COMMITTEE DRAFT VIML2 2CD

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OIML TC 1

Project p1

Title: International Vocabulary of Terms in Legal Metrology

Secretariat:

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Circulated to P- and O-members and liaison international bodies and external organisations for:

[X] discussion at (date and place of meeting): 29-30 September 2010, GUM, Warsaw, POLAND

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[ ] vote (P-members only) and comments by:

TITLE OF THE CD (English):

OIML Vocabulary

International Vocabulary of Terms in Legal Metrology (VIML)

TITLE OF THE CD (French):

Vocabulaire de OIML

Vocabulaire international des termes de métrologie légale (VIML)

Original version in: English

N15

Explanatory Note to the 2nd Draft of the Revised Version of the International Vocabulary of Terms in Legal Metrology

Note: the Revised Version of the International Vocabulary of Terms in Legal Metrology is hereunder referred to as VIML2

1. Documents which are being circulated to the OIML TC1 Members are:

    a) VIML2 2CD (N16) and
    b) VIML2 1CD Inquiry Evaluation (N13)
    c) VIML2 2CD Comments Template (N17).

In case of the 2CD the layout of the 1CD and the parts of text printed in colour have been preserved. (The new text added to the WD was printed in blue, the removed parts of the WD were printed in red.) The new text added to the 1CD is printed in green and the removed parts of the 1CD are printed in brown. In this way the reader can see the evolution of the text which has taken place.

The results of the evaluation of comments to the VIML2 1CD, which were received by the TC1 Secretariat are presented in a tabular form in N13. The observations made by the TC1 Secretariat to each comment are given in column 7 of the table. Requests of the Secretariat to the referees (US,AU) are also placed in column 7.

2. The 2CD will be discussed during the OIML TC1 Meeting in Warsaw (Poland) on 29-30 September, 2010.

3. Those of the OIML TC1 members who will not be able to attend the meeting are kindly requested to send their comments by e-mail to the TC1 Secretariat before 24 September 2010. For sending your comments please use:

    - VIML2 2CD Comments Template (N17).

The referees are requested to make their comments in the same way as they did in the case of the 1CD. If changes in the 2CD text are suggested, please enclose a rationale to your proposals.

The TC1 Secretariat wishes to express its gratitude to the colleagues who have delivered their comments to the 1CD. It was attempted to use their proposals either directly or indirectly.

4. Numbering

In the present draft (2CD) numbering have got set in order. All the entries received their VIML2 numbers, each number consisting of:

- chapter number,
- dot,
- ordinal number within the chapter.

Based on the remarks which were sent to the 1CD, it was decided that the chapter "4. Units of Measurement" be removed from the draft . The entries which were so far given therein have got transferred to the other chapters. The chapters which in 1CD were numbered 5, 6, 7 and 8 are in 2CD numbered 4,5,6 and 7, respectively. Consequently the entry numbers in the present chapters 4, 5, 6 and 7 got adjusted respectively. However, for the reader's convenience, the former entry numbers are left and are printed in lilac blue (below the actual numbers).

Primary and alternative terms and definitions are placed under the same entry number.

5. Literature sources used were:

- VIM (OIML V2-200:2008 i.e. ISO/IEC Guide 99:2007),
- VIML1,
- OIML publications,
- ISO/IEC International Standards

Terms and definitions which were quoted from other publications are given in:

a. the introduction (those from VIM),
b. the annexes (those from ISO/IEC International Standards)
c. chapters 1 through 7 (those from the other OIML publications)

It is intended that in each entry of the VIML2 there will be a reference to the source publication (column "Sources").

The column with the editorial remarks is added in the sequent drafts (only) of the VIML and it is intended to give an additional information to the referees (during the technical works).

The entries which come from OIML publications and those which were extracted from VIM2 and which, however, do not appear in the VIM3 any more, are quoted in the editorial remarks.

5. The comments from the TC1 Members were used in the following way:

- In general, the entries from other publication are quoted *in extenso*.
- Where the referee proposes a modification in the text, it is made and marked in colour print.
- Where the referee proposes to introduce a new wording or a new definition into the text, it is added below the present definition so that one of the two options can be chosen by the referees. The alternative definition is marked in colour print.
- The proposals of any changes in the definitions which were extracted from other OIML publications shall be discussed with relevant OIML committees and no change will be made unless it is accepted by the committee.
- Where the proposals made by the referee missed, a rationale the referee was requested to provide one.

- All comments were taken into consideration and it was attempted to use each proposal.
- However, in cases where the text accepted by referees in WD was questioned by one of them, no change in CD was introduced and such a case will be discussed during the T1 Meeting.

5. In the view of the referees' comments it was found necessary to formulate the Guiding principles for VIML2 so that the actual shape of the 2CD be comprehensive. The adopted principles are as follows:

   1) VIML must give terms and definitions common for the whole legal metrology.
   2) VIML must contribute to harmonization of terms and definitions used within OIML.
   3) VIML must be a coherent set of concepts, terms and definitions. It must not be a set of chapters where each of them contains terms from an OIML publication which are an exclusive "property" of a certain TC.
   4) When considering a change in a term or a definition extracted from an OIML publication the relevant TC must be consulted.
   5) Where there are two or more analogous definitions developed by different OIML TCs an attempt should be made to elaborate a common definition. Using by the TCs their "own" definitions will lead to terminological divergence. In further future this can make the OIML terms and definitions confusing for the legal metrology users.
   6) The list of entries in VIML cannot be limited to the "OIML terms" only unless its title is changed.
   7) As a vocabulary VIML should provide the reader with information about important concepts, definitions, and phenomena from the legal metrology environment.

6. Finally the actual contents of VIML2 2CD is the following:

   0. Introduction. Basic terms
   1. Metrology and its legal aspects
   2. Legal metrology activities
   3. Documents and marks within legal metrology
   4. (5) Classification of measuring instruments
   5. (6) Construction and operation of measuring instruments
   6. (7) Software in legal metrology
   7. (8) Tests in legal metrology

   Annex 1. Selected terms of conformity assessment

International Vocabulary of Terms In Legal Metrology (VIML). 2nd Committee Draft (VIML2 2CD)

NOTES

1. The layout and contents of the present draft are explained in the attached Explanatory Note.
2. The publication referred to hereunder as OIML V2-200:2008 is the ISO/IEC Guide 99:2007. International vocabulary of metrology – Basic and general concepts and associated terms (VIM).

0. Introduction. Basic Terms

No.	Term	Definition	Notes and examples	Source	Editorial remarks
0.01	**metrology**	science of measurement and its application	NOTE Metrology includes all theoretical and practical aspects of measurement, whatever the measurement uncertainty and field of application.	OIML V2-200:2008, 2.2	
0.02	**International System of Units, SI**	system of units, based on the International System of Quantities, their names and symbols, including a series of prefixes and their names and symbols, together with rules for their use, adopted by the General Conference on Weights and Measures (CGPM)	NOTE 1. The SI is founded on the seven base quantities of the ISQ …*[ISQ: International System of Quantities. For the details on the names and symbols of the corresponding base units refer to OIML V2-200:2008 (ISO/IEC Guide 99:2007) International vocabulary of metrology – Basic and general concepts and associated terms (VIM).]* NOTE 2. The base units and the coherent derived units of the SI form a coherent set, designated the "set of coherent SI units". NOTE 3. For a full description and explanation of the International System of Units, see the current edition of the SI brochure published by the Bureau International des Poids et Mesures (BIPM) and available on the BIPM website. NOTE 4. In quantity calculus, the quantity 'number of entities' is often considered to be a base quantity, with the base unit one, symbol 1. NOTE 5 The SI prefixes for multiples of units and submultiples of units are: ….*[listed in OIML V2-200:2008 (ISO/IEC Guide 99:2007)International vocabulary of metrology – Basic and general concepts and associated terms (VIM) and in the SI brochure]*	OIML V2-200:2008, 1.16	

0. Introduction. Basic Terms

No.	Term	Definition	Notes and examples	Source	Editorial remarks
0.03	**error (of indication)**	indication of a measuring instrument minus a true value of the corresponding input quantity	O	IML D11:2004, 3.5 after VIM2, 5.20	OIML V2-200:2008 does not contain this entry.
0.04	**maximum permissible measurement error** maximum permissible error limit of error	extreme value of **measurement error**, with respect to a known **reference quantity value**, permitted by specifications or regulations for a given **measurement, measuring instrument,** or **measuring system**	NOTE 1 Usually the term "maximum permissible errors" or "limits of error" are used, where there are two extreme values. NOTE 2 The term "tolerance" should not be used to designate 'maximum permissible error'.	OIML V2-200:2008, 4.26 (5.21)	
0.05	**maximum permissible error (of a measuring instrument)**	extreme value of an error permitted by specifications, regulations, etc. for a given measuring instrument	O	IML D11:2004, 3.6 after VIM2, 5.21	OIML V2-200:2008 does not contain this entry
0.06	**intrinsic error**	error of a measuring instrument, determined under reference conditions	O	IML D11:2004, 3.7 after VIM2, 5.24	

0. Introduction. Basic Terms

No.	Term	Definition	Notes and examples	Source	Editorial remarks
0.07	**influence quantity**	**quantity** that, in a direct **measurement**, does not affect the quantity that is actually measured, but affects the relation between the **indication** and the **measurement result**	EXAMPLE 1 Frequency in the direct measurement with an ammeter of the constant amplitude of an alternating current. EXAMPLE 2 Amount-of-substance concentration of bilirubin in a direct measurement of haemoglobin amount-of substance concentration in human blood plasma. EXAMPLE 3 Temperature of a micrometer used for measurement of length of a rod, but not the temperature of the rod itself, which can enter into the definition of the **measurand**. EXAMPLE 4 Background pressure in the ion source of a mass spectrometer during a measurement of amount-of substance fraction. NOTE 1 An indirect measurement involves a combination of direct measurements, each of which may be affected by influence quantities. NOTE 2 In the GUM, the concept 'influence quantity' is defined as in the 2nd edition of the VIM, covering not only the quantities affecting the **measuring system**, as in the definition above, but also those quantities that affect the quantities actually measured. Also, in the GUM this concept is not restricted to direct measurements.	OIML V2-200:2008, 2.52	OIML 11:2004, 3.13 gives after VIM2, 2.7 the following definition: **influence quantity** Quantity that is not the measurand but that affects the result of the measurement Note An influence quantity is a disturbance if the rated operating conditions for that influence quantity are not specified.

0. Introduction. Basic Terms

No.	Term	Definition	Notes and examples	Source	Editorial remarks
0.08	**rated operating condition**	operating condition that must be fulfilled during **measurement** in order that a **measuring instrument** or **measuring system** perform as designed	NOTE Rated operating conditions generally specify intervals of **values** for a **quantity** being measured and for any **influence quantity**.	OIML V2-200:2008, **4.9** (5.5)	OIML D11:2004, 3.14 gives the following definition adapted from VIM2, 5.5: Conditions of use giving the range of values of influence quantities for which specified metrological characteristics of a measuring instrument are intended to lie within given limits.
0.09	**reference operating condition** reference condition	operating condition prescribed for evaluating the performance of a **measuring instrument** or **measuring system** or for comparison of **measurement results**	NOTE 1 Reference operating conditions specify intervals of **values** of the **measurand** and of the **influence quantities**. NOTE 2 In IEC 60050-300, item 311-06-02, the term "reference condition" refers to an operating condition under which the specified **instrumental measurement uncertainty** is the smallest possible.	OIML V2-200:2008, **4.11** (5.7)	OIML D11:2004, 3.15 after VIM2, 5.7 gives the following definition: **reference operating conditions** Conditions of use prescribed for testing the performance of a measuring instrument or for intercomparison of results of measurements. Note: The reference conditions generally include reference values or reference ranges for the influence quantities affecting a measuring instrument.
0.10	**measuring instrument**	device used for making measurements, alone or in conjunction with one or more supplementary devices	NOTE 1 A measuring instrument that can be used alone is a measuring system. NOTE 2 A measuring instrument may be an indicating measuring instrument or a material measure.	OIML V2-200:2008, 3.1	Note that OIML B3:2003 quotes VIM 4.1: "device intended to be used to make measurements, alone or in conjunction with supplementary device(s) Note: "measuring instruments" means any device or system with a measuring function (that is covered by Article 1 and 3) MID Directive 2004/22/EC"

0. Introduction. Basic Terms

No.	Term	Definition	Notes and examples	Source	Editorial remarks
0.11 6.20	**measurement transducer**	device, used in measurement, that provides an output quantity having a specified relation to the input quantity .	EXAMPLE Thermocouple, electric current transformer, strain gauge, pH electrode, Bourdon tube, bimetallic strip.	OIML V2-200:2008, 3.7 ~~(4.3)~~	OIML R 49-1: 2006 (E) gives the following definition: "2.1.2 measuring transducer: part of the meter which transforms the flow or the volume of the water to be measured into signals which are passed to the calculator. It can be based on a mechanical, or an electrical, or an electronic principle. It may be autonomous or use an external power source Note: For the purposes of this Recommendation, the measurement transducer includes the flow sensor or volume sensor."
0.12	**measuring system**	set of one or more measuring instruments and often other devices, including any reagent and supply, assembled and adapted to give information used to generate measured quantity values within specified intervals for quantities of specified kinds	NOTE A measuring system may consist of only one measuring instrument.	OIML V2-200:2008, 3.2 ~~(4.5)~~	Note that OIML R 140: 2007 (E), T.1.7 gives the following definition: "System which comprises the metering module (see T.1.8), and all the ancillary devices and additional devices and, when appropriate, a documented provisions system ensuring the quality and the traceability of data."
0.13	**scale of a displaying measuring instrument**	part of a displaying measuring instrument, consisting of an ordered set of marks together with any associated quantity values	OIML	V2-200:2008, 3.4 (4.17)	OIML R 35-1: 2007 (E), 2.1. 4 gives the following definition: "set of all the scale marks and associated numbering"
0.14	**indication**	**quantity value** provided by a **measuring instrument** or a **measuring system**	NOTE 1 An indication may be presented in visual or acoustic form or may be transferred to another device. An indication is often given by the position of a pointer on the display for analog outputs, a	OIML V2-200:2008, 4.1 (3.2)	Note that gives the following information: OIML R 51-1: 2006 (E), T.1.10 **indication of an instrument** value of a quantity provided by a measuring instrument

0. Introduction. Basic Terms

No.	Term	Definition	Notes and examples	Source	Editorial remarks
			displayed or printed number for digital outputs, a code pattern for code outputs, or an assigned quantity value for **material measures**. NOTE 2 An indication and a corresponding value of the **quantity** being measured are not necessarily values of quantities of the same **kind**.		NOTE The terms “indication”, “indicate” or “indicating” include both displaying and/or printing. This term in the 1CD was numbered 5.24

1. Metrology and Its Legal Aspects

No.	Term	Definition	Notes and examples	Source	Editorial remarks
1.01 ~~1.02~~	**legal metrology**	part of metrology relating to activities which result from statutory requirements and concern measurement, units of measurement, measuring instruments and methods of measurement and which are performed by competent bodies	NOTE 1 The scope of legal metrology may be different from country to country. NOTE 2 The competent bodies responsible for legal metrology activities or part of these activities are usually called legal metrology services. NOTE 3 Legal metrology includes four main activities: • Setting up legal requirements; • Control/conformity assessment of regulated products and regulated activities; • Supervision of regulated products and of regulated activities; and • Providing the necessary infrastructure for the traceability of regulated measurements and measuring instruments. NOTE 4 There are also regulations outside the area of legal metrology pertaining to the accuracy and correctness of measurement methods.	VIML:2000, 1.2 NOTE 3 from OIML D1:2004 (E)	Definition from VIML:2000, 1.2, supplemented with Note 3 from OIML D1:2004 (E)

1. Metrology and Its Legal Aspects

No.	Term	Definition	Notes and examples	Source	Editorial remarks
		practice and process of applying regulatory structure and enforcement to metrology	NOTE 1 The scope of legal metrology may be different from country to country. ~~2) The competent bodies responsible for legal metrology activities or part of these activities are usually called legal metrology services.~~ ~~3) Legal metrology includes four main activities:~~ ~~• Setting up legal requirements;~~ ~~• Control/conformity assessment of regulated products and regulated activities;~~ ~~• Supervision of regulated products and of regulated activities; and~~ ~~• Providing the necessary infrastructure for the traceability of regulated measurements and measuring instruments .~~ ~~4~~ NOTE 2 There are also regulations outside the area of legal metrology pertaining to the accuracy and correctness of measurement methods.		Alternative definition proposed by USA
1.02 ~~1.03~~	**metrological assurance**	all the regulations, technical means and necessary operations used to ensure the credibility of measurement results in ~~legal metrology~~ national regulatory environment		Adapted from VIML:2000, 1.3	

1. Metrology and Its Legal Aspects

No.	Term	Definition	Notes and examples	Source	Editorial remarks
1.03 ~~1.04~~	**law on metrology**	legal acts and regulations that in particular ~~define~~ specify the legal units of measurement, ~~and~~ prescribe - requirements ~~as regards~~ with respect to the properties of measuring instruments, - accuracy of measurement in cases specified by law, - a system of legal control of measuring instruments and - metrological supervision ~~the organizational structure of legal metrology programs and activities~~		Adapted from VIML:2000, 3.1	
		legal acts and regulations that ~~in particular~~ specify the legal units of measurement and prescribe requirements as regards properties of measuring instruments and the accuracy of measurement results in cases specified by law, ~~as well as~~ which may include a system of legal control of measuring instruments and metrological supervision			Alternative definition proposed by USA

1. Metrology and Its Legal Aspects

No.	Term	Definition	Notes and examples	Source	Editorial remarks
1.04 ~~1.05~~	**legal metrology regulations**	regulations on measurements, on prepackages and on measuring instruments made by the authority in order to: • protect the interests of individuals and enterprises; • protect national interests; • protect public health and safety, including in relation to the environment and medical services; and • meet the requirements of international trade	NOTE These regulations shall, when applicable, be compatible with the International Recommendations of the OIML and make use of their requirements.	OIML D1:2004 (E), V.1	
		regulations on measurements, ~~on~~ prepackages and ~~on~~ measuring instruments made by ~~the~~ an authority in order to assure: ~~• protect the interests of individuals and enterprises~~ • equity in trade; • ~~protect~~ national interests; • ~~protect~~ public health and safety, including ~~in relation to~~ the environment and medical devices ~~services~~; and • meet the requirements of international trade			Alternative definition proposed by USA

1. Metrology and Its Legal Aspects

No.	Term	Definition	Notes and examples	Source	Editorial remarks
1.05 ~~1.06~~	**national metrology infrastructure**	basic national system indispensable for implementation of law and order in the field of measurement	NOTE The national metrology infrastructure should comprise: • a legal corpus, including the laws and regulations that have provisions related to metrology; • an authority in the government, in charge of the national metrology policy, and of coordinating the action of other departments related to metrological issues; • one or several institutes in charge of tasks assigned at national level for the metrology policy; •system of national measurement standards and dissemination of legal units; • a (voluntary) system for accrediting calibration laboratories and, if required, testing laboratories, inspection bodies and certification bodies; • structures for disseminating knowledge and competencies in metrology (e.g. training, education, consultants, etc.); and • services to industry and to the economy in the field of metrology (e.g. calibration, maintenance, training, consultancy, type testing, verification, etc.).	Notes drawn from OIML D1:2004 (E), II.1	Definition is based on general definition of "infrastructure" (- **Infrastructure** is the basic physical and organizational structures needed for the operation of a society or enterprise, or the services and facilities necessary for an economy to function. – **Infrastructure:** The basic physical systems of a country's or community's population, including roads, utilities, water, sewage, etc.). Notes are drawn from OIML D1.
	national (legal) metrology infrastructure	infrastructure that underpins confidence in measurement results obtained in a regulatory environment in a country			Alternative term and definition proposed by USA

1. Metrology and Its Legal Aspects

No.	Term	Definition	Notes and examples	Source	Editorial remarks
1.06 ~~1.07~~	**national responsible body**	national organization or agency responsible for implementing laws or regulations regarding legal metrological control of measuring instruments in order to ensure necessary accuracy of measurements	NOTE The national service of legal metrology may fall under the jurisdiction of the national responsible body.	Adapted from OIML D27: 2001 (E), 2.1	The Note is adapted from the following passage of D27: "The national service of legal metrology may fall under the jurisdiction of the national responsible body [referred to in OIML D 27: 2001 (E)]; therefore, when delegated the responsibility, the national service of legal metrology should be substituted for the "national responsible body" throughout the text of this Document."
		~~national~~ organization or agency at the national level [or in a nation] responsible for ~~implementing~~ developing and enforcing laws or regulations regarding legal metrological control of measuring instruments in order to ensure necessary accuracy of measurements			Alternative definition proposed by USA
1.07 ~~1.08~~	**metrological authority**	legal entity (i.e. the verification, and/or issuing authority) designated or formally accepted by the government to be responsible for ascertaining that the measuring instrument satisfies all or some specific requirements of ~~a~~ relevant recommendations or regulations	NOTE Usually it is a government or local government body authorized by law on a national level to be responsible for type approval, verification, and/or issuing authority.	Adapted from OIML R51-1: 2006 (E), T.1.9	Note that OIML D9:2004 (E) gives the following general definition: "2.15 Authority: public (Government or local Government) body authorized by law on a national level to be responsible for metrological supervision as a whole or in part"

1. Metrology and Its Legal Aspects

No.	Term	Definition	Notes and examples	Source	Editorial remarks
		legal entity ~~(i.e. the verification, and/or issuing authority)~~ designated ~~or formally accepted~~ by the government to be responsible for particular legal metrology activities. ~~ascertaining that the measuring instrument satisfies all or some specific requirements of a relevant recommendation or regulation~~			Alternative definition proposed by USA
1.08 ~~1.09~~	**legal units of measurement**	units of measurement required or permitted by regulations	NOTE 1 Legal units may be: - SI units, - their decimal multiples and submultiples as indicated by the use of SI prefixes, - non-SI units specified by relevant regulations. NOTE 2 See also OIML V2-200:2008, 1.9	VIML:2000, 4.1	

2. Legal Metrology Activities

No.	Term	Definition	Notes and examples	Source	Editorial remarks
2.01	**legal metrological control**	the whole of legal metrology activities which contribute to metrological assurance	NOTE Legal metrological control includes: - legal control of measuring instruments, - metrological supervision, - metrological expertise.	VIML:2000, 2.1	
2.02	**legal control of measuring instruments**	generic term used to globally designate legal operations to which measuring instruments may be subjected, e.g. type approval, verification, etc.	VIML	:2000, 2.2	
		legal metrological control as applied to measuring instruments			Alternative definition proposed by USA
2.03	**metrological supervision**	control exercised in respect of the manufacture, import, installation, use, maintenance and repair of measuring instruments, performed in order to check that they are used correctly as regards the observance of metrology laws and regulations	NOTE 1 Metrological supervision also includes checking the correctness of quantities indicated on and contained in prepackages. NOTE 2 For achieving these purposes, means and methods such as market surveillance and quality management may be utilized.	VIML:2000, 2.3, modified	Note that OIML D9:2004 (E) gives the following comment: "5 Forms of metrological supervision: The target areas (forms) of metrological supervision are as follows: - use of legal units; - market surveillance; - quality system surveillance; - field surveillance; - repairs and installation of measuring instruments."
			NOTE 1 Metrological supervision also includes checking the correctness of quantities indicated on and contained in prepackages. NOTE 2 For achieving these purposes, ~~means and methods~~ market and quality ~~management~~ system surveillance may be utilized.		Alternative notes proposed by USA

2. Legal Metrology Activities

No.	Term	Definition	Notes and examples	Source	Editorial remarks
2.04	**metrological expertise**	all the operations for the purpose of examining and demonstrating, e.g. to testify in a court of law, the condition of a measuring instrument and to determine its metrological properties, amongst others by reference to the relevant statutory requirements	VIML	:2000, 2.4	
2.05	**type (pattern) evaluation**	systematic examination and testing of the performance of one or more specimens of an identified type (pattern) of measuring instruments against documented requirements, the results of which are contained in the evaluation report, in order to determine whether the type may be approved	NOTE 1 "Pattern" is used in legal metrology with the same meaning as "type"; in the entries below, only "type" is used. NOTE 2 There are countries and economies where conformity assessment procedures are employed for type evaluation.	VIML:2000, 2.5 (definition and NOTE 1)	
2.06	**type approval**	decision of legal relevance, based on the evaluation report, that the type of a measuring instrument complies with the relevant statutory requirements and is suitable for use in the regulated area in such a way that it is expected to provide reliable measurement results over a defined period of time	NOTE See also A1.26	VIML:2000, 2.6	A1.26 (ISO/IEC 17000, 7.1): **approval** permission for a **product** (3.3) or a process to be marketed or used for stated purposes or under stated conditions NOTE Approval can be based on fulfillment of **specified requirements** (3.1) or completion of specified **procedures** (3.2)

2. Legal Metrology Activities

No.	Term	Definition	Notes and examples	Source	Editorial remarks
2.07	**type approval with limited effect**	approval of a type of measuring instrument that is linked with one or more specific restrictions such as: - the period of validity, - number of instruments covered by the approval, - obligation to notify the competent authorities of the place of installation of each instrument, - use of the instrument	VIML	:2000, 2.7	
2.08	**examination for conformity with approved type**	part of the examination of a measuring instrument carried out to ascertain its conformity with the approved type	NOTE There are countries and economies where conformity assessment procedures are employed for examination for conformity with approved type. See also A1.12	VIML:2000, 2.8 (definition)	

2. Legal Metrology Activities

No.	Term	Definition	Notes and examples	Source	Editorial remarks
	examination	(official) visual inspection of an instrument or device and relevant documentation to ensure that some specified requirements are met	NOTE See ISO/IEC 17000, 4.3		Alternative term and definition proposed by USA for using in VIML2 and OIML B3 A1.12 (ISO/IEC 17000, 4.3) **inspection** examination of a product design, **product** (3.3), process or installation and determination of its conformity with specific requirements or, on the basis of professional judgement, with general requirements NOTE Inspection of a process may include inspection of persons, facilities, technology and methodology. Note that 2.21 utilises term "inspection" to denote operation different from that defined in A1.12. However OIML D27, clause 4,5 bases on ISO/IEC 17000, 4.3 OIML D27, 4.5: An inspection system shall be established for accepting or rejecting instrument components and materials and for segregating nonconforming and incorrect components from work in process.

2. Legal Metrology Activities

No.	Term	Definition	Notes and examples	Source	Editorial remarks
2.09	**recognition of type approval**	legal decision taken by a party either voluntarily or based on a bi- or multilateral arrangement whereby a type approved by another party is recognized as complying with the relevant ~~regulatory~~ statutory requirements, without issuing a new type approval certificate	NOTE See also A1.34	VIML:2000, 2.9	
		legal decision taken by a party either voluntarily or based on a bi- or multilateral arrangement whereby a type approved by another party is recognized as complying with the relevant ~~regulatory~~ ~~statutory~~ requirements, ~~without issuing a new type approval certificate~~			Alternative definition proposed by USA
2.10	**withdrawal of a type approval**	decision of legal relevance canceling a type approval	NOTE The withdrawal is justified in case of: - alterations of the type, - modification of its vital parts, - circumstances that affect metrological durability and/or reliability, - effects altering the metrological performance of the instrument required by law and coming to light only after the official type approval was granted.	VIML:2000, 2.10, modified	

2. Legal Metrology Activities

No.	Term	Definition	Notes and examples	Source	Editorial remarks
2.12	**preliminary examination**	partial examination of certain elements of a measuring instrument of which verification will be completed at the place of installation or an examination carried out before certain elements of the measuring instrument are fitted ~~partial~~ examination of a ~~certain elements of a~~ measuring instrument either to partial requirements or ~~of which verification will be completed at the place of installation or an examination carried out~~ before certain elements of the measuring instrument are fitted	VIML	:2000, 2.12	Alternative definition proposed by USA
2.13	**verification of a measuring instrument**	procedure (other than type approval) which includes the examination and marking and/or issuing of a verification certificate, that ascertains and confirms that the measuring instrument complies with the statutory requirements	See also OIML V2-200:2008, 2.44	VIML:2000, 2.13	OIML V2-200:2008, 2.44 gives the following general definition: "2.44 verification provision of objective evidence that a given item fulfils specified requirements EXAMPLE 1 Confirmation that a given reference material as claimed is homogeneous for the quantity value and measurement procedure concerned, down to a measurement portion having a mass of 10 mg. EXAMPLE 2 Confirmation that performance properties or legal requirements of a measuring system are achieved. EXAMPLE 3 Confirmation that a

2. Legal Metrology Activities

No.	Term	Definition	Notes and examples	Source	Editorial remarks
					target measurement uncertainty can be met. NOTE 1 When applicable, measurement uncertainty should be taken into consideration. NOTE 2 The item may be, e.g. a process, measurement procedure, material, compound, or measuring system. NOTE 3 The specified requirements may be, e.g. that a manufacturer's specifications are met. NOTE 4 Verification in legal metrology, as defined in VIML 2000, and in conformity assessment in general, pertains to the examination and marking and/or issuing of a verification certificate for a measuring system. NOTE 5 Verification should not be confused with calibration. Not every verification is a validation. NOTE 6 In chemistry, verification of the identity of the entity involved, or of activity, requires a description of the structure or properties of that entity or activity”".
2.14	**verification by sampling**	verification of a homogeneous batch of measuring instruments based on the results of examination of a statistically appropriate number of specimens selected at random from an identified lot	VIML	:2000, 2.14	
2.15	**initial verification**	verification of a measuring instrument which has not been verified previously		VIML:2000, 2.15	See also: 2.29 (hereunder)

2. Legal Metrology Activities

No.	Term	Definition	Notes and examples	Source	Editorial remarks
2.16	**subsequent verification**	any verification of a measuring instrument after a previous verification and including: - mandatory periodic verification, - verification after repair, - voluntary verification	NOTE Subsequent verification of a measuring instrument may be carried out before expiry of the period of validity of a previous verification either at the request of the user (owner) or when its verification is declared to be no longer valid.	VIML:2000, 2.16	
2.17	**mandatory periodic verification**	subsequent verification of a measuring instrument, carried out periodically at specified intervals according to the procedure laid down by the regulations	VIML	:2000, 2.17	
2.18	**voluntary verification**	any verification which does not result from the application of obligation any verification which is not mandatory	VIML	:2000, 2.18	Alternative definition proposed by Australia
2.19	**rejection of a measuring instrument**	decision of legal relevance that a measuring instrument does not comply with statutory requirements for verification and prohibiting its use for applications requiring mandatory verification	VIML	:2000, 2.19	
2.20	**recognition of verification**	legal decision taken by a party, either voluntarily or based on a bi- or multilateral arrangement whereby a verification certificate issued and/or a verification mark applied by another party is recognized as complying with relevant requirements	VIML	:2000, 2.20	

2. Legal Metrology Activities

No.	Term	Definition	Notes and examples	Source	Editorial remarks
2.21	**inspection of a measuring instrument**	examination of a measuring instrument to ascertain all or some of the following: - verification mark and/or certificate is valid, - no sealing marks are damaged, - after verification the instrument suffered no obvious modification, - its errors do not exceed the maximum permissible in service errors	NOTE Inspection of a measuring instrument may be done only after verification. See also A1.12	VIML:2000, 2.21	Note that OIML D9:2004 (E) refers to the present definition in the following way: "2.8 Inspection Function of an investigation to ascertain that the legal requirements related to the matter under investigation are observed. *(A more general form of the definition is given in the VIML under 2.21 for inspection of a measuring instrument).*"
2.22	**inspection by sampling**	inspection of a homogeneous batch of measuring instruments based on the results of evaluation of a statistically appropriate number of specimens selected at random from an identified lot	VIML	:2000, 2.22	
2.23	**marking**	affixing of one or more of the marks such as verification, rejection, sealing and type approval marks (as described in 3.05, 3.06, 3.07 and 3.08)	NOTE 1 Verification and sealing marks may be combined. NOTE 2 The manufacturer may be authorized to apply other marks.	VIML:2000, 2.23, modified	The numbers in the definition were adjusted so that they refer to the present ~~working~~ draft.
2.24	**obliteration of a verification mark**	cancellation of the verification mark when it has been found that the measuring instrument no longer complies with the statutory requirements	VIML	:2000, 2.24	

2. Legal Metrology Activities

No.	Term	Definition	Notes and examples	Source	Editorial remarks
2.27	**conformity assessment of a measuring instrument**	examination, testing and evaluation of measuring instruments to ascertain whether or not a single instrument, an instrument lot or a production series of instruments comply with all statutory requirements applicable to this instrument type	NOTE Conformity assessment does not only concern metrological requirements but also requirements relating to: - safety, - EMC, - software (eg. its identification), ~~- ease of use,~~ - marking, etc. See also A1.1	VIML:2000, 2.11	
2.28	**module of conformity assessment of measuring instruments**	set comprising a limited number of different procedures applicable to conformity assessment of measuring instruments, which is combined with other sets of the same kind in a variety of ways in order to establish complete conformity assessment procedures	NOTE 1. Conformity assessment may be made in various way. One of them is based on a scheme made up of so-called conformity assessment modules which can be combined with each other in a variety of ways in order to establish complete conformity assessment procedures NOTE 2. Some of the mentioned combinations are applicable for conformity assessment of measuring instruments.	Adapted from "Guide to the implementation of directives based on the New Approach and the Global Approach", 5.1, European Commission ed. (called "Blue Guide", further referred to as "BG")	BG 5.1, page 31: "Conformity assessment is subdivided into modules, which comprise a limited number of different procedures applicable to the widest range of products. The modules relate to the design phase of products, their production phase or both. The eight basic modules and their eight possible variants can be combined with each other in a variety of ways in order to establish complete conformity assessment procedures. As a general rule, a product is subject to conformity assessment according to a module during the design as well as the production phase. Each New Approach directive describes the range and contents of possible conformity assessment procedures, which are considered to give the necessary level of protection. The directives also set out the criteria governing the conditions under which the manufacturer can make a choice, if more than one option is provided for."

2. Legal Metrology Activities

No.	Term	Definition	Notes and examples	Source	Editorial remarks
2.29	**initial verification of measuring instruments utilizing the manufacturer's quality management system**	manufacturer's declaration of conformity of measuring instruments to legal metrological requirements for initial verification; the declaration permitted on condition that the manufacturer has a quality management system implemented and approved by a competent body	NOTE 1. The national responsible body shall have in place a means for periodically validating the implementation of a manufacturer's quality management system. NOTE 2. The quality management program for measuring instruments shall be in accordance with legal metrological requirements for initial verification according to national laws or regulations for legal metrological control.	OIML D 27: 2001 (E), modified	
2.30	**authorization of a measuring system**	operation that brings the measuring system into a condition suitable for the commencement of the delivery	OIML	R 139: 2007 (E), T.2.8	
2.31	**placing on the market**	making a measuring instrument or a prepackage available for the end user on the market for the first time in the specific country (or region), either for payment or free of charge	OIML	D9:2004 (E), modified	
		the first making available of measuring instrument or a prepackage on the market			Alternative definition proposed by Slovenia. The rationale for the proposal is that the text should be modified in order to be in line with the definition of New Legal Framework Decision 768/2008/EC
		making a legal metrology product (e.g. measuring instrument or prepackage) available on the market to the end user in a jurisdiction for the first time, either for payment or	NOTE Importation shall also be deemed placing on the market.		Alternative term and definition proposed by USA

2. Legal Metrology Activities

No.	Term	Definition	Notes and examples	Source	Editorial remarks
		free of charge			
2.32	**putting into service (use)**	moment of the first use by the end-user of a measuring instrument for the purposes for which it was ~~designed~~ intended the first use of an instrument intended for the end user for the purposes for which it was intended and/or putting it into use for the economic operator's own purposes	OIML	D9:2004 (E), modified	Alternative definition proposed by Slovenia. The rationale for the proposal is that the text should be modified in order to be in line with the definition of New Legal Framework Decision 768/2008/EC

3. Documents and Marks within Legal Metrology

No.	Term	Definition	Notes and examples	Source	Editorial remarks
3.01	**type approval certificate**	document certifying that type approval has been granted	VIML:	2000 ,3.2	
3.02	**verification certificate**	document certifying that the verification of the measuring instrument was carried out ~~with a satisfactory result~~ and compliance with statutory reqirements was confirmed	VIML	:2000, 3.3, modified	
3.03	**metrological expertise certificate**	document issued by an authorized institution and registered by it, stating the conditions under which the metrological expertise took place and reporting the investigation made and the results obtained	VIML	:2000, 3.4	
3.04	**rejection notice**	document stating that a measuring instrument was found not to comply or no longer to comply with the relevant statutory requirements	VIML	:2000, 3.5	
3.05	**verification mark**	mark applied to a measuring instrument certifying that the verification of the measuring instrument was carried out ~~with satisfactory results~~ and compliance with statutory reqirements was confirmed	NOTE The verification mark may identify the body responsible for verification and/or indicate the year or date of verification or its expiry date.	VIML:2000, 3.7, modified	

3. Documents and Marks within Legal Metrology

No.	Term	Definition	Notes and examples	Source	Editorial remarks
3.06	**rejection mark**	mark applied to a measuring instrument in a conspicuous manner to indicate that the measuring instrument does not comply with the statutory requirements and obliterating the previously applied verification mark	VIML	:2000, 3.8	
3.07	**sealing mark**	mark intended to protect the measuring instrument against any unauthorized modification, readjustment, removal of parts, etc.	VIML	:2000, 3.9	
3.08	**type approval mark**	mark applied to a measuring instrument certifying its conformity to the approved type	VIML	:2000, 3.10	
3.09 4.03	**documentation of a measurement standard**	all the documents attached to or associated with a measurement standard describing its technical and metrological characteristics and indicating the conditions and methods of its conservation, maintenance and use	VIML	:2000, 3.6	

NOTE Based on the remarks which were sent to the 1CD it was decided the chapter "**4. Units of Measurement"** to be removed from the draft**.** The entries which were so far contained therin have got transferred to the remaining chapters. The chapters which in 1CD had numbers 5, 6, 7 and 8 are in 2CD numbered 4, 5, 6 and 7 respectively.

4. Classification of Measuring Instruments

No.	Term	Definition	Notes and examples	Source	Editorial remarks
4.01 5.02	**category of instruments**	identification or classification of instruments according to unique metrological and technical characteristics that may include the measured quantity, the measuring range, and the principle or method of measurement	OIML	B3:2003, 2.2	
4.02 5.03	**family of measuring instruments**	identifiable group of measuring instruments belonging to the same manufactured type within the same category that have the same design features and metrological principles for measurement but which may differ in some metrological and technical performance characteristics, as defined in the relevant recommendation	OIML	B3:2003, 2.3	Note that OIML R 76-1: 2006 (E), T.3.5 gives a definition which combines the definitions of family of measuring instruments and that of family of modules and modifies them. It reads: **"**Identifiable group of weighing instruments or modules belonging to the same manufactured type that have the same design features and metrological principles for measurement (for example the same type of indicator, the same type of design of load cell and load transmitting device) but which may differ in some metrological and technical performance characteristics (e.g. Max, Min, *e*, *d*, accuracy class, etc.)".

4. Classification of Measuring Instruments

No.	Term	Definition	Notes and examples	Source	Editorial remarks
4.03 5.05	**metrologically relevant**	attribute of any device, instrument, function or software that influences the measurement result or any other primary indication	Adap	ted from OIML R 21: 2007 (E), 2.1.4	Note that OIML R 76-1: 2006 (E), T.2.9 gives the following definition: "Any device, module, part, component or function of a weighing instrument that may influence the weighing result or any other primary indication is considered as metrologically relevant." OIML R 21: 2007 (E), 2.1.4 gives the following definition: "Any device, instrument, function or software (of a taximeter) that influences the measurement result or any other primary indication is considered as metrologically relevant."
4.04 5.06	**module**	identifiable part of a measuring instrument or of a family of measuring instruments that performs a specific function or functions and that can be separately evaluated according to prescribed metrological and technical performance requirements as specified in the relevant recommendation	EXAMPLE Typical modules of a weighing instrument are: load cell, indicator, analog or digital data processing device, weighing module, terminal, primary display.	OIML B3:2003, 2.4) modified	Note that OIML R 76-1: 2006 (E), T.2.2 gives the following definition: "Identifiable part of an instrument that performs a specific function or functions, and that can be separately evaluated according to specific metrological and technical performance requirements in the relevant Recommendation. The modules of a weighing instrument are subject to specified partial error limits. Note: Typical modules of a weighing instrument are: load cell, indicator, analog or digital data processing device, weighing module, terminal, primary display."

4. Classification of Measuring Instruments

No.	Term	Definition	Notes and examples	Source	Editorial remarks
4.05 5.07	**family of modules**	identifiable group of modules belonging to the same manufactured type that have similar design features but may differ in some metrological and technical performance requirements as defined in the relevant recommendation	OIML	B3:2003, 2.5	
4.06 5.08	**type of a measuring instrument or module**	definitive model of a measuring instrument or module (including a family of instruments or modules) of which all of the elements affecting its metrological properties are suitably defined	OIML	B3:2003, 2.6	
4.07 5.09	**legally controlled measuring instrument**	measuring instrument which conforms to prescribed requirements, in particular legal metrological requirements	VIML	:2000,4.3	
4.08 5.10	**legally relevant**	part of a measuring instrument, device or software subject to legal control		OIML R 21: 2007 (E), 2.1.5	
4.09 5.11	**specimen of an approved type**	measuring instrument of an approved type, which on its own or together with suitable documentation, serves as a reference e.g. for checking conformity of instruments with the approved type	VIML	:2000,4.6	
~~5.12~~	~~**legally relevant parameter**~~	~~parameter of a measuring instrument, device, software or a module subject to legal control~~	~~The following types of legally relevant parameters can be distinguished: type-specific parameters and device-specific parameters.~~	~~OIML R 76-1:2006 (E), T.2.8.2~~	See 6.22

4. Classification of Measuring Instruments

No.	Term	Definition	Notes and examples	Source	Editorial remarks
~~5.13~~	~~**type specific parameter**~~	~~legally relevant parameter with a value that depends on the individual instrument~~	~~Device specific parameters comprise calibration parameters (e.g. span adjustment or other adjustments or corrections) and configuration parameters (e.g. maximum capacity, minimum capacity, units of measurement, etc.)~~	~~OIML R 76-1: 2006 (E), T.2.8.4~~	See 6.36
~~5.14~~	~~**device specific parameter**~~	~~legally relevant parameter with a value that depends on the individual instrument~~	~~Device specific parameters comprise calibration parameters (e.g. span adjustment or other adjustments or corrections) and configuration parameters (e.g. maximum capacity, minimum capacity, units of measurement, etc.)~~	~~OIML R 76-1: 2006 (E), T.2.8.4~~	See 6.15
4.10 5.15	**approved type**	definitive model or family of measuring instruments permitted for legal use, the decision being confirmed by the issuing of a type approval certificate	VIML	:2000, 4.5	
4.11 5.16	**measuring instrument acceptable for verification**	measuring instrument of an approved type, or one that meets ~~relevant specifications~~ statutory requirements and may be exempt from type approval	VIML	:2000,4.4, modified	
4.12 5.17	**verification equipment**	equipment that meets the statutory requirements and that is used for verification	VIML	:2000,4.7	
4.13 5.18	**equipment under test**	a sub-assembly, a combination of subassemblies or a complete ~~meter~~ measuring instrument subject to a test	NOTE Abbreviated: EUT	OIML R 75-1: 2002 (E), 3.5, modified	

5. Construction and Operation of Measuring Instruments

No.	Term	Definition	Notes and examples	Source	Editorial remarks
5.01 6.02	**scale interval**	value expressed in units of the measured quantity of the difference between: • ~~the difference between~~ the values corresponding to two consecutive scale marks, for analog indication; or • ~~the difference between~~ two consecutive indicated values, for digital indication		Adapted from OIML R35-1: 2007 (E), 2.1.5	
5.02 6.03	**verification scale interval**	value, expressed in units of ~~the measured quantity~~ mass, used for the classification and verification of an instrument	NOTE This term applies to the weighing instruments.	Adapted from OIML R76-1: 2006 (E), T.3.2.3	OIML R76-1: 2006 (E), T.3.2.3: "verification scale interval, e: value, expressed in units of mass, used for the classification and verification of an instrument"
5.03 6.04	**number of verification scale intervals**	quotient o f the m aximum capacity and the verification scale interval: $n = \text{Max} / e$	NOTE This term applies to the weighing instruments.	OIML R76-1: 2006 (E), T.3.2.5	
5.04 6.05	**adjustment device**	device incorporated in the ~~meter~~ measuring instrument that only allows shifting of the relative error curve generally parallel to itself, with a view to bringing errors within the maximum permissible errors and to set the weighted mean error at minimum		Adapted from OIML R140: 2007 (E), T.1.11.1	Note that OIML R76-1: 2006 (E), T.2 Construction of an instrument observes: "In this Recommendation the term "device" is used for any means by which a specific function is performed, irrespective of the physical realization, e.g. by a mechanism or a key initiating an operation. The device may be a small part or a major portion of an instrument." In fact this also applies to other OIML publications. And it has to be noted that VIM suggested in the introductory

5. Construction and Operation of Measuring Instruments

No.	Term	Definition	Notes and examples	Source	Editorial remarks
					note to Chapter 4 a hierarchy of terms pertaining to the measurement equipment. It was recommended there to consider the term “measuring instrument “ more general than the term “device”. However OIML V2-200:2008 ISO/IEC Guide 99:2007 applies the term “devices for measurement” as more general than “measuring instrument” (Chapter 3; 3.1). Also note that eg. OIML R49 gives a definition which is identical in meaning and almost identical in wording: “2.1.6 Adjustment device Device incorporated in the meter, that only allows the error curve to be shifted generally parallel to itself, with a view to bringing errors (of indication) within the maximum permissible errors.” OIML R139 gives the following definition: “T.1.12 Correction device Device connected to or incorporated in the meter for automatically correcting the mass, by taking into account the flowrate and/or the characteristics of the gas to be measured (viscosity, temperature, pressure, etc.) and the pre-established calibration curves.”

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No.	Term	Definition	Notes and examples	Source	Editorial remarks
5.05 6.06	**indicating device**	part of the ~~meter~~ measuring instrument which displays ~~continuously~~ the measurement results either continuously or on demand	NOTE A printing device which provides an indication at the end of the measurement is not an indicating device.	OIML R139: 2007 (E), T.1.4, modified	
5.06 6.07	**correction device**	device connected to or incorporated in the meter/and or a calculator for automatically correcting the volume at metering conditions, by taking into account the flowrate and/or the characteristics of the gas to be measured (temperature, pressure, gas composition, etc.) and by also taking into account pre-established calibration curves	NOTE The characteristics of the gas may either be measured using associated measuring instruments, or stored in a memory in the instrument.	OIML R140: 2007 (E) T.1.11.2, modified	This term is applicable for gasmeters but there exist almost identical definitions applicable for other kinds of measuring instruments. The question is whether there is a need of one common definition or it is enough to admit that the existing definitions in OIML Recommendations are variants of one definition which have been adapted to the specific needs without however losing the single meaning. Note that eg. R49-1 gives a definition which is almost identical. “2.1.7 Correction device Device connected to or incorporated in the meter for automatically correcting the volume at metering conditions, by taking into account the flowrate and/or the characteristics of the water to be measured (e.g. temperature and pressure) and the pre-established calibration curves. The characteristics of the water to be measured may either be measured using associated measuring instruments, or be stored in a memory in the instrument.”

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No.	Term	Definition	Notes and examples	Source	Editorial remarks
5.07 6.08	**ancillary device**	device intended to perform a particular function, directly involved in elaborating, transmitting or displaying measurement results	NOTE 1. An ancillary device may or may not be subject to legal metrology control according to its function in the measuring system or to national regulations. NOTE 2. Main ancillary devices are: • zero setting device; • repeating indicating device; • printing device; • memory device; • price indicating device; • totalizing indicating device; • pre-setting device; • self-service device.	Adapted from OIML R139: 2007 (E), T.1.5	Note that in OIMLR49-1 there is a definition which is almost identical: "2.1.8 Ancillary device Device intended to perform a particular function, directly involved in elaborating, transmitting or displaying measurement results. The main ancillary devices are: (a) zero setting device; (b) price indicating device; (c) repeating indicating device; (d) printing device; (e) memory device; (f) tariff control device; (g) pre-setting device; and (h) self service device. Note: An ancillary device may or may not be subject to legal metrological control according to national regulations."
5.08 6.09	**checking facility**	~~facility incorporated in a water meter with electronic devices and which enables significant faults to be detected and acted upon~~ facility that is incorporated in a measuring instrument and which enables significant faults to be detected and acted upon.	~~The checking of a transmission device aims at verifying that all the information which is transmitted (and only that information) is fully received by the receiving equipment.~~ NOTE «Acted upon» refers to any adequate response by the measuring instrument (luminous signal, acoustic signal, prevention of the measurement process, etc.).	~~OIML R 49-1: 2006 (E), 2.5.4~~ OIML D11:2004 (E): 3.18. See also 5.34 and 5.35	Note that OIML R49-1: 2006 (E) gives the following definition: " 2.5.4 **Checking facility** facility incorporated in a water meter with electronic devices and which enables significant faults to be detected and acted upon Note The checking of a transmission device aims at verifying that all the information which is transmitted (and only that information) is fully received by the receiving equipment." This term is applicable for flowmeters.

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No.	Term	Definition	Notes and examples	Source	Editorial remarks
5.09 6.10	**control instrument**	weighing instrument used to determine the conventional true value of the mass of the test load(s).	NOTE 1 Control instruments used for testing may be: • separate from the instrument being tested; or • integral, when a static weighing mode is provided by the instrument being tested NOTE 2 This term is applicable for weighing instruments.	OIML R51-1: 2006 (E), T.1.7	~~This term is applicable for weighing instruments.~~
5.10 6.11	**associated measuring instrument**	instrument for measuring certain measurands which are characteristic of the gas (temperature, pressure, calorific value, etc.) and which are used by the calculator with a view to making a correction and/or a conversion		OIML R140: 2007 (E), T.1.9	Note that simultanously in OIML R117-1: 2007(E) another definition was adopted: **"T.a.7 Associated measuring device** Device, connected to the calculator, the correction device or the conversion device, and converting, during the measurement the characteristic quantities (temperature, pressure, density, viscosity, etc.) of the liquid into signals destined for the calculator, with a view to making a correction and/or a conversion. It includes an associated measuring sensor and an associated measuring transducer."
5.11 6.12	**calculator**	part of the measuring system that receives the output signals from the ~~flow~~ measuring device(s) or from another calculator and possibly from the associated measuring instruments, transforms them and/or processes them into data, and, if appropriate, displays the measurement results or stores the results in memory until they are used. In addition, the calculator may be capable of transmitting and	NOTE A measuring system may have one~~,~~ ~~two~~ or more calculators, for instance a mechanical calculator to produce the volume at metering conditions and which transmits the value to a mechanical indicating device, an electronic calculator which also calculates the volume at metering conditions, associated with an electronic indicating device, and another one to calculate the converted value.	OIML R140: 2007 (E), T.1.3, modified	Directive 2004/22 gives the following: " - MI-004, Definitions ... calculator as defined in Article 4(b) ... Article 4 (b) of the Directive reads: For the purposes of this Directive: ..... (b) 'sub-assembly 'means a hardware device, mentioned as such in the specific annexes, that functions independently and makes up a measuring instrument together

5. Construction and Operation of Measuring Instruments

No.	Term	Definition	Notes and examples	Source	Editorial remarks
		receiving data from peripheral equipment			- with other sub-assemblies with which it is compatible, or - with a measuring instrument with which it is compatible; -MI-005, Definitions: Calculator A part of a meter that receives the output signals from the measurement transducer(s) and possibly, from associated measuring instruments and displays the measurement results" OIML R117 states as follows: " T.1.3: Calculator A part of the meter that receives the output signals from the transducer(s) and, possibly, from associated measuring instruments, transforms them and, if appropriate, stores in memory the results until they are used. In addition, the calculator may be capable of communicating both ways with peripheral equipment." OIML R 139: 2007 (E) gives the following definition: "T.1.3 Calculator T.1.3.1 Metering calculator Part of the meter that receives the output signals from the transducer(s) and, possibly, from associated measuring instruments, transforms them and, if appropriate, stores the results in memory until they are used. T.1.3.2 Operational calculator Optional part of the meter that receives the digital output signals from the metering calculator and, possibly, from

5. Construction and Operation of Measuring Instruments

No.	Term	Definition	Notes and examples	Source	Editorial remarks
					associated measuring instruments, which processes them into data for the indicating device. *Note:* The metering calculator and the operational calculator may be two separate elements or form a single unit. Except in the case of a particular need to dissociate the two kinds of calculators, the association of both functions is called the calculator in this Recommendation.”

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No.	Term	Definition	Notes and examples	Source	Editorial remarks
5.12 6.13	**conversion device**	~~device which automatically converts the volume measured at metering conditions into a volume at base conditions, or into a mass, by taking account of the characteristics of the liquid (temperature, pressure, density, relative density...) measured using associated measuring instruments, or stored in a memory~~ device, which automatically converts: • the volume measured at metering conditions into a volume at base conditions, or • the volume measured at metering conditions into a mass, or • the measured mass into a volume at metering conditions, or • the measured mass into a volume at base conditions, or • the volume at metering conditions or the measured mass of a mixture of pure ethanol (ethyl alcohol) and water into a volume or the mass of pure ethanol contained in that mixture, by taking account of the characteristics of the liquid (temperature, pressure, density, relative density, etc.) measured using associated measuring devices, or stored in a memory	~~The quotient of the volume at base conditions, or of the mass, to the volume at metering conditions is referred to as "conversion factor".~~ NOTE The ratio of the converted quantity to the quantity at metering conditions is referred to as the "conversion factor."	OIML R117-1:2007, T.~~1.12~~ c.4	Note that OIML R140: 2007 (E) gives no definition but, under T.1.12, the following notes are placed: " 1 In this Recommendation the wording "conversion device" covers conversion devices as such, as well as the conversion function in a calculator. 2 A calculator, a correction device and a conversion device may be combined in a single unit." The previous edition of OIML R117 gives the following definition "**T.1.12 conversion device** device which automatically converts the volume measured at metering conditions into a volume at base conditions, or into a mass, by taking account of the characteristics of the liquid (temperature, pressure, density, relative density...) measured using associated measuring instruments, or stored in a memory Note The quotient of the volume at base conditions, or of the mass, to the volume at metering conditions is referred to as "conversion factor".

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No.	Term	Definition	Notes and examples	Source	Editorial remarks
		device which automatically converts the measurement of a physical quantity to different reference quantities and/or to a different physical quantity			Alternative definition proposed by Australia
5.13 6.14	**terminal**	digital device that has one or more keys (or mouse, touch-screen, etc.) to operate the instrument, and a display to provide the measurement ~~weighing~~ results transmitted via the digital interface ~~of a weighing module~~ or an analog data processing device	NOTE In particular this term is applied to non-automatic weighing instruments.	OIML R76-1: 2006 (E), T.2.2.5, modified	
5.15 6.16	**meter model**	different sizes of ~~heat~~ meters or sub-assemblies having a family similarity in the principles of operation, construction and materials	NOTE In particular this term is applied to heat meters.	Adapted from OIML R75-1: 2002 (E), 4.13	
5.14 6.17	**meter**	instrument intended to measure, memorize and display the quantity of product ~~volume or mass of gas~~ passing through the ~~flow~~ measuring device at metering conditions	NOTE The display may be a remote indicating device.	Adapted from OIML R140: 2007 (E), T.1.1	

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No.	Term	Definition	Notes and examples	Source	Editorial remarks
5.16 6.18	**family of meters**	group of meters of different sizes and/or different flowrates, in which all the meters shall have the following characteristics: • the same manufacturer; • geometric similarity of the measuring part; • the same metering principle; • roughly the same ratios Q_{max}/Q_{min} and Q_{max}/Q_t; • the same accuracy class; • the same electronic device for each meter size; • a similar standard of design and component assembly; and • the same materials for those components that are critical to the performance of the meter.	NOTE This term is applicable to flowmeters.	OIML R137-1: 2006 (E), 2.1.13	
5.17 6.19	**metering module**	subassembly of a measuring system which corresponds to the meter(s) itself (themselves), associated, where applicable, with an additional calculator with a correction and an indicating device, and to all other parts of the gas circuit of the measuring system (in particular additional devices)		OIML R140: 2007 (E), T.1.8	
5.19 6.21	**electronic device**	device employing sub-assemblies and performing a specific function	NOTE 1. An electronic device is usually manufactured as a separate unit and is capable of being tested NOTE 2. An electronic device may be a complete measuring instrument (e.g. counter scale, electricity meter) or a part of a measuring instrument (e.g. printer,	OIML D31:2008 (E), 3.2	This definition is too general. The Secretariat suggests to adopt the D11 definition modified so that its second sentence become a note as in D31.

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No.	Term	Definition	Notes and examples	Source	Editorial remarks
			indicator). NOTE 3. An electronic device may be a module in the sense this term is used in OIML B3 OIML Certificate System for Measuring Instruments .		
	electronic device	Device employing electronic sub-assemblies and performing a specific function. Electronic devices are usually manufactured as separate units and are capable of being tested independently.	NOTE 1 An electronic device may be a complete measuring instrument (for example: counter scale, electricity meter) or a part of a measuring instrument (for example: printer, indicator). NOTE 2 An electronic device can be a module in the sense that this term is used in OIML Publication B 3 "The OIML Certificate System for Measuring Instruments" .	OIML D11:2004 (E), 3.2, modified	The second sentence in the definition is an additional information and should be included in a note as it has been done in OIML D31.
	electronic device	device that performs a specific function and makes use of electronic components			Alternative definition proposed by Australia.
5.20 6.22	**electronic measuring instrument**	measuring instrument intended to measure an electrical or non-electrical quantity using electronic means and/or equipped with electronic devices	NOTE For the purpose of OIML D11:2004(E) it was assumed that ancillary equipment, as long as it was subject to legal metrological control, was considered a part of the measuring instrument.	Based on OIML D11:2004 (E), 3.1	OIML D11:2004 (E), **3.1 Electronic measuring instrument** Measuring instrument intended to measure an electrical or non-electrical quantity using electronic means and/or equipped with electronic devices. *Note:* For the purpose of this Document, auxiliary equipment, provided that it is subject to metrological control, is considered to be a part of the measuring instrument.
		measuring instrument ~~intended to measure an electrical or non-electrical quantity~~ used to measure a physical quantity using electronic			Alternative definition proposed by Australia

5. Construction and Operation of Measuring Instruments

No.	Term	Definition	Notes and examples	Source	Editorial remarks
		means and/or equipped with electronic devices			
5.21 6.23	**sub-assembly**	part of an electronic device employing electronic components and having a recognizable function of its own.	NOTE Amplifiers, comparators, power converters, etc.	Based on OIML D 11:2004 (E), 3.3	
5.22	**electronic sub-assembly**	part of an electronic device, employing electronic components and having a recognizable function of its own	EXAMPLES: amplifiers, comparators, power converters. NOTE OIML B 3 [2] contains the following definition of a “module”: Identifiable part of a measuring instrument or of a family of measuring instruments that performs a specific function or functions and that can be separately evaluated according to prescribed metrological and technical performance requirements in the relevant Recommendation.	OIML D11:2004 (E), 3.3, modified	The examples have been separated from the definition
5.23	**electronic component**	smallest physical entity that uses electron or hole conduction in semi-conductors, gases or in a vacuum	EXAMPLE Electronic tubes, transistors, integrated circuits.	OIML D11:2004 (E), 3.4	
5.24	**initial intrinsic error**	intrinsic error of a measuring instrument as determined prior to performance tests and durability evaluations	O	IML D11:2004 (E), 3.8	

5. Construction and Operation of Measuring Instruments

No.	Term	Definition	Notes and examples	Source	Editorial remarks
5.25	**fault**	difference between the error of indication and the intrinsic error of a measuring instrument	NOTE 1 Principally, a fault is the result of an undesired change of data contained in or flowing through an electronic measuring instrument. NOTE 2 From the definition it follows that in this Document, a “fault” is a numerical value which is expressed either in a unit of measurement or as a relative value, for instance as a percentage.	OIML D11:2004 (E), 3.9	
5.26	**significant fault**	fault greater than the value specified in the relevant recommendation	NOTE The relevant Recommendation may specify that the following faults are not significant, even when they exceed the value defined in 3.10: a) Faults arising from simultaneous and mutually independent causes (e.g. EM fields and discharges) originating in a measuring instrument or in its checking facilities; b) Faults implying the impossibility to perform any measurement; c) Transitory faults being momentary variations in the indication, which cannot be interpreted, memorized or transmitted as a measurement result; d) Faults giving rise to variations in the measurement result that are serious enough to be noticed by all those interested in the measurement result; the relevant Recommendation may specify the nature of these variations.	OIML D11:2004 (E), 3.10	
5.27	**durability error**	difference between the intrinsic error after a period of use and the initial intrinsic error of a measuring instrument	O	IML D11:2004 (E), 3.11	

5. Construction and Operation of Measuring Instruments

No.	Term	Definition	Notes and examples	Source	Editorial remarks
5.28	**significant durability error**	durability error greater than the value specified in the relevant recommendation	NOTE The relevant recommendation may specify that durability errors are not significant, even when they exceed the value defined in 3.12, in the following cases: a) The indication cannot be interpreted, memorized or transmitted as a measurement result; b) The indication implies the impossibility to perform any measurement; c) The indication is so obviously wrong that it is bound to be noticed by all those interested in the result of the measurement; or d) A durability error cannot be detected and acted upon due to a breakdown of the appropriate durability protection facility.	OIML D11:2004 (E), 3.12	
5.29	**influence factor**	influence quantity having a value within the rated operating conditions of a measuring instrument specified in the relevant recommendation	OIML	D11:2004 (E), 3.13.1	
5.30	**disturbance**	influence quantity having a value within the limits specified in the relevant recommendation, but outside the specified rated operating conditions of a measuring instrument	OIML	D11:2004 (E), 3.13.2	
5.31	**performance**	ability of a measuring instrument to accomplish its intended functions	OIML	D11:2004 (E), 3.16	

5. Construction and Operation of Measuring Instruments

No.	Term	Definition	Notes and examples	Source	Editorial remarks
5.32	**durability**	ability of a measuring instrument to maintain its performance characteristics over a period of use	OIML	D11:2004 (E), 3.17	
5.33	**automatic checking facility**	checking facility that operates without the intervention of an operator.	NOTE - Permanent automatic checking facility (type P): Automatic checking facility that operates at each measurement cycle. - Intermittent automatic checking facility (type I): Automatic checking facility that operates at certain time intervals or per fixed number of measurement cycles.	OIML D11:2004 (E), 3.18.1, 3.18.1,13.18.1.2. See also 5.08.	
5.34	**non-automatic checking facility (type N)**	checking facility that requires the intervention of an operator.	OIML	D11:2004 (E), 3.18.2. See also 5.08.	
5.35	**durability protection facility**	facility that is incorporated in a measuring instrument and which enables significant durability errors to be detected and acted upon.	OIML	D11:2004 (E), 3.19	

6. Software in Legal Metrology

No.	Term	Definition	Notes and examples	Source	Editorial remarks
6.01 7.01	**legally relevant software**	~~programs, data, type-specific and device-specific parameters that belong to the measuring instrument or module, and define or fulfill functions which are subject to legal control~~ software/hardware/data or part of the software/hardware/data of a measuring instrument which interferes with properties regulated by legal metrology, e.g. the accuracy of the measurement or the correct functioning of the measuring instrument	~~*Examples:* Final results of the measurement, i.e. gross, net and tare / preset tare value (including the decimal sign and the unit), identification of the weighing range and the load receptor (if several load receptors have been used), software identification.~~	~~OIML R 76-1: 2006 (E), T.2.8.1~~ OIML D31:2008(E). 3.1.29	
		software/hardware/data ~~or part of the software/hardware/data of a measuring instrument which interferes with~~ of a measuring instrument in part or whole which manipulates the properties regulated by legal metrology, e.g. the accuracy of the measurement or the correct functioning of the measuring instrument			Alternative definition proposed by Australia
6.02 7.02	**software identification**	~~sequence of readable characters of software that is inextricably linked to the software (e.g. version number, checksum) identification~~ sequence of readable characters (e.g. version number, checksum) that is inextricably linked to the software or software module under consideration	NOTE It can be checked on an instrument whilst in use.	~~OIML R 76-1: 2006 (E), T.2.8.6~~ OIML D31:2008(E). 3.1.42	

6. Software in Legal Metrology

No.	Term	Definition	Notes and examples	Source	Editorial remarks
6.03 7.03	**software separation**	~~unambiguous separation of software into legally relevant software and non-legally relevant software~~ software in measuring instruments/electronic devices/sub-assemblies can be divided into a legally relevant part and a legally non-relevant part	~~If no software separation exists, the whole software is to be considered as legally relevant.~~ NOTE These parts communicate via a software interface.	~~Adapted from OIML R76-1: 2006 (E), T.2.8.7~~ OIML D31:2008(E). 3.1.46	
6.04 7.04	**software protection**	~~securing of measuring instrument software by a hardware or software implemented seal which has to be removed, damaged or broken to obtain access to change software~~ securing of measuring instrument software or data domain by a hardware or software implemented seal	NOTE The seal must be removed, damaged or broken to obtain access to change software.	~~OIML R21: 2007 (E), 2.2.8.5~~ OIML D31:2008(E). 3.1.45	
6.04 7.05	**acceptable solution**	design or principle of a software module or hardware unit, or design or principle of a feature that is considered to comply with a particular requirement.	NOTE An acceptable solution provides an example of how a particular requirement may be met. It does not prejudice any other solution that also meets the requirement.	OIML D31:2008 (E), 3.1.1	
6.06 7.06	**audit trail**	continuous data file containing a time stamped information record of events, e.g. changes in the values of the parameters of a device or software updates, or other activities that are legally relevant and which may influence the metrological characteristics	O	IML D31:2008 (E), 3.1.2	

6. Software in Legal Metrology

No.	Term	Definition	Notes and examples	Source	Editorial remarks
6.07 7.07	**authentication**	checking of the declared or alleged identity of a user, process, or device (e.g. checking that downloaded software originates from the owner of the type approval certificate)	O	IML D31:2008 (E), 3.1.3	
6.08 7.08	**authenticity**	result of the process of authentication (passed or failed)	O	IML D31:2008 (E), 3.1.4	
6.09 7.09	**closed network**	network of a fixed number of participants with a known identity, functionality and location	NOTE See also: **open network** O	IML D31:2008 (E), 3.1.6	
6.10 7.10	**commands**	a sequence of electrical (optical, electromagnetic, etc.) signals on input interfaces or codes in data transmission protocols	NOTE Commands can be generated by the software of the measuring instrument / electronic device / sub-assembly (software commands) or generated by the user through the user interface of the measuring instrument (user commands).	OIML D31:2008 (E), 3.1.7	
6.11 7.10	**communication**	exchange of information between two or more units (e.g. software modules, electronic devices, subassemblies, etc.) according to specific rules	O	IML D31:2008 (E), 3.1.8	
		exchange of information between two or more units (e.g. software modules, electronic devices, subassemblies, etc.) ~~according to specific rules~~			Alternative definition proposed by Australia

6. Software in Legal Metrology

No.	Term	Definition	Notes and examples	Source	Editorial remarks
6.12 7.11	**communication interface**	electronic, optical, radio or other technical interface that enables information to be passed between components of a measuring instrument (e.g. electronic devices) or sub-assemblies	O	IML D31:2008 (E), 3.1.9	
6.13 7.12	**cryptographic certificate**	data set containing the public key belonging to a measuring instrument or a person plus a unique identification of the subject, e.g. serial number of the measuring instrument or name or Personal Identification Number (PIN) of the person	NOTE 1. The data set is signed by a trustworthy institution with an electronic signature. 2.The assignment of a public key to a subject can be verified by using the public key of the trustworthy institution and decrypting the signature of the certificate.	OIML D31:2008 (E), 3.1.10	
6.14 7.13	**cryptographic means**	encryption of data by the sender (storing or transmitting program) and decryption by the receiver (reading program) with the purpose of hiding information from unauthorized persons or electronic signing of data with the purpose of enabling the receiver or user of the data to verify the origin of the data, i.e. to prove their authenticity	NOTE 1. For electronic signing a public key system is used in general, i.e. the algorithm needs a pair of keys where only one has to be kept secret; the other may be public. NOTE 2. The sender (the sending or storing program) generates a hash code of the data and encrypts it with his secret key. The result is the signature. The receiver (the receiving or reading program) decrypts the signature with the public key of the sender and compares the result with the actual hash code of the data. In case of equality, the data are authenticated. The receiver may require a cryptographic certificate of the sender to be sure of the authenticity of the public key.	OIML D31:2008 (E), 3.1.11, modified	

6. Software in Legal Metrology

No.	Term	Definition	Notes and examples	Source	Editorial remarks
			NOTE 1. For electronic signing ~~a public key system is used in general, i.e. the algorithm needs~~ there is a pair of keys ~~where only one has to be kept secret; the other may be public~~. , one is made available to the public and the other is kept secret. NOTE 2. The sender ~~(the sending or storing program)~~ generates a hash code of the data and encrypts it with his secret key. ~~The result is the signature.~~ The receiver ~~(the receiving or reading program)~~ decrypts ~~the signature~~ it with the public key of the sender and compares the result with the actual hash code of the data. ~~In case of equality, the data are authenticated. The receiver may require a cryptographic certificate of the sender to be sure of the authenticity of the public key.~~		Alternative notes proposed by Australia
6.15 7.14	**data domain**	location in memory that each program needs for processing data	NOTE 1. Depending on the kind of programming language used, this location is defined by hardware addresses or by symbolic names (variable names). The size of the smallest addressable domain is typically one byte, but the size is nearly not limited: it ranges from 1 bit (e.g. a flag of a register) to arbitrary data structures which may be as large as the needs of the programmer are. NOTE 2. Data domains may belong to one software module only, or to several. For high level languages (such as JAVA, C/C++, etc.) it is easy to separate the data domain of one software module from access by any other software modules by means of the language.	OIML D31:2008 (E), 3.1.12	

6. Software in Legal Metrology

No.	Term	Definition	Notes and examples	Source	Editorial remarks
			NOTE 1. ~~Depending on the kind of programming language used, this~~ The location is defined by hardware addresses or by symbolic names ~~(variable names). The size of the smallest addressable domain is typically one byte, but the size is nearly not limited: it ranges from 1 bit (e.g. a flag of a register) to arbitrary data structures which may be as large as the needs of the programmer are.~~ NOTE 2. Data domains may belong to one software module only, or to several. ~~For high level languages (such as JAVA, C/C++, etc.) it is easy to separate the data domain of one software module from access by any other software modules by means of the language.~~		Alternative notes proposed by Australia
6.16 7.15	**device-specific parameter**	legally relevant parameter with a value that depends on the individual instrument	NOTE Device-specific parameters comprise adjustment parameters (e.g. span adjustment or other adjustments or corrections) and configuration parameters (e.g. maximum value, minimum value, units of measurement, etc.).	OIML D31:2008 (E), 3.1.13	Note that OIML R 76-1: 2006 (E), T.2.8.4 gives a similar definition: "legally relevant parameter with a value that depends on the individual instrument Note Device-specific parameters comprise calibration parameters (e.g. span adjustment or other adjustments or corrections) and configuration parameters (e.g. maximum capacity, minimum capacity, units of measurement, etc.)"
		legally relevant parameter ~~with a value that depends on~~ which is unique to ~~the~~ an individual instrument			Alternative notes proposed by Australia

6. Software in Legal Metrology

No.	Term	Definition	Notes and examples	Source	Editorial remarks
6.17 7.16	**error log**	continuous data file containing an information record of failures/faults that have an influence on the metrological characteristics	NOTE This especially applies to volatile failures that are not recognizable afterwards when the measurement values are used.	OIML D31:2008 (E), 3.1.14	
6.18 7.17	**event**	Action in which a modification of a measuring instrument parameter, adjustment factor or update of software module is made.	~~This especially applies to volatile failures that are not recognizable afterwards when the measurement values are used.~~	OIML D31:2008 (E), 3.1.20	
6.19 7.18	**event counter**	non resettable counter that increments each time an event occurs	O	IML D31:2008 (E), 3.1.21	
6.20 7.19	**executable code**	file installed on the computer system of the measuring instrument, electronic device, or sub-assembly (EPROM, hard disk, etc.)	NOTE This code is interpreted by the microprocessor and transposed into certain logical, arithmetical, decoding, or data transporting operations.	OIML D31:2008 (E), 3.1.22	
6.21 7.20	**fixed legally relevant software part**	part of the legally relevant software that is and remains identical in the executable code to that of the approved type	O	IML D31:2008 (E), 3.1.24	
6.22 7.21	**integrity of programs, data, or parameters**	assurance that the programs, data, or parameters have not been subjected to any unauthorized or unintended changes while in use, transfer, storage, repair or maintenance	O	IML D31:2008 (E), 3.1.26	

6. Software in Legal Metrology

No.	Term	Definition	Notes and examples	Source	Editorial remarks
6.23 7.22	**legally relevant parameter**	parameter of a measuring instrument, (electronic) device, sub-assembly, software or a module subject to legal control	NOTE The following types of legally relevant parameters can be distinguished: type-specific parameters and device-specific parameters."	OIML D31:2008 (E), 3.1.30, OIML R76-1:2006 (E), T.2.8.2; modified; the second sentence of the definition has been transferred to the note	Note that OIML R76-1:2006 (E), T.2.8.2 gives the following definition: "Parameter of a measuring instrument or a module subject to legal control. The following types of legally relevant parameters can be distinguished: type-specific parameters and device-specific parameters." OIML OIML D31:2008 (E), 3.1.30, gives the following definition: 3.1.30 Legally relevant parameter Parameter of a measuring instrument, electronic device, or a sub-assembly subject to legal control. The following types of legally relevant parameters can be distinguished: *type-specific parameters* and *device-specific parameters*. See also 6.16 and 6.36
6.24 7.23	**legally relevant software part**	part of all software modules of a measuring instrument, electronic device, or sub-assembly that is legally relevant	O	IML D31:2008 (E), 3.1.31	
6.25 7.24	**non-interruptible / interruptible measurement**	a cumulative continuous measuring process with no definite end	NOTE 1. The measuring process cannot be stopped and continued again by a user or operator without inadmissibly disturbing the measurement or the supply with goods or energy. NOTE 2. If the cumulative measurement of a quantity of a substance can be stopped easily and rapidly during normal operation – not only in case of emergency – without falsifying the measurement result, it is called interruptible.	OIML D31:2008 (E), 3.1.34	

6. Software in Legal Metrology

No.	Term	Definition	Notes and examples	Source	Editorial remarks
	non-interruptible ~~/ interruptible~~ measurement	a cumulative continuous measuring process which cannot be stopped and with no definite end	NOTE The measuring process cannot be stopped and continued again by a user or operator without inadmissibly disturbing the measurement or the supply with goods or energy		Modification of the entry proposed by Australia
	~~non-interruptible /~~ interruptible measurement	a cumulative ~~continuous~~ measuring process ~~with no definite end~~ which can be stopped without disturbing the measurement or the supply with goods or energy	NOTE If the cumulative measurement ~~of a quantity of a substance~~ can be stopped easily and rapidly during normal operation – not only in case of emergency – without falsifying the measurement result~~, it is called interruptible~~.		Modification of the entry proposed by Australia
6.26 7.25	**open network**	network of arbitrary participants (electronic devices with arbitrary functions)	NOTE The number, identity and location of a participant can be dynamic and unknown to the other participants (see also **closed network**).	OIML D31:2008 (E), 3.1.35	
6.27 7.26	**sealing**	means intended to protect the measuring instrument against any unauthorized modification, readjustment, removal of parts, software, etc.	NOTE It can be achieved by hardware, software or a combination of both.	OIML D31:2008 (E), 3.1.38	
6.28 7.27	**securing**	means preventing unauthorized access to the device's hardware or software part	O	IML D31:2008 (E), 3.1.39	
6.29 7.28	**software**	generic term comprising program code, data, and parameters	O	IML D31:2008 (E), 3.1.40	

6. Software in Legal Metrology

No.	Term	Definition	Notes and examples	Source	Editorial remarks
6.30 7.29	**software examination**	technical operation that consists of determining one or more characteristics of the software according to the specific procedure (e.g. analysis of technical documentation or running the program under controlled conditions)	O	IML D31:2008 (E), 3.1.41	
6.31 7.30	**software interface**	program code and a dedicated data domain which receive, filter, or transmit data between software modules (not necessarily legally relevant)	O	IML D31:2008 (E), 3.1.43	
6.32 7.31	**source code**	computer program written in a form (programming language) that is legible and editable	NOTE Source code is compiled or interpreted into executable code.	OIML D31:2008 (E), 3.1.47	
		computer program written in a ~~form (programming language) that is legible and editable~~ high level language	NOTE Source code is compiled ~~or interpreted~~ into ~~executable code~~ object code or machine language before it is executed.		Alternative definition and note proposed by Australia
6.33 7.32	**storage device**	storage used for keeping measurement data ready after completion of the measurement for later legally relevant purposes (e.g. the conclusion of a commercial transaction	O	IML D31:2008 (E), 3.1.48	
6.34 7.33	**time stamp**	unique monotonically increasing time value, e.g. in seconds or a date and time string denoting the date and/or time at which a certain event or fault occurred	NOTE This data is presented in a consistent format, allowing for easy comparison of two different records and tracking progress over time.	OIML D31:2008 (E), 3.1.50	

6. Software in Legal Metrology

No.	Term	Definition	Notes and examples	Source	Editorial remarks
6.35 7.34	**transmission of measurement data**	transmission of measurement data via communication networks or other means to a distant electronic device where they are further processed and/or used for legally regulated purposes	O	IML D31:2008 (E), 3.1.52	
6.36 7.36	**type-specific parameter**	legally relevant parameter with a value that depends on the type of instrument only	NOTE Type-specific parameters are part of the legally relevant software.	OIML D31:2008 (E), 3.1.53	Note that OIML R 76-1: 2006 (E), T.2.8.4 gives the following definition: "legally relevant parameter with a value that depends on the individual instrument Note Device-specific parameters comprise calibration parameters (e.g. span adjustment or other adjustments or corrections) and configuration parameters (e.g. maximum capacity, minimum capacity, units of measurement, etc.)" See also 6.22.
		legally relevant parameter ~~with a value that~~ which depends on the ~~type of~~ instrument type only			Alternative definition and note proposed by Australia
6.37 7.37	**universal computer**	computer that is not constructed for a specific purpose but that can be adapted to the metrological task by software	NOTE In general this software is founded on an operating system that permits loading and execution of software for specific purposes.	OIML D31:2008 (E), 3.1.54	

6. Software in Legal Metrology

No.	Term	Definition		Notes and examples	Source	Editorial remarks
6.38 7.38	**user interface**	interface that enables information to be interchanged between ~~a human~~ the operator and the measuring instrument or its hardware or software components, e.g. switches, keyboard, mouse, display, monitor, printer, touch-screen, software window on a screen including the software that generates it	O		IML D31:2008 (E), 3.1.55	

7. Tests in Legal Metrology

No.	Term	Definition	Notes and examples	Source	Editorial remarks
7.01 8.01	**performance test**	test to verify whether the equipment under test is capable of performing its intended functions		OIML R76-1: 2006 (E), T.7	Note the similar definitions in: OIML R51-1: 2006 (E), T.6.3 test to verify that the equipment under test (EUT) is able to accomplish its intended functions OIML R21: 2007 (E), 2.5.10 test intended to verify whether the EUT is capable of accomplishing its intended functions The term is also used in OIML R49-1 (2.4.7) and R137-1 (2.4.8).
7.02 8.02	**function test**	test conducted at ambient environmental conditions of the type evaluation test to check the distance and time accuracy and functionality of the taximeter	NOTE This term applicable for legal metrological control of taximeters.	OIML R21: 2007 (E), 2.5.11	This term applicable for legal metrological control of taximeters, however
7.03 8.03	**span stability test**	test to verify that the equipment under test is capable of maintaining its performance characteristics over a period of use		OIML R51-1: 2006 (E), T.6.4	
7.04 8.04	**endurance test**	test intended to verify whether the ~~water~~ meter is able to maintain its performance characteristics over a period of use test intended to verify whether the measuring instrument is able to maintain its performance characteristics over a period of use		OIML R49-1: 2006 (E), 2.4.8	This term applicable for legal metrological control of water meters.

7. Tests in Legal Metrology

No.	Term	Definition	Notes and examples	Source	Editorial remarks
7.05 8.05	**operational test**	test carried out on a complete instrument using a test load or loads of the type that it is intended to weigh, and using the load conveyor or load transport system to move it on to and off the load receptor	NOTE This term is applicable for legal metrological control of weighing instruments	OIML R51-1: 2006 (E), T.6.1	This term is applicable for legal metrological control of weighing instruments.
7.06 8.07	**simulation test**	test carried out on a complete instrument or part of an instrument in which any part of the ~~weighing~~ measuring operation is simulated		Adapted from OIML R51-1: 2006 (E), T.6.2	This term is applicable for legal metrological control of weighing instruments. It seems however that it may be useful for other fields of measurement to which it can be easily adapted by omitting the word "weighing".
7.07 8.08	**test**	series of operations intended to verify the compliance of the equipment under test (EUT) with specified requirements		OIML D11: 2004 (E), 3.20	
7.08 8.09	**test procedure**	detailed description of the test operations		OIML D11: 2004 (E), 3.20.1	
7.09 8.10	**test program**	description of a series of tests for certain types of equipment		OIML D11: 2004 (E), 3.20.2	
7.10 8.11	**performance test**	test intended to verify whether the EUT is able to accomplish its intended functions		OIML D11: 2004 (E), 3.20.3	
7.11 8.12	**durability test**	test intended to verify whether the EUT is able to maintain its performance characteristics over a period of use		OIML D11: 2004 (E), 3.20.4	

Annex 1. Conformity Assessment in Legal Metrology

No.	Term	Definition	Notes and examples	Source	Editorial remarks
A1.1	**conformity assessment**	demonstration that specified requirements (3.1) relating to a product (3.3), process, system, person or body are fulfilled	NOTE 1 The subject field of conformity assessment includes activities defined elsewhere in this International Standard, such as testing (4.2), inspection (4.3) and certification (5.5), as well as the accreditation (5.6) of conformity assessment bodies (2.5). NOTE 2 The expression “object of conformity assessment” or “object” is used in this International Standard to encompass any particular material, product, installation, process, system, person or body to which conformity assessment is applied. A service is covered by the definition of a product (see Note 1 to 3.3).	ISO/IEC 17000, 2.1	Quotation of the terms and definition from ISO/IEC 17000:2005 which are contained in this annex was proposed by the United States.
A1.2	**conformity assessment body**	body that performs conformity assessment services	NOTE An accreditation body (2.6) is not a conformity assessment body.	ISO/IEC 17000, 2.5	
A1.3	**accreditation body**	authoritative body that performs accreditation (5.6)	NOTE The authority of an accreditation body is generally derived from government.	ISO/IEC 17000, 2.6	
A1.4	**conformity assessment system**	rules, procedures (3.2) and management for carrying out conformity assessment (2.1)	NOTE Conformity assessment systems may be operated at international, regional, national or sub-national level.	ISO/IEC 17000, 2.7	
A1.5	**conformity assessment scheme, conformity assessment program**	conformity assessment system (2.7) related to specified objects of conformity assessment, to which the same specified requirements (3.1), specific rules and procedures (3.2) apply	NOTE Conformity assessment schemes may be operated at international, regional, national or sub-national level.	ISO/IEC 17000, 2.8	

Annex 1. Conformity Assessment in Legal Metrology

No.	Term	Definition	Notes and examples	Source	Editorial remarks
A1.6	**(specified) requirement**	need or expectation that is stated	NOTE Specified requirements may be stated in normative documents such as regulations, standards and technical specifications.	ISO/IEC 17000, 3.1	
A1.7	**product certification system**	system that has its own rules, procedures and management for carrying out product conformity assessment			
A1.8	**procedure**	specified way to carry out an activity or a process [ISO 9000:2000, 3.4.1]		ISO/IEC 17000, 3.2	
A1.9	**product certification scheme**	product certification system related to specified products to which the same specified requirements, rules and procedures apply			
A1.10	**sampling**	provision of a sample of the object of conformity assessment, according to a procedure (3.2)		ISO/IEC 17000, 4.1	
A1.11	**testing**	determination of one or more characteristics of an object of conformity assessment, according to a procedure (3.2)	NOTE “Testing” typically applies to materials, products or processes.	ISO/IEC 17000, 4.2	
A1.12	**inspection**	examination of a product design, product (3.3), process or installation and determination of its conformity with specific requirements or, on the basis of professional judgement, with general requirements	NOTE Inspection of a process may include inspection of persons, facilities, technology and methodology.	ISO/IEC 17000, 4.3	These term and definition were also proposed by Germany for inclusion in the VIML.

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No.	Term	Definition	Notes and examples	Source	Editorial remarks
A1.13	**audit**	systematic, independent, documented process for obtaining records, statements of fact or other relevant information and assessing them objectively to determine the extent to which specified requirements (3.1) are fulfilled	NOTE Whilst “audit” applies to management systems, “assessment” applies to conformity assessment bodies as well as more generally.	ISO/IEC 17000, 4.4	
A1.14	**peer assessment**	assessment of a body against specified requirements (3.1) by representatives of other bodies in, or candidates for, an agreement group (7.10)		ISO/IEC 17000, 4.5	
A1.15	**review**	verification of the suitability, adequacy and effectiveness of selection and determination activities, and the results of these activities, with regard to fulfillment of specified requirements (3.1) by an object of conformity assessment		ISO/IEC 17000, 5.1	
A1.16	**attestation**	issue of a statement, based on a decision following review (5.1), that fulfillment of specified requirements (3.1) has been demonstrated	NOTE 1 The resulting statement, referred to in this International Standard as a “statement of conformity”, conveys the assurance that the specified requirements have been fulfilled. Such an assurance does not, of itself, afford contractual or other legal guarantees. NOTE 2 First-party and third-party attestation activities are distinguished by the terms 5.4 to 5.6. For second-party attestation, no special term is available.	ISO/IEC 17000, 5.2	

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No.	Term	Definition	Notes and examples	Source	Editorial remarks
A1.17	**scope of attestation**	range or characteristics of objects of conformity assessment covered by attestation (5.2)		ISO/IEC 17000, 5.3	
A1.18	**declaration (of conformity)**	first-party attestation (5.2)		ISO/IEC 17000, 5.4	
A1.19	**certification (of conformity)**	third-party attestation (5.2) related to products, processes, systems or persons	NOTE 1Certification of a management system is sometimes also called registration. NOTE 2 Certification is applicable to all objects of conformity assessment except for conformity assessment bodies (2.5) themselves, to which accreditation (5.6) is applicable.	ISO/IEC 17000, 5.5	
A1.20	**accreditation**	third-party attestation (5.2) related to a conformity assessment body (2.5) conveying formal demonstration of its competence to carry out specific conformity assessment tasks		ISO/IEC 17000, 5.6	
A12.1	**surveillance**	systematic iteration of conformity assessment activities as a basis for maintaining the validity of the statement of conformity		ISO/IEC 17000, 6.1	
A1.22	**suspension**	temporary invalidation of the statement of conformity for all or part of the specified scope of attestation (5.3)		ISO/IEC 17000, 6.2	

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No.	Term	Definition	Notes and examples	Source	Editorial remarks
A1.23	**appeal**	request by the provider of the object of conformity assessment to the conformity assessment body (2.5) or accreditation body (2.6) for reconsideration by that body of a decision it has made relating to that object		ISO/IEC 17000, 6.4	
A1.24	**complaint**	expression of dissatisfaction, other than appeal (6.4), by any person or organization to a conformity assessment body (2.5) or accreditation body(2.6), relating to the activities of that body, where a response is expected		ISO/IEC 17000, 6.5	
A1.25	**agreement group**	bodies that are signatories to the agreement on which an arrangement is based		ISO/IEC 17000, 7.10	
A1.26	**approval**	permission for a product (3.3) or process to be marketed or used for stated purposes or under stated conditions		ISO/IEC 17000, 1.1	
A1.27	**reciprocity**	relationship between two parties where both have the same rights and obligations towards each other	NOTE 1 Reciprocity can exist within a multilateral arrangement comprising a network of bilateral reciprocal relationships. NOTE 2 Although rights and obligations are the same, opportunities emanating from them can differ; this can lead to unequal relationships between parties.	ISO/IEC 17000, 7.11	
A1.28					

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No.	Term	Definition	Notes and examples	Source	Editorial remarks
A1.1	**equal treatment**	treatment accorded to products (3.3) or processes from one supplier that is no less favorable than that accorded to like products or processes from any other supplier, in a comparable situation		ISO/IEC 17000, 7.12	
A1.29	**national treatment**	treatment accorded to products (3.3) or processes originating in other countries that is no less favourable than that accorded to like products or processes of national origin, in a comparable situation		ISO/IEC 17000, 7.13	
A1.30	**equal and national treatment**	treatment accorded to products (3.3) or processes originating in other countries that is no less favorable than that accorded to like products or processes of national origin, or originating in any other country, in a comparable situation		ISO/IEC 17000, 7.14	
A1.31	**designation**	governmental authorization of a conformity assessment body (2.5) to perform specified assessment activities		ISO/IEC 17000, 7.2	
A1.32	**designating authority**	body established within government or empowered by government to designate conformity assessment bodies (2.5), suspend or withdraw their designation or remove their suspension from designation		ISO/IEC 17000, 7.3	

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No.	Term	Definition	Notes and examples	Source	Editorial remarks
A1.33	**equivalence, equivalence of conformity assessment results**	sufficiency of different conformity assessment results to provide the same level of assurance of conformity with regard to the same specified requirements (3.1)		ISO/IEC 17000, 7.4	
A1.34	**recognition, recognition of conformity assessment results**	acknowledgement of the validity of a conformity assessment result provided by another person or body		ISO/IEC 17000, 7.5	
A1.35	**acceptance, acceptance of conformity assessment**	results use of a conformity assessment result provided by another person or body		ISO/IEC 17000, 7.6	
A1.36	**unilateral arrangement**	arrangement whereby one party recognizes or accepts the conformity assessment results of another party		ISO/IEC 17000, 7.7	
A1.37	**bilateral arrangement**	arrangement whereby two parties recognize or accept each other's conformity assessment results		ISO/IEC 17000, 7.8	
A1.38	**multilateral arrangement**	arrangement whereby more than two parties recognize or accept one another's conformity assessment results		ISO/IEC 17000, 7.9	