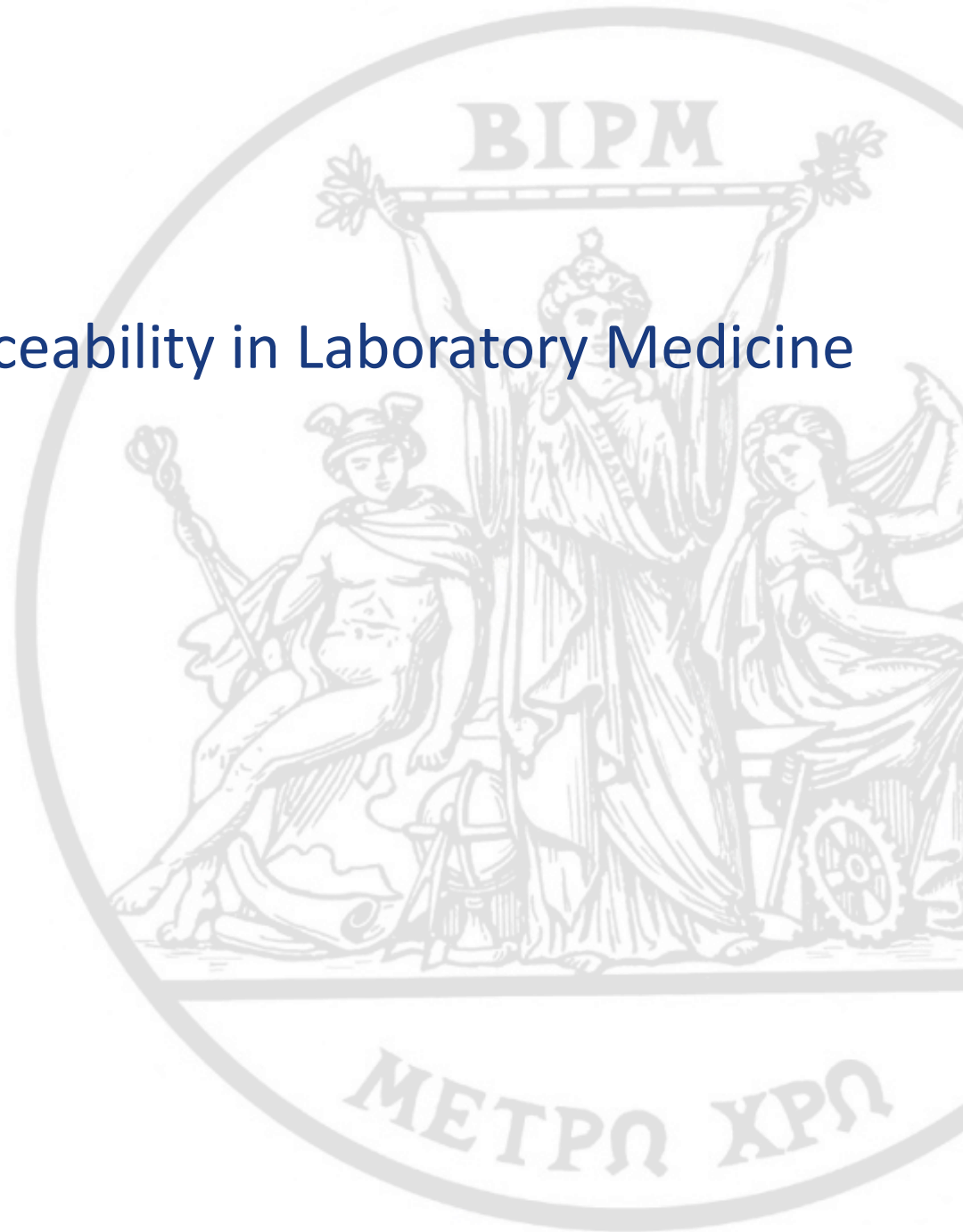


Joint Committee for Traceability in Laboratory Medicine

Terminology

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Bureau
♦ **I**nternational des
♦ **P**oids et
♦ **M**esures



Terminology

1. **Understanding the words and phrases we are using**
2. **Terminology in ISO standards**
3. **Vocabulary of Metrology (Measurement Science)**
4. **Everyday easy to understand definitions of terms (JCTLM TEP WG)**


ISO Online Browsing Platform (OBP): Terms and Definitions



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analyte | English 

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analyte

constituent of a sample with a measurable property


ISO 18113-1:2009(en), 3.3 

Available in:



analyte

The element or constituent to be determined.

ISO 10136-2:1993(en), 3.3 

Available in:



analyte

substance that is identified or quantified in a specimen during an analysis

ISO 13943:2017(en), 3.18 


Joint Committee for Guides in Metrology (JCGM): Internationally agreed terminology related to measurement

The JCGM maintains and promotes the use of the Guide to the Expression of Uncertainty in Measurement (GUM) and the International Vocabulary of Basic and General Terms in Metrology (VIM).

Guides in Metrology

Overview	Uncertainty in Measurement (GUM)	Vocabulary of Metrology (VIM)
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→ The following, corrected version of the 3rd edition cancels and replaces JCGM 200:2008 (see the JCGM 200:2008 *Corrigendum*) and the 2nd edition (1993). It can be downloaded as a PDF file or browsed online complete with annotations.

↓	<i>International Vocabulary of Metrology – Basic and General Concepts and Associated Terms (VIM 3rd edition)</i> JCGM 200:2012 (JCGM 200:2008 with minor corrections)	
↓	See also: VIM Definitions with Informative Annotations (html format) (last updated 29 April 2017) The annotations are developed exclusively by JCGM-WG2.	

The VIM, published by the JCGM in English and French, has been translated into a number of other languages, including:

Catalan, Croatian, Czech, German, Hungarian, Italian, Japanese, Portuguese (Portugal and Brazil), Romanian, Russian, Serbian, Spanish (Spain and Peru), Thai, Turkish, and Ukrainian.

For more information, please contact your NMI.

Vocabulary of Metrology: Definitions and informative definitions

VIM definitions with informative annotations

Options

Q

Contents

- + 1 Quantities and units
- + 2 Measurement
- + 3 Devices for measurement
- + 4 Properties of measuring devices
- + 5 Measurement standards (Etalons)

Last update: 29 April 2017

★ Contents

[VIM3] 2.7 reference measurement procedure

Options

[measurement procedure](#) accepted as providing [measurement results](#) fit for their intended use in assessing [measurement trueness](#) of [measured quantity values](#) obtained from other measurement procedures for [quantities](#) of the same [kind](#), in [calibration](#), or in characterizing [reference materials](#)

– Annotations

ANNOTATION (informative) [5 June 2014] The definition systematically uses preferred terms and so is long and complex. A shorter definition, coupled with a Note, might be sufficient:
"measurement procedure used in the process of providing results for assessing trueness of values obtained from other measurement procedures for quantities of the same kind"
NOTE 1 Reference measurement procedures are often used in calibration and in assigning values to reference materials.

Everyday easy to understand definitions of terms (JCTLM TEP WG)



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Resources

This section contains 'living file' of resources designed to increase an understanding of traceability in laboratory medicine and its impact on reducing between-method variability and improving clinical outcomes for patients. The resources are presented in four categories.

Additional resources may be found in the Publications and Meetings section of this website.

Glossary of terms used in traceability in laboratory medicine:

Robert Wielgosz (FR). [Access the document here.](#)

14 terms with easy to understand definitions

Everyday easy to understand definitions of terms (JCTLM TEP WG)

Term	Every day – Easy to understand definition	Formal Definition	Source
Calibration	The determination of the relationship between an instrument response and the concentration of substance being measured.	<p>operation that, under specified conditions, in a first step, establishes a relation between the quantity values with measurement uncertainties provided by measurement standards and corresponding indications with associated measurement uncertainties and, in a second step, uses this information to establish a relation for obtaining a measurement result from an indication</p> <p>NOTE 1 A calibration may be expressed by a statement, calibration function, calibration diagram, calibration curve, or calibration table. In some cases, it may consist of an additive or multiplicative correction of the indication with associated measurement uncertainty.</p> <p>NOTE 2 Calibration should not be confused with adjustment of a measuring system, often mistakenly called “self-calibration”, nor with verification of calibration.</p> <p>NOTE 3 Often, the first step alone in the above definition is perceived as being calibration.</p>	<p>VIM</p> <p>http://www.bipm.org/utis/common/documents/jcgm/JCGM_200_2012.pdf</p>
Calibrator	A (certified) reference material used for calibration	<p>measurement standard used in calibration</p> <p>NOTE The term “calibrator” is only used in certain fields.</p>	<p>VIM 3</p> <p>http://www.bipm.org/utis/common/documents/jcgm/JCGM_200_2012.pdf</p>
Certified Reference Material (CRM)	A reference material with a certificate, normally provided by a manufacturer or specialist supplier, to calibrate or validate a measurement system	<p>reference material, accompanied by documentation issued by an authoritative body and providing one or more specified property values with associated uncertainties and traceabilities, using valid procedures</p> <p>EXAMPLE Human serum with assigned quantity value for the concentration of cholesterol and associated measurement uncertainty stated in an accompanying</p>	<p>VIM 3</p> <p>http://www.bipm.org/utis/common/documents/jcgm/JCGM_200_2012.pdf</p>

Everyday easy to understand definitions of terms (JCTLM TEP WG)

Traceability

A demonstrable link between a patient sample/routine measurement result and a Reference Measurement Procedure /Certified Reference Material.

property of a **measurement result** whereby the result can be related to a reference through a documented unbroken chain of **calibrations**, each contributing to the **measurement uncertainty**

NOTE 1 For this definition, a 'reference' can be a definition of a **measurement unit** through its practical realization, or a **measurement procedure** including the measurement unit for a non-ordinal quantity, or a **measurement standard**.

NOTE 2 Metrological traceability requires an established **calibration hierarchy**.

NOTE 3 Specification of the reference must include the time at which this reference was used in establishing the calibration hierarchy, along with any other relevant metrological information about the reference, such as when the first calibration in the calibration hierarchy was performed.

NOTE 4 For **measurements** with more than one **input quantity in the measurement model**, each of the input **quantity values** should itself be metrologically traceable and the calibration hierarchy involved may form a branched structure or a network. The effort involved in establishing metrological traceability for each input quantity value should be commensurate with its relative contribution to the measurement result.

NOTE 5 Metrological traceability of a measurement result does not ensure that the measurement uncertainty is adequate for a given purpose or that there is an absence of mistakes.

NOTE 6 A comparison between two measurement standards may be viewed as a calibration if the comparison is used to check and, if necessary, correct the quantity value and measurement uncertainty attributed to one of the measurement standards.

NOTE 7 The ILAC considers the elements for

Everyday easy to understand definitions of terms (JCTLM TEP WG)

<p>Measurement uncertainty</p>	<p>The smallest range of values that reasonably includes the true value of a measurand, i.e. $X \pm Y$, where X is the measurement result and Y, which by convention is greater than or equal to zero, is the uncertainty of X.</p> <p>This is the reliability range of a measurement result expressed as a plus / minus value.</p> <p>Many things can influence how well a measurement result can be made; such as the operating conditions, instrument used etc.</p>	<p>non-negative parameter characterizing the dispersion of the quantity values being attributed to a measurand, based on the information used</p> <p>NOTE 1 Measurement uncertainty includes components arising from systematic effects, such as components associated with corrections and the assigned quantity values of measurement standards, as well as the definitional uncertainty. Sometimes estimated systematic effects are not corrected for but, instead, associated measurement uncertainty components are incorporated.</p> <p>NOTE 2 The parameter may be, for example, a standard deviation called standard measurement uncertainty (or a specified multiple of it), or the half-width of an interval, having a stated coverage probability.</p> <p>NOTE 3 Measurement uncertainty comprises, in general, many components. Some of these may be evaluated by Type A evaluation of measurement uncertainty from the statistical distribution of the quantity values from series of measurements and can be characterized by standard deviations. The other components, which may be evaluated by Type B evaluation of measurement uncertainty, can also be characterized by standard deviations, evaluated from probability density functions based on experience or other information.</p> <p>NOTE 4 In general, for a given set of information, it is understood that the measurement uncertainty is associated with a stated quantity value attributed to the measurand. A modification of this value results in a modification of the associated uncertainty.</p>
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Commutability	The ability of a reference material to behave in the same way as a human sample when measured with a routine test kit.	<p>property of a reference material, demonstrated by the closeness of agreement between the relation among the measurement results for a stated quantity in this material, obtained according to two given measurement procedures, and the relation obtained among the measurement results for other specified materials</p> <p>NOTE 1 The reference material in question is usually a calibrator and the other specified materials are usually routine samples.</p> <p>NOTE 2 The measurement procedures referred to in the definition are the one preceding and the one following the reference material (calibrator) in question in a calibration hierarchy (see ISO 17511).</p> <p>NOTE 3 The stability of commutable reference materials should be monitored regularly.</p>
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