

UKAS Day for Electrical Laboratories

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Building on the Foundations

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Introduction

Historians remind us that by looking backwards we should see more clearly the way ahead¹. Therefore by looking back we can see the reason why we are here, but more importantly we can see the reasons why laboratory accreditation is so essential in meeting the challenge of new international standards and legislation.

The Case for Laboratory Accreditation

The case for the UK Laboratory Accreditation Service¹ was first developed in 1964/65 by Industry, who identified a need for: -

- Authenticated certificates of calibration in support of exports
- The development of new and improved measurement standards
- Education and training in measurement science and technology
- To relieve NPL of the routine calibration of every day equipment

Following discussions with Industry, Academia and Government Departments led to the Government announcement in Parliament of formation of the British Calibration Service BCS on 25th April 1966.

Fifteen years later, in 1981, the Government announced the formation of the National Testing Laboratory Scheme NATLAS². In 1985 BCS and NATLAS merged to form the National Measurement Accreditation Service NAMAS.

The Case for Accreditation of Certification Bodies

Running in parallel with the formation of BCS, NATLAS and NAMAS was the unified approach to the U.K. Quality Assurance Requirements, which had first been introduced in the sixties with the NATO AQAP Series of Quality Publications³. These Publications realised the importance of a fully integrated calibration system within the quality control arrangements of a company. The AQAP Series of Publications were later, in 1973, adopted by the Ministry of Defence, who produced the DEF STAN 05 Series of Defence Quality Standards, which in turn at the end of the seventies, became the British Standards BS 5750 and BS 5781 for Quality Management Systems. The British Standards, in 1987, were adopted as the first version of ISO 9000 Series of Standards.

The continuing importance given to calibration systems in ISO 9000 Series of standards can be seen from the need to have the ISO 10012 2003 Standard for Calibration System Requirements. The ISO 9000 standards themselves require a documented process to ensure that all calibration requirements are satisfied, and the Standard emphasises that it is the responsibility of the user of the equipment to ensure that his calibration is correctly structured and implemented. It also requires the user to know the measurement uncertainty of his inspection measuring and test equipment, and to ensure that it is consistent with the required measurement capability for the verification of the product.

The authority responsible for the accreditation of certification bodies for the registration of companies to ISO 9000 series of standards was the National Accreditation Council for Certification Bodies, NACCB, which was formed in 1985. In 1995, NAMAS and NACCB merged to form the United Kingdom Accreditation Service, UKAS.

Standards for Laboratory Accreditation

The UKAS calibration and testing standard for accreditation was originally M10 this encompassed the requirements of European Standard EN 45001, which equated to ISO/IEC Guide 25, for the operation and accreditation of calibration and testing laboratories. The aim of Guide 25 was to provide a means by which laboratories can demonstrate technical competence and that they operate a documented quality management system. Guide 25 had been in use for nearly twenty years and had stood the test of time, before it and EN 45001 were replaced by the new ISO/IEC Standard 17025- General requirements for the competence of testing and calibration laboratories, which has replaced M10 as the UKAS accreditation criteria.

Aims of Laboratory Accreditation

The overall aims of BCS and NATLAS were very similar and are the current aims of Laboratory Accreditation by UKAS. Both operate a laboratory accreditation service by independent assessment by experts in the field, which adds credibility to the assessments. Both had the clear intention of providing a nationally recognised laboratory accreditation service, to foster international recognition of the competence of the accredited laboratories and to enhance the United Kingdom's reputation for accuracy and quality.

The national and international recognition of UKAS together with its accredited laboratories is a clear indication that the aims set for BCS in 1966 and NATLAS in 1981 have strengthened the United Kingdom's reputation for technical excellence and quality.

Conclusions

The foresight of the founders of BCS and NATLAS, together with accredited laboratories, have provided the United Kingdom with a very sound base to meet the challenge of new and demanding European and international Standards and legislation.

The contribution of accurate instrumentation to product quality is now internationally acknowledged and embodied in all formal quality standards⁴. Indeed, it is self evident that the verification of product specification depends on accuracy of measurement. It is no exaggeration to claim that accurate measurement is central to trade and customer satisfaction. The customer can be assured of accurate instrumentation; if his equipment has been calibrated at agreed specified intervals, used in the correct environment, to the correct performance specification and covered by an accredited certificate of calibration. This why we are here today to discuss measurement accreditation and to seek ways of improving the service provided by UKAS and its accredited Laboratories for the benefits of Industry and International Trade.

References: -

1. In The Beginning (of the British Calibration Service) - FLN Samuels IEE Digest 96/099
2. NAMAS Newsletter Spring 92
3. The Evolution of Quality Control Standards for Calibration Systems - Lawrie Cronin The National Measurement Conference/ British Electromagnetic Conference Digest – November 2001.
4. Chairman Introduction – Lawrie Cronin IEE Digest 96/099

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