

An Introduction to ‘The Guide to the Expression of Uncertainty in Measurement’

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SUMMARY

Organisations are created to fulfil some need. They succeed when they satisfy the requirements and expectations of their stakeholders. Stakeholders are the people or organisations that can give or take something from an enterprise. They include government, suppliers, society, employees, and most particularly customers. The customer is a special stakeholder. The customer is the person, or organisation that receives a product or service. The customer is the one who pays. And only the customer can decide if products or services are satisfactory. Customers require quality products and services delivered on time and at a price that reflects value for money. What are characteristics of quality? Quality products are reliable, functional, durable, secure, available, and traceable - among many other things. Quality services reflect competence, responsiveness, integrity, reliability, and credibility. Quality is the degree to which a product or service fulfils a set of requirements: a requirement being a need or expectation. Surveyors must provide legally accurate and precise information to their customers. Typically they will strive to do this in an optimal cost effective way and with the most appropriate instrumentation. Naturally this requires a good understanding and assurance in the instruments that are used. All instruments are subject to measurement error or uncertainty. Measurement uncertainty can be an essential element in the professional decision making process. Additionally, as tolerances become more demanding, the role of measurement uncertainty is becoming more important in determining conformity. Measurement uncertainty almost always plays a central role in quality assessment and quality standards. The Guide to the Uncertainty in Measurement - colloquially referred to as the GUM - is an internationally recognised standard that addresses uncertainty in measurement. Because Surveyors are so consummately involved in measurement, an understanding of the role of uncertainty is essential. This paper aims to provide an introductory discussion of the GUM in the context of the surveying profession.