

NIST Traceability and Laboratory Accreditation

or

To be Traceable, or Not to be Traceable: Traceability Myth Debunked

Over the years a mystique has grown that has resulted in general confusion on the interpretation for the concept of NIST traceability. The ISO definition of traceability is the: “property of the result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties.” This definition is in general agreement with the concepts accepted by NIST. While anyone in possession of a reference material can claim traceability for their measurements, the spirit of the definition is not fulfilled without a demonstration of the quality of the analysis. Furthermore, the demonstration should be linked in an unbroken chain of comparisons to a stated reference. Within the US, the preferred stated references are the NIST standards. Therefore, to be able to reasonably claim traceability to NIST, analytical proficiency should be tested through an ongoing program whose analytical proficiency, in turn, is regularly tested by NIST.

While NIST traceability is a very important indicator of analytical proficiency, it is not the sole indicator of continued analytical competence. Two other important aspects of quality assurance are needed: 1) scientifically sound documented analytical protocols, and 2) periodic on-site technical expert assessment. These two aspects of quality assurance, in conjunction with NIST traceability, are the basis for strong laboratory accreditation programs.

This workshop will discuss: a) incorporation of the above concepts into national written standards, b) NIST traceability testing programs, and c) incorporation of these concepts in agency accreditation programs.