



### **Third Committee Draft (CD)**

Project: Review of OIML D10  
Title: Info file – 2CD vote result, collated comments and convener responses.  
Date: 2021-08-30  
Document number: TC4/P9/N021  
Supersedes document:  
Project Group: OIML TC 4/p 9  
Convenership: Slovakia  
Convener: Mr. Stephan Kral

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

☐ ☒ Information:

☐ ☐ Comments by:

☐ ☐ Vote (P-members only) and comments

## Result of online voting and comments

### TC 4: Measurement standards and calibration and verification devices

#### p 9: Revision of D 10: Guidelines for the determination of recalibration intervals of measuring equipment used in testing laboratories

2 CD circulated to PG for vote and comment

Deadline: 2020-05-04

Status: Closed

Voted Yes: 6

Voted No: 2

Abstain: 0

Country	Action	Comment
AUSTRALIA	Voted Yes on 2020-05-04	Yes
FRANCE	Voted Yes on 2020-04-30	
GERMANY	Voted No on 2020-04-17	Yes
IRAN	Voted Yes on 2020-05-04	Yes
JAPAN	Voted Yes on 2020-05-01	Yes
KOREA (R.)	Commented on 2020-04-29	Yes
NETHERLANDS	Commented on 2020-04-09	Yes
POLAND	Voted Yes on 2020-05-03	Yes
SLOVAKIA	Voted Yes on 2020-02-12	
UNITED KINGDOM	Commented on 2020-04-28	Yes
UNITED STATES	Voted No on 2020-05-04	Yes

# Template for comments and convener's observations

Date:2020-05-05

Document: OIML D 10

Project: TC 4 – P9

Country Code <sup>1</sup>	Part	Clause/ Subclause	Paragraph/ Figure/Table	Type of comment <sup>2</sup>	Comments	Proposed change	Convener's responses
0001 US-1	1			ge	<p>The US has decided to vote “no” on the 2CD of D10 for the following two reasons:</p> <p>a) in our review of the comments submitted by several countries on the 2CD package ... there are many valuable general/technical (and editorial) comments that need to be considered/implemented before the D10 document is ready to be presented to the CIML as a preliminary online ballot; and</p> <p>a) b) <u>none</u> of the US comments that were submitted on the 1CD package were included in “Collated comments on the 1CD” document that was part of the 2CD package.</p> <p>b) Two notes are appropriate here:</p> <p>Note 1: We believe that not having the US comments from the 1CD included was most probably just an accidental oversight on the part of the BIML during the collation of comments process. The Convener was probably not even aware that there was an issue.</p> <p>Note 2: We feel that the 1CD of D10 was a significant improvement over the WD ... and we feel that the 2CD is a significant improvement over the 1CD. We thank the Convener and the PG for their efforts on this document and look forward to assisting further with this document's improvement.</p>	<p>Note: as this column was left empty by commenter, following text (US comments on 1CD package of 17.7.2019 which were not due to mistake reviewed) was added by convenor for more clarity: <b>Comments of 17.7.2019 on 1CD</b> <b>US-1</b> (ge) Many improvements to D10 in the 1CD over the 3WD! Thank you for your efforts! <b>US-2</b> (3.5) Note 1 (ed) There are 2 terms in this note. Change to: Note 1 Usually, the terms “maximum permissible errors” or “limits of error” <u>are</u> <del>is</del> used where there are two extreme values. <b>US-3</b> 3.6 and 3.7 (ge) It was not clear from the comments or the text why the “old” 3.6 and 3.7 had been deleted. <b>US-4</b> 6.1.2, 2nd bullet (ge) Usually when it is said that the “performance exceeds” a given value ... it is considered a “good” thing. So, this bullet was initially confusing because the term was meant as a “bad” thing ... <b>Suggested change to:</b> the measuring instrument's equipment's performance fails to meet established <del>exceeds set</del> limits (i.e. maximum permissible error, accuracy requirements) due to drift over time or by usage <b>US-5</b> (6.1.2) 4th bullet (ge) The term “adjustments” in the 4th bullet needs additional information (clarity) so the user of the document understands exactly what is (and what is not) meant by this term. <b>US-6</b> (6.1.3) note (ed) <b>Suggested change to:</b> It is recommended for new measuring equipment to be calibrated more frequently at the beginning, so as to establish behavioural trends. After analysis of the behavioural trends, the periodicities of recalibration intervals may be re-evaluated. Note: It is recommended for new measuring equipment to collect calibration data <u>from</u> at least from three successive calibration periodicities to establish behavioural trends. <b>US-7</b> (6.2.3) (ed) Suggested change to:</p>	<p><b>Regarding comments</b> submitted by other countries: see convener's responses on respective comments.</p> <p>Regarding US comments on 1CD package of 17.7.2019: due to mistake (oversight) comments were not evaluated at that time. Please accept our apologies, corrective action was implemented (decision to do additional checks of presented documents before final summarisation of comments by convener and his team).</p> <p>Comments were for purposes of preparation of 3CD reviewed and incorporated as following (as far as applicable): US-1: thank you US-2: accepted, wording changed accordingly US-3: unessential definitions were reduced. US-4: accepted - wording changed as proposed. US-5: partially accepted - as term “adjustment” is defined under 3.6. Note 2 defines measuring equipment as synonym to measuring system (for which adjustment is defined under 3.7), only text regarding clarification of use of alternative terms was added in second paragraph of cl. 3. US-6: partially accepted (term “trend” is deemed more appropriate than “behavioural</p>

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						It would be inappropriate to take a recalibration interval to extremes using this method. The risk associated with withdrawing large numbers of certificates issued, or repeating a <b>significant amount</b> <del>lot</del> of work, may ultimately be <b>problematic</b> . <del>unacceptable</del> .	trend"). See also convener's response to comment 0054 (DE). US-7: partially accepted (although term "(risk) unacceptable" was not changed, as "problematic" may still be acceptable). Thank you for understanding.
0002 JP1	1	1.1 (in introduction)	1 <sup>st</sup> and 2 <sup>nd</sup> sentences	Ed	In the first sentence, the reference to the revision of D 10 is unnecessary in the final publication of D 10.	Delete "is a revision of OIML D 10" and joint the 1 <sup>st</sup> and 2 <sup>nd</sup> sentences as follows.  <i>This guidance Document is a revision of OIML D 10. It was developed by ....</i>	Accepted - wording changed as proposed.
0003 JP2	1	1.2 (in introduction)	Paragraph a)	Ed	The expression at the end of this paragraph is redundant. The word "individual" is used twice.	The expression should be revised "... based on its individual needs and <u>risk assessments</u> , and".	Accepted - wording changed accordingly. Note: purpose of original wording was to emphasize necessity of laboratories to conduct risk assessments which sufficiently take into account relevant conditions specific for that laboratory.
0004 JP3	1	1.2 (in introduction) and others	Paragraph b)	Ed	In this draft, a past participle (e.g., implemented) is frequently placed after a noun as an adjective. It is correct in English; however, we recommend moving the past participle before the noun in order to facilitate understanding.  In addition, the latter part of this clause could be simplified and separated.	We recommend rephrasing this clause as follows.  <i>b) it is also the responsibility of each laboratory to evaluate the effectiveness of the <u>implemented</u> method(s). The laboratory should also take responsibility for the consequences of the <u>choice</u> of the method(s).</i>  Regarding the use of past participles, other clauses may be also amended if appropriate.	Accepted - wording changed as proposed.
0005 NL	1	2		ed	There is no need to define a section 2.1 within chapter 2 "Scope", which only has one section.	Remove section header "2.1".	Accepted - wording changed accordingly.
0006 JP4	1	2.1	1 <sup>st</sup> sentence	Ed	The ownership of "measuring equipment" is ambiguous (a laboratory or a customer). We consider that it belongs to the laboratory.	Insert "their" before "measuring equipment".	Partially accepted - wording of proposed change was changed to "under their control" to be more compatible with wording of ISO/IEC 17025:2017, as

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							ownership of equipment (in a legal sense) is not prerequisite for control of equipment.
0007 AU	1	3		ed	<p>We suggest that it is clarified that the alternative terms listed for each term are presented as such.</p> <p>E.g. measurement uncertainty uncertainty of measurement uncertainty</p> <p>Ideally this could be achieved via a short explanation be provided under Clause 3.</p>	<p>Include an explanation in Clause 3 that states that the terms listed below may be provided with alternative terms which are considered to have the same definition.</p> <p>The format of the alternative terms could also be bolded to align with the term.</p>	<p>Accepted - text related to alternative terms was added to cl. 3.</p> <p>Format was not changed, as it is similar to formatting of e.g. OIML V 2-200 VIM and it is to imply that term in bold is the preferred one. Thank you for understanding.</p>
0008 AU	1	3		ed	The text under clause 3 is not provided with a sub-clause. To aid with referencing, we suggest it is presented as a sub-clause, 3.1 General.	Include a new sub-clause “3.1 General” to capture the test currently under Clause 3.	Not accepted - although proposed change is technically correct and in case of longer text with other than explanatory text proposed change would be probably accepted, based on other recent publications of OIML (e.g. OIML R117-1,) it is assumed current text is similar to currently issued publications and in line with requirements. Text of unnumbered subdivision of clause or subclause may be referred to as “paragraph”, if necessary (OIML B6-2). Numbering of subclauses starting with “terms” (first subclause related to first term) was deemed preferable. Thank you for understanding.
0009 AU	1	3		ed	It is not clear what arrangement the terms and definitions have been ordered in? Could they be ordered alphabetically to aid search and reference	We suggest organising alphabetically to aid in locating terms and definitions.	Partially accepted - ordering of terms alphabetically was not accepted - it is assumed sorting of terms based on their similarity to other terms or their relation to them is preferred, also terms are sorted mostly in order in which they are written

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							in relevant publications. For example term as defined in VIM, 3.1 is followed by term in VIM, 3.2, and followed by term ISO 10012, 3.3 as this term is related to abovementioned two terms. Terms were sorted to more closely fulfil abovementioned "sorting criteria". Thank you for understanding.
0010 DE	1	3		Te	In 2.1 the term "calibration program" is mentioned, a definition of "calibration program" does not exist. We propose to add a definition.	Add "3.x Calibration program Documented procedure to establish and maintain the traceability of measurement results. <i>Note:</i> This can be done by means such as, but not limited to: - defining calibration interval - process control measures - intermediate checks"	Not accepted - although proposed change might be useful, purpose of OIML D10 is to provide guidance on determining of calibration intervals - although these should be part of calibration program, this document is not intended to provide guidance on preparing whole calibration program (which might include procedures for calibration, requirements on personnel, etc. which are not in scope of OIML D10). Although guidance on content of calibration program may be found in e.g. currently valid OIML D10 (which was based on ISO/IEC 17025: 2005), due to lack of specific definitions of calibration program in current publications there is risk of proposing a definition which might not be suitable for whole range of subjects to use this guidance document and therefore might not be useful or may be found limiting. Thank you for understanding.
0011	1	3		Te	In 2.1 the term "calibration program" is mentioned in a	Add a new definition in chapter 3:	Not accepted - see convener's

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CECIP					prominent position (Scope). However, a definition of "calibration program" does not exist.	3.x Calibration program Documented procedure which serves to establish and maintain the traceability of measurement results Note: this can be done by means such as, but not limited to: <ul style="list-style-type: none"> <li>defining calibration periodicity</li> <li>process control measures</li> <li>intermediate checks</li> </ul>	response to similar comment 0010 (DE). Thank you for understanding.
0012 JP5	1	3.1, 3.7 and 3.10		Ed	The word "characterise" is shown as "characterize" in US English in the original text of VIM. If this clause refers VIM exactly, the original form should be maintained.	We recommend using "characterize".	Accepted. The OIML documents are published in UK English, but for citations and imported text the original spelling is kept. A note describing the procedure will be entered by the BIML at the final edition stage.
0013 JP6	1	3.4 Note 3		Ed	The article "the" is added before "measurement result". If this clause refers VIM exactly however, the original expression should be maintained.	We recommend using the original expression.	Accepted - wording changed as proposed.
0014 JP7	1	3.13 measuring equipment	Notes 1 and 2	Ed	Although we appreciate the addition of two notes in 2CD, we would like to add two comments.  (1) Original notes provided for D 10 should be distinguished because Chapter 3 contains many notes transferred from other publications. This comment may apply to other clauses in Chapter 3.  (2) In Note 2, the expression using "equal" should be changed because "measuring equipment" is not always compatible with "measuring system".	Notes 1 and 2 should be distinguished as follows.  <i>Note 1 for D 10: ..... Note 2 for D 10: The term "measuring equipment" may be considered equivalent with "measuring system".</i>	Accepted - wording changed accordingly. Explanatory text was added to cl. 3 second paragraph.
0015 JP8	1	3.15 (laboratory) and others	Many	ge	In 2CD, the term "testing laboratory" was replaced with "laboratory" in many clauses. However, "laboratory" has a broad scope in meaning. On the other hand, "test laboratory" is frequently used in OIML-CS. Also, test for type evaluation and verification plays an important role in legal metrology. We recommend adding a note for the OIML members.	We recommend adding the note shown below as an example.  <i>Note for D 10: In OIML, "laboratory" means a test laboratory for type evaluation and/or verification of measuring instruments.</i>	Not accepted - although proposal is in general correct, defining laboratory in context of OIML as „testing laboratory“ may be misleading or sometimes incorrect, especially in relation to context (most members of OIML are

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							also ILAC members, which distinguish laboratories by their activities). Although OIML- <del>CS</del> deals mostly (perhaps exclusively) with testing laboratories, “laboratory” in publications of OIML is almost exclusively used with relevant adjective (e.g. “test laboratory” or “testing laboratory” (OIML-CS documents), or “calibration laboratory” in OIML G 1-100:2008 (E). Purpose of OIML D10 is to provide guidance also for other subjects, like calibration laboratories, where applicable. Thank you for understanding.
0016 CECIP	1	4.1		te	"An important aspect for maintaining the capability of a laboratory to produce traceable and reliable measurement results is a determination of the maximum period..." The aim of calibration and re-calibration is the maintenance of metrological traceability. Reliability in turn is dependent on other influence factors and is not properly defined.  Delete "and reliable"	Delete "and reliable"	Accepted - wording changed as proposed.
0017 DE	1	4.2		Te	The purpose of re-calibrations is to maintain traceability, this fact is missing in the list.	Replace the first sentence “The purposes of periodic calibration of measuring equipment are:”  By “The purposes of periodic calibration as a measure of maintaining metrological traceability of measuring equipment are:”	Accepted - wording changed accordingly.
0018 CECIP	1	4.2		te	Since the purpose of an initial calibration is to <u>establish</u> traceability and the purpose of re-calibrations is to <u>maintain</u> traceability, this fact is missing in the list.	Add new item a) in the list while re-numbering all other items  a) to maintain metrological traceability	Accepted - wording changed accordingly, without adding item a), see also convener's response to comment 0017 (DE).

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0019 JP9	1	4.2	Sentence b)	Ed	This sentence is somewhat unclear.	We recommend rephrasing as shown below.  <i>b) to support the validation of the <u>smallest value of measurement</u> uncertainty that can be achieved with the measuring equipment; and</i>	Partially accepted - wording changed to be more general (without restriction to validation of smallest value of measurement uncertainty useful for BMC), in order to reflect individual needs of laboratory (e.g. in relation to CMC).
0020 JP10	1	4.3	1 <sup>st</sup> and 2 <sup>nd</sup> sentences	Ed	These sentences are somewhat unclear. The expressions using “when” and “how” might be changed although we understand what is intended. The 2 <sup>nd</sup> sentence should be also amended.	We recommend rephrasing as shown below.  <i>One of the most significant decisions regarding the calibration is <u>timing and frequency for implementation</u>. <u>Many</u> factors influence the time interval between calibrations, and <u>they</u> should be taken into account by the laboratory.</i>	Accepted - wording changed as proposed.
0021 DE	1	4.4		Te	We do not agree with the new content resulting from comment 0028 from ILAC. According to ILAC P10 there are more possible ways to realise traceability of the results than via NMIs (with peer reviews) or accredited laboratories. The reference to similar CMCs of the laboratories is helpful because it is important to take CMC into account when evaluating the long-time behaviour of the measuring instrument. We would therefore recommend keeping the wording from 1CD.	Please re-insert the wording from 1CD:  “The previous calibration records can be used for determination of the recalibration interval when subsequent calibration is performed by a laboratory with appropriate CMC and / or several different laboratories with similar CMC.”	Partially accepted - wording changed accordingly (added item c) and second paragraph.
0022 JP11	1	4.4	1 <sup>st</sup> sentence and sentence b)	Ed	In the 1 <sup>st</sup> sentence, the expression could be rephrased. The sentence b) is unclear partly.	The sentences should read as follows.  <i>The calibration records may be used for determining the recalibration interval, when the calibrations are performed at <u>appropriate conditions including, but not limited to, the following cases</u>:</i>  <i>a) .....</i>  <i>b) calibration and measurement capabilities <u>with demonstrations of metrological traceability</u> are provided by the laboratories that have been accredited by an accreditation body subject to the ILAC <u>MRA</u> (International Laboratory Accreditation Cooperation <u>Mutual Recognition Arrangement</u>), or <u>by an accreditation body under regional arrangements</u></i>	Partially accepted - wording of first sentence was changed to be more clear. item b) changed as proposed. Thank you for understating.

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						<i>recognised by ILAC.</i>	
0023 JP12	1	4.5	All	Ed	This clause is not clear.	The clause should read as follows.  <i>When determining the recalibration intervals, the costs of recalibrations <u>normally cannot be ignored</u>. <u>The costs need to be balanced against increased risks in terms of quality of measurement which arises from increased measurement uncertainties under longer recalibration intervals.</u></i>	Accepted - wording changed as proposed.
0024 PL	1	4.6		ed	Information on ISO 10012-1 is not clear enough. It should be explicitly stated that it has been withdrawn. "The methods have been published in more detail in certain standards (e.g. ISO 10012-1:1992 [4] is a standard containing useful details, which have been amended by standard ISO 10012:2003 [5], which however contains only general information related to confirmation intervals),...."	"The methods have been published in more detail in - ISO 10012-1 [4]. This withdrawn standard has contained useful details. It has been revised by standard ISO 10012 [5], which however contains only general information related to confirmation intervals, .."	Accepted - wording changed accordingly to reflect emphasis on fact that document was withdrawn.
0025 CECIP	1	4.7		ed	"...adopted...." Probably a typo.	"... adapted..."	Accepted - typo corrected ("adapted" as in the meaning of "modified", as text of subclause 4.7 is not relevant to already known methods generally considered to be valid).
0026 IR	1	4.8		te	"The laboratory should select appropriate methods and should document those used." For what? For what purpose? This sentence is not commensurate with the following sentences, and also the note added to this paragraph has nothing to do with this paragraph. It should be clear what the method should be for. For calibration records? To calculate uncertainty and relate it to recalibration?	Paragraph corrected as follows: The laboratory should select appropriate methods for use of calibration records and should document those used. For example, Calibration results should be collected and retained as the historical data, in order to form the basis of future decisions for recalibration intervals of the measuring equipment.	Accepted - wording was changed as follows: "...select appropriate methods for determining recalibration intervals and...". Text "Note: ..." was moved to cl 4.10.  Purpose of documenting of methods is to provide basis for decisions on recalibration intervals (which may not depend solely on calibration results). Purpose of second sentence of cl. 4.8 is related to

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							maintaining records relevant for use of abovementioned methods.
0027 IR	1	4.8	Note	te		For some types of measuring equipment, each measuring device or instrument that makes up the equipment may be calibrated separately. In this case, if the measurement uncertainty is a criterion for reviewing the next calibration interval, a standard measurement uncertainty of the measuring equipment is calculated from the uncertainties resulting from all measuring devices and instruments.	Accepted - added text regarding reevaluation of calibration intervals of measuring system or its parts based on data from calibration of system or its parts (this includes uncertainties, regardless whether they are criterion for evaluation of calibration intervals or not).
0028 DE	1	4.9		Te	"Independently of the determined recalibration intervals, the laboratory should have an appropriate system of intermediate checks..."  This phrase is in contradiction to section 5.1 m) which states that the intermediate checks do influence the choice of the calibration interval. So the word "independently..." is misleading.	Delete first half of the sentence to read:  "The laboratory should have an appropriate system of intermediate checks to ensure the proper functioning and calibration status of the measuring equipment used between calibrations (e.g. see ISO/IEC 17025 [3])."	Accepted - wording changed as proposed.
0029 CECIP	1	4.9		Te	"Independently of the determined recalibration intervals, the laboratory should have an appropriate system of intermediate checks..."  This phrase is in contradiction to section 5.1 which states that the intermediate checks <u>do</u> influence the choice of the calibration interval. So the word "independently..." is misleading or wrong. There <u>is</u> a clear dependence between intermediate checks and calibration intervals.	Delete first half of the sentence to read:  The laboratory should have an appropriate system of intermediate checks to ensure the proper functioning and calibration status of the measuring equipment used between calibrations (e.g. see ISO/IEC 17025 [3]).	Accepted - wording changed as proposed.
0030 DE	1	4.10		Ed	"...predetermined set limits...": the word "set" is superfluous.	Delete "set" to read: "...predetermined limits..."	Accepted - wording changed as proposed.
0031 CECIP	1	4.10.		ed	"...predetermined set..." Probably a typo.	Delete "set"	Accepted - wording changed as proposed.
0032 IR	1	5.1		te	In many case, acceptance criteria is equipment accuracy	b) risk of the measuring equipment exceeding the limits of the maximum permissible error or "accuracy" when in use; accuracy added	Accepted - wording changed as follows: "...exceeding the predetermined limits (e.g. maximum permissible error, accuracy requirements) when in use"

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0033 0005 UK	1	5.1		te	<p>The description of environmental conditions should be more descriptive</p> <p>i) environmental conditions (climatic conditions, vibration, ionising radiation, etc.);</p> <p>Due to the above explanation there no need for section j)</p> <p>j) influence of the measured quantity (e.g. high temperature effect on thermocouples);</p>	<p>i) environmental conditions (change in temperature, humidity, pressure, vibration or any other conditions which affect maintenance of standards or instruments);</p>	<p>Not accepted - although proposed change is technically correct, item i) was “kept short” as it is assumed that from original wording, it is clear and generally well understood what climatic conditions shall be taken into account in relation to monitoring and that specific environmental conditions shall be monitored/maintained within limits when they might have an influence on performance of measuring equipment (which although might have an influence on maintenance).</p> <p>item j) was not deleted, as this item is related to e.g. exposure to rated operating conditions (e.g. high measured temperature of liquid, in which part of thermocouple is submerged) which are different from environmental conditions (e.g. ambient temperature). Thank you for understanding.</p>
0034 DE	1	5.1	a)	Te	<p>"a) uncertainty of measurement required or declared by the laboratory"</p> <p>The meaning of this item is not quite clear. Is it</p> <ul style="list-style-type: none"> <li>* the required uncertainty of the recipient</li> <li>* or the declared uncertainty of the emittent</li> <li>* or the declared uncertainty (CMC) of the recipient?</li> </ul> <p>We propose to delete “or declared”. The measurement uncertainty declared by the laboratory influences the calibration interval only via the required measurement uncertainty. This is the leading value for determining</p>	<p>Replace “ “uncertainty of measurement required or declared by the laboratory”</p> <p>By “uncertainty of measurement required and evaluated by the laboratory”</p>	<p>Accepted - wording changed as proposed. Note: meaning of “required” includes all relevant requirements which are required by laboratory. These in general might take into account e.g. requirements of its potential customers, legal requirements and requirements on declared uncertainty (e.g. for purposes of accreditation).</p>

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					the interval.  In addition, we propose to add “and evaluated” to meet the requirement of EN ISO/IEC 17025 section 7.6 which states that the uncertainty needs to be evaluated.		
0035 CECIP	1	5.1	a)	te	"a) uncertainty ...required or declared by the laboratory"  It is unclear what is meant here. Is this * the required uncertainty of the recipient * or the declared uncertainty of the emittent * or the declared uncertainty (the CMC of the recipient)?  A proposal cannot be made since the underlying idea of this phrase is unclear.	A proposal cannot be made since the underlying idea of this phrase is unclear.	Accepted - (see conveners's response to comment 0034 (DE))
0036 JP13	1	5.1	All	Ed	In the 1 <sup>st</sup> sentence, the expression could be rephrased. In the sentences a) and e), use the expression “measurement uncertainty” which is used frequently in this draft.  In the sentence d), a component is not always inside the equipment.  We propose rephrasing other sentences for better understanding as shown in the right column.	Rephrase the clause as follows.  <i>5.1 The initial decision in determining the recalibration interval is based <u>the factors including, but not limited to, the following:</u></i>  <i>a) measurement <u>uncertainty</u> required or ...</i>  <i>b) risk of the measuring equipment <u>which has an error in use</u> exceeding the maximum permissible error;</i>  <i>c) risk assessment analysis <u>regarding the cases, e.g., incorrect determinations of the recalibration interval and use of measuring equipment out of calibration or with a significant drift. Such cases are not considered as traceable anymore;</u></i>  <i>d) type of measuring equipment and its <del>inner</del> components;</i>  <i>e) ... (e.g. suggestions from the manufacturer when the measurement <u>uncertainty</u> is required .....);</i>  .....  <i>j) influence of <u>a change in the characteristics of the measuring equipment on the measured quantity</u> ...</i>	Partially accepted - item a) changed accordingly for item b) see convener's response to comment 0032 (IR) item c) accepted - item corrected and rewritten for more clarity items d), e), n) accepted - changed accordingly item j) accepted - added text “on measuring equipment”. item k) not accepted - although proposed change might be considered to be more in line with original meaning, it is preferred to not exclude data other than data in form of database (whatever their form may be) . Also “data on devices” includes “data on measuring equipment”. Thank you for understanding. item l) accepted, wording changed as follows: “...comparisons with...”,

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						<p><i>k) pooled or published <u>database</u> about the same or similar <u>measuring equipment</u>;</i></p> <p><i>l) frequency of <u>comparisons between</u> other reference standards or measuring instruments;</i></p> <p><i>m) frequency, quality and results of intermediate <u>recalibrations or comparisons</u>;</i></p> <p><i>n) transportation arrangements of <u>the measuring equipment and associated risks</u>;</i></p> <p>.....</p>	<p>however recalibrations were not added for better clarity on this item (comparison with other comparable equipment of laboratory)</p> <p>item m) not accepted - intermediate checks may include also activities other than calibration or comparisons, e.g. visual inspection (e.g. weights), tests of correct functioning of components.</p> <p>Thank you for understanding.</p>
0037 DE	1	5.1	c)	Te	<p>"...measuring equipment is out of calibration..."</p> <p>This wording is not clear. "Out of calibration" can be misinterpreted.</p> <p>Furthermore, the phrase continues "it is not traceable anymore".</p> <p>According to VIM, traceability refers to results and not to equipment.</p>	<p>Replace</p> <p>"...measuring equipment is out of calibration (it is not traceable anymore)"</p> <p>By</p> <p>"measuring equipment does not produce traceable results anymore..."</p>	<p>Accepted - wording modified to include situations which affect traceability (see also convener's responses to other similar comments).</p>
0038 CECIP	1	5.1	c)	Te	<p>"c) ...measuring equipment is out of calibration..."</p> <p>It is not defined what "out of calibration" means.</p> <p>Furthermore, the phrase continues "it [equipment] is not traceable anymore". This is a mistake, since traceability refer to results and not to equipment according to the VIM.</p>	<p>c)... measuring equipment does not produce traceable results anymore or significant...</p>	<p>Accepted - wording modified (see also convener's responses to other similar comments).</p>
0039 DE	1	5.1	e)	Te	<p>See our comment on 5.1 a).</p> <p>Again, we propose to delete "or declared" because it does not really seem to fit in this context and to add "and evaluated".</p>	<p>Replace "...when the uncertainty of measurement is required or declared by the laboratory..."</p> <p>By</p> <p>"...when the uncertainty of measurement is required and evaluated by the laboratory..."</p>	<p>Accepted - wording changed as proposed</p>
0040 DE	1	5.1	h)	Te	<p>The term "significance of the measuring instrument" seems a little vague to us. The estimation of the significance should be part of the risk analysis mentioned in 5.1 c).</p>	<p>We propose to delete 5.1 h)</p>	<p>Accepted - item h) was deleted, as most of "significance of the measuring instrument" may be expressed by reduction/extension of range of required measurement</p>

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							uncertainty or other parameters, which may be defined separately for different uses (e.g. tests).
0041 JP14	1	5.2	1 <sup>st</sup> and 2 <sup>nd</sup> sentences	Ed	Rephrase some sentences for better understanding.	In the 1 <sup>st</sup> sentence, replace “a person or by persons” with “personnel”. Rephrase the 2 <sup>nd</sup> sentence as follows.  <i>An estimate should be made for each piece (or a group of pieces) of measuring equipment as to the time period in which the piece(s) is likely to remain within the prescribed limits to the accuracy (e.g., maximum permissible error) after a calibration.</i>	Accepted - wording mostly changed as proposed. Last part of sentence regarding prescribed limits was left unchanged to not exclude criteria other than accuracy (e.g. repeatability may be in calibration certificate expressed separately from expanded uncertainty for weighing instruments used for calibration/verification of weights by substitution method with standard weights, for which repeatability might be more important than accuracy possibly influenced by drift).
0042 CECIP	1	6		te	It is highly acknowledged that in addition to the "calendar time" methods, chapter 6 also mentions "in use time" for instruments that might change rather with "in use time" than with calendar time. However, a third category is missing, which is the "number of uses count": There are a number of important devices which neither change with calendar time nor with in use time, or for which "in use time" is not accessible. Well-known examples are e.g. weight pieces and end gauges. These are mechanical instruments which are only affected by the "number of uses". Their properties will not change with calendar time at all and a proper variable to describe their degradation is dependent on "number of uses" or "number of contacts". This has e.g. been described in a paper "Extending Recalibration Interval Estimates to the Number of Uses" by Alex Lepek, Newton Metrology Ltd, Israel (an author who is already cited in the 2007 version of the document in a different context).	Add a method which is analogous to Method 3, however uses "number of uses" instead of "in use time".	Not accepted - not enough information on this method was available to convener. As the laboratory may develop new methods and modify existing (e.g. to apply new criteria for setting of intervals based on frequency of use), omitting of this or other methods from final text of OIML D10 does not prohibit its use. Furthermore in this phase of preparation of OIML D10 (committee drafts) there should not be significant changes to content of publication. Thank you for understanding.

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0043 DE	1	6.1.1		Te	We propose to add a note to chapter 6 to state that the described methods may also be applied to intermediate checks or components of the calibration program.	<i>Note:</i> The methods described in this section may also be used to review the type and frequency of intermediate checks or components of the calibration program."	Accepted - proposed text added at the beginning of chapter 6.
0044 IR	1	6.1.1		ed	Risk and cost stated in General aspects, then "introduction" replaced with "general aspects"	... optimise the balance of risks and costs as stated in the general aspects.	Accepted - wording changed accordingly.
0045 CECIP	1	6.1.1		te	Add a note to chapter 6 to extend the methods presented also to the intermediate checks mentioned	NOTE: The methods described in this section may also be used to review the type and frequency of intermediate checks and other components of the calibration program.	Accepted - proposed text added at the beginning of chapter 6.
0046 JP15	1	6.1.1	1 <sup>st</sup> sentence	Ge/ed	Propose to change the word "established" as shown in the right column.  Also, "1. Introduction" does not seems to refer the adjustment of the recalibration intervals to optimise the balance of risks and costs.	In the 1 <sup>st</sup> sentence, replace "established" with "conducted", and delete "as stated in the introduction" as follows.  <i>Once calibration has been conducted on a routine basis (...), adjustment of the recalibration intervals should be possible in order to optimise the balance of risks and costs as stated in the introduction.</i>	Accepted - wording changed accordingly, except "...as stated in the introduction" corrected to "...as stated in the general aspects." (see also convener's response to comment 0044 (IR).
0047 CECIP	1	6.1.1	a)	te	"a) measuring equipment may be less reliable than expected". It might also be <i>more</i> reliable	a) measuring equipment may be more or less reliable than expected;	Accepted - wording changed accordingly.
0048 CECIP	1	6.1.1	d)	Te	d) ...may show that longer calibration intervals..."  It may also be show that <i>shorter</i> intervals are required	Reword d) to read: d) the instrumental drift determined by the recalibration of the measuring equipment may show that longer or shorter calibration intervals are required.	Accepted - wording changed as follows "...may show that shorter calibration intervals are required or longer calibration intervals may be possible without increasing risks, etc."
0049 0005 UK	1	6.1.2			The explanation below may be added to the section:  "If the number of uses of the equipment is exceeded compared to the previous period over which the present recalibration period (or interval) was used, a shorter recalibration period is recommended."	a) measuring equipment is treated individually or as groups (e.g. by the manufacturer's model or by the type), b) the measuring equipment's performance exceeds the prescribed limits (e.g. maximum permissible error, accuracy requirements) due to drift over time or by usage, c) the measuring equipment shows different types of instabilities, d) the measuring equipment undergoes adjustments, and e) data are available and importance is attached to the history of calibration of the measuring equipment	Not accepted - although recommendation is technically correct, it is not appropriate to add this specifically to this subclause 6.1.2.. Suggested recommendation is either implied in this or other parts of OIML D10 (e.g. 6.1.2 item b) contains text "... fails to meet prescribed limits)... due to drift over time or <u>by usage</u> ).", also cl. 6.1.1 item b). Increased number of uses may also still

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						(e.g. trend data obtained from previous calibration records or recorded history of maintenance and servicing of the measuring instrument). f) If the number of uses of the equipment is exceeded compared to the previous period over which the present recalibration period (or interval) was used, a shorter recalibration period is recommended.”	be in range of “intended usage”, and usage in relation to other criteria shall be taken into account. Thank you for understanding.
0050 DE	1	6.1.2	e)	Ed	The content of e) seems not so clear to us. To make it easier to understand we propose to delete the phrase “importance is attached”. In addition, we propose to make reference to calibration results rather than calibrations.	Replace “e) data are available and importance is attached to the history of calibration of the measuring equipment...”  By “e) data is available of the history of calibration results of the measuring equipment...”	Partially accepted - however text was rephrased for hopefully better clarity and to maintain original meaning.
0051 JP16	1	6.1.2	The last sentence e)	Ed	This sentence is not clear.	The sentence should read as follows.  <i>e) data are available <u>regarding</u> the history of calibration of the measuring equipment .....</i>	Partially accepted - text was rephrased (see also convener's response on comment 0050 (DE)).
0052 AU	1	6.1.3		ed	The grammar of the first sentence requires review.	Suggest: “For new measuring equipment, it is recommended <b>that they are</b> calibrated more frequently at the beginning of its operational lifetime in order to <b>allow the laboratory to</b> quickly become aware of a trend indicating a change in its characteristics.”	Accepted, wording changed as proposed.
0053 NL	1	6.1.3		ed	The first sentence is grammatically incorrect.	Suggest to phrase: “.. it is recommended <b>to calibrate</b> more frequently..” Alternatively: add “to” in front of “be”.	Accepted - wording changed accordingly (see also convener's response on comment 0052 (AU)).
0054 DE	1	6.1.3	Note	Te	We propose to delete the Note as it seems self-evident to collect data of 3 measurements to be able to identify a trend. Furthermore, the wording might be misleading because an instrument cannot be considered as “new” after it has been recalibrated 3 times.	Delete Note	Accepted - wording changed as proposed.
0055 0005 UK	1	6.1.3 or 5.1		te	The explanation below may be added to the section:  “Prior to the use of new equipment, it is recommended that the length of time they take to stabilise under normal laboratory environmental conditions is	“Prior to the use of new equipment, it is recommended that the length of time they take to stabilise under normal laboratory environmental conditions is determined.”	Not accepted - although recommendation is technically correct, this does not directly involve determination of recalibration intervals and is

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					determined.”	For new measuring equipment, it is recommended be calibrated more frequently at the beginning of its operational lifetime in order to quickly become aware of a trend indicating a change in its characteristics. After analysis of this trend, the recalibration intervals may be re-evaluated.	more related to conditions of use of equipment. Text would be redundant, as it is assumed calibration is conducted when equipment is used “correctly” according to instructions (e.g. when conditions for stability like warm-up time and environment conditions are met). Thank you for understanding.
0056 DE	1	6.1.4		Te	We propose to delete section 6.1.4 because it does not give any guidance how to review a calibration interval. This section only states that fixing intervals without review is not appropriate. This becomes self-evident if the other sections of D10 are considered. These contain all necessary information.	Delete 6.1.4	Partially accepted - word “generally” added. Deleting of recommendation was not accepted, as text emphasises need of re-evaluation of calibration intervals based on available information and methods to limit influence of subjective interpretation. As text is formulated as recommendation, this does not preclude possibility of use of not applying any specific method for setting of initial intervals or their re-evaluation. Although review is not specifically defined, OIML D10 specifies some calibration methods (and criteria) which may be used and which should form significant part of review (as well as e.g. data from intermediate checks). Thank you for understanding.
0057 CECIP	1	6.1.4		Te	6.4.1 reads; "The so-called “engineering intuition” which fixed the initial recalibration intervals, and a system which maintains fixed intervals without review, are not considered as being sufficiently reliable and are therefore not recommended."	Reword to read: The so-called “engineering intuition” which maintains fixed intervals without review, is not considered as being sufficiently reliable and are therefore not recommended.	Accepted - sentence was reformulated (see also convener's response to comment 0056 (DE).

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					<p>This phrase contains two statements, connected with "and":</p> <p>a) a system which maintains fixed intervals is not sufficient</p> <p>b) a system with a fixed initial interval which is based on engineering intuition is not sufficient</p> <p>We object to the second part (b), since</p> <p>* the <u>initial</u> interval is not subject of this chapter 6 (Title: "Methods of reviewing...intervals")</p> <p>* An "engineering intuition" can be based on sound competence and thus might be a perfect way to define the <u>initial</u> interval.</p>		
0058 JP17	1	6.1.4	1st sentence	Te/ed	This sentence is not clear.	<p>The sentence should read as follows.</p> <p><i>A system based on so-called “<u>engineer’s intuition</u>”, in which a fixed recalibration interval is maintained without a review, <u>is</u> not considered as reliable and <u>it</u> <u>is</u> therefore not recommended.</i></p>	Accepted - wording changed as proposed (word “generally” was added, see also convener’s response to comment 0056 (DE)).
0059 AU	1	6.2.1		ed	<p>The Note references NCSL.</p> <p>The acronym should be expanded and some explanation and background provided with respect to NCSL.</p>	Expand acronym and provide background on NCSL.	Partially accepted - wording changed to expand acronym for better reference to publication. Background of source of publication is deemed to be non-essential for understanding of wording of OIML D10 and therefore was omitted. Thank you for understanding.
0060 PL	1	6.2.1		ed	<p>Missing preposition in the sentence:</p> <p>“A similar point of view may therefore also apply to Method 1 the present Document.</p>	<p>“A similar point of view may therefore also apply to Method 1 in the present Document”</p> <p>or</p> <p>“A similar point of view may therefore also apply to Method 1 of the present Document”</p>	Accepted - wording changed as proposed.
0061 DE	1	6.2.1	Note	Te	<p>There should not be a requirement in the note. We therefore recommend adapting the wording</p>	<p>Change “...the user shall compromise the results.”</p> <p>To</p> <p>“...it is important that the user compromises the results.”</p>	Partially accepted - text “the user shall compromise the results” - by this change, requirements were excluded from “Note”. Original wording implied that in order to maintain stable

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							interval (which might be desirable) would require disregarding of results of applied method A1, or modification of method A1 to allow maintaining of intervals when specific conditions are met (regardless of results of method A1).
0062 DE	1	6.2.1	Note	Te	The sentence “Another problem is that the calibration interval approaches the correct interval slowly <u>and the correct interval may not be maintained even after it has been achieved.</u> ” is hard to understand. Why is the correct interval not maintained after it is already achieved? We propose to clarify the last part of the sentence.	Change the text to  “Another problem is that the calibration interval approaches the correct interval slowly. Due to changes of the measurement equipment afterwards the calibration interval may not be maintained.”	Accepted, text changed as follows “...essentially drive the calibration interval to change as due to decision rules of this method each new calibration should lead to either expansion or reduction of calibration interval (without possibility to maintain current interval).” Due to change of text, redundant text in following sentence regarding impossibility to maintain current interval was deleted.  Explanatory note: method A1 as described in publication has only two possible outcomes - if calibration data are within set limits, interval is extended by calculated amount and if they are outside of limits, interval is reduced by calculated amount.
0063 JP18	1	6.2.1 Note	2 <sup>nd</sup> and 4 <sup>th</sup> sentences	Te/ed	In the 2 <sup>nd</sup> sentence, the meaning of “thus the user shall <b>compromise</b> the results” is ambiguous. Does it mean “the user is controlled by the results unpredictably”?  In the 4 <sup>th</sup> sentence, Method 1 is just explained above in this clause not in the entire Document.	We cannot propose any changes for the 2 <sup>nd</sup> sentence. The 4 <sup>th</sup> sentence should be rephrased as follows.  <i>A similar point of view may therefore also apply to Method 1 <u>explained in this Clause</u>.</i>	Accepted - wording changed accordingly.
0064 DE	1	6.2.2		Te	We propose to delete 6.2.2 because it does not give any guidance but only complains about difficulties	Delete 6.2.2	Partially accepted - wording changed as follows:

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					<p>that might arise.</p> <p>If it is decided to keep it anyway, we propose to leave the wording from 1CD. The addition “between risks and costs” is confusing, because this sentence deals with a balanced workload, i.e. to keep the workload more or less equal (not risks and costs). The term “balanced” fits quite good in our opinion.</p>	<p>((If it is decided not to delete 6.2.2: Change “...to keep the calibration workload smooth and balanced between risks and costs, and that it requires detailed advanced planning.”</p> <p>To</p> <p>“...to keep the calibration workload smooth and balanced, and that it requires detailed advanced planning.”))</p>	<p>“...workload smooth, <u>relatively stable</u> and balanced between risks and costs,...”</p> <p>cl. 6.2.2 was not deleted, as it deemed appropriate to emphasise possible drawbacks, which might be taken into account when choosing applicable methods.</p> <p>Text was modified to emphasize costs related to irregular workload (which possibly is included in term “smooth”, as purpose of workload smoothing is to achieve workload balance - depending on interpretation) and to keep changes from 1CD made on comments on 1CD (which were related to differently interpreted term “balanced”, which was not clear from OIML D10, as balance between risks and costs as a “requirement” for metrological conformation is explicitly mentioned in referenced standard ISO 10012: 1992, but this text was missing in OIML D10.</p> <p>Costs in our opinion also include increased costs due to mentioned higher or irregular workload (e.g. increased work and costs related to external calibration when similar equipment which would otherwise be calibrated at the same time is calibrated at different time due to slightly different interval).</p> <p>Thank you for understanding.</p>

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0065 DE	1	6.2.3		Te	We agree to reword the paragraph to make it easier to understand. We feel that the sentence is misleading when applying it to extremely short recalibration intervals. We propose to delete "or short" to refer only to extremely long recalibration intervals.	Replace "It would be inappropriate to set an extremely long or short recalibration interval using this method."  By  "It would be inappropriate to set an extremely long recalibration interval using this method."	Accepted - wording changed as proposed. .
0066 DE	1	6.2.3		Te	".. withdrawing large number of certificates issued." We propose to use a more general wording because the calibrated measuring instruments are not exclusively used to issue certificates.	Replace "...withdrawing large numbers of certificates issued,..."  By  "...withdrawing a large number of reported measurement results,..."	Accepted - wording changed as proposed.
0067 CECIP	1	6.2.3		Te	".. withdrawing large number of certificates issued." This assumes that the calibrated items are only used to issue <i>certificates</i> . However, D10 is also applied (especially in the application cases of ILAC) to produce any kind of <i>measurement results</i> . A more general wording is therefore proposed.	"... withdrawing a large number of measurement results."	Accepted - wording changed as proposed
0068 AU	1	6.3.2		ed	Third sentence: What is meant by reliability? Reliability of the measuring instrument? Reliability of the recalibration interval?  Can reliability be calculated, what is the criteria or value? Or can reliability be assumed or inferred from calculations?	Please clarify what is considered reliable in this context.	Accepted - wording changed as follows: "...reliability of interval..." Explanatory notes: from data it is possible to calculate estimated range of values during next calibration. Comparing real values with estimated values allow to determine reliability of calculations of estimated values and therefore of interval. In case of calibration intervals set for group of similar measuring equipment, reliability of interval (or method which lead to set interval) may be expressed as percentage of calibrations in line with acceptance criteria (R

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							= number in tolerance / number calibrated). Other approaches are possible.
0069 DE	1	6.3.2		Te	See our comment on 6.2.2. The 2 <sup>nd</sup> sentence does not give useful guidance. With the addition “between risks and costs” the sentence is even more confusing. We propose to delete this sentence.	Delete the sentence “Again, it is difficult to achieve the balanced workload between risks and costs.”	Partially accepted - wording changed accordingly and taking into account convener's response to comment 0064 (DE)
0070 JP19	1	6.3.2	3 <sup>rd</sup> and 4 <sup>th</sup> sentences	Te/ed	These sentences are not clear.	The sentences should read as follows if we understand correctly.  <i>A considerable variation of the recalibration interval from <u>the</u> prescribed <u>interval</u> is possible without invalidating the calculation <u>results</u>. Because the reliability of this procedure is known, the calculation theoretically gives an efficient recalibration interval at least. Furthermore, the calculation of the dispersion of the results will indicate whether the accuracy limits specified by the manufacturer are reasonable and the analysis of the instrumental drift may indicate the cause of the drift.</i>	Partially accepted - wording changed accordingly except for “accuracy limits specified by the manufacturer”, as it is preferred to keep current wording, which may include accuracy and possibly other characteristics which may be significant. Thank you for understanding
0071 DE	1	6.4.1		Te	The last sentence gives no guidance for the user of D10.	Delete the last sentence “Another advantage of this method is that there is the automatic check on the measuring equipment utilisation.”	Not accepted - it is deemed appropriate to emphasise possible drawbacks or advantages (in this case lower costs are implied) for potential users, which might be taken into account when choosing applicable methods.
0072 KR	1	6.4.1		ge	For clarification, insert “standard lamps of which the drift is subject to its burning time” after “Such measuring equipment are for example thermocouples, used at extreme temperatures,” as it is the simplest and the most direct method .	After “Such measuring equipment are for example thermocouples, used at extreme temperatures,” add the following:  :“standard lamps of which the drift is subject to its burning time”	Accepted - wording changed accordingly.
0073 JP20	1	6.4.1	The last sentence	Te/Ed	The “automatic check (timer)” may not be available for some kinds of equipment.	The sentence should read as follows.  <i>Another advantage of this method is that <u>an automatic timer for the hours of use of the measuring equipment may be available.</u></i>	Accepted - wording changed accordingly.

1 Country code (enter the ISO 3166 two-letter country code, e.g. CN for China)

2 Type of comment: ge = general te = technical ed = editorial

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Country Code <sup>1</sup>	Part	Clause/ Subclause	Paragraph/ Figure/Table	Type of comment <sup>2</sup>	Comments	Proposed change	Convener's responses
0074 NL	1	6.4.2		ed	Grammar in first sentence is incorrect.	Change to: “Nevertheless, this method also has the following practical disadvantages:”	Accepted - wording changed accordingly.
0075 NL	1	6.4.2	a	“	“passive measuring instrument” should be in plural form.	Add an ‘s’ at the end of the word ‘instrument’.	Accepted - wording changed accordingly.
0076 AU	1	6.4.2	a)	ed	The grammar of the sentence requires review.	It is not suitable for measuring equipment containing passive measuring instruments	Accepted - wording changed accordingly.
0077 AU	1	6.4.2	a)	ge	Could some explanation or clarification be provided of the concept of passive measuring instrument; beyond just the examples?	Please provide some explanation of the concept of passive instrument and standard.	Accepted - wording changed accordingly.
0078 DE	1	6.4.2	c)	Te	The described disadvantage applies only to automatic timers and is not relevant if the elapsed time is recorded manually. Therefore, we propose to change the wording accordingly.	Change the text from “the initial cost is high for providing and installing suitable timers for measuring the elapsed time” to “the initial cost may be high for providing and installing suitable timers for measuring the elapsed time, if the time is not recorded manually”	Accepted - wording changed accordingly.
0079 JP21	1	6.4.2 c)	2 <sup>nd</sup> sentence	Ed	This sentence is not clear.	The sentence should read as follows.  <i>Since users may <u>be interfered</u> with the installation of timers, additional supervision may be required <u>for the users</u> which will increase the costs; and</i>	Partially accepted - wording was changed to maintain original meaning (e.g. users not using timers or equipment correctly (e.g. accidental erasure of data of timer, incorrect start/stop recording).
0080 JP22	1	6.4.2 d)	1 <sup>st</sup> sentence	Te/Ed	This sentence is not clear.	The sentence should read as follows.  <i>d) the planning of recalibration work is more difficult in comparison with the <u>procedures</u> of the <u>Methods 1 and 2</u> since the <u>user cannot predict precisely when the next calibration is required.</u></i>	Accepted - wording changed accordingly, text “laboratory” was not deleted without replacement by “user” as not to lead to confusion with person, who may not be planning recalibration with the user meant to be a subject which is not referring to itself as “laboratory”.
0081 DE	1	6.5.1		Te	We agree with the amendment proposed with comment 0055 (JP16). However, shifting the last sentence of 6.5.3 to the first sentence of 6.5.1 makes 6.5.1 hard to understand. We propose to put this	1) Replace “This method is a variant of methods 1 and 2 and may prove to be more effective than the method of evaluating a recalibration interval of the original	Accepted - wording changed as proposed.

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					<p>sentence to the end of 6.5.1, considering comment 0056 from ILAC and 0057 (JP17).</p>	<p>measuring equipment. It is particularly suitable when the part, which provides a reference standard of the measuring equipment, is calibrated easily and quickly.”</p> <p>By</p> <p>“This method is a variant of methods 1 and 2 and it is particularly suitable when the part, which provides a reference standard of the measuring equipment, is calibrated easily and quickly.”</p> <p>2)</p> <p>Insert the following sentence at the end of the paragraph (before the note):</p> <p>“Method 4 may prove to be more effective than the method of evaluating the recalibration interval of the original measuring equipment.”</p>	
0082 CECIP	1	6.5.1		te	<p>The description of the method in the 2007 version is unclear and it became even more unclear in the last CD document.</p> <p>Should this method refer to the usage of a "check standard", and statistical process control then please use the term "check standard".</p> <p>It is completely unclear if the term "black box" refers to the reference standard or to the checking device (check standard).</p>	<p>Re-word whole section 6.5.1</p> <p>A proposal cannot be made since the meaning of the section is unclear.</p>	<p>Accepted - 1<sup>st</sup> sentence was simplified as follows:</p> <p>“This method is a variant of methods 1 and 2 and particularly suitable when easy and quick calibration of measuring equipment or its part(s) is possible.” It is assumed “part” is understood as part of equipment, characteristics of which have significant effect on traceability of measurement results.</p> <p>From the comment it is not clear whether there are any specific requirements on specifying type of devices used for this interim check.</p> <p>Term “black-box” may include any device (usually designed for such purpose) which is used for interim checks described in this method. Other terms</p>

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							(reference standards, check standards) should be understood to be included in term “portable calibration gear” (as there is no reason not to have them included under that term). Thank you for understanding.
0083 JP23	1	6.5.1	1 <sup>st</sup> and 2 <sup>nd</sup> sentences	Te/Ed	These sentences are not clear.	The sentences should read as follows.  <i>This method of evaluating a recalibration interval is a variant of <u>Methods 1 and 2</u> and may prove to be more effective than <u>a method applied to the complete measuring equipment</u>. It is particularly suitable when <u>only the part of the equipment</u>, which provides a reference/<u>working</u> standard, is calibrated easily and quickly.</i>	Partially accepted - wording changed (see convener's response to comments 0081 (DE) and 0082 (CECIP)). Note: although this part of guide was commented several times in the past, still other comments to 2CD clearly indicate more complex wording is not clear enough or do not include all possibilities and therefore consensus is difficult to achieve. Therefore wording was simplified as much as possible, also changed in order to encompass any possibilities (e.g. partial calibration of whole measuring equipment (by e.g. portable calibration gear) or its part(s)). Thank you for understanding.
0084 DE	1	6.6.1		Te	We do not agree with deleting the word “type” as it changes the content of the sentence. Methods are applied to individual instruments or to types of instruments. To make this clearer, we propose to use the same word, e.g. measuring instrument.	Replace “Methods based on statistical analysis of an individual measuring equipment or measuring instrument can also be a possible approach.”  By “Methods based on statistical analysis of an individual measuring <u>instrument</u> or <u>a</u> measuring instrument <u>type</u> can also be a possible approach.”	Partially accepted - wording changed to reflect original meaning and wording of subclause 6.2.2 (analysis of data on single instrument or group of similar instruments (categorised based on various characteristics depending on needs of laboratory), which do not have to be of same type).
0085 AU	1	6.6.2		ed	Similar to AU comment on 6.2.1. The clause references NCSL. The acronym should be expanded and some	Expand acronym and provide background on NCSL.	Partially accepted - wording changed to expand acronym for better reference to publication.

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					explanation and background provided with respect to NCSL.		Background of source of publication is deemed to be non-essential for understanding of wording of OIML D10 and therefore was omitted. Thank you for understanding.
0086 JP24	1	6.7 Comparison of methods	Title	Ed	The full name “methods of reviewing recalibration intervals” is given in the title of Chapter 6 and a short name “method” is used frequently in this chapter. But its meaning is sometimes ambiguous. The clause title of 6.7 should indicate the full name again because this is a summary of Chapter 6.	To avoid confusion, add an expression to revise the clause title to “Comparison of methods <u>of reviewing recalibration intervals</u> ”.	Accepted - wording changed as proposed.
0087 JP25	1	6.7.1	all	Ge/Ed	In the 1 <sup>st</sup> sentence, we propose clarifying that “one method” means one of Methods 1 to 5 explained in 6.2 to 6.6.  Regarding the 2 <sup>nd</sup> sentence, the factors to be considered by the laboratory while choosing a reviewing method is not only the location of use. As it was already mentioned in 4, 5 and 6.1, there are many factors including costs and risks. We recommend rephrasing this clause using a more general expression.	The clause should read as follows.  <i><u>In Methods 1 to 5 described in 6.2 to 6.6, respectively, no one method is ideally suited for the full range of measuring equipment encountered (see Table 1). The laboratory may choose the most appropriate reviewing method for a category of measuring equipment considering a variety of factors discussed in Clauses 4, 5 and 6.1. Furthermore, it should be noted that the choice will be affected by the fact whether the laboratory intends to introduce a planned maintenance schedule.</u></i>	Accepted - wording of first sentence modified as follows: “No one method described in 6.2 to 6.6 is ideally...” Second sentence was changed, however reformulated in order to keep original meaning (emphasize possibility of using different methods for different equipment based on different factors). Change regarding “category” was excluded, as it is included in term “different measuring equipment” (although it would be technically correct for laboratory to use different method for e.g. one “special” instrument and call it “category”). Thank you for understanding. Third sentence changed as proposed.
0088 DE	1	6.7.2	Table 1	Te	See our comment on 6.2.2.	Change “work load balanced between risks and costs.”  To	Not accepted - see convener's response on comment 0064 (DE). Thank you for understanding.

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						“work load balanced”	
0089 NL	1	6.7.2	Table 1	ge	For “work-load balanced ..”, it is perhaps not instantaneously clear what a “low” or “high” balance would mean. Does “low” imply (1) low risks and high costs, or (2) a poor balance between risk and cost? I believe the latter (option 2) is meant, but I may be wrong.	Consider changing the indicative words used. I see that the previous version (1CD) has “bad” instead of “low”. I believe “bad” conveys the meaning better, if my understanding of the matter is correct. If the intent was to get rid of the word “bad”, perhaps “poor” is a better replacement.	Not accepted - although “bad” or “poor” are also correct, grading “high/medium/low” in the meaning of “level” (of meeting performance criteria in comparison to other methods) is considered to be understandable, correct and equivalent to other suggested wordings. Thank you for understanding.
0090 JP26	1	7	[1]	Ed	The correct full name of VIM is deleted in 2CD. However, we recommend expressing the full name as it was in 1CD.	Provide the full name of VIM.	Accepted - Wording changed as follows: OIML V 2-200 International Vocabulary of Metrology – Basic and General Concepts and Associated Terms (VIM). 3rd edition, Edition 2012 (E/F), (Edition 2010 with minor corrections), JCGM 200:2012(E/F)
0091 0005 UK	1	Foreword		ge	In the paragraph below, the test laboratory terminology is already defined in section 3.15, therefore there is no need to use test labs. “Consequently, manufacturers and users of measuring instruments, test laboratories, etc. may simultaneously apply OIML publications and those of other institutions.”	Consequently, manufacturers and users of measuring instruments and laboratories may simultaneously apply OIML publications and those of other institutions.	Not accepted - although correct, original wording was not changed, as it is consistent with wording of other publications of OIML issued in last decades. Also original wording includes other laboratories (by means of text “etc.”). Thank you for understanding.

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 PASSED TEST (number of files): 10  
 FAILED TEST (number of files): 0  
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