What metrological traceability is and what it is not!

Authored by Elvar Theodorsson (<u>elvar.theodorsson@liu.se</u>, +46736209471) and reviewed by the JCTLM Traceability Education & Promotion Working group and by other beneficiaries of the JCTLM

BIPM in Paris in 2022

This is a "living document", version 2022-03-23. Suggestions for improvements are gratefully received.

JCTLM Secretariat

Bureau International des Poids et Mesures Pavillon de Breteuil 92312 Sèvres Cedex France

Tel: +33 1 45 07 70 70 Fax: +33 1 45 34 20 21 Email: jctlm@bipm.org



What metrological traceability is and what it is not!

Traceability **IS** a *property of a measurement result* that can be related to a *reference* through a documented unbroken chain of calibrations, each contributing to the measurement uncertainty (1).

The reference must be amongst the following

- 1. The definition of a SI unit
- 2. A certified value of a reference material
- 3. The result of a reference measuring system
- 4. The value assigned to an international conventional calibrator
- 5. The values assigned by an *international harmonization protocol*

It is unfortunately and frequently misunderstood that traceability **IS NOT** traceability to the producer of the reference material used for calibrating measuring systems, to the internal or external quality control samples used in the measurement or to the producer(s) of the reagents and measuring systems used.