

ASPECTS OF THE COLLABORATION BETWEEN BRML-INM and JRC IRMM

Dr.Mirella BUZOIANU, director INM

Framework of collaboration between INM and IRMM

Letter of Intent for Collaboration between INM and IRMM


Signed on 09-04-02

by

dr. Dragos BOICIUC,
director of INM

and

Prof. Dr. M. Grasserbauer,
director of IRMM

 EUROPEAN COMMISSION
DIRECTORATE GENERAL JRC
JOINT RESEARCH CENTRE
Institute for Reference Materials and Measurements
IRMM

Letter of Intent for Collaboration
between INM and IRMM

The undersigned
Prof. Dr. Manfred Grasserbauer,
Director of the Institute for Reference Materials and Measurements (IRMM)
of the Joint Research Centre of the European Commission
and
Dr. Dragos Boiciuc,
Director of the National Institute of Metrology (INM), Romania

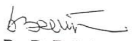
convinced of the need for education and training in "Metrology in Chemistry"
(MIC) as basis for international recognition of measurement certificates needed
for the effective implementation of EU-Directives on:


- fair trade
- border-crossing implementation of environmental regulations
- implementation of regulations on food safety requiring chemical measurements
incl measurements of upper limits of toxic substances

convinced of the need for simple, easy-to-read-and-use, pictures of degree of
equivalence of measurement capabilities in the countries-candidate for accession to
the European Union on the one side and in countries of the EU on the other side,
hereby declare their intention to cooperate.

Specifics of this collaboration are taken up in the technical annex to this agreement,
which will be updated as and when required.

Date: 09-04-02

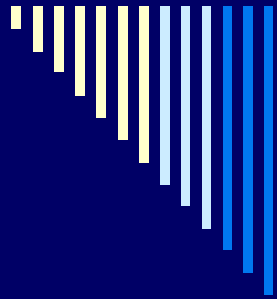

Dr. D. Boiciuc
Director
National Institute of Metrology


Prof. Dr. M. Grasserbauer
Director
Institute for Reference Materials and
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European Commission



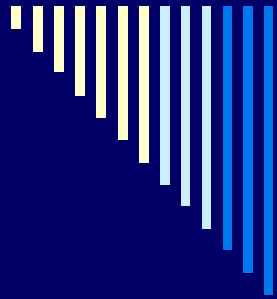
Specific tasks

1. Education and Training in MiC of INM staff at IRMM
 2. Training Romanian students as future specialists in MiC via collaboration between IRMM and INM, involving universities from Romania and Belgium
 3. Seminars on MiC by IRMM staff in Romania
 4. Participation of Romanian laboratories in relevant comparisons in MiC to support declared CMCs for CIPM – MRA
 5. Participation of Romanian measurement laboratories in IMEP
 6. Provision of IRMM RMs to Romanian laboratories
 7. Transposing specific European regulations into Romanian regulations regarding MiC
 8. Studies and reports on the status and development of MiC in Romania
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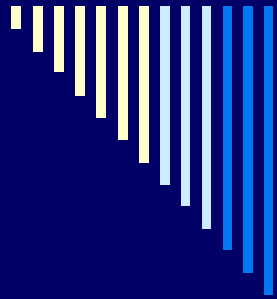
Main results obtained

- 30 specialists of INM included in the more than 542 Romanian specialists working in 10 Romanian organisations trained in MiC;
- 19 seminars on MiC organised in Romania;
- Status Report of Romania on Metrology in Chemistry;
- 9 IMEP rounds with the participation of Romanian laboratories



Train MiC programm

- The TrainMiC - Training for Metrology in Chemistry - programme has its beginning in Sinaia, Romania in 2001
- TrainMiC[®] aims at the harmonised interpretation of the metrological requirements of ISO/IEC-17025 – the main standard for chemical and bio-analytical measurements in different sectors such as environment, food or consumer protection. It supports Commission initiatives such as the Europe 2020 Strategy initiative, “Agenda for new skills and jobs”.
- TrainMiC[®] operates across Europe via national teams, which share pedagogic tools that have been harmonized by an editorial board.
- The training material has been translated into 14 different languages (Romanian language included)



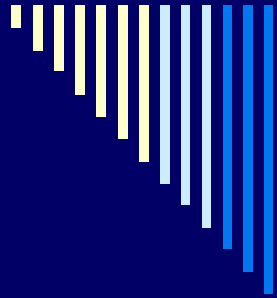
Train MiC programm

- TrainMiC® - has been set up as a training platform for experts from all types of organisations.
- Via the TrainMiC® platform, a set of training presentations and examples had been elaborated that provides better understanding in basic measurement matters, which apply to measurements across different sectors such as food, environmental, clinical, industrial, research or routine measurements.
- A training national team is in place, the team members (3 out of 4 members are INM staff) are periodically trained at IRMM by TrainMiC editorial and management boards members.
- The TrainMiC presentations are presented by the national team members in the native language



TrainMiC in Romania

| Event nr. | Place | Period | Number of participants |
|-----------|-----------|----------------------|------------------------|
| 13 | Bucharest | March 17-18, 2003 | 39 |
| 23 | Bucharest | March 2004 | 98 |
| 28 | Bucharest | June 3, 2004 | 18 |
| 35 | Sinaia | November 25-26, 2004 | 29 |
| 42 | Bucharest | May 2005 | 43 |
| 50 | Bucharest | September 2005 | 25 |
| 52 | Bucharest | October 2005 | 25 |
| 61 | Bucharest | March 15-16, 2006 | 25 |
| | Bucharest | May 11-12, 2006 | 28 |
| 81 | Bucharest | April 11-12, 2007 | 22 |
| 84 | Bucharest | May 23-24, 2007 | 17 |
| 94 | Sinaia | October 11-13, 2007 | 44 |
| 105 | Bucharest | December 19-20, 2007 | 14 |
| 109 | Bucharest | March 2008 | 25 |
| 121 | Medias | June 2008 | 20 |
| 126 | Bucharest | September 2008 | 10 |
| 173 | Braila | June 21-23, 2010 | 18 |
| 176 | Bucharest | October 2010 | 22 |
| 182 | Bucharest | November 2010 | 20 |
| 191 | Bucharest | March 2011 | |



TrainMiC contact in Romania



Dr Steluta DUTA
National Team Leader

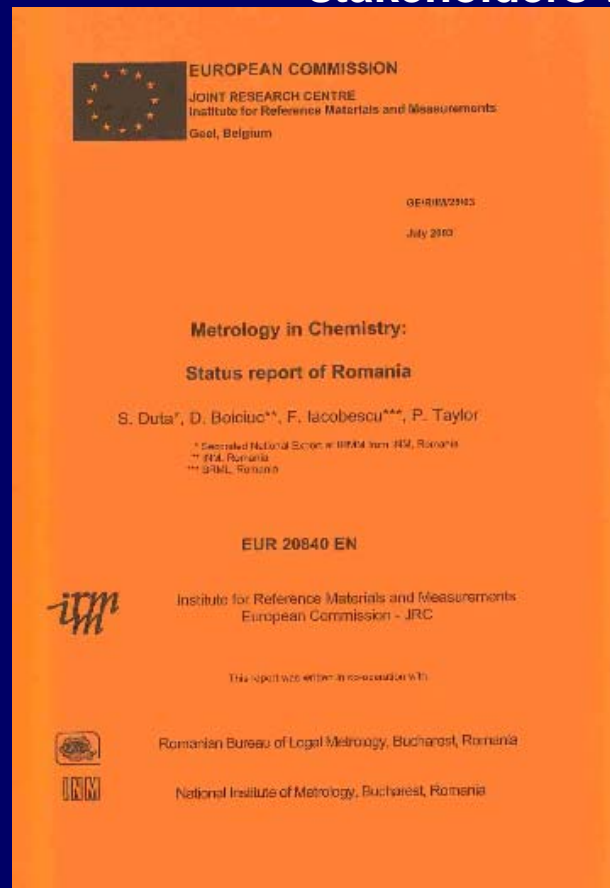
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European Integration

Status Report

IRMM's initiative was to assist the national organisations (i.e. metrology institutes or universities) to document the status of metrology in chemistry in the country, then, to write about the main activities, responsibilities and further preoccupations of the major stakeholders which are dealing with chemical measurements.

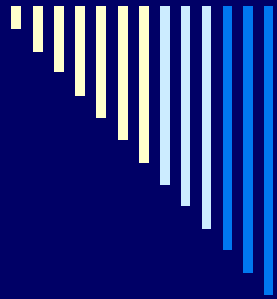


- The Status of metrology in chemistry in Romania was documented and elaborated in 2003.
- The activities of more 65 institutions were described and more than 25 people contributed to collect the relevant information contained in this report.
- It was published as EUR 20840 EN and it is distributed, at the national level as well as at the European level



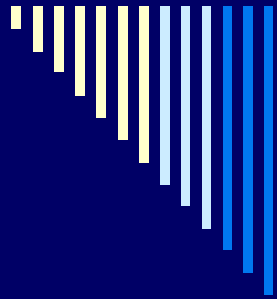
Training Romanian students

- Another knowledge dissemination activity supported by INM-BRML is via *AcadeMiC[®]: Metrology in Chemistry for Academia*, originated in 2002 at IRMM-JRCEC.
 - From the beginning, the vision of AcadeMiC[®] was to foster the advancement of education in metrology in chemistry and related topics (e.g. method validation, traceability, measurement uncertainty) on the generic measurement issues that are addressed in the standard ISO/IEC-17025.
 - It is important to provide good quality education to the new generation of university students, so they are equipped with the necessary competence
 - Later on, the effort was spent to create a Joint Degree Programme (JDP) on this topic. Nine universities, one from Romania (Brasov), are now part of the consortium that applied to the European Chemistry Thematic Network Association (ECTNA).
 - In this respect, BRML – INM acts, on behalf of Romania, as specialised metrology organisation to support the Romanian universities to joint this activity.
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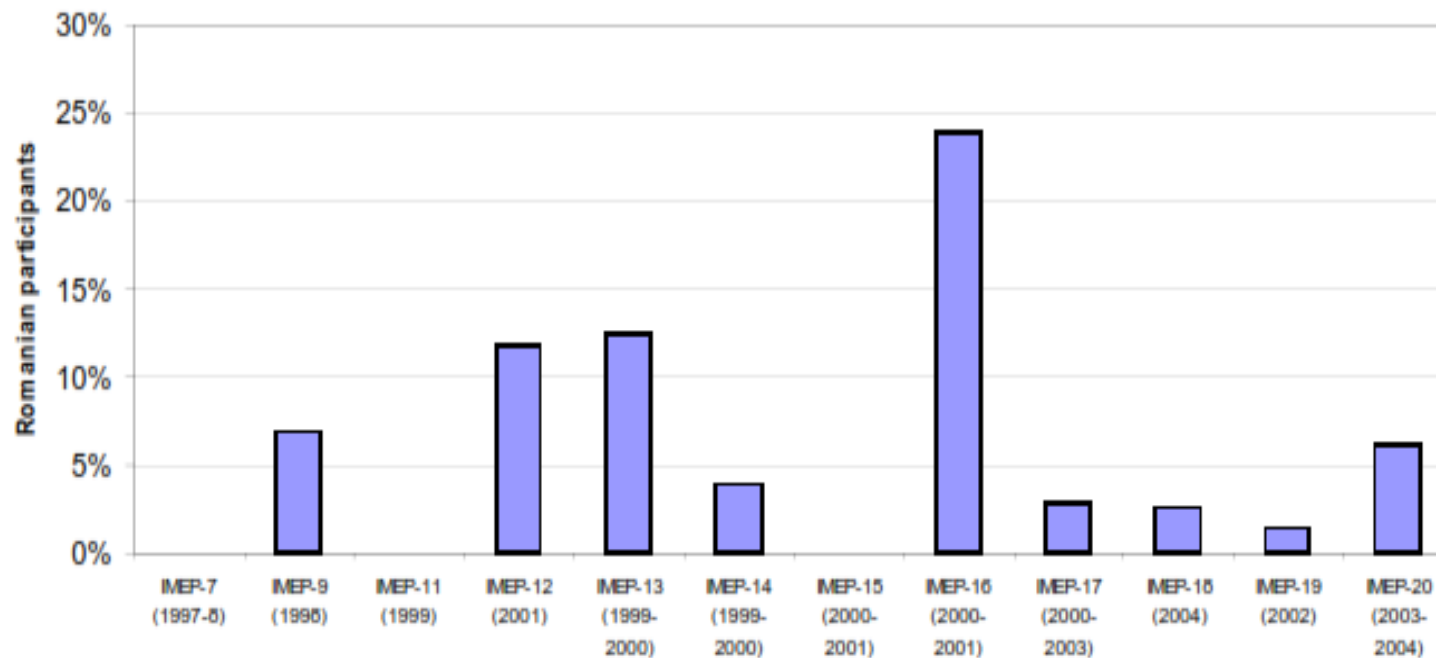


International Measurement Evaluation Programme - IMEP

- **The aim:** to demonstrate objectively the degree of equivalence and the quality of chemical measurements by comparing participants' measurement results with external reference values, which are completely independent from the participants' results. The reference values are obtained by metrological work of recognized reference laboratories with demonstrated measurement capability at international level. Participating laboratories can use this value to assess the quality of their results and to support their measurement capabilities claims on an international forum.
- **IMEP is focused** as much as possible on 'real – life' samples and has as the main objective to enable assessment of measurement capability linked to implementation of European Directives in the fields where chemical measurements are important, such as consumer protection and public health, single market, external trade, environment, research and technology or economic policy.
- IMEP is aiming to assist the establishment of an internationally structured measurement system for chemical measurement, and in this respect, interacts with different bodies as BIPM-CCQM, EURAMET, European Accreditation and others.
- To disseminate measurement traceability, IRMM provides with its IMEP, an inter-laboratory tool to enable the benchmarking of laboratory performance.
- IMEP emphasizes the metrological aspects of measurement results, such as traceability and measurement uncertainty. In this way it became a publicly available European tool for metrology in chemistry.



Participation of Romanian laboratories in IMEP ILCs



IMEP-12

“Trace elements in water”

IMEP-16 “Lead in wine”

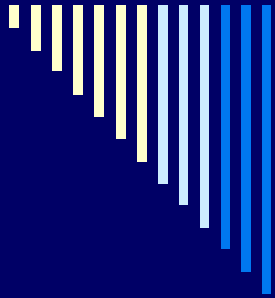
IMEP-17 “Trace and Minor Constituents in Human serum”

IMEP-20 “Trace Elements in Tuna Fish”



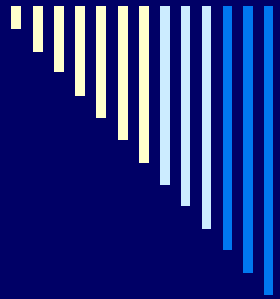
Provision of IRMM RMs to INM

- More than 15 types of RMs (BCRs) provided in 2002 to the INM
 - Matrix BCRs (human serum, water, copper, alloys, etc.)
 - Ensure the SI traceability of the calibrations and measurements performed by the INM in chemical fields
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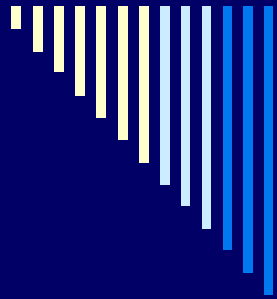
Publications

- S. Duta, D. Boiciuc, F. Iacobescu, P. Taylor, *Metrology in Chemistry: Status Report of Romania, 2003*, EUR 20840 EN,
- <http://www.imep.ws>,
- P. Taylor, I. Leito, N. Majcen, A. Galdikas, E. Vassileva, S. Duta, E. Bulska, *A strategy paper for a national metrology institute to create a cost effective distributed metrology infrastructure for chemical measurements*, *Accred. Qual. Assur.* 2004, 9:478-484
- T. Prohaska, E. Bulska, S. Duta, I. Leito, B. Magnusson, N. Majcen, E. Prichard, P. Robouch, M. Suchanek, P. Taylor, E. Vassileva, W. Wegscheider, *Report of the 1st AcadeMiC summer school for Metrology in Chemistry*, *Anal. Bioanal. Chem.* 2006, 385:1031-1032
- S. Duta, Y. Aregbe, L. Van Nevel, P. Taylor, F. Iacobescu, *IMEP in support of comparability of measurement results across the Romanian chemical metrology infrastructure*, *Accred. Qual. Assur.* 2006, 10:554-561
- Steluta DUTA, Philip TAYLOR, Dragos. BOICIUC, Fanel IACOBESCU, *Improving Metrology in Chemistry Infrastructure in Romania via IRMM-JRC-EC Collaboration*, *METROLOGIE* 2-3/2008



European Metrology Research Program (EMRP)

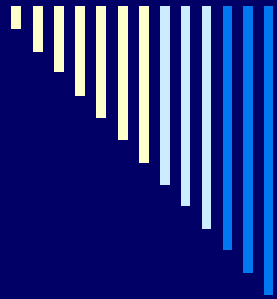
- ❑ The European Metrology Research Programme (EMRP) is an applied research programme approved in 2009.
- ❑ It seeks to accelerate the development, validation and exploitation of new measurement techniques, standards, processes, instruments, reference materials and knowledge.
- ❑ The EMRP supports research collaboration between the National Measurement Institutes (NMI) and Designated Institutes (DI) from 22 European States together with the European Commission's Joint Research Centre.
- ❑ These collaborations run as Joint Research Projects (JRPs) co-funded by the national measurement system programmes of the EMRP Member countries and the European Union.
- ❑ The JRPs are supplemented by the EMRP Researcher Grants.



EMRP Grants

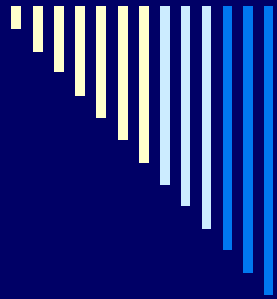
3 Types of EMRP Researcher Grant

- **Researcher Excellence Grant (REG)**
 - Aim: “to enlarge the number of organisations with capacities closely relating to metrology” within the EU Member States and FP7 associated countries
- **Researcher Mobility Grant (RMG)**
 - Aim: “to increase the capability of the European metrology researcher community”
- **Early-Stage Researcher Mobility Grant (ESRMG)**
 - In addition to the aim of the Researcher Mobility Grant, the Early-Stage Researcher Mobility Grant aims to “ensure sustainability of cooperation between the NMI and DI” of the EMRP.



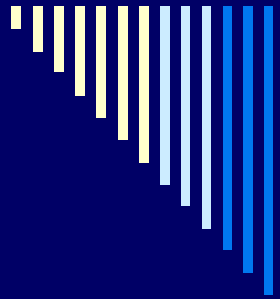
Researcher Excellence Grant (REG)

- A REG provides financial support for an experienced researcher who is capable of making a substantial contribution through research activities relevant to the JRP objectives.
- The research must be mainly undertaken at a Home Organisation that is not part of the national metrology systems (i.e. a non NMI/DI organisation). This aims to “open the JRPs to the best science”
- Additionally, there is the opportunity to undertake a period of Research based at a Guestworking Organisation (a funded JRP-Partner, or REG Home Organisation) located in a different country to the Home Organisation. This transnational Guestworking can be between 1 month and 30 % of the total REG duration.
- REG allowances include: a salary allowance, research & training allowance, and contribution to the Home organisation’s overhead. For REGS including transnational Guestworking further allowances include: contribution to the Guestworking Organisation’s overhead, living allowance, travel allowance and family allowance (where applicable)



Researcher Mobility Grant (RMG)

- ❑ A RMG provides financial support for a researcher at any stage of their career, to undertake research activities relevant to the JRP objectives. This aims to “to develop the capacity of individuals in Metrology”.
- ❑ The research must be undertaken at a Guestworking Organisation (a funded JRP-Partner, or REG Home Organisation) located in a different country to the researcher’s employer.
- ❑ RMGs are open to many countries, but EURAMET particularly encourages applications from researchers in EURAMET countries which are not yet participating in the EMRP (Albania, Bosnia & Herzegovina, Bulgaria, Croatia, Cyprus, FYR Macedonia, Greece, Iceland, Ireland, Latvia, Lithuania, Luxembourg, Malta and Serbia). This aims to support EURAMET member countries building and furthering their capacity in metrology.
- ❑ RMG allowances include research & development allowance, contribution to the Guestworking Organisation’s overhead, living allowance, travel allowance and family allowance (where applicable)



Early-Stage Researcher Mobility Grant (ESRMG)

- An Early-Stage Researcher Mobility Grant provides financial support for a researcher with fewer than 4 years experience, employed by an NMI or DI from an EU Member State or FP7 associated countries, to undertake research activities relevant to the JRP objectives. This aims to “prepare the next generation of experienced metrology researchers” by building experience of metrology collaborations.
- The research must be undertaken at a Guestworking Organisation (a funded JRP-Partner, or REG Home Organisation) located in a different country to the researcher’s employer.
- ESRMG allowances include research & development allowance, contribution to the Guestworking Organisation’s overhead, living allowance, travel allowance and family allowance (where applicable)



Benefits of an EMRP Researcher Grant

The EMRP Researcher Grant **supports the researcher by offering:**

- An opportunity to work on a world leading metrology project with high social and economic impact
 - An opportunity to build links to key metrology organisations and individuals
 - An opportunity to build metrology experience
 - Potential to publish joint papers with world leading metrological scientists on groundbreaking JRPs
 - An opportunity to learn about research in other countries and apply this to their own research
 - A range of financial allowances (including a generous salary allowance for REG-Researchers)
-



Benefits of an EMRP Researcher Grant

The EMRP Researcher Grants enable the JRP-Consortium an opportunity to access researchers from within and beyond the national metrology systems, at little or no cost to the JRP-Consortium.

The benefits are:

- Access to expert researchers to undertake specialist research activities relating to the JRP
 - Measurement of extra parameters that are additional to those in the JRP-Protocol
 - Increase the impact of your JRP, for example through additional publications
 - Improve networking among European metrologists, by linking the JRP to other countries
-