physical Laboratory (NPL, United Kingdom) and started his term as EURAMET Chairperson in 2012.

“I would like to thank EURAMET for giving me the privilege of being the Chairperson during one of the busiest periods of development. I had the chance to work with the most wonderful set of people, all talented and with great enthusiasm. I enjoyed enormously the job and the challenge. I have every confidence in Beat, my successor, and I wish him all the best.”

During his term of office Kamal has been the initiator of crucial strategic developments and improvements at EURAMET. He was the main driver behind EURAMET’s 2020 Strategy, including the Association’s strategic objectives aimed at improving the European metrology infrastructure. Kamal further developed the close cooperation between the Technical Committees and the Board of Directors, two important bodies of EURAMET. He also facilitated more focussed communication both externally, between EURAMET and external associations and stakeholders, and internally. One of the major achievements for EURAMET within the past three years was the launch of the new 600 Million Euros European Metrology Programme for Innovation and Research, EMPIR. “Such major achievements were the result of the efforts of many people and of excellent teamwork”, said Kamal.

“With Kamal’s leadership EURAMET was able to improve its governance and built new strategic partnerships. We appreciate Kamal’s effort and engagement. He spent a lot of his personal time working for the benefit of the Association. On behalf of EURAMET I would like to express my sincerest thanks to Kamal”, says Beat.

As Past-Chairperson Kamal Hossain remains on the Board of Directors until June 2016.

EURAMET welcomes six new Technical Committee Chairs

Luca Callegaro –
TC-Chair for Electricity and Magnetism (TC-EM)



Luca Callegaro has a degree in Electronic Engineering and a PhD in Physics from the Politecnico di Milano in Italy. He joined the Istituto Nazionale di Ricerca Metrologica (INRIM) in 1996, where he now works as senior researcher and leader of the research programme ‘Quantized charge and resistance’ of the Nanoscience and Materials Division. His primary research interest is electrical

impedance metrology. Luca is responsible for the Italian national standards for electrical AC resistance, inductance, capacitance and AC voltage ratio.

He is member of the Council for the PhD in Metrology of the Politecnico di Torino and has a national qualification as a full professor of measurement science. Additionally he has been a visiting scientist at various universities

and institutes in Europe and was adjunct professor of Physics and Electronic Measurements.

Within EURAMET he is currently the Italian contact for TC-EM and the Subcommittee on Low Frequency, and a member of the TC-EM Working Group on Strategic Planning. Luca took over the role as TC-Chair from Francois Piquemal (LNE, France) who successfully chaired TC-EM from 2011 to 2015.

Petra Milota –
TC-Chair for Flow (TC-F)



Petra Milota studied Aerosol and Environmental Physics at the University of Vienna and gained her degree in Atomic Physics at Vienna Environmental Research Accelerator (VERA).

After postdoctoral and visiting scientist positions in various European universities and institutes, she joined the Austrian Federal Office of Metrology and Surveying, BEV, as technical

officer of water flow and thermal energy in 2007. Since 2011 Petra has been Head of the Unit for Flow, Temperature and Photometry and since 2014 she has also led the Physico-Technical Testing Service of BEV. Petra is responsible for the management of the Unit in technical matters, conceptual design and engineering of measuring methods. Internationally she has

experience as a representative in various technical committees and has taken part in EMRP joint research projects. “In my new role as Chair of TC-Flow I would like to continue the very good work of my predecessor Elsa and to set further steps towards interdisciplinary cooperation.” Petra took over the position from Elsa Batista (IPQ, Portugal) who successfully led TC-F from 2011 to 2015.

Isabel Spohr –
TC-Chair for Mass and
Related Quantities (TC-M)



Isabel Spohr studied Chemical Engineering at the Technical University of Lisbon (Instituto Superior Técnico) in Portugal. She joined the Portuguese National Metrology Institute, Instituto Português da Qualidade (IPQ), in 1996 and worked at the mass laboratory, before moving to the pressure and force laboratories, for which she is now responsible.

Since 2004 Isabel has been head of the Mass and Related Quantities section. She has been involved in the EURAMET community since 2002, participating in meetings and comparisons.

Isabel took over the position from Nieves Medina Martin (CEM, Spain) who successfully led TC-M from 2011 to 2015. In her new role as TC-M Chair Isabel wishes to carry

on the good work done by the previous TC-M Chairs: "My goal is to further develop and foster the cooperation between the National Metrology Institutes, Regional Metrology Organisations and other metrological organizations in the field of mass and related quantities."

Harald Bosse –
TC-Chair for Length (TC-L)



Since 2009 Harald Bosse has been head of the Precision Engineering division of the German National Metrology Institute, Physikalisch-Technische Bundesanstalt (PTB). He obtained a PhD in Physics at the University of Kassel in Germany. Harald joined PTB in 1990 where he started working in the field of precise form and diameter metrology and photomask and wafer metrology, before becoming head of the department for Length and Angle Metrology in 2000.

Harald is a member of the CIPM Consultative Committee for Length, where he is heading a discussion group and a task group. Additionally he is engaged in cooperative activities in research and education as a member of different management and editorial boards of organisations and journals, and he is active in international standardization work.

Harald took over from Antti Lassila (MIKES, Finland) who successfully chaired TC-L from 2011 to 2015:

"In my role as TC-Chair I would like to further promote the work of TC-L to metrologists from other disciplines and the public. Additionally I will keep the focus on making best use of the EMPiR programme including the tools for capacity building."

Hanspeter Andres –
TC-Chair for Metrology
in Chemistry (TC-MC)



Hanspeter Andres is the head of the analytical chemistry sector at the Federal Institute of Metrology (METAS) of Switzerland and holds a PhD in Chemistry from the University of Bern. After a post-doctoral fellowship at Carnegie Mellon University in Pittsburgh (USA) and five years work in industry, Hanspeter joined METAS in 2007. There he is in charge of the metrology in chemistry

activities, a routine analytical test laboratory and the education programme for metrology. Hanspeter started to contribute to the EURAMET community in 2007 as the Swiss contact for TC-MC. He has been involved in the review of Calibration Measurement Capabilities, comparison projects and EMRP joint research projects.

In his role as TC-Chair he wants to continue the excellent work

of his predecessors: "I would like to focus on further integration of Designated Institutes into the TC work, engagement with key stakeholders on a European level and cross-disciplinary work with the other EURAMET TCs." Hanspeter took over the position from Michela Segal (INRIM, Italy) who chaired TC-MC with great engagement from 2011 to 2015.

Jarle Gran –
TC-Chair for Photometry
and Radiometry (TC-PR)



Jarle Gran studied Technical Physics at the Norwegian University of Science and Technology in Trondheim. He joined Justervesenet (JV), the Norwegian Metrology Service, in 1994 where he started in the mass department before changing to the length area.

Jarle developed the service of calibrating laser speed measurement devices in Norway and worked as scientific witness

in various court cases. Since then he developed and maintained the radiometry laboratory at JV. Between 2001 and 2005 Jarle studied for his PhD at the University of Oslo on exploiting silicon detectors as primary standard detectors. He continued this work within different iMERA-Plus and EMRP joint research projects.

Jarle took over the position as TC-Chair from Marek Smid (CMI,

Czech Republic) who chaired TC-PR with great engagement from 2011 until 2015. Jarle is keen to take up this work: "If I should summarize my objectives as TC-Chair in one word I would say 'collaboration'. I believe we should continue and strengthen our collaborative work within the TC and also encourage collaboration with other institutes inside and outside Europe."



Measure, analyse and innovate: an on-going challenge!

Metrology 4.0 and Industry, Energy, Healthcare, Agrifood or Risk Management – these are only a few of the topics which will be covered by the 17th International Congress of Metrology. It takes place from 21 to 24 September 2015 in Paris, France. It will be a meeting-point for technical exchange between all users of measurement: industrial users of equipment, technical experts, public and private laboratories, manufacturers and service providers. This congress is unique in Europe. It explores developments in measurement techniques, R&D advances and their implication for industry. It demonstrates how measurement improves day-to-day industrial processes and risk management.

For further information, the full programme and online registration go to www.metrologie2015.com/metrology-2015.html

Visit us at CIM 2015!

EURAMET is represented at this year's International Congress of Metrology in Paris, France at the Enova exhibition. From 22 to 24 September you will find us in the Metrology Village, stand number N30G.

Stay up-to-date with the European Metrology community!

Subscribe to EURAMET's newsletters at www.euramet.org/subscribe or take a look at previous versions at <http://www.euramet.org/publications-media-centre>

Take part in the Public Consultation on 'Challenges in flow measurement in Europe'

EURAMET's Technical Committee for Flow (TC-F) is carrying out a survey to identify important challenges in flow measurement in Europe. The information gathered will be used to develop flow-related research proposals to be submitted to EURAMET's European Metrology Programme for Innovation and Research (EMPIR). The input will be treated as confidential and will be considered by TC-F when formulating research proposals.

To take part in the public consultation go to <https://docs.google.com/forms/d/1M9TNOKoNMAPVGWb1-ehkk8tMIQZu2X5GEOqthbgdk-w/viewform>

The survey will be open until 30 October 2015.



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