

Eurachem Newsletter 13 Spring 1998

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Published By:
 The EURACHEM Secretariat, PO Box 46, TEDDINGTON, Middlesex, TW11 0NH, UNITED KINGDOM
 Tel + 44 181 943 7614 Fax + 44 181 943 2767 Email: eurachem@lgc.co.uk
 Internet <http://www.vtt.fi/ket/eurachem.html>
Editor: Keith Marshall. *Additional copies available from Mr David Binney*

Eurachem News Spring 1998

EURACHEM Elects a new Vice Chair

Dr Ed de Leer was elected EURACHEM Vice-Chair in November last year, by a secret ballot of all EURACHEM member nations.

Ed W.B. de Leer's career has been based solely in the Dutch city of Delft. After graduating in 1969, he was appointed as an assistant professor at the Technical University of Delft.

In 1988, he joined TNO, the national applied research institute in Delft, as the head of the analytical chemistry department. He introduced quality systems and his laboratory was the first in The Netherlands accredited for both research and testing.

In 1995 Dr de Leer joined the Nederlands Meetinstituut (the national metrology institute of The Netherlands) as head of the chemistry department. His strong interest in quality aspects of chemical analysis fully developed, with special interests in isotope dilution protocols for primary analysis of trace metals using ICP-HRMS, the production of gaseous primary reference materials, the development of traceability protocols and measurement uncertainty.

To date, Dr de Leer has published Over 80 papers and two books on Water Chemistry and Naturally Produced Organohalogens.

Dr de Leer became an active member of EURACHEM-NL in 1990. In 1996 He became the Dutch representative to the EURACHEM Committee.

For EURACHEM, Dr de Leer sees three major directions for future development:

1. The development of an international measurement structure, based on traceability principles and intercomparisons with a metrological dimension.
2. The dissemination to the working level of results and ideas in the field of QA/QC for chemical measurements, to improve awareness and to achieve acceptance of traceability principles.
3. Enhanced involvement of EURACHEM's New and Associate Members in its activities, so that EURACHEM becomes a truly European organisation.

Dr De Leer will become EURACHEM Vice Chair at the next EURACHEM Committee Meeting, when the present Vice Chair, Prof Veikko Komppa, becomes the EURACHEM Chair.

 Eurachem News Spring 1998 

News from all over Europe

1. [Finland: Finland's new representative](#)
2. [Ireland: EURACHEM Ireland introduces uncertainty to analytical laboratories](#)
3. [Slovakia: Improving the quality systems of chemical laboratories](#)

EURACHEM Finland

Finland's new representative

Earlier this year, Ms Anna-Liisa Pikkarainen, became Finland's second representative on the EURACHEM Committee. Under the terms of the EURACHEM Memorandum of Understanding, each member nation is entitled to send two representatives to EURACHEM Committee meetings. Finland's other representative is Prof Veikko Komppa from "VTT Chemical Technology"

Since 1995, Ms Pikkarainen has been working as quality manager in the Finnish Institute of Marine Research (FIMR) and has been a member of EURACHEM Finland last two years. Since spring this year, she has been a member of EURACHEM Finland's Committee. Previously for six years, she was a forensic chemist at the National Bureau of Investigation, Crime Laboratory.

In addition to quality issues, Ms Pikkarainen's main interest is science itself, especially in relation to environmental issues.

EURACHEM Finland hosted its traditional autumn seminar on the topic of Laboratory Information Management Systems (LIMS), in Helsinki in November 1997. Dr. Allan McLelland from Institute of Biochemistry, Glasgow Royal Infirmary, Scotland, gave a lecture entitled "LIMS - Past, Present and Future". His captivating presentation and experience gave 65 participants a chance to get an overview of LIMS from a clinical chemistry point-of-view.

In addition to Dr. McLelland's lecture, representatives from four companies, involved in the manufacture of LIMS products in Finland, presented their latest developments. Demonstrations of these products also took place in the Finnish Chemical Congress and Exhibition, in Helsinki later that same week.

Anna-Liisa Pikkarainen
EURACHEM Finland

EURACHEM Ireland

EURACHEM Ireland introduces uncertainty to analytical laboratories

Before hosting the 1997 EURACHEM Spring Meeting in May this year (Full details in Newsletter 12, Summer 1996), EURACHEM Ireland organised an introductory seminar for analytical laboratories on "Measurement Uncertainty". The seminar attracted considerable interest and attendance was in excess of 130. At the end of the workshop delegates completed a questionnaire for the newly formed EURACHEM Ireland Measurement Uncertainty Working Group. Results obtained from this questionnaire will help guide the Working Group as to its future activities.

Both meetings were sponsored by AGB Scientific, Brennan and Co, JVA Scientific, Hewlett-Packard, JVA Analytical, Lennox Laboratory Supplies and the State Laboratory.

EURACHEM Ireland has recently formed an Education and Training Working Group. Plans are underway to organise a competition for 3rd level students, which will give students the opportunity to demonstrate their approach to QA as well as to the estimation of uncertainty.

Maire Walsh

EURACHEM Ireland

EURACHEM-Slovakia

Improving the quality systems of chemical laboratories

During 1997, EURACHEM Slovakia drew its attention to the improvement of quality systems in chemical laboratories, in response to requests made by its members. In keeping with this theme the following meetings were held.

- "Validation of chemical methods of analysis" (A workshop in January attended by 160 delegates).
- "Quality '97" (A 5-day training course focusing on statistical and computational approaches to results evaluations. This was held in January and March and attracted 48 delegates in total).
- "Up to date trends in analytical procedures evaluation" (A workshop held in February and May, attracting 40 delegates in total).
- "The new trends in chemistry in the field of standards creation" (A seminar held in June attracting 50 delegates).

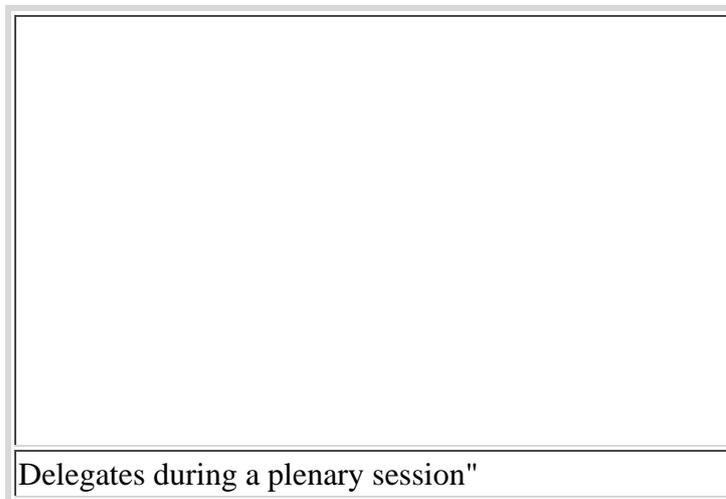
Members of EURACHEM Slovakia's committee also gave lectures on measurement uncertainty during the International conference "Analyses for Geology and Environment", held in Spisska Nova Ves, Slovakia, in October.

Villiam Patoprsty

EURACHEM Slovakia

Second Eurachem Workshop on measurement Uncertainty

Measurement uncertainty in chemical analysis: Current practice and future directions



Over 200 delegates from 41 countries attended EURACHEM's workshop on Measurement Uncertainty in Berlin in September this year. The primary aim of this workshop was to identify the scope and nature of revisions to the second edition of EURACHEM's "Quantifying Uncertainty in Analytical Measurement", first published in 1995.

During the main plenary sessions, delegates listened to talks given by various experts in this field.

EURACHEM's Measurement Uncertainty Working Group Chair, Alex Williams, reviewed the history of the present EURACHEM guide, and provided a brief overview of the principles of evaluating uncertainty, according to the Eurachem Guide. A large number of favourable comments had been received, many incorporating details of constructive amendments or corrections. Adverse comments had focused on the issues of terminology, the applicability of the approach in particular cases and the level of detail apparently expected.

His second lecture, given later, discussed the feasibility of applying a 'quality parameter', analogous to measurement uncertainty, in qualitative analysis.

Prof Veikko Komppa (VTT Chemical Technology, Finland) reviewed four examples of uncertainty estimation at his organisation and considered the effect on the customer of reporting uncertainty. On the latter point, Prof Komppa noted that adding uncertainty figures on reports had led neither to problems nor customer complaints.

Dr Rainer Schmidt (Bayer AG, Germany) applied the principles of the EURACHEM guide in practice, having developed an in-house interpretation. The principles were found to be both generally applicable and sufficiently flexible for practical use. It was also noted that different quality management systems (ISO 9001, EN45001 and GMP) had significantly different priorities for uncertainty information, and more harmonisation was consequently desirable.

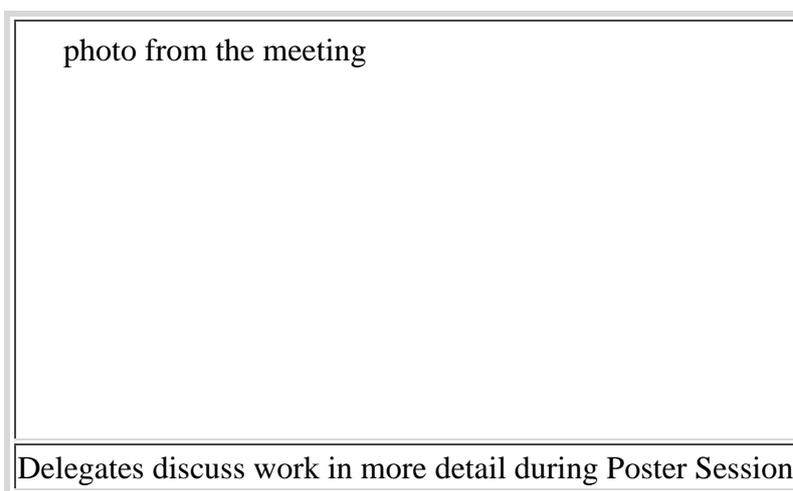
Stephan Koppers (Schering AG, Germany) compared measurement uncertainty estimation with pharmaceutical industry validation requirements. His findings showed that Measurement Uncertainty estimation significantly reduced costs while providing sufficient estimates for ad-hoc methods

Dr Robert Kaarls (EAL) reviewed the history and application of the current ISO Guidance on uncertainty estimation. This guidance had been adopted by EAL for practical accreditation purposes.

As well a>

Transfer interrupted!

re split into ten smaller workshops to facilitate more detailed discussion. The main issues arising from these were:



Complexity

Several workshops recommended simplification of the guide, and in particular the production of a simple 'menu-driven' approach. It was clear that analysts were experiencing difficulty in applying the principles, and did not find the general procedures given in the guide to be sufficient.

Knowledge and experience

Lack of knowledge was seen to be a barrier to implementing measurement uncertainty principles. Knowledge of uncertainty principles alone was not the only problem. Measurement uncertainty, as put forward in the ISO Guide, relies on a background of traceable measurements. Therefore, poor knowledge of the underlying principles of traceability and metrology in general was a consistent theme.

Use of validation data

The relationship between validation and uncertainty estimation was not sufficiently clear for most delegates to obtain uncertainty estimates directly from validation data. Delegates concluded that it was important to clarify the relationship between validation and uncertainty estimation and show how existing data could be applied in practice.

Treatment of bias

Chemists do not generally correct for known bias in results or intermediate values. No consensus on correction for bias was reached. However, a general approach to dealing with uncertainty estimation in the presence of acknowledged, uncorrected bias was considered by two of the workshops and considered an acceptable compromise.

Sampling

Delegates recognised that uncertainties associated with sampling were critically important, and often dominant, where a measurement required sampling. Although there was no clear view on whether sampling should constitute a substantial addition to a revised guide, delegates felt that guidance on this topic could be considered as an additional activity for EURACHEM.

Matrix effects

The effects due to variation in sample matrix is a problem which is particularly acute in environmental analysis, but also affects clinical and food analysis. Given that the effects are unpredictable without detailed knowledge of the sample, matrix effects are not generally amenable to treatment using the ISO approach. Therefore, delegates considered it important that the revised guide should deal explicitly with matrix effects.

Detection limits

Delegates believed that common practice in treating sub-LOD data as 'zero' was incorrect, and that results should be given together with associated uncertainties. They also felt that guidance on handling uncertainty estimation at trace levels was necessary.

The workshop provided the EURACHEM Measurement Uncertainty Working Group with a substantial set of issues and recommendations for consideration. The chief issues facing the Uncertainty WG are:

- **Simplification**

It is clear that analysts find it hard to get to grips with the ISO principles, and there is a strong demand for 'menu-driven' approaches to reduce the skill level required in their implementation.

- **Use of validation data.**

Chemists carry out validation studies to establish confidence in their measurements, and further studies are seen as undesirable and of doubtful value. Guidance is clearly needed on how best to apply this data to calculation of quantitative uncertainty estimates.

In addition, there are specific technical issues which need to be addressed. In particular,

- **Treatment of bias.**

Chemists do not generally correct for known bias, and the implications of this practice for uncertainty estimation need to be considered.

- **Matrix effects**

Matrix effects are large, and unpredictable without detailed knowledge of the sample. Guidance on handling such effects is essential.

- **Detection limits.**

Measurement uncertainty near nominal detection limits needs to be addressed.

Issues facing EURACHEM as a whole include, most notably, the issues of general awareness of metrological principles among analytical scientists, and the problem of Sampling.

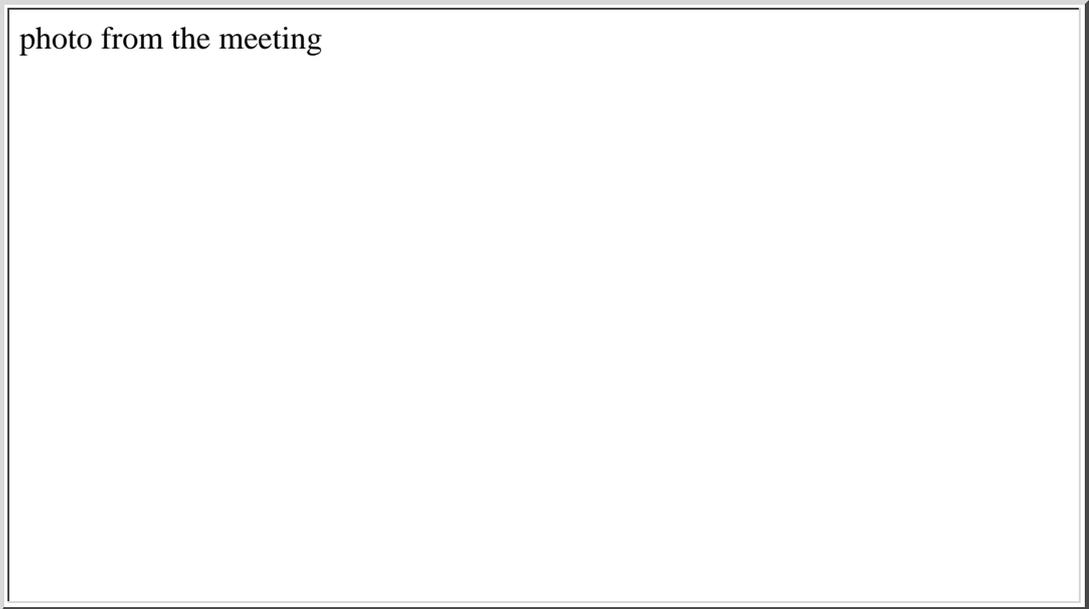


photo from the meeting

One of ten small workshops in action

Eurachem News: Reports

European Co-operation for Accreditation

EAL and EAC merge into EA

The European co-operation for Accreditation (EA) came into being on November 27, 1997. A Memorandum of Understanding was signed in Vienna, which merged the activities of "European Accreditation of Certification (EAC)" and the European co-operation for the Accreditation of Laboratories (EAL). Lars Ettarp (Sweden) was elected as Chair, with Robert Kaarls (The Netherlands) elected as Deputy Chair.

The merger marks the end of a 2-year process which has seen closer collaboration between the two bodies, leading to them joining forces on several activities. It reflects the increasingly prevalent practice in many countries of conducting accreditation of calibration and testing laboratories, inspection bodies and certification bodies, in a single, nationally recognised organisation.

Accreditation is increasingly being used by regulators and by the market, as an impartial, independent and transparent means of assessing the competence of conformity assessment bodies. A major role for EA is to develop, evaluate and ensure the maintenance, of the equivalence of competence of such bodies across Europe, through "Mutual Recognition Agreements". EA also wants to encourage this network to develop world-wide, so as to provide the technical basis for realising the concept, "Tested or certified once - accepted everywhere".

The membership of EA consists of the nationally recognised accreditation bodies of the European Union and EFTA. Other non EU/EFTA nations, with nationally recognised accreditation functions, in line with international standards, may also join as Associate Members. At present The Czech Republic, Hungary and Slovakia are Associate members of EA.

EA members acknowledge their obligation to take full account of the views of all with an interest in the accreditation process. In recognition of this, EA is creating a formal consultative structure, under an independent chair, through which stakeholders' views are taken on board.

In addition to being more efficient, the merger between EAL and EAC will also provide a better European

focus for the consideration of accreditation and will permit European accreditors to offer a more coherent response to its stake holders and to meet their needs more effectively.

For further information about EA, please contact:

Ms Katrina Wenell

SWEDAC
PO Box 878
SE 501 15 BORAS
SWEDEN
Tel + 46 33 17 77 45
Fax + 46 33 10 13 92
Email katrina.wenell@swedac.se
Web <http://www.european-accreditation.org>

Eurachem News: Reports

ILAC Laboratory Liaison Committee

EURACHEM accepts invitation from ILAC

The EURACHEM Committee accepted an invitation from ILAC (International Laboratory Accreditation Co-operation) to be a member of its newly formed Laboratory Liaison Committee. The Committee was formed as a result of ILAC formalising its structures in 1996 and was designed to be a forum through which laboratories can input directly into ILAC. EURACHEM is one of a number of International and Regional Organisations represented on the Committee.

ILAC's Laboratory Liaison Committee has been mandated to:

- *"collate and analyse problems, issues and suggestions, identified by the laboratory community in relation to the practise, promotion and development of laboratory accreditation...."*
- *"discuss and optimise the work within ILAC and laboratory organisations which may contribute to address issues and solve problems, in order to make the best use of laboratory expertise."*

Priority issues for the Laboratory Liaison Committee to consider will include:

- Implications for laboratories and accreditation bodies of the revision of ISO Guide 25.
- The use of Accreditation as recognition of a laboratory's technical competence and compliance to QA standards.
- The determination and statement of uncertainties associated with calibration and test results.
- The validation of test methods.

Note: Continue to read this newsletter about:

Events

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Copenhagen](#)
[Eurachem workshop, Sept. 27-29,1998, at
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