PROGRESS TOWARDS DOCUMENTATION FOR UNCERTAINTY PRACTICES IN TESTING

By Nick RINDER,
Consultant Metrolgist, Assessment Services Limited, and NPL, Convener of the WG within EUROLAB TC-uncertainty «General Guidance Documentation».

In January 1993, the EUROLAB General Assembly set up a EUROLAB Technical Committee (TC5) «Uncertainty in Measurement for Testing». This TC, composed of experts from 14 countries, held its inaugural meeting in June 1993 in Paris.

One of the terms of reference for the TC was: «to produce guidelines on the determination and presentation of uncertainties associated to test results which could be applied to specific fields». The TC decided, during its inaugural meeting, to address this task in the following manner: (i) To develop general guidance information on uncertainty in measurement for testing, and (ii) to produce specific examples of evaluation processes in some of the many different testing fields for which uncertainty considerations are deemed appropriate. The general guidance documentation is intended to be of use to all involved in measurement uncertainty in testing including suppliers, customers, regulatory and accreditation bodies. The examples, illustrating the application of the general principles to specific areas of testing, are intended for workers in the respective, and allied, fields of testing.

The TC also decided that both general guidance documentation and examples would conform to the recommendations given in «Guide to the expression of uncertainty in measurements» published in October 1993 by the International Organization for Standardization (ISO).

The general guidance documentation gives information on the application of uncertainty to testing and compliance. It begins by discussing briefly the difference between «uncertainty of measurement» and «measurement error». This distinction is important as only the uncertainty of the measurement gives a quantitative measure of the doubt about the validity of the result of the measurement and hence its quality. It is followed by a section giving the reasons for estimating uncertainty, and highlighting its importance during any meaningful interpretation of measurement data. Subsequent sections of the text lay out general principles, including the distinction between random and systematic errors, methods of evaluating uncertainty components and potential sources of uncertainty which may be present in a test or measurement process.

The text also gives a summary of the procedure to be adopted when evaluating and expressing uncertainty, and considers the application of uncertainty. These include the use of uncertainty for product specification (i.e., pass/fail decisions), compliance to specification limits, results comparisons and assessing test quality. The suitability of compliance assessments in different applications (e.g. safety critical etc.) is discussed.

The text ends with an appendix designed to interface with, and enhance the understanding of, the examples developed in specific fields. So far, these include examples in the fields of mechanical, physical and chemical, electrical and thermal testing.

The EUROLAB TC is interested in co-ordinating its activities with other European bodies active in this area, e.g., the newly-formed European Accreditation of Laboratories (EAU) and the European Committee for Standardization (CEN). For example, an EAL Task Force on the expression of uncertainty in testing includes representation from EUROLAB.

THE EAL-EUROLAB PERMANENT LIASION GROUP: A PROBLEM SOLVING MECHANISM

A liaison group between WELAC and EUROLAB was set up by the two Executive Committees in 1992. It has been confirmed after the merger of WELAC and WECQ and is now the EAL-EUROLAB permanent liaison group.

Its role is to open a channel of discussion and to clarify and propose solutions on issues relating to accreditation procedures raised by the laboratory community.

The French saying «la discussion apporte la lumière» (discussion brings light) has once more demonstrated its value.

After the EUROLAB Symposium in Strasbourg in January 1992, it was decided to hold a workshop between the national delegates to the WELAC and EUROLAB General Assemblies on «Future developments in laboratory accreditation in Western Europe». It was held in May 1992 in Madrid and considered the starting point for the liaison group. It demonstrated the existence of convergent views and interest on such essential areas as quality of testing, fairness of competition, satisfaction of test results users, but also a number of issues which needed clarification and harmonisation.

The definition of the Scope of Accreditation was identified as the most urgent problem and it was decided to create an Ad-hoc working group composed of 5 representatives of WELAC and of an equal number of EUROLAB, whose mandate was to propose a common WELAC-EUROLAB document «Scope of Accreditation». This task has been achieved in the form of the WELAC-EUROLAB Doc. WG7 published in the series of WELAC documentation.

The way this Ad-hoc group achieved its first mandate encouraged both WELAC and EUROLAB to convert this Ad-hoc group into a permanent WELAC-EUROLAB Liaison Group (PLG), which was continued by EAL after the merger of WELAC and WECQ.

The second mandate of the PLG was to develop a consensus document on the Assessment Methods to the Scope which was completed and is ready for printing.

Now the PLG works on the development of a general EAL-EUROLAB Position Paper on Accreditation, defining the views to be adopted on a consensus basis by both communities, on such matters as accreditation of calibration laboratories, limits of accreditation (research), expert opinions and inspection, as well as the distinction between accreditation and certification of the QA system of a laboratory according to ISO 9000, etc.

The PLG Working Program includes topics like problems arising from the accreditation of small laboratories or of multidiscipline laboratories, harmonisation of the classification of measurement and testing fields and techniques, products, etc.

The PLG feels that the mutual understanding between its members has its equivalent at the General Assemblies' level of both EAL and EUROLAB and that there is now room for a new EAL-EUROLAB Working group which should be held in June 1995, on the main topics of common interest to the two communities.

Note: the laboratories interested in obtaining the two EAL-EUROLAB documents mentioned above may obtain them through the national EUROLAB branches or through the national accreditation bodies.

ILAC '94 : PROMOTING LABORATORY ACCREDITATION

The International Laboratory Accreditation Conference (ILAC) met for its plenary session in Hong Kong from October 17 to 21, at the invitation of HKOSL, the local laboratory accreditation scheme.

Some 200 delegates representing 36 countries and 9 several regional and international organisations participated.

The major outcome of ILAC '94 have been:

- the endorsement of several documents including the following:
  - guidelines for establishment and review of mutual recognition agreements,
  - information documents on 'liability in testing' and on 'testing, quality assurance, certification and accreditation',
  - guidelines for training courses for assessors,
  - guidelines on scopes of accreditation,
  - report on traceability of measurement,
  - a proposal for the revision of ISO Guide 43 on proficiency testing,
  - a guide on calibration and maintenance of test and measuring equipment,
  - guidance document for laboratories performing sampling under ISO-IEC Guide 25,
  - the continuation or opening of the following work items for the next two years:
  - effectiveness of mutual laboratory recognition agreements for industry and international trade,
  - model co-operation agreements between laboratory accreditation bodies and quality system and product certification bodies, uncertainties associated to test results,
  - guidelines for various aspects of the practice of laboratory accreditation such as: surveillance and assessment of accredited laboratories, accrediting multidiscipline laboratories, assessor qualification scheme, use of accreditation logo by laboratories,
  - investigation on the subject of inspection and its relation with testing and laboratory accreditation,
  - guidance for QA associated to the use of highly automated laboratory equipment,
  - validation and verification of test methods,
  - processing of test data and associated uncertainties in connection with the presentation of test inputs, the determination and statement by laboratories of the compliance of tested items to specifications and requirements,

The conference took note of the undertaking by ISO-CASCO of the revision of ISO-IEC Guide 25. It recommended that a balanced representation of all parties involved should be ensured and that the revised document should cover both the relevant clauses of ISO 9000 and requirements for the technical competence of laboratories.

A general discussion on the future of ILAC concluded that steps should be taken to consolidate the Conference in an international association of laboratory accreditation bodies at the next plenary session due to take place in the Netherlands in September 1996.

Information on ILAC may be obtained through ILAC '96 Secretariat c/o NEKOSTERFINSTELAB, Postbus 20715, 3501 GD Rotterdam, The Netherlands, or through the EUROLAB Secretariat.

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