

Looking for guidance

H. Emons

Published online: 20 January 2015
© Springer-Verlag Berlin Heidelberg 2015

How to design, perform and evaluate measurements and their quality assurance for obtaining reliable results which are fit for purpose? This question comes up much more frequently than years ago. Indeed, economic, regulatory and societal decision making is requesting much more measurement results and expects the availability of such data in an increasing range of application sectors, from nano- to biotechnology or from personalized medicine to food authentication. In addition, globalization processes are relying on a geographically much broader, often worldwide, comparability and (metrologically speaking) equivalence of measurement results.

Therefore, it is not surprising that the number of requests for guidance on good, i.e., problem adequate, measurement practices is increasing as well. I am receiving frequently such requests from around the world. At a first glance, this may sound surprising in the ‘internet age.’ However, various surveys and discussions at meetings reveal that people are looking for different kinds of guidance in dependence on their application needs, education background, knowledge level, professional environment, etc. A guidance document is certainly not available for each specific purpose. On the other hand, an appropriate paper may get lost in the flood of existing information. A considerable part of my communication is devoted to facilitate the identification and distribution of relevant guidance. The selection criteria include the aspect on who has written and reviewed the released document. Obviously, ‘authoritative advice’ undergoes a renaissance in the time of internet databases and search engines.

Standardization organizations have released a wealth of documentary standards addressing also many measurement methods and corresponding quality assurance tools and measures. However, such standards are often written in a more generalized manner for covering various peculiarities of individual measurement procedures. Therefore, their application requires further interpretation and specification by the analytical laboratories. Over the years, a cascade of additional guidance documents has evolved to assist in the common understanding and implementation of standardized measurement methods and related activities, such as estimation of measurement uncertainty and laboratory internal quality control. There are guides from officially mandated bodies such as ISO which have actually undergone the same consensus-building steps like their international standards. On a less formal level, various sectorial organizations, such as AOAC International for food analysis or the Clinical Laboratory Standards Institute (CLSI) for clinical analysis, have developed guidance documents describing specific measurement procedures, preparation and use of certain types of reference materials, tailored data evaluations, etc.

In addition to laboratory internal documentation, which is nowadays usually a main component of quality management systems, laboratory staff often appreciates external explanatory documents for performing selected steps of an analytical process under specific conditions. Here, the availability of documents in the appropriate language—in the sense of both the regionally spoken language and the technical language of the respective application area or scientific sub-discipline—is of utmost importance.

On the other hand, there is still a tendency to ‘reinvent the wheel’ regarding ideas and best practice as well as terms and definitions, arguing that new approaches would

H. Emons (✉)
Geel, Belgium
e-mail: JRC-IRMM-ACQUAL@ec.europa.eu

be required as the existing ones would not satisfy the specific needs or conditions of the own area. Before creating additional terms, it is strongly advised to review the state of play. For instance, ISO has made a database publicly available, called Online Browsing Platform (OBP), which summarizes also the terms and definitions used in ISO documents (<https://www.iso.org/obp/ui>). By the way, the OBP demonstrates also that identical terms are used for different concepts (and vice versa) even within the world of ISO standards and that further communication and harmonization within and between scientific disciplines are highly desirable.

Another challenge for guidance comes from the time-scale. There are so many guidance documents in use that it is impossible to keep all of them at an equivalent updated level. Consequently, they are not all based on the same fundamental concepts, knowledge and understanding which results in an unavoidable lack of consistency. This can be observed not only by comparing various guidance documents addressing the same topic, but also by reading

published articles in various scientific journals. Therefore, *Accreditation and Quality Assurance* (ACQUAL) has as one of its scopes to present measurement issues and their quality assurance in a form which is consistent to up-to-date metrological concepts and approaches. I am aware that this poses sometimes a challenge because of the need to bridge between a sector-specific jargon and a more abstract, metrology-wide (and at least partially agreed) terminology. However, getting these bridging messages across allows our readers to exploit ACQUAL articles also as guidance for their application needs in the sense of the explanatory documents mentioned above.

The journal welcomes to receive information about new or still not widely known guidance documents, which could be incorporated into practitioner's reports, could come as a report from international bodies and/or be introduced in the section on legislation and norms.

Hendrik Emons
Editor-in-Chief