

European and International Standards for Statements of Uncertainty in Measurement

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To make measurements comparable it is necessary to state the quality of a measurement by an assessment of measurement uncertainty that may be considered as unified measure of the quality of measurements. The ISO/BIPM "Guide to the Expression of Uncertainty in Measurement", usually referred to as the GUIDE or the GUM, was published in 1993 and proposed a unifying method for evaluating and stating measurement uncertainties. This method has been accepted by nearly all calibration services and test co-operations in the world. It has become a quasi-standard in the field of metrology. This paper describes the fundamental aspects of the method, which also has entered the EA-4/02 requirement document edited by the European cooperation for Accreditation. It starts with a short overview of the different aspects of measurement uncertainty, compiles the principles of uncertainty evaluation that underlie the GUM, describes the GUM-method and discusses its consequences for conformity statements in trade and industry.