

## Eurachem Newsletter 17 Winter 1999/2000

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 Tel + 49 30 6392 5596 Fax + 49 30 6392 5597 Email: [eurachem@bam.de](mailto:eurachem@bam.de)  
 Internet <http://www.vtt.fi/ket/eurachem/>  
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**Eurachem News Winter**  
**1999/2000**

**EURACHEM: Focus on Traceability**

Bringing traceability of the "amount of substance" into practice is one of the key problems in chemical measurement. Up to the date, EURACHEM dedicated three workshops to the topic. The first was held in 1992 (Geel, Belgium), the second in 1996 (Noordwijkerhout, The Netherlands). In continuation of this tradition, more than 80 analysts from 28 countries gathered in Bratislava (Slovak Republic) on 5 - 8 September 1999 for the 3rd EURACHEM Workshop on the Status of Traceability in Chemical Measurement. The scientific programme included lectures and working-group discussions on five key issues in chemical traceability. [See for a detailed report](#) later on the topics and results of the workshop.

## **EU & USA Implementing Metrology Arrangement**

It was a great privilege for me as the Chairperson of EURACHEM to represent the members at the official signing ceremony of the "EU - USA Implementing Arrangement for co-operation in the field of metrology and measurement standards" in Brussels on Tuesday, 5 October 1999. The core purpose of the Arrangement is to permit the acceptance of the concept "once tested - everywhere accepted".

About 20 invited guests attended this brief ceremony and EURACHEM was invited by the Commission as the representative of chemical measurement in Europe. EUROMET and EUROLAB were also represented by their chairs at the signing of the Arrangement. The agreement was signed by Prof. Jorma Routti, Director General of the European Commission's Research DG, and Dr. Ray Kammer, Director of the National Institute of Standards and Technology (NIST).

The aim of this co-operation is "to demonstrate the degree to which equivalent measurement capability exists between the NIST national laboratories and the European national laboratory network and to augment the scientific and technical capabilities of the participating institutions".

The Arrangement will be implemented by a series of measures and it is intended to apply to "exchange of technical information, reference data and materials, calibration and measurement standards, exchange visits, co-operative research in areas of mutual interest, and other forms of co-operation activities as mutually agreed".

The official press release of the EU and NIST is available at URLs: <http://europa.eu.int/comm/dg12/press/1999/pr0510en.html> and [http://www.nist.gov/public\\_affairs/releases/n99-17.htm](http://www.nist.gov/public_affairs/releases/n99-17.htm).

*Veikko Komppa*  
*EURACHEM Chairman*

## **The EURACHEM Proficiency Testing Mirror Group**

The Eurachem Proficiency Testing Mirror Group (PTMG) was formed in the Autumn of 1997, under the direction of its first convenor, Professor Paul De Bievre of the Institute for Reference Materials and Measurements (IRMM), Geel. The first meeting of the group was held at IRMM in November 1997.

The terms of reference for the group were as follows:

1. To improve the organisation of proficiency testing in Europe
2. To promote best practice in proficiency testing
3. To provide a forum for organisers and users of proficiency testing schemes on issues affecting the practice of proficiency testing
4. To provide input and comment from the chemical measurement community to the EA-EUROLAB-EURACHEM Working Group on Proficiency Testing in Accreditation Procedures (EEE-PTWG)
5. To forward EEE-PTWG conclusions to EURACHEM
6. To provide input to any international activity related to PT.

In November 1998, Paul De Bievre stood down as convenor of the Group, and it was agreed that Nick Boley of LGC, Teddington, should take over as convenor. The membership of the Group is now:

*Mr Nick Boley, LGC, UK (Convenor)*

*Mr Rainer Schmidt, Bayer AG, Germany*

*Dr Philip Taylor, IRMM*

*Dr Ellen van Berkel, KIWA NV, Netherlands*

*Mr Steve Evans, LGC, UK*

*Dr Adam Uldall, DEKS, Herlev University Hospital, Denmark*

*Dr Ulf Örnemark, SP, Sweden.*

Nick Boley, Philip Taylor, Adam Uldall and Ellen van Berkel represent EURACHEM on the EEE-PTWG. It is an important function of the group to ensure that there is proper discussion of both the minutes and papers coming out of the EEE-PTWG, and topics which are on the agenda for the next meeting. This also ensures that EURACHEM members present a common front at EEE-PTWG meetings, and do not argue amongst themselves! The EEE-PTWG discusses issues which go much wider than analytical chemistry, and it is the responsibility of the EURACHEM representatives to ensure that any decisions and outputs of the WG take into account the needs of analytical chemistry. A guide to the Selection, Use and Interpretation of PT-Schemes has been produced by the Eurachem Netherlands PT Group, edited by Nick Boley, and approved by the Mirror Group. This document is in the process of approval by the EEE-PTWG and should be available on-line and in hard copy format from EURACHEM at the end of 1999.

One of the current important challenges facing the Group has been the organisation and planning of the Workshop on Proficiency Testing (jointly organised with EQALM) to be held in Borås, Sweden on 25 and 26 September 2000 (see page 9). We hope to see many EURACHEM members at the workshop.

There is currently some scope to extend the membership of the Group. We are concerned that there is a need for input from countries in southern and eastern Europe. If any EURACHEM member in the appropriate countries, who is active in organising PT schemes, is interested in joining the Group, they should contact:

*Nick Boley, EURACHEM U.K.*

*Tel: +44 20 8943 7311*

Fax: +44 210 8943 0654

[npb@lgc.co.uk](mailto:npb@lgc.co.uk)

## Editorial

How did you pass the New Year's season? No matter whether this has been with mystic dwarves at the Polar Circle or fortune tellers in ancient Angkor Wat, at Merlin's miraculous fountain in Paimpont Forest, on board of a super-sonic airliner crossing the Atlantic Ocean, in the centre of the splendid London or Paris fireworks or simply in front of your cosy fireplace - we at EURACHEM Newsletter hope that you all had a very pleasant millennium's border-crossing and a bug-free, successful and lucky start into the New Year. Also in this 3rd millennium, EURACHEM Newsletter will keep you informed on the events in Europe's analytical community.

While the millennium fever cools down, we see EURACHEM's 2005 Mission and Key Objectives and the new MoU on a good way to be accomplished before the Full Committee Meeting in Berlin shall endorse these documents.

EA has elected a new chair: Daniel Pierre who is with COFRAC (France) took over the chairmanship from Lars Ettarp on 1 January, 2000. The vice-chair Thomas Facklam comes from Germany and is with Frankfurt-based TGA GmbH. Meeting the challenges of the new ISO 17025 will be one of the main tasks of the new team. Good luck!

In Fall 99, we saw another real "millennium" event: Although already existing for more than 100 years, the member states of the Meter Convention only now signed in an agreement on mutual recognition of national measurement standards and calibration and measurement certificates issued by National Metrology Institutes. Good news for the global market!

*The Editor*

## EURACHEM and the Permanent Liaison Group (PLG)

The first time EURACHEM officially participated in a PLG Meeting was on 11 May 1999 in Espoo, Finland (the 20th meeting since the group has been founded). EURACHEM was represented by the chairman because the nomination of EURACHEM representative to the PLG, Ed de Leer, was done only during the EURACHEM 10th Anniversary celebrations in Helsinki in mid June 1999.

The next PLG meeting where EURACHEM was officially represented took place on 22-23 November 1999 in Athens, where in conjunction the 1999 EA-EUROLAB-EURACHEM Workshop was held. All members of the EURACHEM Executive Committee had been invited but due to other commitments only the chairman Veikko Komppa, Adolf Zschunke and Werner Steck could participate. The Workshop was very well attended by EUROLAB and EA members.

Spread all over the town, the beautiful testimonies of Athens' great history dating back more than two millennia into the past provided fantastic possibilities for sightseeing tours and walks.

The meeting programme contained a general session and one devoted to the PLG and its future. B. Thomas introduced the new ISO/IEC 17025 and he and D. Holcombe confirmed that some clinical laboratories are preparing their own ISO standard for accreditation. D. Pierre gave a paper on multisite, multidiscipline, multifunction assessment as an EA view. B. Steffen outlined validation in relation to the scope of accreditation and A. Zschunke summarised the work of the EEE-RM Group. J. Forsten reviewed the Work Programme of the PLG and N. Mueller gave a PLG view on uncertainty of measurement in testing.

In the very last part of the Workshop the three participating organisations gave the stakeholders' views on the PLG. In my words I stressed the importance of chemical and clinical measurements to the whole society, the meaning of accreditation and laboratory intercomparisons to the quality and staff motivation, and welcomed the joint efforts of all the three E's in improving proficiency testing schemes, reference materials and quality in laboratories in general.

**Happy New Millennium  
to the whole EURACHEM community!**

*Veikko Komppa*  
*EURACHEM Chairman*

## **Metrology Award for EURACHEM Protagonist**

Each year, the "Metrology for World Class Manufacturing Awards" recognise the value-added contribution metrology makes to world-class manufacturing in the UK and those individuals or organisations who have played their part in raising the profile of metrology. The awards are supported by Britain's leading organisations concerned with innovation, metrology and manufacturing competitiveness. Award sponsors are the National Physical Laboratory (NPL), Taylor Hobson and the EMTA (Engineering and Marine Training Authority). Prizes are awarded in 4 categories: Frontier Science and Measurement, Innovative Metrology, Measurement for Manufacturing Excellence, and Champions of Metrology.

This year's winner of the "Champions of Metrology" award for lifetime contribution is EURACHEM founding member and protagonist Alex Williams, well-known to the analytical community in particular for his leading role in the creation of, and the contributions to the EURACHEM Measurement Uncertainty Guide.

In their decision, the Award judges emphasized that "... Alex Williams CB has spent almost the whole of his career in metrology. He has been involved in the promotion and definition of accuracy and uncertainty for more than 30 years. ... His distinguished career brought him international repute as a champion of metrology, both physical and chemical. He was the driving force behind both EUROMET and EURACHEM. ... He was the first non-North American to be elected to the Board of the Association of Analytical Chemists (AOAC) in the USA."

**Congratulations with this success, Dear Alex,**

**and keep on making uncertainty a bit more certain!**

*EURACHEM Secretariat*

## **EAAB: Stakeholders' Expectations from Accreditation**

### **Third Meeting of the EA Advisory Board (EAAB)**

The third meeting of EAAB was held in Brussels on 5 November 1999. It was the first purely operational session which addressed various issues such as EA complaints procedure, items from the EA General assembly agenda for 23-25 November 1999 in Athens, MLA's concerning mutual recognition and mutual acceptance, the relationship between accreditation and notification, consultation mechanisms within the "colleges" represented on the board (colleges are industry, national authorities and the conformity assessment operators, the latter including organisations like EURO-LAB, EUROMET and EURACHEM). Maybe the until now most important output of EAAB is its recent position paper "Stakeholders' Expectations From Accreditation". The document was well received by the EA general Assembly in Athens and will be used by EA to guide future policies and priorities.

*W. Steck, EURACHEM Germany*

**1.**

#### **The common expectations**

All stakeholders expect accreditation to deliver confidence in the conformity assessment infrastructure, and consistency between conformity assessment operators.

These need to be delivered at reasonable cost. In particular, accreditation needs to lead to a reduction in assessments at all levels and to support notification under EC directives. Accreditation has a number of roles to fulfil in support of wider policies:

- \* To contribute to the development of the national technical infrastructure
- \* To improve the quality of goods and services
- \* To enhance safety
- \* To advance competitiveness
- \* To support the increasing globalisation of business on the basis of fair competition

In considering the expectations in more detail, there are differences between the direct customers, the indirect customers and the national authorities, although they can all be related to one of the main considerations identified above.

#### **Direct customers**

In principle, direct customers are seeking an effective service that keeps the cost of accreditation at a minimum. Particular expectations identified are as follows:

\* Confidence:

The accreditation process should focus on technical competence of accredited bodies and their assessors. There should be surveillance of the use of accreditation marks in the market. Accreditation bodies should promote the added value of accreditation to the wider market.

Accreditation bodies should not compete with their direct customers (e.g. should not offer certification services). Accreditation should result in the widespread acceptance of the results of accredited conformity assessment operators.

\* Consistency:

Consistency between accreditation bodies and between assessors. Consistent interpretation of requirements. Accreditation should deliver a level playing field for conformity assessment operators

\* Cost:

Reduction of multiple assessment of conformity assessment operators. A cost effective and rapid service, with reductions in the wide variations in accreditation charges currently practised. There should be a flexible attitude to definition of scope. Accreditation should facilitate obtaining notification under Directives and Government approval generally. Accreditors should optimise the accreditation of multi-function, multi-disciplinary operators.

### **Indirect customers**

The prime expectation of the indirect customers (consumers and industry) is that accreditation should provide one stop assessment/testing, with the results being accepted internationally and across all purchasers, at reasonable cost. Particular expectations identified are:

\* Confidence:

Accreditation must deliver confidence in the integrity, impartiality and technical competence of conformity assessment operators. It must create a level playing field for CA operators. It should support international trade. Mutual recognition should lead to reference to accreditation being sufficient to comply with treaty requirements. It should provide the basis for reciprocal acceptance in third countries. Accreditation must relate to the real needs of business. Accreditation bodies must provide full and up to date information on accredited conformity assessment services available to business. Competition between accreditation bodies should be discouraged as it undermines confidence (consumers' view).

\* Consistency:

Accreditation must bring the regulated and voluntary sectors together.

### **National Authorities**

The member states, as stakeholders, have focused primarily on support for implementation of the Single Market. Although most could be expected to sign up to the wider objectives identified in the first section above, their particular expectations were identified as follows:

\* Confidence:

Accreditation must have wide stakeholder involvement. Accreditation must ensure transparency throughout the process. Accreditation must support, and not conflict with, EC legislation. Accreditation must ensure the competence and reliability of CA operators. Accreditation should support the notification of CA operators under EC directives.

*ABD, 25 November 1999*

## **Accredited RM Producers - A New Trend?**

## \* ILAC-Guidelines for the Requirements for the Competence of Reference Material Producers Endorsed

### \* Positive Voting on Revised ISO Guide 34

The International Laboratory Accreditation Cooperation (ILAC) on its meeting in Rio de Janeiro on 19 and 20 October endorsed the Guidelines for the Requirements for the Competence of Reference Material Producers. In the same decision ILAC noted that ISO REMCO is revising its Guide 34 and therefore requests the Technical Accreditation Issues (TAI)-Committee to review the ILAC Guidelines at the time Guide 34 is finalised. In the meantime the voting on the ISO Guide resulted positive. It is expected to be available at the beginning of the year 2000.

The ILAC document describes Management Systems Requirements and Technical Requirements which the producers of reference materials (even when not certified to ISO Guide 31) shall fulfil to achieve and maintain competence. Its purpose is to be a basis for the evaluation of the competence of reference materials producers.

After a long debate about the bodies which should do the evaluation, the following wording was finally found for par. (d) of the introduction of the ILAC document:

"If the producer of the reference material is a laboratory, the assessment according to these Guidelines can be done by a laboratory accreditation body in connection with an accreditation according to ISO/IEC 17025. Otherwise, the assessment by a product certification body, accredited for this purpose, may be more appropriate."

The advantage of this solution is that

- i) no new type of accreditation is created with all its mutual recognition problems,
- ii) laboratories can be accredited by their usual accreditation body at the same time for their testing, calibration and RM characterisation and (if relevant) production activities,
- iii) manufacturers, whose products are used as reference materials, will be assessed by product certification bodies according to ISO Guide 65, thus avoiding a competition between accreditation and certification bodies.

The common EA, EUROLAB and EURACHEM working group on Reference Materials (EEE-RM) supported that philosophy with the understanding that the reference materials produced under surveillance of accreditation or certification bodies should meet the same quality level. The basis for the assessment should be ISO Guide 34 (2000). The ILAC-Guide may serve as an interim solution.

The EEE-RM recommended to watch the development of third party assessment of RM-producers first and not to start with the development of additional technical guidance documents immediately.

With regard to the question whether laboratories producing RMs should be accredited as calibration or testing laboratories, the EEE-RM recommended not to install new barriers to trade by requiring this distinction. Again the technical requirements of ISO Guide 34 (2000) or the ILAC Guide, respectively, should be fulfilled independently of the body in charge. Furthermore, it was agreed that the technical level of testing laboratories in that area should



be comparable to that of calibration laboratories (e.g. uncertainty budgets, intercomparisons) where applicable.

*Adolf Zschunke+ and Bernd Steffen++*  
+ EURACHEM Germany  
++ German Accreditation Council

## **Budapest Hosts Method Validation Workshop**

An international workshop organized by FAO-IAEA-AOAC-IUPAC on Principles and Practices of Method Validation was held on 4 - 6 November 1999 in Budapest (Hungary). The conference site - the glorious building of the Hungarian Academy of Science - was selected with choice. Árpád Ambrus and Gabriella Sz. Kükedy co-ordinated the programme. The workshop brought together analytical chemists and representatives of agencies, governments, standardisation organisations and accreditation bodies involved in method validation. Experts mainly focused on the residue analysis of pesticides, veterinary drugs and mycotoxins to define minimum data requirements for procedure characterisation. Lectures were devoted to improve effectiveness of the within-laboratory QC, to discuss the estimation of limits of detection, determination and quantitation. They provided guidance on method performance characterisation and recommended practical validation approaches. The 3-day workshop was very well attended by over 80 participants from several countries including New Zealand, USA and Canada. Along with the 31 oral and poster presentations panel discussions were held on "Harmonised Guidelines for Methods of Analysis". After the international workshop, FAO-IUPAC experts met in Miskolc for the final approval of the "Practical Approach to Method Validation" document.

*Jozsef Hlavay, EURACHEM Hungary*

## **EURACHEM Workshop Report**

### **The Status of Traceability in Chemical Measurement**

This latest EURACHEM workshop was held in Bratislava (Slovak Republic) on 5 - 8 September 1999. It aimed at a review of the present status, the development of new ideas for solving the basic metrological problem connected with the realisation of the unit "mole" and its transfer, and a discussion of the present and future role of CRM and, particularly, interlaboratory studies. The workshop participants (63 experts from abroad and 20 participants from Slovakia) came from 28 countries.

#### **The programme**

The workshop was organised in lectures, posters and working groups focused on five key issues:

- \* establishing traceability in chemical measurement despite a certain incongruity of chemical and physical units as a result of the qualitative factor comprised in their definition
- \* uncertainty evaluation and its impact on traceability
- \* organisation and implementation of interlaboratory comparisons as a part of assuring "common sense" in measurement on an international scale and with respect to accreditation

- \* measurement with the highest level of reliability
- \* reference materials and RM applications in the process of calibration and validation of chemical measurements and various certification approaches.

31 scientific lectures have been given and 12 posters presented. A proceedings booklet has been compiled including the 27 presentations which were sent to the organisers in advance. These proceedings are available from EURACHEM Slovakia upon request.

## **The results**

After the plenary and contributed lectures, each topic has intensively been discussed in working groups. The results obtained were summarised and presented during a plenary session at the end of the workshop. In brief, working group discussions were as follows:

### **WG "Establishing traceability"**

(chaired by P. De Bievre)

Traceability relates the result of the measurement (the value of the measurand obtained by measurement) to stated references. A traceability chain is a chain of successive comparisons (i.e. measurements) of one value to another value, etc., to a stated reference. It can end in the value of the unit we have chosen to express the result of measurement. Stated references can be i) the value carried by a material measure (e.g. balance weight) or a reference material, and/or ii) the value obtained from a (calibrated) measuring instrument or a measuring system using described measurement procedures (DMP). All of these values imply the use of a measurement scale. Traceability chains can exist with either large or small uncertainties in their links and values, and therefore with large or small combined uncertainty.

### **WG "Uncertainty evaluation"**

(chaired by W. Wegscheider)

The two key features required to achieve traceability are an accepted reference, preferably international, and a full evaluation of uncertainty in a two-fold sense: All components contributing to uncertainty have to be considered, and this is done for all comparisons leading to this accepted reference.

It is noteworthy that traceability applies both to the value of a standard and to the result of a measurement, but since values of standards are in general only accessible through measurements, one may concentrate on the traceability of the result of a measurement.

The consideration of uncertainty from sampling (traditionally called "the sampling error") makes it mandatory that there needs to be a transparent agreement between the laboratory and the client regarding the delimitation of the object sampled from constituting the sample population: if answers are only expected for single samples, uncertainty from sampling is not an issue, for answers on the population (entire object) uncertainty from sampling may be the predominant contribution.

The uncertainty of the reference as end point of the traceability chain is frequently not an issue, neither in chemistry nor in physics. The failure to mention that end point is the much more frequent deficiency.

In discussing the issues of uncertainty for empirical methods it was noted that the major fraction of uncertainty generally comes from the practice of the method. This practice, in everyday implementation, has often a fair amount of variability in environmental conditions and in equipment used. These parallels the frequently observed fact that for empirical methods reproducibility is a good measure of uncertainty. Finally, it was emphasized that all enforcement of legal and statutory limits based on measurements will in some way have to cope with the uncertainty of these measurements.

### **WG "Primary direct methods"**

(chaired by M. Mariassy)

The quality (traceability and uncertainty) of results is the major goal in chemical measurement. Highest metrological quality means smallest uncertainty (after taking into account all sources of uncertainty). Definition of primary methods is not unequivocal and still a matter of debate. One output of the discussion was to differentiate between primary direct and primary relative methods. Both of them should fulfill the requirements of highest metrological quality.

The president of CIPM and director of the BNM (France), Jean Kovalevsky, elaborated on the consequences for international metrology of the mutual recognition of measurement standards.

Primary methods are those which provide links to the SI without chemical references. Primary relative methods are those which provide traceability with help of chemical references. Primary direct methods can provide traceability to SI without yielding results with small uncertainty.

### **WG "Reference materials"**

(chaired by J. Pauwels)

There are no real problems in establishing traceability in strict conformity with the VIM definition for pH, gases, pure metals or compounds, and standard solutions thereof. Therefore, the discussion in the WG was mainly focused on matrix reference materials, which constitute by far the most important group of certified reference materials. It was recognised that certified values of matrix reference materials can be traceable to SI units, but also to values of reference methods (e.g. IFCC reference methods) or to values assigned to reference preparations (e.g. WHO primary preparations). If traceable to a reference method, the CRM value is arbitrary and may change when the standard operational procedure (SOP) is modified. For a reference method, the SOP must specify the procedure in detail, and individual measurement steps contained in it must include calibrations which - whenever possible - have to be traceable to SI units. If CRM values are traceable to the value of primary preparations, these must be internationally recognised, and in principle, they do not carry an uncertainty.

The largest number of certified matrix reference materials claim, however, traceability to SI units, although they are certified by laboratory intercomparison. It was recognised in the WG that if carried out properly (e.g. by strict observation of the principles set in the BCR Guidelines) the results of such a certification can be considered as equivalent to SI traceability. In fact, in such a system, the result of each individual laboratory should display

traceability to SI units and be accompanied by an uncertainty statement in accordance with the ISO Guide to the Expression of Uncertainty in Measurement.

However, a need was felt to make progress in accreditation of CRM producers and their third party assessment, as to come to a stricter observation of the existing guidelines. Moreover, CRM producers were addressed to provide maximum information on uncertainty evaluation and traceability of the certified values of their certified reference materials, in order to help users to select those CRM which are the most appropriate for their application. It was also stressed that CRM producers carry responsibility and liability both for the quality of the products they put on the market and for the values and uncertainties they certify, which means that legal disclaimers like those existing in EC Certificates are not acceptable and - probably - have no juridical value as well.

## Some remarks

Experts coming from different branches (physical metrologists, EURACHEM representatives, leading personalities of the FECS Division of Analytical Chemistry etc.) including such involved in accreditation joined in the workshop. This provided a unique opportunity for exchanging ideas and practical experience in the area of chemical metrology and traceability.

Thirteen presentations from the workshop programme shall be published in the Journal of Accreditation and Quality Assurance.

*Jan Garaj*

*EURACHEM Slovakia*

*(abridged by EURACHEM Secretariat)*

EURACHEM wishes to express its gratitude to the local organisers and acknowledges their inspired work for an excellent organisation and accomplishment of this successful workshop.

## Analytical Quality Assurance at Universities

### New EURACHEM Working Group

During the Bratislava Executive Meeting in Fall 1999, EURACHEM decided to set up a new working group dedicated to "Analytical Quality Assurance at Universities".

On this page, the designated WG chair Bernd Neidhart elaborates on the aims and tasks, and the background of the new WG. The working group is open to all those EURACHEM members interested in contributing to QA at universities.

For more information, contact Prof Bernd Neidhart at GKSS Forschungszentrum, D-21502 Geesthacht, Germany; [bernd.neidhart@gkss.de](mailto:bernd.neidhart@gkss.de).

The concepts of **Analytical Quality Assurance (AQA) and Analytical Quality Management (AQM)** developed in the wake of the harmonization of the European market

and in connection with the globalization of the world's major trading zones, have now been formally established via the appropriate directives and standards (ISO 17025, EN 45000ff. etc.).

## **Background**

Although these developments have become widely accepted as market-regulating elements by both the chemical industry and independent laboratories for routine chemical analysis and are now practised extensively in the form of accreditation, this has taken place without any perceptible participation on the part of the universities. This state of affairs is somewhat similar to the situation prevailing at the beginning of the 80's with regard to the introduction of Good Laboratory Practice (GLP). The university sector which has always prided itself on its enduring commitment to high quality and its generally recognized competence appears to be having difficulties in accepting that henceforth it will have to demonstrate proof of quality and, moreover, invest in expensive measures to maintain it. In contrast to the situation with regard to GLP, this will be disadvantageous in the short-to-medium term to those institutions in the higher education sector that persist with their traditional structures and teaching curricula and thus fail to react to the developments in Analytical Chemistry which have given it the status of an independent scientific discipline with increasing global-economic and socio-political importance.

In considering the role of AQA in the higher education sector it is necessary to differentiate between the various university activities which include services, research and development and teaching, as follows:

- \* Routine chemical analyses (including ad hoc analyses) performed for external clients and for the university's own measurement campaigns
- \* Routine chemical analyses carried out for internal clients as a service to research in other Chemistry Departments
- \* Chemical analyses performed as part of R&D work including such in non-analytical Chemistry disciplines
- \* Chemical analyses carried out within the framework of research projects having pre-eminent goals which are analytically based.

These considerations also apply to the whole range of scientific disciplines in which chemical measurements are made, such as Biology, Geology, Medicine, Microbiology, Mineralogy, Ecology, Pharmacy, Toxicology etc.

The quality of chemical measurements (or AQA) must become a sustaining element of modern research and teaching in the Chemistry departments of universities. Academic freedom in teaching and research also involves a responsibility to adapt oneself to changed conditions, prepare students for new tasks, face the competition from other universities, and give priority to fulfilling teaching duties, if necessary, at the expense of one's own scientific interests.

## **Aims and tasks of the working group**

In order to assist universities in the implementation of actions and structures of AQA in the various areas mentioned above, a guide is needed, which could be worked out by a new, temporary working group. The new guide should be based on the EURACHEM/CITAC

Guide "Quality Assurance for Research and Development and non-routine Analysis" but needs to reflect in particular the situation at universities.

The preliminary working programme of the group includes the following major steps:

- \* constitution of the working group; university professors in Analytical Chemistry, accepted as experts (at least in Europe), are highly welcome
- \* setup of a network of experts at European universities and research centres
- \* evaluation of the situation at European universities and research centres
- \* development of a concept (criteria catalogue) and a strategy for the implementation of AQA in universities and research centres
- \* elaboration of a guide "AQA at Universities and Research Centres" (draft title)

All activities will be developed in close co-operation and in co-ordination with DAC/FECS, so that overlapping work is avoided and synergism is created.

*Bernd Neidhart, EURACHEM Germany*

## **Reports from National Organisations**

### **EURACHEM Portugal: A thorny way...**

The EUROANALYSIS VII Conference in September 1990 was the first one on Analytical Chemistry after EURACHEM had formally been founded. When Bernard King presented the initiative to an audience of nearly one thousand participants, Filomena Camoes (University of Lisbon, Portugal) understood that EURACHEM emerged as a real focal point for the analytical community, attaining an important role in and beyond Europe. At that time, 12 member countries had already signed the MoU. Despite existing contacts, Portugal didn't join in, but Filomena Camoes was co-opted as a National Delegate. Being aware of the relevance of the organisation, she attempted to direct the attention of national organisations concerned with QA to the necessity of, and the support for a portuguese EURACHEM representation, but without much resonance.

Although time and resources were scarce and no support available, a systematic personal participation in the activities of the Measurement Uncertainty WG and some collaboration with Education and Training WG was ensured. An outcome of the latter one was the portuguese contribution to the Glossary of Analytical Terms (published in *Accred Qual Assur*). It was felt that these activities were still far from being sufficient, and that related national activity had to be intensified. A national organisation was required, but although some attempts had been made (in particular on the occasion of the EURACHEM Committee Meeting held in Lisbon in 1993, and the IUPAC General Assembly), the desire couldn't be fulfilled until recently.

### **... and promising solutions**

Finally, RELACRE, a confirmed portuguese network of accredited laboratories, took the initiative of promoting the formation of a Secretariat with the responsibility for coordination of all national and international activities within the scope of EURACHEM. A two-year mandate has been given to Filomena Camoes and to Leopoldo Cortez (Portuguese Institute

for Quality - IPQ) to preside the newly formed EURACHEM Portugal in order to ensure continuity in, and definition and development of activities.

The portuguese team feels that EURACHEM's 10th anniversary, which has recently been celebrated, is a good reference point to mark the birth of this new national structure, which has all our enthusiasm and gives the guarantee of a fruitful, mutually beneficial involvement of the most diverse portuguese institutions.

Curiously enough, this occurs at a time when Portugal is organising the EUROANALYSIS XI Conference which will take place in Lisbon from 3 to 9 September 2000.

*Filomena Camoes*  
*EURACHEM Portugal*

## **Inventory on Chemical Metrology in Turkey**

EURACHEM/Tr Committee has been established in March 1997 after its first meeting held at UME (National Metrology Institute of Turkey) and was granted Associate Membership status during the EURACHEM Meeting held in Dublin in May 1997.

At the first meeting of EURACHEM/Tr it was decided to establish working groups on "Education and Training" and "Uncertainty of Measurements". The first activity of the "Education and Training" group was the translation of metrological terms into Turkish. This work is still in progress. On the other hand, the "Uncertainty of Measurements" group was charged to translate into Turkish the 1995 "Quantifying Uncertainty in Analytical Measurement" Guide. This work has been postponed after the publication date of the revised version.

In February 1999 EURACHEM/Tr Committee organised a one-day workshop entitled "Introduction of UME and the EURACHEM/Tr Committee, and Current Situation in Chemical Metrology" with 48 participants from university, governmental and industrial laboratories. The purpose of this workshop was to introduce to members of these laboratories EURACHEM, EURACHEM/Tr, UME, and chemical metrology issues such as reliability of chemical measurements, measurement uncertainty and traceability, and to present a review on the current status of chemical metrology in the world.

Moreover, an inventory study has been conducted which aimed at the definition of the current situation in the field of metrology in chemistry and related areas by examining the calibration, measurement uncertainty and traceability profile of secondary and working level laboratories in Turkey, the determination of most frequently performed analyses and most frequently used analytical instruments, the estimation of the metrological needs of analytical laboratories, and finally (on the basis of the results obtained) the decision-making on major investment targets of UME.

The study was based on the determination of the subsectors of chemical industry, visits to companies operating analytical laboratories, a questionnaire preparation and evaluation of the results, and contacts with the Undersecretariat of Foreign Trade in order to obtain an idea about the difficulties encountered in the exportation of Turkish products. The inventory study has been finished and the results have been presented during the EURACHEM/Tr Committee meeting on 26 November 1999.

*Fehmi Ficicioglu*  
*EURACHEM Turkey*