



# Eurachem News

*A Focus for Analytical Chemistry in Europe*

Issue 29

Autumn 2011



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## Report from the Eurachem Workshop "Key Quality Assurance Challenges for Analytical Measurements" and the General Assembly in Moscow, Russia

The ancient Russian city Moscow with more than 850 years history was honored by hosting the 2011 Eurachem Workshop "Key Quality Assurance Challenges for Analytical Measurements", and the 27<sup>th</sup> EURACHEM General Assembly. The warm spring weather and the hospitality offered the participants not only a scientific, but also a rich cultural experience including the sightseeing tour across Moscow in the evening.

Over 50 participants from 30 analytical organizations, certification centers, accreditation bodies, and clinical and forensic laboratories took part at the workshop "Key quality assurance challenges for analytical measurements" in the premises of the National Research Technological University "MISIS" (NITU MISIS), a leading Russian technical university training metallurgical experts, on 23-24 May. The School of metrology and quality of analytical measurements is



headed by member of the Russian Academy of Sciences and CITAC member professor Yuri Karpov.

The Workshop was run under the aegis of Eurachem Working Group "Education and Training" and supported by the TrainMic team, the Russian Foundation of Basic Researches, the Scientific Council of Analytical Chemistry of the Russian Academy of Sciences, and by the Association of the Analytical Centers of Russia "Analytica". A team of skilled lecturers consisting of TrainMic representatives and of Eurachem GA members presented interesting reports on actual problems of metrology in analytical

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chemistry. More details on this event may be found in the article by the Chair of WG Vicki Barwik.

A meeting of the Working Group Education and Training, following the Workshop, took place on 25<sup>th</sup> May. Discussed were pressing questions on current and future activities.



Eurachem General Assembly began its work on 26<sup>th</sup> May. As much as 26 delegates from 18 European countries,

enjoyed not only professional, but also a cultural programme.

The first day of General Assembly finished by the a friendly banquet garnished by the performance of a folklore music ensemble.



The Eurachem Chairman was praised after ancient Russian habit by a salutatory song and dressed in attributes of the imperial dress — a cap of the Monomakh and a neckpiece. The Chair Miloslav Suchanek proved to be an exceptional dancer and has broken into a dance with Russian beauties. It appeared that many colleagues were familiar with Russian national songs while echoing performers. At a pleasant conversation, warm and cosy atmosphere the colleagues and friends had no will to finish. But next day work was coming.

On the second day of General Assembly, the 27<sup>th</sup> May, were presented National reports of the member countries. That day has traditionally come to the end with session of the Executive Committee.

It is worthwhile to note an organizational support of the events. The young specialists, students and post-graduate students of NITU MISIS and GIREDMET were involved in escorting and aiding the visitors. With warmth and attention they cared about visitors and evidently



promoted interesting communications. The organizing committee hopes that the 27<sup>th</sup> session of the General Assembly has passed successfully and invites all the colleagues to visit Russia again. Moscow passes the baton on to Berlin for carrying out the 28<sup>th</sup> Eurachem General Assembly in 2012.

Vasilisa Baranovskaya



Delegates at the 27<sup>th</sup> Eurachem General Assembly, Moscow 2011

# EURACHEM/CITAC 2011 workshop: Recent Developments in Measurement Uncertainty, Lisbon 6-7 June 2011

The EURACHEM/CITAC Measurement Uncertainty and Traceability Working Group promoted a workshop on "Recent Developments in Measurement Uncertainty", held in the Science Museum of the University of Lisbon on 6 and 7 June 2011. This event was organized by the Faculty of Sciences of the University of Lisbon and the Portuguese Association of Accredited Laboratories (RELACRE). The program of the workshop was divided in five sessions, namely: "Measurement Uncertainty", "Practical evaluation of Measurement Uncertainty", "Compliance and Traceability", "Numerical methods", and "Future Directions".

This very successful event included presentation and discussion over the draft



version of the 3<sup>rd</sup> edition of the EURACHEM/CITAC guide "Quantifying Uncertainty in Analytical measurement", that celebrated its 16<sup>th</sup> anniversary. The 86 participants of the workshop from 26 countries had opportunity to present, both orally and in posters, their most recent work on the evaluation of the measurement uncertainty. Seven invited lectures, eleven oral communications and 29 posters were presented at the meeting. All of these stimulated lively discussions and it was encouraging to listen to the application on evaluation of measurement uncertainty to such a wide range of analytical measurements.

Two pairs of parallel breakout sessions on "Compliance" and "Traceability", and

"Numerical Methods" and "Uncertainty and Detection Limits" allowed some longer discussion between participants about these key issues. The book of abstracts, some communication from participants and the report of breakout sessions are available in the workshop website <http://eurachem2011.fc.ul.pt>. The Journal of Accreditation and Quality Assurance (ACQUAL) will publish a topical issue with full papers with works presented at the workshop.

Ricardo Bettencourt da Silva



## Working Groups Reports

### Eurachem Education and Training Working Group

The Eurachem Education and Training Working Group (E&T WG) meets formally once a year during the week of the General Assembly. The group had a very successful meeting in Moscow in May which was attended by 16 members. The Working Group is always keen to attract new members and we were pleased to welcome some 'new recruits' in Moscow. Martina Hedrich (Germany), Linnéa Linko (Finland) and Fatma Akçadağ (Turkey) have all joined the group during 2011.

The E&T WG has been very active during 2010/2011 with two key projects reaching their conclusions. The new Eurachem Guide 'Terminology in Analytical Measurement - Introduction to VIM 3' was published in April and can be downloaded from the Eurachem website. The Guide was prepared by a project group comprising E&T WG members and other metrologists co-opted for the project. In the Guide a selection of the

concepts in VIM 3 are discussed, focusing on those most likely to be encountered in analytical laboratories. It aims to cover chemical, biological and clinical measurements and gives examples over and above those in the notes accompanying the definitions in VIM 3. The Guide is intended for laboratory staff, accreditation bodies, for those commissioning measurements and for those using measurement results. The Guide has proved popular - it has received around 1200 'hits' on the Eurachem website and a number of requests for permission to translate the Guide have been received.

The second key activity for the working group was the organisation of a workshop on 'Key Quality Assurance Challenges for Analytical Measurements' which was held prior to the General Assembly in Moscow. The workshop was organised in collaboration with the Scientific Council on Analytical Chemistry at the Russian Academy of Science, the Association of Analytical Centres ('Analitica'), the National University of Science and

Technology (MISIS) and TrainMiC. The workshop was attended by approximately 50 delegates from a range of organisations. The programme comprised a mixture of presentations and workshop sessions and covered a wide range of topics including quality management and accreditation, method validation, measurement uncertainty, quality control, traceability, reference materials and proficiency testing. The presentations were delivered by speakers representing Eurachem and TrainMiC, as well as from Russian organisations. Feedback from the delegates has been generally positive and the smooth running of the workshop was ensured by our hosts at MISIS. As Chair of the workshop's Scientific Committee I would like to thank everyone who helped to make the event a success.

An ongoing task for the E&T WG is to ascertain the state of education and training in metrology within member states. To assist with this a questionnaire has been developed by WG members. The questionnaire is aimed at

universities and other institutions providing academic courses (dealing with metrology), and to institutions and other companies/organisations offering training for laboratory employees as part of continuing professional development. The plan is to circulate the questionnaire in the autumn. The E&T WG urges Country Representatives to distribute this questionnaire widely to universities, colleges, professional bodies, training companies and accreditation bodies as well as others known to them who are interested in this topic. The questionnaire responses will inform Eurachem of the extent to which metrology is part of the curriculum for chemistry and biology students, and the professional development of analysts.

Finally, the working group is planning to hold a workshop on quality control during October 2012, in Berlin. Details will be circulated later in the year.

Vicki Barwick

## Eurachem Measurement Uncertainty & Traceability Working Group

The WG has been very active this year; we held meetings at the GA assembly in Copenhagen in May 2010, at LGC in the UK in December 2010 and in Brussels in March 2011. All of these meetings were well attended and the group also carried out work by e-mail between the meetings.

The main business was the preparation of the third edition of the Measurement Uncertainty Guide and the final draft is now going through the final proof reading stage by members of the group, in time for it to be presented at the Workshop in Lisbon in June. This workshop is being organised jointly by Eurachem Portugal and RELACRE (The Portuguese Accreditation Agency). Preparation of the programme and the publicity for the WS has been the second major activity of the group. We had a good response to the first round of publicity and call for papers that was sent out at the beginning of this year. We had proposals for more than 10 contributed papers and over 30 for posters.

The second round of publicity giving the workshop programme was sent out in April. We have had over 70 registrations so far and ACQUAL has agreed to publish the workshop papers in a special issue. Following the workshop a final version of the revised guide will be published taking into account the comments received from the participants.

Alex Williams

## EA-EUROLAB-Eurachem Working Group: "Proficiency Testing in Accreditation" (EEE-PT)

The EEE-PT WG has continued to make progress on a number of work activities during the past year:

- The work on the frequency of PT participation is now complete and has been published; EA-4/18:2010 'Guidance on the level & frequency of proficiency testing participation'. This document has made an important contribution to the revised ILAC P9 ('ILAC Policy for Participation in Proficiency Testing Activities') which was published in November 2010.

- The revision of the Eurachem Guide 'Selection, Use and Interpretation of Proficiency Testing Schemes' is now complete. The final version was circulated to GA members for vote and comment during March 2011. There were 15 positive votes and no negative votes received. There were three editorial comments which have been addressed. The revised guide, following final approval from the Eurachem Executive, will be published shortly on the Eurachem website.

- A new work activity recently started is guidance document on how to use ILCs with a few participants in accreditation. The document will focus on two scenarios:

- The assessor questions the lab on the PTs they have participated in and quality measures that have been performed. If the lab answers that they have organised their own PT, the assessor can determine how to assess this by following this guidance.

- The assessor brings an artefact asking the laboratory to make a measurement and provide the answer.

- Another new work activity is guidance document on accreditation scopes for PT providers. The key elements of the scopes of accreditation for PT providers have been discussed in terms of the level of detail and degree of flexibility that is appropriate. These include dates, technical fields, test sample matrix, parameters being tested etc.

The EEE-PT WG has continued to provide input to the ILAC PTCG.

Current Eurachem representatives on the EEE-PT WG are:  
Frank Baumeister, Germany  
Brian Brookman, UK  
Marina Patriarca, Italy  
Piotr Roboczek, EU

## Eurachem Proficiency Testing Working Group

The Eurachem Proficiency Testing Working Group (PTWG) has continued to make progress on a number of work activities during the past year:

- The PTWG is in the process of having the leaflet on pre- and post-analytical proficiency testing translated into a number of other European languages. The translated leaflet will shortly be sent to the appropriate GA members for final approval.

- The organization of the 7<sup>th</sup> Eurachem Workshop addressing current practice and future directions of proficiency testing (PT) and external quality assessment (EQA) in analytical chemistry, microbiology and laboratory medicine is progressing well. The Workshop is being organised in co-operation with CITAC and EQALM. It was held on the 4<sup>th</sup> to 6<sup>th</sup> October 2011 in Istanbul, Turkey. The Workshop was structured to include key-note lectures along with a number of short presentations, discussions in working groups and poster sessions, to enable interactive participation and cross-fertilisation of ideas. The key topics addressed at the Workshop:

- Implementing the requirements of ISO/IEC 17043 by PT/EQA;
- Accrediting PT/EQA providers to ISO/IEC 17043;
- Establishing acceptability criteria in microbiology PT/EQA schemes;
- Evaluating participant performance in qualitative PT/EQA schemes;
- Establishing PT/EQA schemes in developing countries;
- Pre and post analytical aspects in EQA.

Some exhibition space was available. Training sessions preceded (3<sup>rd</sup> October) the Workshop, which was on "Establishing traceability and uncertainty of assigned values and assisting participants to assess/estimate their measurement uncertainty using PT results". Full information is available at [www.labkar.org.tr/Eurachem2011](http://www.labkar.org.tr/Eurachem2011); a link is available from the Eurachem website.

- Work has recently started on a new PT leaflet – "How can proficiency testing help my laboratory?"

- Another new work item is the production of guidance on the evaluation of qualitative results in PT schemes. This work is at early stage and will start with a survey, conducted in collaboration with EQALM, to current PT/EQA providers to enquire how they currently evaluate performance in qualitative schemes.

Current members of the PTWG are:  
Brian Brookman, UK (Chair)  
Minna Loikkanen, Finland  
Tracey Noblett, UK (Secretariat)  
Miklos Naray, Hungary

Brian Brookman

Bruno Berken, France  
Ender Okandan, Turkey  
Ewa Bulska, Poland  
Ulf Örnemark, Sweden (corresponding member)  
Owen Butler, UK  
Marina Patriarca, Italy  
Andreja Drolic, Slovenia  
Kees van Putten, The Netherlands  
Ildi Ipolyi, Italy  
Piotr Robouch, EU  
Michael Koch, Germany

Brian Brookman

## Eurachem Method Validation Working Group

This is certainly – and very unfortunately – the very first words written from this working group for a full year!!!

As a convener for this WG (even getting a new mandate for that a year ago in Copenhagen) I can only regret and apologize for this. My last year have been quite difficult for a number of personal reasons resulting in lack of time, energy and inspiration for really dealing with this interesting task. And finally I have ended up in not doing anything at all due to my own disappointment of not being able to fulfil my own thoughts and ambitions regarding this work. Which is of course silly – but a fairly correct description of the actual situation!

Well – in an attempt to make up some kind of report I will now just make a few suggestions for the future activities of this WG – partly based on what has been discussed previously, and partly on some of my own considerations regarding the relevance of making a new Eurachem Guideline on Method Validation and the form of such a revised document! I do hope this can be used as basis for a revival of this WG with or without myself as the convener.

Two years ago in Bratislava a two-step approach was decided:

- 1) A necessary revision and up-dating of the old "Fitness-for-Purpose" guide from 1998.
- 2) A new guide with a revised structure and content – and as a practical counterpart to the more theoretical document to be elaborated by IUPAC.

The task of handing suggestions for the necessary changes in the old 1998 document was delegated to a number of members of the WG at that time (giving 2-3 paragraphs to each to go through), but actually only one person gave a feedback (and I missed following up hard on getting more contributions).

It must be discussed in the WG (and the EC) asap. whether this work is still worthwhile instead of focusing on – and using the resources for – elaborating a new guide (it may even be relevant to

discuss whether the old guide should be declared obsolete!?).

The basis and need for elaborating a new Eurachem Guideline on Method Validation must be thoroughly discussed (again!) as a rather big number of more or less sector-specific documents are now available!

Can a new Eurachem Guideline add any value to the laboratory community in terms of ...

- 1) Securing the validity of the methods used for different purposes?
- 2) Giving ... which is not already covered by existing guidelines?

At present I have no information about whether the planned IUPAC work has been initiated and if so whether it will be possible to adapt to that work in elaborating the "practical counterpart"?

The "Fitness for purpose" principle must still be the valid principle to aim at, setting up new methods in the laboratory (whether from scratch or by implementing/modifying existing methods).

When elaborating a guide on this principle it is probably important to consider for whom this "fitness" is in focus! Is it for those receiving the results of a method as basis for any kind of decision? Or is it for those having to deal with the method in a secure and continuous way in their daily routine work in the laboratory? It is probably for both groups but with a partly different focus both with regard to the planning and the outcome of a validation study.

For the first group it can mainly be seen as a task of fulfilling specified requirements – mainly with regard to the uncertainty of the final results and relating to a number of the well-known "method characteristics" (measuring range, linearity, LOD/LOQ, precision, accuracy etc.) – based on statistical principles for evaluating the risk associated with these results. This should probably be the focus of the IUPAC Guide (?).

For the second group – those working daily in the laboratories – the fitness is more related to the practicalities of handling (planning, setting up, being careful of critical steps, evaluating immediate outputs etc.) and securely performing the method in the routine work. These practical issues are also extremely valuable outputs of a validation study (in addition to the formal method characteristics) and adds to the importance of the need for a very practical planning of the validation study in the laboratory (setting up the protocol) to give BOTH the right statistical basis for the final evaluations of the characteristics AND some good practical knowledge about handling the method.

I suggest elaboration of a guideline primarily aiming at the second group (referring to the IUPAC Guide for the more theoretical and statistical principles – and maybe with some simple explanations of how to use the statistical methods in an Annex?).

I think it should deal with – step by step – all the practical elements in setting up a good validation protocol. Differentiating between different situations with regard to the importance of the different elements in relation to the type and purpose of the actual method. Giving some good elaborated examples in the annexes.

If possible some coordination could be done within existing guides in terms of including examples – and referring to the relevant guides (list of references). A couple of guidelines has actually been elaborated among our members quite recently (in Turkish and Swedish) and it will be obvious to take these documents into consideration instead of "re-inventing the wheel" – as far as they follow the principles for structure and content which will be decided for any new Eurachem Guide.

So far 10 persons are listed as members of the WG (probably need for revision in regard of the time passed since the first meeting 2 years ago!). If possible (part of ?) the group will be gathered during the events in Moscow in May 2011, but we have also received an offer from Germany to host a meeting sometime later.

Lorens P. Sibbesen

## 23<sup>rd</sup> Interagency Meeting (IAM-23)

Friday, 14.00 p.m., 4<sup>th</sup> March 2011  
Főligazgató-Helyettes  
Budapest, Hungary

### Notes

1. *Chair's welcome/introduction /apologies for absence*  
The Chair welcomed delegates to the meeting. Approximately 15 members attended from BIPM, IRMM, Eurachem (S. Ellison), ISO, NMKL, AOAC, AOCS, CODEX Alimentarius and other bodies with interests in methods of analysis for foodstuffs.
2. *Introduction of the Participants*  
Participants introduced themselves in the usual way.
3. *Adoption of the Agenda*  
The agenda was adopted without change.
4. *Report of the Previous Meeting*  
The Report had already been communicated to CCMAS in the previous (2010) session and was agreed without change.

5. *Matters arising from the Previous Meeting not otherwise on the Agenda*  
There were no additional matters arising.

6. *Criteria Approach to the Adoption of Methods – Practical Implications (Inclusion of HorRat values)*  
The Chair asked whether all agencies reported HorRat values in standard test methods. NMKL do; others generally do not.

There was a brief discussion as to the reason for doing so. It was noted that while the Criteria approach was in use and applied Horwitz criteria, it was useful to analysts selecting methods to be able to see immediately whether the methods met Codex criteria.

#### 7. *Proprietary Methods*

##### 7.1 *IAM/CCMAS Paper*

The Chair introduced CCMAS paper CX/MAS 11/32/6 (Use Of Proprietary Methods In Codex Standards)  
Comments on the paper were invited (The Chair noted that comments had also been received from other national delegations within Codex.)

NMKL noted that their approach in microbiological testing permitted proprietary methods on the same basis as any other; that is, they were acceptable if validated and shown to perform well. ISO TC34 had not commented on the paper.

7.2 *Extension of the Criteria Approach*  
I presented a short discussion paper on "The CODEX Criteria Approach applied to Operationally Defined ("Empirical") Methods", prepared in my capacity as a Eurachem representative. It was agreed that this was an important issue and should be put to the CCMAS plenary meeting as an additional item under the discussion of Proprietary Methods. I agreed to introduce the item.

##### 7.3 *IAM-MoniQA Workshop, 6<sup>th</sup> March, 2011*

The meeting noted the workshop on "Methods for food identification and authenticity" to be held on the 6<sup>th</sup>.

#### 8. *Harmonisation of Analytical Terminology in Accordance with International Standards*

The Chair noted the publication of the terminology and asked the CCMAS Secretary for clarification on how Codex would update the terminology (now in the Procedural Manual) when the source documents changed. The secretary said that this would necessarily follow Codex procedures for amending the Procedural Manual, but that this should not normally be contentious if it involved only a change related to an internationally accepted definition.

#### 9. *Other CCMAS Papers*

9.1 *Eurachem Comments on Paper 05 (Conformity Assessment)*  
I presented the Eurachem UfS working group response (prepared by the WG

Chair) to the CX/MAS paper.

The Chair asked whether the particular s/c was the right place to carry the work forward. I indicated that while there was expertise in Eurachem and especially in ISO on sampling issues that ought to be brought to bear on the topic, the principle of changing to a producer/consumer risk control approach had very large implications and was certainly a matter for the regulators themselves to debate. However, it was recognised that the implications of such a move were unlikely to be clear without elaboration, and in particular examples of how individual cases might be managed.

10. *CEN TC 275 WGO Activities - Update*  
The Chair had not acted on this item yet but would be doing so within the next month.

#### 11. *International guidelines for the validation of qualitative methods – update*

Christophe Holst described work on the topic.  
I noted that ISO TC69/SC6/WG 1 were also looking at this (particularly Professor T. Suzuki from Japan). Prof. Suzuki had recently reviewed different approaches, concluding that some (particularly accordance/concordance and statistics such as Cohen's kappa) were in fact equivalent. SC6 WG1 did not feel that the state of the art was yet sufficient for standardisation. It is, however, noteworthy that standards such as ISO 5725 arose in part from prior practice, indicating that work within IUPAC and elsewhere could help to progress the matters.

Holst & co had concluded that existing published approaches were not adequate, but had nonetheless begun to conduct studies based on some simple guidelines (see separate presentation). The basic principle was to test at zero and at least one other level, with each laboratory reporting the number or proportion of positives at each level to give a reported count  $p$  which could be subjected to one-way ANOVA and other graphical methods to summarise performance.

An example was given of PCR detection of a particular DMA target. 20 replicates at each of 7 levels had been reported by 18 labs. Mean proportions and coverage intervals (based on the Beta distribution) were shown for each level. This permitted assessment of the likely range of (for example) detection limits. Publication was in progress.

In a second example, for E. coli detection, 20 labs reported 10 replicates each at 3 levels. Performance at the highest level studied was modest, leading to only a lower limit for detection capability.

Both are nice examples and it will be worth watching the outcome.

#### 12. *Recovery Correction in Collaborative Trials – Update*

This matter had been explored at the previous meeting. C. Holst noted that it was not immediately clear what 'recovery correction' meant; clearly, it partially corrected laboratory bias if done using a run-specific value for recovery. The meeting did not feel that this was a disadvantage and in fact that this laboratory-specific correction was responsible for the improvement in precision.

The Chair asked the meeting whether they felt that methods should be trialled on a recovery-corrected basis if intended for use in Codex where recovery correction was required. The meeting noted that applying a recovery correction constituted a change in the method, and that it was accordingly important to specify in advance of a trial whether the procedure should or should not include correction, and ideally the basis for the correction. The results from the study should then be clearly identified as including recovery correction.

13. *Revision of ISO 5725 – update*  
I summarised the outcome of the January meeting of SC6 WG1, which had resulted in 15725 parts 1 and 2 moving from preparatory work to formal work item proposals. In addition, the meeting had recommended that the new Part 2 be restricted to trueness and the 'basic method' (combining 5725 parts 2 and 4) and that it should NOT include intermediate measures of precision as originally planned.

RC noted that users had pleaded for better usability; I said that this might be improved because the new version would take advantage of the wide availability of software.

#### 14. *IAM Housekeeping/Standing Items*

— Exchange of Reports and Information/Concerns of Members  
Given the time available, members noted that websites were available for updating.  
— Incorporation of change of methods/method corrections in the Codex Alimentarius Commission.  
No significant comment.  
— "Newsletter" and Website Update.  
The IAM website existed; I offered to include a link to it on the Eurachem site, as the IAM was an important continuing collaboration.

#### 15. *Review of Secretariat and Chairmanship*

The Chair and RC agreed to continue in post.

#### 16. *Any Other Business*

BIPM were running a workshop on microbiology in food for national measurement institutes at the CCQM meeting in April. The meeting was by invitation only.

I reported that Eurachem had recently

approved a new Guide to the VIM, which would appear on the Eurachem website shortly.

NMKL were seeking collaborators for collaborative studies of a proposed ICP-MS method for methylmercury in foods and for another on phytosterols and related materials.

17. *Provisional Date and Place of Next Meeting*  
Scheduled for the equivalent date in 2012 (Friday 2<sup>nd</sup> March 2012).

S. Ellison  
Eurachem representative  
to the Inter-Agency Meeting

Note: The Inter-Agency meeting is an annual meeting of standardisation bodies with interests in methods for food analysis in international trade, held in association with the annual meeting of The Codex Alimentarius Committee on Methods of Analysis and Sampling.

## National Reports

### CYPRUS

*Cooperation with the Cyprus Accreditation Body*

The Eurachem Committee proceeded with enhancing its cooperation with the Cyprus Accreditation Body (CYS-CYSAB); to this end, some more of its members applied to CYS-CYSAB to become technical experts in assessments. This is a very useful step ahead in order to ensure wide range of expertise, bearing in mind the increasing needs in accreditation of chemical, microbiological and medical laboratories. In the meantime, additional colleagues have been appointed as members of the Technical Committee for the Accreditation of Laboratories.

*Revision of EA-4/10*

Following a new trend in EA (especially within EA Laboratory Committee), documents are to be reviewed / revised by the stakeholders who were initially involved, Eurachem has undertaken the task for the revision of EA 4/10 on Accreditation of Microbiological Laboratories. The coordination of the work towards the said task has been undertaken by the Cyprus Eurachem Committee.

*Participation at the Conference of the Serbian Accredited CABs*

Kyriacos Tsimillis, past-chair of Eurachem and Jean-Marc Aublant on behalf of Eurolab were the invited speakers at the Annual Conference of the Serbian Accredited CABs. The conference was hosted in Belgrade on the 14<sup>th</sup> June on the occasion of the International Accreditation Day. The two speakers presented the role and activities of Eurachem and Eurolab respectively and the challenge of establishing national committees. K. Tsimillis made also another presentation entitled "The significance of measurements in decision making. The need for reliability".

Dr Kyriacos Tsimillis

### CZECH REPUBLIC

Our local organization continued in disseminating news in area of chemical metrology to Czech chemical and clinical community during the last year. In September 2010 we organised a half-day workshop for chemical laboratories dedicated to basic statistics with using Microsoft Excel. EURACHEM-CZ in cooperation with Czech Accreditation Institute (national accreditation body) hold two-day conference dealing with PT/EQA in June 2011. I was a very successful event, attended by more than 100 participants. During this conference was the Czech translation of the revised version of Eurachem Guide "Selection, Use and Interpretation of Proficiency Testing Schemes" introduced. This document is a main part of our new monograph QUALIMETRICS 17 called Interlaboratory Comparisons and PT. The translation is here accompanied by information about other types of interlaboratory comparisons beside to PT: EQA in laboratory medicine and explanation of statistics used in all kinds of interlaboratory comparisons.

EURACHEM-CZ issued two new Newsletters during time mentioned in this report (16 pages of text). We also continued with publishing our Methodical Leaflets. The leaflets produced this year gave theoretical and also practical view on the limit of detection, limit of quantification and the ways to evaluation data below the limit of detection. These leaflets are in Czech language and are published on the web page for free download.

The regular cooperation within 4E-CZ (association serving with philosophy similar to that of EEE in the Czech Republic) have continued in promoting the translation of VIM 3 in the Czech technical standards, and have dealt with the preparation of new Metrology Act.

David Milde

### DENMARK

Here follows a short summary on the development on Eurachem related activities in Denmark in 2010-2011. Eurachem in Denmark is nested in the Network for Analytical Chemistry within Eurolab Denmark, but also our Network for Microbiology is covering issues related to the Eurachem universe. The total number of members in Eurolab Denmark is at present 70, whereof 40 of them have activities within analytical chemistry and microbiology – covering a wide range of sectors like chemical and pharmaceutical production, environmental laboratories, food control, powerplants, clinical laboratories, forensics a.o. (about status quo from last year). About 150 individuals from these member organisations have signed up for being affiliated to the Networks for Analytical Chemistry and/or Microbiology.

The following activities in 2010-11 with relevance for analytical and microbiological laboratories should be mentioned specifically:

- Meeting on "Internal control in the analytical laboratory" with focus on principles, parameters and tools for establishing reasonable QC in the laboratory.
- Meeting on "Dealing with resistance problems in microbiology".
- A scheduled meeting on "PTs and ILCs for the analytical laboratories" (with a contribution from Brian Brookman) unfortunately had to be cancelled on a very short notice due to some illness, but hopefully the meeting can be accomplished later on.
- Meeting on "Occupational Health in the laboratory". This meeting also formed the start of a new network within our organisation focusing on the subject.
- Lately we have had the pleasure of having impact on a very topical situation in relation to a recently announced bill in Denmark regarding a tax on fats in food. The basis for setting the taxes on different types of fat-containing foods where not in place in form of reliable analytical methods, and our organisation succeeded in sorting out the situation by arranging a couple (so far!) of meetings among all interested parties (laboratories, authorities, industry etc.).

EuroLab Denmark have recently produced a professional looking profile brochure in an attempt to attract new members (an electronic version can be seen on our website, [www.eurolabdanmark.dk](http://www.eurolabdanmark.dk) — only in Danish though). We see a great benefit for all members to have a bigger group of laboratories for exchange of experiences — from all sectors: private, industry, institutions, universities, etc...

Hopefully we can report about an increased number of members next year.

Lorens P. Sibbesen

## GERMANY

EUROLAB-D as a member of both Eurachem and EUROLAB aisbl is active within both organisations. An Annual Report (in German language) on the activities of 2010 is under preparation and will soon be available from the website ([www.eurolab-d.bam.de](http://www.eurolab-d.bam.de)). Our co-operation with and contributions to Eurachem are mainly coordinated by the Technical Committee on Analytical Chemistry which meets twice a year and is chaired by Rüdiger Kaus. A new activity was the establishment of a working group on sensory testing, while a similar working group on uncertainty in microbiology continued its work and published a paper in the Journal of Applied Microbiology.

Last year BAM Federal Institute for Materials Research and Testing and EUROLAB-D jointly organised the 9<sup>th</sup> Symposium on elemental trace analysis by mass spectrometry. The symposium was supported by the German Society for Mass Spectrometry (DGMS). The aim was the exchange of knowledge between scientists from research and industry and bringing them into contact with the instrument producers. Thus the two days programme included oral presentations, a poster session and an exhibition and left sufficient room for social networking.

The EUROLAB-D members' meeting 2011 took place on 6 May in Berlin. Traditionally it was combined with a colloquium, this year comprised of three lectures:

- Introduction to VIM 3 (Paul de Bièvre);
- The German Accreditation Advisory Board and the empowerment of the interested parties (Michael Nitsche);
- The new version of the EURACHEM/CITAC Guide "Quantifying Uncertainty in Analytical Chemistry" (Wolfram Bremser).

The members discussed ways how to improve the networking among the delegates in the Accreditation Advisory Board (a body established by the German Federal Ministry for Economics and Technology) and in the Technical Committees of the National German Accreditation Body (DAkkS) who were either nominated directly by EUROLAB-D or by some of its members. A topical issue of controversial discussion are for example

instructions of DAkkS on metrological traceability.

At present EUROLAB-D is involved in the preparation of the First German Accreditation Conference on 8 and 9 June 2011 which is jointly organised by DAkkS and BAM on the occasion of the World Accreditation Day. A second TrainMiC seminar is planned for 21-23 September 2011 in Berlin.

EUROLAB-D views as honour inviting the Eurachem General Assembly 2012 to be organised at BAM in Berlin and would highly appreciate if Eurachem could accept this invitation.

Manfred Golze

## THE NETHERLANDS

The main activity of the Dutch Section of Eurachem is the organization of a yearly symposium. The organization is carried out by the members of the Steering Committee.

In 2010 the subject of the symposium was on procedures to establish performance characteristics of measurement methods in the analytical laboratory. It was organized on November 10 at the National Institute for Public Health and the Environment (RIVM). The symposium was attended by 80 participants. Four lectures were presented focusing on the new Netherlands Standard Method NEN 7777: Environment and food – Performance characteristics of measurement methods.

- J. Klaessens: The new draft NEN 7777, broader, and more correct and effective;
- H. van de Wiel: Bias – Dealing with a problem that should not be there;
- J. W. Hutter: Performance characteristics in the laboratory – Bottlenecks;
- G. Ellen: Validation according to NEN 7777 – A solid basis for quality or apparent certainty?

Finally, before the final discussion, the participants were entertained by a comedian who presented a lecture more or less related to the subject of the symposium.

The informative and entertaining day was concluded with an informal drink.

Rob Ritsema

## POLAND

Actually there are 77 member laboratories in the Eurachem-PL, Section of Polish Chemical Laboratories in Club of Polish Testing Laboratories POLLAB. Since 10.12.2009 Eurachem-PL has been lead by Andrzej Brzyski (chair), Kinga Makuła (vice-chair), and the section secretariat based in the Military Institute of Armament Technology in Zielonka, near Warsaw. Administration is:

Przewodniczący/Chair: Andrzej Brzyski, Wojskowy Instytut Techniczny Uzbrojenia, ul. Prymasa St. Wyszyńskiego 705-220, Zielonka; e-mail: [brzyskia@witu.mil.pl](mailto:brzyskia@witu.mil.pl); [a.brzyski@wp.pl](mailto:a.brzyski@wp.pl);

Zastępca Przewodniczącego/Vice-chair: Kinga Makuła, Centralny Instytut Ochrony Pracy - PI, Bul. Czerniakowska 16, Warszawa; e-mail: [kimak@ciop.pl](mailto:kimak@ciop.pl);

Członek Zarządu/Member of Board Halina Polkowska-Motrenko, Instytut Chemii i Techniki Jądrowej, ul. Dorodna 16, Warszawa; e-mail: [h.polkowska@ichtj.waw.pl](mailto:h.polkowska@ichtj.waw.pl).

The section was established in 1992 as POLLAB-CHEM, one of sections of the Club of Polish Testing Laboratories POLLAB (recently the full member of EUROLAB). Polish delegates have been participating in Eurachem meetings and GAs, as well as have been working with Eurachem WGs - PT, E&T, MU&T.

Important tasks of the section in general consist of promoting ideas concerning the quality of chemical measurements and materials characteristics as well as distributing any information that member laboratories are interested in. Therefore, several Eurachem guides and other similar documents have been translated into Polish by the section members. The last translations are listed below:

- 1) Internal Quality Control. Handbook for Chemical Laboratories, Nordtest R 569, ed. 2006 [Podręcznik wewnętrznej kontroli jakości. Biuletyn Informacyjny nr 1/46/2006], distributed in 2007.
- 2) Measurement Uncertainty Revisited. Alternative Approaches to Uncertainty Evaluation, EUROLAB Technical Report TR 1/2007 [Niepewność pomiaru raz jeszcze: Różne podejścia do szacowania niepewności. Biuletyn Informacyjny nr 1/48/2007].

Members of the section are involved in organization of, and participate in, the symposia organized every year by POLLAB. The subject for 2010 XVI POLLAB Symposium was „Technical requirements – part II” that draw attention of about 450 participants (in 2 replicas).

There are also special section meetings, at least one per year, with lectures on selected subjects. In 2010 there were two meetings, where participants discussed about „Flexible scope of accreditation” and about measurement uncertainty & traceability.

Recent action of the POLLAB-CHEM / Eurachem-PL section, i.e. inducing, promoting, and leading the organisation of ILC/PT programs, according to the agreement between POLLAB and the Polish Center for Accreditation (PCA, the Polish AB). In 2010 there were 6 such programs started and completed, in which totally about 45 laboratories participated. In 2011 Eurachem-PL intend to continue



present policy to support laboratories. Their members will attend Symposium POLLAB, section meetings and new ILC/PT programs.

Andrzej Brzyski

## PORTUGAL

The activities of Eurachem Portugal in 2010 had their highest visibility through the active participation in the Eurachem/CITAC Working Group on "Measurement Uncertainty and Traceability" and the organisation of the Eurachem/CITAC Workshop on "Recent Developments in Measurement Uncertainty" held in Lisbon in June 2011. Concurrently to these activities, Eurachem actions and guidance were disseminated in research publications, in presentations at scientific events, in academic courses at national and international levels, in postgraduate training courses at national and international levels and in a workshop on metrology, "CONFMET 2010", organised together with the Portuguese Chemical Society and Portuguese Society of Metrology, held in Lisbon in November 2010.

Ricardo Bettencourt da Silva

## ROMANIA

The Eurachem Romania Association succeeded to maintain the interest for the professional activities, enlarging the participation of its active members from various institutions. Our members are coming mainly from the universities' teaching staff (University of Bucharest, Politehnica University of Bucharest, Transylvania University of Brasov, Ovidius University of Constanta, University of Iasi, Technical University of Iasi, University of Targoviste, University of Craiova). Together with researchers from research institutes (INCDSB, ICECHIM, INMR, IMT), practitioners from specialized and accredited laboratories and with specialists from national and local agencies for environmental monitoring and public health, the Eurachem Romania Association developed in 2010 activities as:

- National Workshop – "Bioanalysis versus Biotechnology";
- The 9<sup>th</sup> Annual Forum – "Measurement Quality Assurance", December 2010;
- The National General Assembly of Eurachem Romania;
- Issue of the national publication of Eurachem Informative Bulletin no.14, June 2010, ISSN 1582-9057 (20 pages) with papers related to the limitations of the Horwitz equation, to the progresses in validation and measurement uncertainty for improving the chemical data quality, and also information of the 32<sup>nd</sup> meeting of REMCO from Teddington;
- Revision of the translated Eurachem-CITAC 2007 GUIDE – "Uncertainty of

measurement due to sampling. Guide to methods and approaches.

— Updating the web site <http://www.eurachem.ro> in order to assure a constant and dynamic information of our collaborators.  
- Co-organizer of the XXVII Summer School of the European Membrane Society, Bucharest, June 2010.

During the 7<sup>th</sup> National Workshop "Bioanalysis versus Biotechnology" there were given interesting lectures as: "The Traceability Approach from Metrological Perspective", presented by Eng. Dumitru Dinu, the Deputy General Director of BRML, "Novelties of the ISO 15189 Standard Applications in the Biomedical Laboratories", Dr. Marilena Dinca, Director of RENAR, Romanian Accreditation Association. The next papers given by known specialists, presented in the area of the assurance of the chemical measurements quality were followed by discussions and significant comments from the participants.

On the occasion of the IX National Forum was also organized the General Assembly of EURACHEM Romania Association. It presented the activities of the national association in the last year, and according to the provisions of the EURACHEM Romania Association valid statute there were organized national elections for the new national board. Following the unanimous vote, the executive President was re-elected. The new team was assigned with sustained activities not only to increase the visibility of the Association at the national level but also to larger involvement at the approach to a specific problems as that one of the data dissemination.

A "XXVII Summer School of the "European Membrane Society" – "Membrane Materials and Technologies", under the main topic of "Systems Membranes – Complex Roadmaps Toward Functional Devices and Coupled Processes", which was organized together with the University "Politehnica" of Bucharest and with the Embassy of France, was held in Bucharest in June 2010. An important participation of delegates from all over the Europe was recorded: over 50 people attending the scientific event. There were presented over 42 lectures, given by important names in the domain as: dr. Pierre Aimar, CNRS-LGC Toulouse, France, prof. Mihail Barboiu, IEM Montpellier, France, dr. Lidietta Giorno, ITR, Rende, Italy, prof. Mathias Ulbricht, University Essen, Germany, Prof. Joao Crespo, University National Lisbon, Portugal, prof. Gheorghe Nechifor, University Politehnica of Bucharest, dr. Kang Li, Imperial College London, UK, prof. Bart van der Bruggen, Catholic University of Leuven, Belgium, and many others.

Prof. dr. eng. Gabriel-Lucian Radu  
President

## RUSSIA

Eurachem Russia acts under the aegis of Scientific Council on Analytical Chemistry of the Russian Academy of Sciences. A number of the scientific and exhibition actions devoted to actual problems in this area have been organized in the field of analytical chemistry and MiC during the last year. The basic information resource informing on actions is a web portal "Analytical chemistry in Russia", accessible at [www.rusanalytchem.org](http://www.rusanalytchem.org) address.

In Russia there was a radical reform of accreditation system in 2011. The president of the Russian Federation has signed the Decree "About joint national system of accreditation" which provides creation of unified national accreditation body, and one of its purposes is assurance for a mutual recognition of assessment conformity results by members of the Customs union and the countries – the basic trading partners of Russia. The new system should be set before January, 2012.

The basic periodicals profiled on analytical chemistry and MiC are "Industrial laboratory. Diagnostics of materials" and "Journal of analytical chemistry", published in Russian and English languages. A new Review Journal of Chemistry begun in 2011. The Journal covers all aspects of modern research in the field of chemistry, including fundamental and applied aspects of organic, inorganic, physical, biological, medical, theoretical and analytical chemistry and theoretical aspects of chemical technology. The journal also publishes materials in the field of the interdisciplinary research connected with chemistry. Exhaustive critical reviews are published solely in this journal.

The International dictionary on metrology (VIM 3) was published in Russian (translation was executed by The D. I. Mendeleev All-Russian Institute for Metrology (VNIIM)). The dictionary edition should be considered as a stage of harmonization of the international and domestic metrological terminology.

In this year it is planned to translate two documents by the Eurachem Russia team: Handbook for analytical laboratories "Internal Quality Control" (developed by Nordtest) and Introduction to VIM 3 "Terminology in analytical measurements". Basic attention of Eurachem Russia in the current year has been devoted to processing and carrying out the 27<sup>th</sup> Eurachem General Assembly in Moscow and a Workshop "Key Quality Assurance Challenges in Analytical Measurements" together with Eurachem Working Group "Education and Training" and the TrainMic group with support of Association "Analitica" and Scientific Council on Analytical Chemistry of the Russian Academy of Sciences at National Research and Technological University NITU "MISIS".

More than 50 experts in metrology of the chemical analysis, analytical chemistry, forensic sciences and accreditation of test and analytical laboratories from Russia and other countries took part at the Workshop. Team of skilled teachers, V. Barwick, B. Brookman, S. Ellison, N. Majcen, M. Hedrich, B. Magnusson, M. Patriarca, M. Suchanek performed lectures and a practical training on the basic aspects of quality in analytical measurements (uncertainty, traceability, validation of analytical methods etc.). Twenty seven representatives from 17 countries accepted participation at the General Assembly.

Eurachem Russia team hopes that the organized event was not only useful and fruitful in terms of work and discussions, but also interesting and entertaining.

Vasilisa Baranovskaya

## SLOVAKIA

During previous year the Eurachem-Slovakia focused its attention mainly to following activities:

- contribute to increasing qualification of managing and executing workers of analytical laboratories as one of the basic requirements to obtain correct results of analyses,
- ensure transfer of latest knowledge necessary to perform analytical activities in everyday practice of Slovak analytical workplaces,
- support accreditation process in chemical and biochemical laboratories,
- ensure traceability of Eurachem-Slovakia activities to Eurachem activity and mediate experience and issued Eurachem

Guides to work of national laboratories, - ensure participation of Eurachem-Slovakia committee members on GA meetings and increase their activity in Eurachem WGs, - utilize declaration year 2011 as an International Year of Chemistry (IYC) to self activities and increasing of chemistry significance for improving of living standard.

The Eurachem-Slovakia organized national workshop New Tasks in laboratory Accreditation in 2010, where were presented lectures of SNAS (Slovak national accreditation body) members. Topics like flexible accreditation, new policy and procedures of international accreditation bodies, accreditation of PT organizers (ISO/IEC 17043), acceptability of officially and non officially organized multi and bilateral inter-laboratory comparisons, experience with application of Slovak Act on accreditation were presented and actual connected issues were widely discussed amongst approximately 60 participants.

Besides this members of Eurachem-Slovakia took part on reviewing of Eurachem Guide to VIM 3. Also Slovak version of ISO Guide 99 (VIM 3) in reduced form was prepared for implementation to Slovak legislation as a national standard.

Viliam Pätoprstý

## UNITED KINGDOM

Eurachem activities in the UK are delivered through the UK government's Chemical and Biological Measurement programme run by LGC and through LGC's

own training activities. The Executive for Eurachem UK is the UK Royal Society of Chemistry (RSC) Analytical Methods Committee; Eurachem's international activities are reported to the AMC ad to the RSD Analytical Division Council. The Royal Society of Chemistry also provides direct support to Eurachem by paying the annual fee and sponsoring representation at the annual GA meeting.

UK activity in promoting quality in analytical chemistry includes a range of training courses; approximately 10 courses on method validation, measurement uncertainty, statistics and further statistics for analytical chemistry were run in the period May 2010-May 2011.

Several committees and subcommittees in the UK act as Eurachem-UK technical committees. The UK Proficiency Testing working group meets twice a year, and this year has been particularly concerned with input to the revision of ISO 13528, the Standard describing statistics for proficiency testing. The UK Reference materials working group also met twice during the period, discussing issues relating to the accreditation of reference material producers, practical matters relating to accreditation including best practice stability and homogeneity testing, and monitoring activities at ISO REMCO.

RSC AMC sub-committees also include a statistics sub-committee and a validation sub-committee; much of the work of these sub-committees appears in the form of peer-reviewed AMC Reports and the well-known series of AMC Technical Briefs available at <http://www.rsc.org/amc>.

Stephen Ellison

# News in Brief

## New Eurachem website goes live

Eurachem has substantially upgraded its popular website to bring the look of the site up to date and to add an impressive new range of features.

The new website has been built using a well-established content management system. This allows

- \* Better access to recent and popular items from the front page
- \* Improved search facilities
- \* A new, improved calendar system, with forthcoming events easily visible on the front page
- \* A new Contact page, allowing a user to contact Eurachem and its national delegates via a secure contact form.
- \* Contributions from multiple authors, allowing quicker updates and more accurate working group pages.

In addition, a new feature on the site is the use of 'Task views'. These pages summarise the Eurachem resources available for specific topics, giving site users quick access to all the most relevant Eurachem guides, documents and reference information.

The new website can be accessed at the usual location: <http://www.eurachem.org>.

S. Ellison

## New Executive Members

New Executive Committee members were elected for the next three years term at the 27<sup>th</sup> General Assembly in Moscow:

prof. Wolfhard Wegscheider (Austria)

dr. David Milde (Czech Republic)

Congratulations!

## Elections to Executive 2012

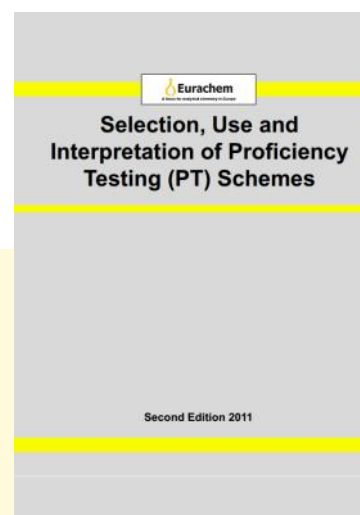
In 2012 will the mandate of three Executive Committee members run out. In addition a new Vice-Chairperson, a Secretary and a Treasurer have to be elected. If the Vice-Chair would originate from the existing Executive, a fourth nominee would be needed.

The national delegates are therefore kindly invited to send the names of their nominees to the Secretariat by 31 December 2011 together with their short professional curriculum vitae. As a matter of course it is understood that the nominees were informed about the nomination and that they agreed with it.

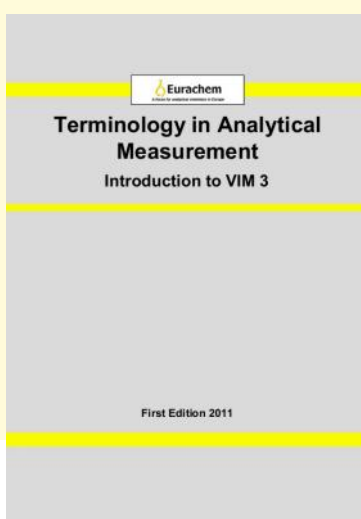
## New Eurachem PT Guides released

The Eurachem/Eurolab/EA (EEE) Proficiency Testing Working Group has released a revised edition of its well-known guide "**Selection, Use and Interpretation of Proficiency Testing (PT) Schemes**". Developed in conjunction with EQUALM, the new edition brings the Guide up to date on current terminology and best practice in PT.

This document represents the current state-of-the-art with respect to the selection and use of proficiency testing schemes, and the interpretation of results and evaluations given in proficiency testing schemes. Although this is aimed primarily at staff in analytical laboratories, it is also useful for customers of laboratories, assessors working for accreditation bodies and other external users of PT scheme results. The main topics covered by the Guide are: a) the aims and benefits of participation in PT schemes; b) selecting the most appropriate PT scheme; c) understanding the basic statistics and performance scoring used by the PT providers; d) using and interpreting the PT results in order to improve the overall performance of the laboratory. This second edition, approved in 2011, has been prepared by the EEE-PT Working Group (EA-Eurolab-Eurachem). EQALM (European Organisation for External Quality Assurance Programmes in Laboratory Medicine) as an affiliate member was also involved in this revision.



## Terminology in Analytical Measurement: Introduction to VIM 3



This guide has been produced by members of the Eurachem Education and Training Working Group and others co-opted to the Project group for this task.

In the world of metrology – the science of measurement and its application – there is a language which has to be learned. The International Vocabulary of Metrology (VIM) was produced to provide a common language, primarily for physical measurements. The third edition (International Vocabulary of Metrology – Basic and General Concepts and Associated Terms (VIM 3) was published in 2007. There are many differences between VIM 3 and earlier editions; one important change is captured in the title with the addition of the word 'concepts'. The VIM 3 is a consistent set of concepts each described by a unique term, the 'label' of the concept. VIM 3 is applicable across all scientific disciplines thus making it relevant to those involved in performing measurements in chemistry and biology. Consistent definitions of concepts with their associated terms and symbols are essential if analysts and customers across the globe are to understand each other.

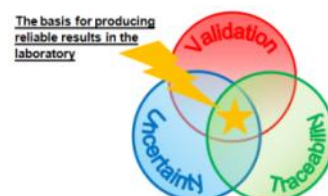
This Eurachem Guide discusses a selection of the concepts in VIM 3, focusing on those most likely to be encountered in analytical laboratories. It aims to cover chemical, biological and clinical measurements and gives examples over and above those in the notes accompanying the definitions in VIM 3. The guide is intended for laboratory staff, accreditation bodies, for those commissioning measurements and for those using measurement results. Lecturers and trainers may also find this guide useful when teaching aspects of metrology.

## Upcoming Events

### Method validation / Traceability / Measurement Uncertainty: Challenges for the 21<sup>st</sup> Century's Analysts. 21-22 May in Berlin

During the last 20 years there have been a substantial development in the understanding and handling of the 3 elements and this event will deal with the latest achievements in the areas focusing specifically at the important relations between the elements.

A training course on internal quality control will be held the first day.



## Internal Quality Control. 9-11 October 2012 in Berlin

The Education and Training Working Group invites you to participate in this international workshop. Main focus will be at quality control performed in laboratory for continuous monitoring of results of measurements.

## Eurachem General Assembly 2012

will be held on 24<sup>th</sup> May 2012 afternoon and 25<sup>th</sup> May 2012 morning in Berlin courtesy of BAM.

# Contact Points

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Institute of Chemical Technology, Prague, CZ

**Vice Chair:** Bertil Magnusson  
SP Sveriges Tekniska Forskinstitut

**Past Chair:**

**Secretary:** Dr. Ivan Koruna  
Eurachem-CZ

# Eurachem Member Countries

Albania	Greece	Portugal
Austria	Hungary	Romania
Belgium	Iceland	Russia
Bulgaria	Ireland	Slovakia
Croatia	Italy	Slovenia
Cyprus	Lithuania	Spain
Czech Republic	Luxembourg	Sweden
Denmark	Malta	Switzerland
European Commission	The Netherlands	Turkey
France	Norway	Ukraine
Germany	Poland	United Kingdom

To get involved with Eurachem in your nation, contact the Eurachem Secretariat for details on how to contact your national representatives or visit the Eurachem website.