



TC 5/SC 2/p 5:	Revision of D 31: <i>General requirements for software controlled measuring instruments</i> – Collated comments TC5_SC2_P5_N032		
PG comments on 1CD:	TC5_SC2_P5_N021		
Circulation date:	2025-07-22	Convener: Germany – Marko Esche	Closing date for voting and/or comments: 2025-10-22 at 17:00 CET
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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

Country Code ¹	Part	Clause/ Sub clause	Paragraph / Figure/ Table/	Type of comment ²	COMMENTS	PROPOSED CHANGE	OBSERVATIONS OF THE CONVENER/PG on each comment submitted
Country Code ¹	Part	Clause/ Sub clause	Paragraph / Figure/ Table/	Type of comment ²	COMMENTS	PROPOSED CHANGE	OBSERVATIONS OF THE CONVENER/PG on each comment submitted
CZ-02		6.2.3.7.1	2 nd paragraph	ed	Seems an editing error occurred: the underlined word „commands“ does not correspond with the sentence meaning: „Each command in the legally relevant software shall be unambiguously assigned to <u>all commands</u> or data changes triggered by it.“	Instead „commands“ a word „functions“ should be there: „Each command in the legally relevant software shall be unambiguously assigned to <u>all functions</u> or data changes triggered by it.“	You are correct. This appears to be a mistake.
UK-32				general	Will the recommendation require a section for where the operating system is not part of the measuring instrument?		At the moment, clause 6.3.5 is always applicable. We can discuss if we need to establish an exception to that rule. At the meeting, the PG agreed that it is already clear that all other requirements apply in such a case. No additional section should be needed.
UK-02				ge	“parameters” is used extensively throughout the document but not defined in the terminology.	Propose defining “parameters” as “a numerical or other measurable factor forming one of a set that defines a system or sets the conditions of its operation”	Typically, OIML refrains from defining common IT terms. We should discuss if we need to make an exception here. If we do, we may need to define other terms as well. Withdrawn at the meeting.
BR-01				ge	The Direction of Legal Metrology of Brazil is pleased to see this document under review and improvement. While we have experts in this field, they were unable to review the document due to an overwhelming workload. As a result, we could not provide comments at this time.		Noted.
UK-03				ge	Legally relevant software needs to be more specific to what the areas of the instrument where this is relevant.		If more specificity is needed, this should be provided in the relevant Recommendation. D31 itself should remain generic.
UK-04				ge	“Artificial intelligence” is mentioned only once in the Document.	Suggest adding a definition for and a section on artificial intelligence processes as this is an increasing important application in the field of measurement enabling smart testing systems.	This was discussed during the previous revision of D31. The conclusion was to provide requirements for “dynamic modules” and then indicate that these may incorporate AI.

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DE-27		3.2	Whole clause	ed	a) Some definitions are a 1 to 1 copy from a source (3.2.15). b) In others there have been one or more words changed/left out (3.2.1). c) Some definitions have additional notes now (3.2.20). d) For some definitions the notes in the sources have been left out (3.2.32). In 3.2.36 notes have been left out and new ones have been added.	To simplify and harmonize the indication of sources, we propose to cite a source only when a definition is a direct copy from the source (see a)). In all other cases, we propose to not give a source, since the changed definition has now become D31's own (see b) to e)). When done like this, we would not have any "adapted from" sources anymore.	We should briefly discuss the best approach at the meeting. Proposal: Provide source reference only for the definition itself, regardless of any changes or additions to the notes. (a, c, d) Additional sentence in 3.2: References to external sources are provided for the definitions themselves, notes have only been copied or adapted where relevant.
DE-12		3.2.51		ed	The note is not written very concisely.	Change to "Defined commands or data are exchanged between the software modules by having one part of the protective interface store them in the dedicated data domain, while the other part of the protective interface reads them from it."	Agreed. The rephrased version appears to be in line with the current understanding of 3.2.51.
DE-11		3.2.57		ed	ISO/IEC/IEEE 12207:2017 is expected to be replaced within the coming months.	Check source before publishing	All references will be checked prior to publication of 2CD. As of 04-03-2026, the standard is still up to date.
JP-11		3.2.59	<i>Note 1</i>	ed	It is preferable to cite section 6.2.2.1 "software identification" rather than section 6.2.1.	Revise "see 6.2.1" to "see 6.2.2.1".	OK
DE-34		3.2.8, 3.2.12, 3.2.52		ed	The term "instrument" is used instead of "measuring instrument.	Write the word "measuring" before "instrument" ", since this is the term used in V1 2.09.	We can change 3.2.8 and 3.2.52. Unfortunately, 3.2.12 stems from V1 and should not be modified further.
DE-38		3.2.9, 3.2.20, 3.2.14,...		ed	The term "digital signature" is not used uniformly, sometimes it is electronic or cryptographic signature.	Harmonize the term to always be "digital signature".	OK
AU-01		4.2		ge	The different categories of guidance that are provided throughout the Document should be briefly described here as an aid to readers. I appreciate they are described in more detail in Annex D, but a short introduction here would be beneficial. If I understand correctly, these are: <i>Notes</i> – informative notes to aid understanding and interpretation of the clause <i>Guidance</i> – guidance to PGs regarding requirements for software modules to be considered within a Recommendation <i>Documentation</i> – guidance to PGs regarding documentation to be submitted to support software evaluation in accordance with a Recommendation <i>Certificate</i> – guidance to PGs regarding information to be included in a certificate issued in accordance with a Recommendation	It is suggested a brief description of the categories of guidance is provided here (in 4.2) as an aid to readers.	Agreed. This would help improve usability of the document significantly.
AU-02		4.2		ed	Typo.	Amend "faciliate" to "facilitate".	The typo will be corrected.

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AU-03		5.2	3 rd para.	ge	The last sentence of the paragraph states that "...an in-depth analysis of the software to detect deficiencies or security vulnerabilities shall be performed." It is understood that the paragraph is providing a strong recommendation to a PG. As such it is suggested to change "shall" to "should" in accordance with clause 4.3. In addition, the terminology should be consistent with other clauses in D 31. Suggest changing the phrase "in-depth analysis" to "extended examination" to align with the term used in clause 7.	It is suggested to change "shall" to "should". It is suggested to change "in-depth analysis" to "extended examination".	Agreed.
JP-12		6.2.2.1	Examples 1)	ed	The term "flow computer" is a mistake for "flow meter." (It is actually referred to as "flow meter" elsewhere, such as in Annex B.)	Revise "flow computer" to "flow meter".	OK
AU-04		6.2.2.1	Last para	ed	Typo.	Delete the second "it".s	OK
JP-01		6.2.2.1	last paragraph above the examples	ed	The expression "allow it it to" is a typo.	Revise "allow it it to" to "allow it to".	OK
AU-06		6.2.2.6	Example	Te	The example talks about enhancing the reliability of the internal clock by redundancy. But, it is not clear how this relates to the requirement of this clause. Clause 6.2.2.6 states if a timestamp is required the instrument shall be able to keep or read time accurately. The example appears to describe a checking facility, because this example isn't directly about an accurate clock, but instead about raising an error if a check of the clock fails.	Suggest to change the example, or move it elsewhere as an example of a checking facility.	Agreed. Only the second part of the example actually addresses the timestamp format. For the rest of the example, no corresponding requirements exist. Therefore, the first part of the example can be deleted.
AU-05		6.2.2.6		ge	The clause covers both requirements for timestamps and requirements for clocks. The Guidance provided is for clocks, but not for timestamps. Suggest the guidance is moved to 6.2.3.5. Guidance for timestamps could be included here. E.g. PGs should define minimum requirements for the format of timestamps to ensure consistency and applicability.	It is suggested to move the Guidance to clause 6.2.3.5. New Guidance for timestamps should be included in 6.2.2.6. E.g. PGs should define minimum requirements for the format of timestamps to ensure consistency and applicability.	The Guidance will be moved to 6.2.3.5. The correct wording for new Guidance in clause 6.2.2.6 should be discussed at the meeting. The following will be moved to 6.2.3.5: "Guidance: PGs may define requirements and test methods for internal clocks in cases where accurate time is required for a legally relevant purpose." New Guidance under 6.2.2.6: "PGs may define minimum requirements for the resolution of timestamps to ensure consistency and applicability."

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AU-07		6.2.2.7		ed	Suggest some minor rewording to clarify the intent of the first sentence, whereby the necessary verification information may be displayed, printed and/or transmitted.	It is suggested to amend the wording as follows: It shall be possible to display, print, and/or transmit to the verification software, all necessary verification information, see 6.3.10.	Thank you. The rephrased version is much clearer.
AU-08		6.2.2.7a (also in the checklist)		ed	Typo.	Add the second 'i' in identification.	OK
CECIP-01		6.2.3		Ed	Clause organisation should be reassessed. The examples 1, 2, and 3 under 6.2.3.1 General describe protection of parameters so should be moved to 6.2.3.4. Example 4 under 6.2.3.1 describes protection of software so should be moved to 6.2.3.2.	The examples 1, 2, and 3 under 6.2.3.1 General describe protection of parameters so should be moved to 6.2.3.4. Example 4 under 6.2.3.1 describes protection of software so should be moved to 6.2.3.2.	Agreed. The examples appear to fit better in the respective subclauses.
CZ-01		6.2.3.1	Example no. 4	te	The first three examples at this article are about protecting/securing parameters. The fourth one is about protecting software – the code of software, not parameters.	Distinguish what is protected and write an introductory sentence: For the first three examples: „Example of parameters protection“ For the fourth one: „Example of software securing:“	Agreed. This would help readers to understand the intentions of the examples. This has been solved by changes resulting from CECIP-01.
DE-08		6.2.3.3 6.2.2.7		ed	We have duplicate notes stating that audit trails are means of providing evidence of intervention.	Change “see 6.2.x.x” to “see also 6.2.x.x” to avoid a circular reference.	
DE-09		6.2.3.3.1	2 nd sentence	ed	“If applicable, the source of the modification shall be recorded in the audit trail.”	Either put this sentence into Guidance or change “if applicable” to “if possible”. The first option would be preferred.	We should discuss the proposal at the meeting. Proposal: Modify Guidance “PGs may define additional information to be recorded in the audit trail. This could be the source of the modification, or when the modification is the result of an action of dynamic modules of legally relevant software or remote verification.”
AU-09		6.2.3.3.2	3 rd para.	te	It is suggested that paragraph be reworded to clarify requirements for the different concepts of changing and deleting entries. It should never be possible to change data in an event counter or audit log. It should be possible to delete entries in an event counter or audit log under specific circumstances.	Suggested wording: “It shall not be possible to change the data of an entry in an event counter or audit trail, including when software is updated. It shall not be possible to delete an entry in an event counter or audit trail, except as an appropriate response to free up storage capacity to allow for the addition of new entries.”	The proposed version appears to be much clearer. Thank you.

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AU-10		6.2.3.3.2	5/6 para.	te	The Guidance (5 th para) and the following paragraph (6 th) are inconsistent. It is suggested that the order of the paragraphs is swapped and reworded to provide for consistency.	Suggested wording: “Events shall be recorded automatically, except where PGs determine specific provisions apply. Guidance: Where necessary, PGs should define for specific types of instruments which manual additions to an event in the audit trail are admissible as long as they do not affect the remaining contents of the audit trail.”	Agreed.
AT-01		6.2.3.3.2		ed	Change the sentence The audit trail(s) and event counter(s) shall have sufficient capacity to ensure the traceability of events between at least two successive verifications or inspections of a measuring instrument in the field.	Suggestion: Sufficient capacity shall be available for the audit trail(s) and event counter(s) to ensure the traceability of events between at least two successive verifications or inspections of a measuring instrument in the field.	The current phrasing already appears clear enough and has been implemented in several Recommendations without problems.
JP-02		6.2.3.3.2	3rd paragraph	te	It may not be appropriate to categorically prohibit additions to the audit trail during software updates, as such additions may be necessary. In particular, according to the requirements for a "traced update" defined in clause 6.3.9.4.3, recording the outcome of a software update in the audit trail may be required.	Present: It shall not be possible to change or delete the data of the event counter(s) or audit trail(s) unless to add new entries or free up storage capacity, see below, and it shall not be possible to change the audit trail(s) or the value of the event counter(s) <u>when the software is updated</u> . Revise: It shall not be possible to change or delete the data of the event counter(s) or audit trail(s) unless to add new entries or free up storage capacity (see below). It shall not be possible to change the audit trail(s) or the value of the event counter(s); <u>however, this does not preclude recording software update information in the audit trail as described in 6.3.9.4.3.</u>	This should be solved by the change proposed by AU-09.
AU-11		6.2.3.4	Last para	Ed	Typo of ‘contain’.	Add the ‘t’ into contain.	OK
AU-12		6.2.3.5	Note 2	Ed	This note was an AU proposal, but upon review this clause (under 6.2.3 Securing and Protection) is not the right place to have a note that says ‘PGs may specify accuracy requirement for clock.’ In fact, clause 6.2.2.6 (Timestamps) already provides Guidance ‘PGs may define requirements and test methods for internal clocks in cases where accurate time is required for a legally relevant purpose’. So the note is not needed.	Remove Note 2.	OK. The note will be deleted.
DE-14		6.2.3.5 and others	Note 3	ed	There are several phrasings: national requirements/legislation/jurisdiction/regulation/laws.	Harmonize them throughout the document: “national regulations” would be preferred.	“National legislation” is used 14 times in the text, “regulation” 4 times, “jurisdiction” and “laws” just once. We should discuss the best term at the meeting. We will use the term “national legislation”. “Jurisdiction” in 6.2.3.5 will be changed to national legislation, too.

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DE-16		6.2.3.7.1	document ation	te	Functions that are triggered through the protective interface shall be declared and documented.	1. Delete “declared” because it does not offer additional information. or 2. Rewrite to fit the phrasing scheme: The documentation shall contain a declaration of all functions that are triggered through the protective interface.	OK
DE-35		6.3.1	2 nd to last line	ed	The term “instrument” is used instead of “measuring instrument.	Write the word “measuring” before “instrument””, since this is the term used in V1 2.09.	Agreed. We should use the term “measuring instrument” consistently throughout the text.
CECIP-08		6.3.10.2.2 8.3.2 8.3.3.1		Ed / Te	A new undefined term has been introduced “change logs”. Suggest either defining it, or just deleting it.	“e.g., approved type number, serial number, legally relevant settings and parameters, verification information and status, software identification, software integrity, audit logs/trails, <u>change logs</u> , error logs etc.” “e.g., approved type number, serial number, legally relevant settings and parameters, verification information and status, software identification, software integrity, audit logs/trails, error logs etc.”	I believe the term was introduced to distinguish such logs from error logs. We should discuss if we need to add a definition of such a specific realization of an audit trail. We will delete the term “change log”.
CECIP-09		6.3.10.2.3	Note 2	Te	“If remote verification is not allowed, the manufacturer shall disable the remote verification functionality”. 1. Requirements shall not be given in notes 2. According to OIML B 6-2:2023, 2.6.2 this sentence may present a technical barrier to international trade The paragraph (“Result of the remote verification”) is not appropriate for such a requirement	Delete Note 2. Instead add a sentence “Remote verification functionality shall be sufficiently secured” (or similar) to 6.3.10.2.1 General	The first part of the note “National regulations may allow or disallow remove verification” should probably stay in place. We should discuss if we actually need the second part as a separate requirement. The note in 6.3.10.2.3 will be deleted. Addition to 6.3.10.1: “National regulations may allow or disallow remote verification.” The proposed requirement will be added to 6.3.10.2.1.
AU-16		6.3.10.3	3 rd para.	te	Does the reference to software modules include software modules uses by the verifier to remotely verify the instrument (e.g. on a back-office system)? Or does it refer to only software modules that are part of the instrument used for the purposes of remote verification? If the former, how are these modules to be type approved? If the latter, could clarity be provided?	Suggest an amendment: The software modules (that form part of the instrument subject to verification) which are involved in the remote verification procedure are part of the legally relevant software and shall fulfil the relevant requirements.	Agreed. This would help avoid confusion regarding the role of software used for the purpose of verification.

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DE-05		6.3.10.3	3 rd paragraph	ed	“All legally relevant software modules shall communicate with other modules or components through a protective interface, see 6.2.3.6.1.” Kommentar von Marko: Modules can communicate with modules and/or components.	For consistency with other requirements, change the phrase to “modules and/or components”.	Presumably, clause 6.3.8.3.3 is meant. We should amend the text to follow similar requirements elsewhere in D 31.
DE-06		6.3.10.3	3 rd gray box, example 1)	te	“A priority level is assigned to the legally relevant function which is higher than for normal processes...”: it should be clarified, what “normal processes” are.	Clarify that “normal” is equivalent to “legally non-relevant”: “...for normal <u>(non-legally relevant)</u> processes”.	This change should be discussed at the meeting. Comment pertains to 6.3.8.3.3: Change “normal” to “legally non-relevant”.
DE-07		6.3.11.4.3	Paragraph under last gray box	ed	“It shall only be possible to resume the download procedure or to show an error.” Rewrite this sentence to be more precise	Change to: “Only two things shall be possible: Either the user can manually restart the download process or the instrument displays an error message.”	Agreed. The rephrased text appears to be in line with the original intention of the clause.
DE-01		6.3.2.2	Example 2) in gray box, end of 2 nd paragraph	ed	“the program stops execution”: we think “aborts execution” would fit better here	Change to “aborts execution”.	OK
AU-13		6.3.2.2 and 6.3.3.2		ge	This comment relates to: <ul style="list-style-type: none"> checking facility error logs – 6.3.2.2; and significant faults and durability protection error logs – 6.3.3.2 Is more guidance / requirements needed for PGs regarding error logs? Should the requirements and guidance of 6.2.3.3.2 also apply to error logs? Is a separate subclause required for error logs?	Consider including additional requirements and guidance along the lines of 6.2.3.3.2. e.g. Error logs are part of the legally relevant software and shall be secured and protected as such against accidental, unintentional or intentional changes. It shall not be possible to change the data of an entry in an error log, including when software is updated. It shall not be possible to delete an entry in an error log, except as an appropriate response to free up storage capacity to allow for the addition of new entries. Entries shall be recorded automatically.	We should discuss the connection between audit trails, error logs and change logs. Proposal: We will delete the term “audit log”. We will add a new clause 6.3.3.3 “Securing and Protection If an error log is used to fulfill requirements from 6.3.3.2 error logs are part of the legally relevant software and shall be secured and protected as such against accidental, unintentional or intentional changes. It shall not be possible to change the data of an entry in an error log, including when software is updated. It shall not be possible to delete an entry in an error log, except as an appropriate response to free up storage capacity to allow for the addition of new entries. Entries shall be recorded automatically.” 6.3.2 will be modified accordingly.
JP-03		6.3.3	whole	te	The body text refers only to durability errors, but does not mention significant durability errors, so “significant” in the title is unnecessary.	Remove the word “significant” from “significant durability error” in the title of 6.3.3, change it to “durability error”.	Agreed. This appears to be an editorial error. The term “significant durability errors” is not used anywhere else in the document.

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DE-28		6.3.4.2 6.3.8.3.3	First document ation respectively	ed	The two documentation paragraphs are the same: “The documentation shall contain the description of the prioritization of using all legally relevant parts, including dynamic modules of legally relevant software.”	We should either only keep one of them or move this sentence somewhere else completely.	We should amend both notes to fit their respective clause more precisely. 6.3.4.2 should not mention dynamic modules at all.
DE-13		6.3.5.1	First sentence	Ed	The first sentence is partly redundant.	Change to: “Each of the operating system requirements in 6.3.5.1 and 6.3.5.2 shall be met by measures on application level, operating system level or a combination of both. “	6.3.5.1 does not address operating system requirements. Probably, the comment was meant to address 6.3.6.1, instead. We can rephrase it to “If an operating system is part of the measuring instrument, each of the requirements in 6.3. 5 6.1 and 6.3. 6 5.2 shall be met by measures on application level, operating system level or a combination of both.” Such a change should be discussed at the meeting. Rejected at the meeting.
AT-02		6.3.5.3		te	it is recommended to document and enforce firewall settings that limit open network ports on the operating system of legally relevant software. This measure reduces the system’s attack surface, prevents unauthorized access, and ensures that only approved communication channels are available. Including this configuration in the device documentation supports type evaluation and reinforces the integrity and security of the measurement device (For example: Which ports need to be open for the legally relevant software to function, and which are not needed and should therefore be closed? Or in the non-usage case of network ports firewall settings ensuring all ports are closed should be recommended). Note: No further mentions of the keywords 'firewall settings' or 'network ports' were found in the document.		We should discuss if we want to to address firewall settings in an additional example in 6.3.5.3.4. Proposal for a new example under 6.3.5.3.4: “Firewall settings limit open network ports on the operating system to only allow communication with the legally relevant software through a limited list of protocols.” Agreed at the meeting.
DE-02		6.3.5.3.3	Last sentence	ed	“Bootting via open interfaces shall be prohibited.”: “Disabled” would fit better here, because it shall be impossible to boot via open interfaces in the first place.	Change to “...shall be disabled”.	Agreed. “Prohibited” sounds more like an instruction than a technical requirement.

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DE-17		6.3.5.3.5	Documentation	ed	<p>“The manufacturer shall identify the hardware and software environment that is suitable.”</p> <p>This sentence doesn’t fit the phrasing that was agreed upon in the last meeting (The documentation shall contain...).</p>	Rephrase to: “The documentation shall contain the identification of a suitable hardware and software environment.”	<p>We should discuss the correct phrasing at the meeting. DE-17 and UK-34 will be combined as follows: “The documentation shall specify a suitable hardware and software environment.”</p> <p>Subsequent changes:</p> <p>6.3.4.2: Certificate: The certificate shall describe the impact of such dynamic modules on the legally relevant software (modules/parts/algorithms etc.). Documentation: If dynamic modules of legally relevant software have facilities for continuous learning that allow dynamic parameter changes during use, the documentation shall describe the facilities and their priorities to the whole legally relevant software, especially in reference to the measuring functions.</p> <p>7.1.1: Replace note with: Documentation: In cases of dynamic modules of legally relevant software (e.g., evolving machine learning models), the documentation shall describe clear ways of verification and evaluation of said dynamic modules. Guidance: With respect to metrological performance testing more generally, PGs may need to consider the impact of dynamic modules of legally relevant software on traditional methods and assumptions regarding the interpolation or extrapolation of measurement performance across the operational range of the measuring instrument under evaluation and test. Annex D will be amended to include the new Guidance.</p>

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CECIP-02		6.3.6.1 6.3.7.1		Ed	<p>“General Requirements of 6.3.6.2 and 6.3.6.3 regarding storage of data apply to software identification, log files, and, if applicable, to results of diagnostics, results of remote verification and measurement data before they are used for legal purposes.”</p> <p>“Error logs” is preferred over “log files” because it’s already defined and used.</p> <p>An Oxford comma would help in this list to differentiate between measurement data and remote-measurement data.</p>	<p>“General Requirements of 6.3.6.2 and 6.3.6.3 regarding storage of data apply to software identification, error logs, and, if applicable, to results of diagnostics, results of remote verification, and measurement data before they are used for legal purposes.”</p>	We should use the term “change logs, error logs”, see 6.3.10.2.2, 8.3.2, 8.3.3.1 etc. The change may depend on the outcome of the discussion on CECIP-08.
CZ-03		6.3.6.2.3	2 nd and 3 rd paragraph	te	This article is about data storage and possibility to delete the measurement results. But it is linked to remote verification. Why? It should be common requirement for all measurement results, not only for the ones that are possible to read via remote verification.	Delete the words „remote verification“ from the 3rd paragraph and from the Guidance underneath.	This should be solved by the change proposed in response to CA-09.
DE-31		6.3.6.3	2 nd paragraph under 1 st box	ed	“The software that displays, or further processes, the measurement data shall check the authenticity and integrity of the data after having read the data from the storage.”	Replace the third “data” with “them”.	Agreed.
UK-36		6.3.6.3, 6.3.7.3, 6.3.8.2.3, 6.3.9.4.3,		Ed	The terms “ECC-based signature”, “electronic signature”, “cryptographic signature”, and “digital signature” are used in the document, they appear to be similar applications. “electronic signature” is not defined in the terminology.	Define “electronic signature” in the terminology if it is different from “digital signature”.	No, it is not. We should use the term “digital signature” throughout the document. “ECC-based signature” can remain in place as it is a specific example of a digital signature.
CECIP-04		6.3.6.3, and 6.3.7.3		Te / Ed	The terms “electronic signature” and “digital signature” are both used in this section, are they the same thing or intentionally different? “Digital signature” is the only one in definitions.	Replace “electronic signature” with “digital signature” in both instances.	See response to UK-36. This instance of the old term should be corrected.
CECIP-03		6.3.7.3		Ed	Two sets of Examples cover the same requirement, suggest amalgamating the examples.	All requirement text first followed by Examples 1: hardware seal + integrity check, 2: CRC32 appended to dataset, 3: Digital signature appended to dataset, 4: Electronic signatures in the case of web-based components	Agreed. The proposed order of examples would help readers understand the clause better.
DE-32		6.3.7.3	5 th +6 th paragraph (1 st under gray box)	ed	Presuming “measurement data” is meant here, we should add the word “measurement” before both “data” in both paragraphs. In Annex D, the term “measurement data” is still present from earlier versions.	Please modify the text accordingly.	Agreed.

Country Code ¹	Part	Clause/ Sub clause	Paragraph / Figure/ Table/	Type of comment ²	COMMENTS	PROPOSED CHANGE	OBSERVATIONS OF THE CONVENER/PG on each comment submitted
DE-04		6.3.7.4	Guidance	te	“Disabling of further measurements”: “blocking further measurements” would fit better here	Change to “blocking further measurements”.	We should discuss this proposal at the meeting. Guidance: PGs should decide what response is required, e.g., disabling the measurement function, stopping the current measurement process, discarding the measurement result or marking it as unusable.
JP-04		6.3.8.2.1	Examples :1)	ed	The phrase "Other, legally non-relevant, device" contains unnecessary commas.	Remove the comma between “Other” and “legally” in line 5 from the top of Example 1), change it to “Other legally non-relevant devices”.	See response to RU-45.
CECIP-05		6.3.8.2.3		Te	Neither of the 2 examples are relevant to the requirement “Legally relevant components shall be protected against exchange”. Example 1 is strange in the way it demonstrates a situation where the requirement does NOT apply, but this is probably still valuable and can be kept.	Replace example 2 with perhaps, 2) the communication cable is hardware sealed within the housing.	Agreed. Example 2) will be replaced with the following: “A measuring instrument consists of two components communicating with each other. Both components are placed together in the same housing and the communication cable is sealed within the housing to prevent exchange.”
DE-30		6.3.8.2.3	2 nd box, 1)	te	“Whenever one side or the other exchanges data with the communication partner under the specified network address, they symmetrically encrypt their communication using AES-128 with the secret pairing key.” What data are meant here? If only legally relevant measurement data, it would be more precise to add the word “measurement”. Right now it reads as “any data, no matter the legal relevancy”.	Please clarify.	Since the encryption could be used for all communication between component and measuring instrument, we should rephrase the sentence as follows: “Communication between component and measuring instrument is encrypted in both directions using AES-128 with the secret pairing key.”
CECIP-06		6.3.8.2.3	4 th Example block	Ed	Close parenthesis after section reference.	“(see also example 1) in 6.3.8.3.3,” -> “(see also example 1 in 6.3.8.3.3),”	The parathesis is closed at the end of the sentence. “detailing encryption of measurement data from the measurement sensor” actually refers to 6.3.8.3.3.
DE-20		6.3.8.3.3	2 nd box	te	This example should be rewritten to ensure that it provides more information.	Change to: “The operating system grants priority to the legally relevant software over the legally non-relevant software when using resources.”	OK. The proposed text appears to be more precise.
CECIP-07		6.3.9.1		Ed	“...are concerned” is imprecise. “In the case that device-specific parameters (especially calibration parameters) are concerned, a verified update is the only option allowed.”	“In the case that device-specific parameters (especially calibration parameters) are concerned, a verified update is the only option allowed.” -> “In the case that device-specific parameters (for example, adjustment parameters) are modified during an update, only a verified update is permitted.”	Agreed. The proposed version is much clearer.

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JP-05		6.3.9.1	1st guidance	ed	The phrase “should to” is a typo.	Revise to "should to" to “should”.	Agreed.
AU-14		6.3.9.1	Guidance	Ed	Typo.	Amend “should to decide” to “should decide”.	Agreed.
JP-06		6.3.9.3.1	1st paragraph	ed	The marker "Note:" should be written in italics. "Verified Update" is a typo.	Revise the expression to: " <i>Note</i> : Verified update".	Agreed. Depending on the outcome of the discussion on CA-11, this may no longer be necessary. The note has been deleted because of CA-11.
JP-07		6.3.9.3.3	1st guidance and certificate	ed	The marker "Guidance:" and "Certificate:" should be written in italics.	Italicize the headings “Guidance:” and “Certificate:”.	Agreed. The font will be corrected.
AU-15		6.3.9.3.3	Note	Te	The content of the note should be taken out of the note and set as a requirement. A ‘verified update’ requires sealing and subsequent verification. Also note that 6.3.9.3.1 says ‘Verified Update is the procedure of changing software in a measuring instrument or component after which the <u>subsequent verification is necessary.</u> ’ Note, this relates to comment AU-46 in collated_commmment_D31_v4.	Change to: Note :- After the update of the legally relevant software of a measuring instrument (exchange with another approved software version or re-installation), the securing and protection means should <u>shall</u> be renewed and the measuring instrument should <u>shall</u> be verified.	This was already discussed during the previous revision and at the last PG meeting. The consensus was to leave the text as a note since D 31 cannot impose requirements on national legislation regarding verification.
DE-19		6.3.9.4.3	2 nd paragraph under 3 rd box and the note.	te	“The software update is recorded in an audit trail.” This is a requirement and should be phrased as such.	Change to: “The software update procedure shall be recorded by an audit trail.” Integrate the note, which appears to be a requirement: “For each software update procedure an entry in an audit trail shall be generated.”	We should discuss the proposed change at the meeting. Proposal: Move the sentence to 6.3.9.4.2 and rephrase as follows: “The software update shall be recorded in an audit trail.” The following two sentences will be rephrased: During or as a result of a traced update, any existing protection measures, e.g., audit trail information and event counter values, shall be retained. To be deleted: When the software is updated, the audit trail shall not be erased or overwritten. CECIP will provide a proposal for a restructured version of clause 6.3.9.4.3.
JP-09		7.1.2	2nd bullet point from the bottom	ed	There is a missing space between "see" and "6.3.4.2" in the phrase "especially in reference to the measuring functions, see6.3.4.2".	Revise "see6.3.4.2" to "see 6.3.4.2".	The missing space will be inserted.

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JP-08		7.1.2	7th bullet point	ed	There is a missing space between "see" and "6.2.2.2" in the phrase "description of all legally relevant functions, see6.2.2.2".	Revise "see6.2.2.2" to "see 6.2.2.2".	The missing space will be inserted.
DE-15		7.1.2	First bullet point, first hyphen	ed	Add the word "all" for unambiguous phrasing, also do this in all instances of lists in this chapter.	"List of all LR software modules / commands / parameters / durability errors / components"	Agreed. We should avoid ambiguity as much as possible.
DE-29		7.1.2	Whole clause	ed	The bullet points are in random order.	We propose to write the bullet points in order of appearance in 6.2/6.3.	Agreed, this would improve readability for users of D 31.
DE-22		7.1.2	3 rd from last bullet point, 2 nd hyphen	te	"description of the access rights to the instrument for remote verification and a description how test items can be obtained and made available to relevant authorities depending on national legislation, see 6.3.10.3;" The clause 6.3.10.3 does not say anything about documentation of test items.	Either delete this part in 7.1.2 or add documentation of test items in 6.3.10.3.	In fact, 6.3.10.3 does contain this documentation requirement, but it is hidden on the next page (53).
CZ-04		7.2.2	7 th item	ed	The text „means of integrity protection checking, see 6.3.9.3“ uses different words comparing with the text of article 6.3.9.3. I prefer to use the words of the article for better clearness.	Change to wording to: „The means of how the protection means are renewed or reactivated, see 6.3.9.3“	OK
CZ-05		7.3.1	Table 2, 6.3	ed	The word „configuration“ in a heading „Requirements specific for <u>configurations</u> “ is written in different font type	Unify font type	Agreed. Such errors are typically corrected by BIML prior to publication.
DE-18		7.3.2.3	Complementary procedure, second sentence	ed	If the instrument has interfaces, it is in general not possible to detect undocumented commands only by trying commands at random. Rewrite for better English.	Change to: "If the instrument has interfaces, it is in general not possible to detect commands just by random trial and error."	Agreed. We shall use the rephrased version.
DE-25		8.1	4 th paragraph	ed	"PGs shall..." This must be a PG guidance.	Write as guidance + change "shall" to "should"	Agreed.
DE-23		8.1	First sentence	te	"In use" and "during operation" mean the same thing.	We think this phrase should be harmonized throughout the whole document. "during operation" would be preferred.	Actually, "in use" implies that the verified instrument has been placed on the market, while "during operation" addresses the fact, that the instrument is powered on. Therefore, both terms are needed here.
JP-10		8.3.1	1st paragraph	ed	There are several reference errors in the following phrase that should be corrected: secure connection [3] verification interface [4] verification algorithm [5] the remote unit where they are checked, displayed [11] and logged [2]	All reference errors in the sentence should be corrected individually. Revise secure connection [3] to [2]. Revise verification interface [4] to [3]. Revise verification algorithm [5] to [4]. Revise the remote unit where they are checked, displayed [11] and logged [2] to displayed [7] and logged [6].	Agreed. The numbering will be corrected.

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DE-24		8.3.1	Figure 2	ed	The use of [] is not practical because the sources are marked with square brackets.	We propose using ①②③	We should not use special characters in an OIML publication. We could use round brackets, i.e. , “(1)”, “(2)” etc., instead.
DE-26		8.3.2	4 th paragraph + last one	ed	“PGs shall...” This must be a PG guidance.	Write as guidance + change “shall” to “should”	Agreed, see response to RU-69.
DE-21		8.3.2	Note 2	ed	“The device to be remotely verified needs to be available and ready.” We propose a rephrasing.	Change to: “The remote verification procedure can only be executed when the device to be remotely verified is available and ready.”	Agreed. We should not use normative language in a note.
DE-33		8.3.3.3.5	1 st paragraph	te	The first paragraph is not written very concisely: Simulating a starting signal to sensor at the beginning of a corridor of known length and sending starting time to the point-to-point speed meter processing unit. At the end of the corridor, a stop signal is sent to the sensor also sending a stop time to the processing unit. The measurement result is retrieved from the processing unit to evaluate the accuracy of the measurement algorithms of the point-to-point speed meter.	Proposed rewriting: “A test object passes in front of a point-to-point speed meter, traveling through a corridor of known length. At the beginning of the corridor, a start signal is sent to the remote verification unit. At the end of the corridor, a stop signal is sent to the remote verification unit. The measurement result is retrieved from the point-to-point speed meter and compared with the reference value calculated by the remote unit to evaluate the accuracy of the measurement algorithms of the point-to-point speed meter.” If accepted, add cross-reference in annex F.	Agreed. The proposed text appears to be much clearer.
AU-18		Annex B	Checklist 6.2.3.2	Ed	Typo.	Add the t into “against”.	Agreed.
AU-19		Annex B	Checklist 6.2.3.3.2, row 3	Ed	Typo.	Amend “coutner” to “counter”.	The typo will be corrected.
AU-20		Annex B	Checklist 6.3.3.2, row 2	Ed	Typo.	Amend “reponds” to “responds”.	OK
DE-03		Annex B	p. 92, 4 th box	ed	“is detected an appropriate reaction is given.”: appropriate response	Harmonize with the rest of the document to “appropriate response”. Add comma after “detected”	OK
AU-17		Annex B	Checklist 6.2.2.1, row 1	Ed	Typo.	Amend “beare” to “bear”.	Actually, this should be, “...component are unambiguously...” See response to PL-08.
AU-22		Annex D	PG actions and decisions table, 6.2.2.4, row 1	Ed	Typo.	Amend “thet” to “that”.	The typo will be corrected.

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AU-23		Annex D	PG actions and decisions table, 6.3.3.2, row 2	Ed	Typo.	Amend “should to prescribe” to “should prescribe”.	The typo will be corrected. A similar phrase in 6.3.9.1 should be corrected, too.
AU-21		Annex E		Ed	OIML D 31 spacing.	Change OIML D31 to OIML D 31.	The missing space will be inserted.
DE-36		Annex F	Sealing	ed	The word “seal” is significantly more often used than the word “sealing”.	We propose to change the word “sealing” in Annex F to “seal”.	OK
DE-37		Annex F	SW examination	ed	At the moment, the index numbers in SW examination link to three different terms: SW examination, evaluation, and verification. Since they all mean different things, we should separate them in the index. Verification already exists as a separate term.	Add the term “evaluation” to the index and allocate the clauses accordingly.	Agreed. This will make it easier to search for specific terms.
DE-39		Annex F	SW Protection	ed	We propose to add the word “protection”, since this would also encompass hardware protection.	Either keep “Software protection” and add “protection”/“hardware protection” for hardware protection. Or only write “Protection” and unite SW as well as HW protection under this term.	We should discuss this at the meeting. What would we do with general protectio statements if we list hardware and software protection separately? <u>We should list HW protection separately.</u>
DE-10		Foreword	5 th paragraph	ed	“This publication – reference OIML D 31, edition 2023 (E) – was developed by...”	This paragraph will need to be updated in the end.	Agreed. This will be done prior to publication of the FDD.

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CECIP-10		General		ed	In 3.2.62 “Software protection” is defined, but in the document usually only “protect” is used (without “software”)	Either define “protection” or “protecting” (for similarity with “securing”) in 3 or replace “protect...” with “software protect...” in the whole document. Replace with a general definition of ‘protection’, not just for software, but also for example exchange of components?	“software protection” is a defined term in V1. We should discuss how to provide clearer reference to that term when we use the verb “to protect”. Proposal for a new general definition: “securing: means preventing unauthorized access to hardware or software” “protection: means making an intervention impossible or evident” TODO: Marko to contact TC1. “software protection: protection of measuring instrument or component software or data domain by a hardware or software implemented seal with the intention of making an intervention impossible or evident” We will check all instances of “protect” and modify them to “protected by software means, protected by hardware means etc.”
DE-40		Whole document		ed	The term “protection means” is not used consistently throughout the document.	Replace “protection measures” with “protection means”, where overlooked	Agreed. We should use consistent terminology throughout the document.
RU-06	–	(Normative References)	–	ed	A referenced standard in the terminology (ISO/IEC/IEEE 12207:2017) is expected to be replaced in the near future. If a new version is published before OIML D31 is finalized, the reference could become outdated. Similarly, other references (e.g. WELMEC guides in Annex A) might have newer editions available.	Before publication, update normative references to the latest editions where applicable. For example, check if ISO/IEC/IEEE 12207 has a 2024 edition and update the reference if so. Likewise, in Annex A, change the reference to WELMEC Guide 7.2 to the newest edition (e.g. “WELMEC 7.2:2025” instead of 2023). Keeping references up-to-date will ensure relevance and accuracy.	All references are typically checked and updated prior to publication by BIML. As of publication of 2CD, ISO 12207:2017 was still the valid version.
RU-07	–	3 (Terms and definitions)	–	te	The definition of “verification” has been added or updated in this draft. In parallel, the document currently does not provide a definition for “calibration,” which could be equally important for completeness. As calibration is often referenced alongside verification (especially in legal metrology contexts), the lack of a calibration definition is a gap.	Include a definition of “calibration” in Clause 3, mirroring the inclusion of verification. The definition should encompass the possibility of remote calibration if applicable. For example: “Calibration – a set of operations that establish, under specified conditions, the relationship between values indicated by a measuring instrument and the corresponding known values, possibly including adjustments.” This addition ensures both verification and calibration are covered in the terminology.	OIML V1 (0.14) already provides a proper definition. Since D31 does not impose any requirements on calibration itself, we should refrain from duplicating the definition here.

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RU-09	–	3.2 (Multiple definitions)	–	ed	The sourcing of definitions is inconsistent. Some definitions in 3.2 are exact copies of their sources (e.g. 3.2.15), while others are adapted with changes or have added/omitted notes (e.g. 3.2.1, 3.2.20, 3.2.32, 3.2.36). In cases where definitions were modified, the document still lists a source with “adapted from,” which can be confusing and may not be necessary if the definition has become an original one for this document.	Harmonize the citation of sources for definitions. Only cite an external source when the definition is a direct, verbatim copy of that source. For any definition that has been modified (words changed or notes added/removed), consider treating it as an original D31 definition (no source cited). This approach eliminates ambiguous “adapted from” credits and makes it clear which definitions are taken straight from a source. The result will be cleaner and more consistent terminology section.	See response to DE-27 RU-09 .
RU-08	–	3.2.29	(Note 2)	ed	The term “legal control” is used in Note 2 of definition 3.2.29, but “legal control” is not itself defined in the document. This could lead to varying interpretations of what constitutes legal control. Providing a definition or clarification would assist users in understanding requirements that refer to legal control of software or instruments.	Introduce a definition for “legal control” in Clause 3 (or add a clarifying note). For instance: “Legal control – control exercised by the relevant national authorities through laws and regulations to ensure compliance of measuring instruments with legal requirements.” If adding as a note, explicitly state that legal control pertains to aspects of the instrument subject to regulatory oversight. This will align with the context in which the term is used.	See response to UK-08.
RU-10	–	3.2.34	–	te	In definition 3.2.34 (presumably for “measurement” or a related term), the word “experimentally” is included, which seems unnecessary or confusing in context. The wording should align with the corresponding definition 3.2.41 (possibly for “verification” or related concept) and standard terminology. Including “experimentally” might mislead readers about how measurements are obtained or verified.	Remove the word “experimentally” from the definition in 3.2.34 to better align with definition 3.2.41. A possible phrasing could be: “Process of obtaining one or more quantity values attributed to a measurand that can provide traceability and be attributed to any other relevant quantity.” (This wording is closer to a standard definition of measurement.) Ensuring consistency between related definitions will avoid confusion.	We cannot modify the definition. See response to UK-09.
RU-11	–	3.2.53	–	te	The definition of “sealing” (clause 3.2.53) describes protection against modification, but it does not explicitly say unauthorized modification. Since the purpose of sealing is to prevent unauthorized changes, adding this clarification would strengthen the definition.	Amend the definition of sealing to specify unauthorized modification. For example, “Sealing – means for protecting a measuring instrument or its software against unauthorized modification.” This addition clarifies that sealing is specifically about preventing modifications that are not permitted, aligning with the intent of legal control.	See response to UK-11.
RU-12	–	3.2.59 (Note 1)	–	ed	In Note 1 of definition 3.2.59, there is a reference to “see 6.2.1”, but it would be more precise to refer to 6.2.2.1 (software identification) instead. Clause 6.2.2.1 specifically deals with software identification and is the relevant section, whereas 6.2.1 is a higher-level clause. This appears to be a mis-reference.	Change the reference in Note 1 of 3.2.59 from “see 6.2.1” to “see 6.2.2.1”. This will direct readers to the correct clause about software identification, enhancing clarity and accuracy.	OK
RU-13	–	3.2.8; 3.2.12; 3.2.52 (several definitions)	–	ed	The term “instrument” is used in several definitions without the qualifier “measuring”, e.g. “instrument” instead of “measuring instrument”. For consistency with OIML vocabularies (V1:2013 section 2.09 uses “measuring instrument”), the full term should be used. Using just “instrument” might be interpreted more broadly than intended.	In all definitions and notes where the term “instrument” appears in the context of a measuring instrument, insert “measuring” before “instrument”. For example, in definitions 3.2.8, 3.2.12, 3.2.52, etc., change phrases like “the instrument” to “the measuring instrument.” This ensures terminological consistency across the document.	See response to DE-34.

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RU-05	–	3.3 (Abbreviations) / Content pages	–	ed	The page numbers referenced in the table of contents and introductory sections appear to be incorrect for certain sections. For example, the section on abbreviations and instructions for use of the document is actually on page 19, not page 21 as indicated. This inconsistency could confuse readers navigating the document.	Verify and update all page number references from the “Abbreviations” section onward to reflect the correct page numbers. In the table of contents (and anywhere else page numbers are cited, such as in cross-references), ensure that the page numbers for each clause and annex are accurate.	See response to UK-01.
RU-14	–	4.3	–	ed	In Clause 4.3, the document likely discusses the usage of terms like “shall,” “should,” etc. However, it is noted that no definition or explanation of the term “shall” is provided. Given that “shall” indicates mandatory requirements in OIML documents, an explanation would be useful for readers (especially those drafting Recommendations using this Document).	Add a clarification in Clause 4.3 explaining that “shall” indicates a requirement (i.e., a provision that is mandatory to comply with), as per ISO/IEC Directives or OIML drafting rules. For completeness, it might also mention that “should” indicates a recommendation (advisory) and “may” indicates permission, etc., if not already covered. This will make the usage of these normative terms clear to all users.	See response to UK-15.
RU-15	–	4.4	–	ed	Clause 4.4 states: “It is the objective of this Document to provide the PGs responsible for drawing up OIML Recommendations with a set of requirements...”. However, it omits the fact that Project Groups also use OIML D31 when developing OIML Documents (not just Recommendations). Since D31 itself is an OIML Document and its guidance can apply to drafting other OIML Documents, this clause should acknowledge that.	Modify Clause 4.4 to include OIML Documents. For example: “It is the objective of this Document to provide the Project Groups responsible for drawing up OIML Recommendations and OIML Documents with a set of requirements...”. This small addition reflects actual practice and ensures the scope of D31’s guidance is correctly stated.	See response to UK-16.
RU-18	–	6.2.2.1	Example 1)	ed	In Example 1 of Clause 6.2.2.1, the term “flow computer” is used. Elsewhere in the document (e.g. Annex B), the term “flow meter” is used for what appears to be the same concept. “Flow computer” seems to be a mistake or an outdated term in this context, since we are dealing with measuring instruments (flow meters).	Replace “flow computer” with “flow meter” in Example 1 of 6.2.2.1 to maintain consistency and accuracy of terminology. This aligns with the usage in Annex B and prevents confusion about the device in question.	OK
RU-17	–	6.2.2.1	Last paragraph above examples	ed	There is a typo in Clause 6.2.2.1: the text reads “allow it it to” which is clearly an error (repeated word). This should be a simple correction to improve readability.	Remove the duplicate “it”. Revise the phrase “allow it it to” to “allow it to”.	OK
RU-19	–	6.2.2.1	–	te	Clause 6.2.2.1 deals with software identification. One scenario describes when an instrument or module lacks a display or printer for the identification. The current wording could be clarified. The United Kingdom commented that the text should explicitly refer to the software identification being sent to an associated device, and identify that device properly. As written, it might be slightly ambiguous.	Clarify the last requirement in 6.2.2.1 as follows: “If a measuring instrument or component has neither a display nor a printer, the software identification shall be sent via a communication interface to an associated legally relevant component where it can be displayed or printed.” This is based on UK’s proposed wording and ensures the requirement explicitly mentions software identification and the associated legally relevant component that will show it.	See response to UK-17.

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RU-20	–	6.2.2.2 (Documentation of functions)	–	te	It is unclear how hidden or undocumented legally relevant functions are to be identified or handled. Clause 6.2.2.2 requires documentation of legally relevant functions, but if some functions are hidden or not obvious, this poses a challenge. This is especially pertinent given modern software might have features not directly observable by a user or inspector.	Strengthen Clause 6.2.2.2 to ensure all legally relevant functions are discoverable and documented. For example, add a requirement such as: “It shall be possible to examine and test all legally relevant algorithms and functions (through metrological tests, software tests, or software examination as described in 7.3) to confirm their existence and behavior.” Also, in the documentation requirements, explicitly state: “The documentation shall contain a description of all legally relevant functions (including any hidden or non-user-accessible functions), with their associated algorithms and instructions on how they can be accessed or tested.” This ensures no legally relevant function escapes scrutiny.	See response to UK-18.
RU-22	–	6.2.2.4	Example 1 (I)	ed	There appears to be a corrupted cross-reference in Example 1 (I) of 6.2.2.4. The text shows a sequence “6.3.8.3.36.3.8.3.36.3.10.3” which is clearly incorrect. It seems like multiple clause references ran together (maybe a formatting error). As written, this is not intelligible.	Correct the cross-reference in Example 1 (I). It likely should refer to 6.3.8.3.3 and 6.3.10.3 separately (and perhaps 6.3.8.3.3 is mentioned twice by mistake). For example: “... The means described in 6.3.8.3.3 and 6.3.10.3 guarantee that the legally relevant software can read and display the measurement results before such data are made available to other legally non-relevant software modules.” This aligns with the intended references and resolves the glitch in the text.	6.2.2.4 does not address software separation nor is there an example in that clause. The “glitch in the text” only exists in comment UK-20.
RU-21	–	6.2.2.4	Examples	te	The examples under 6.2.2.4 (which illustrate software separation means) could be improved. In particular, it would be useful to describe how a user or inspector can identify that a measuring instrument implements software separation. Currently, the examples describe technical means, but not how one recognizes an instrument employing those means. This perspective would aid practical enforcement.	Augment one of the examples in 6.2.2.4 to include a note or statement about identifying such an instrument. For instance, add a sentence like: “In practice, a measuring instrument that realizes software separation might be identified by [specific markings, a certificate entry, or a documented description provided with the instrument].” This gives PGs a hint on how to convey the presence of software separation to end-users or authorities. (No specific text was provided by other comments, but the intent is to improve guidance.)	6.2.2.4 does not address software separation means.
RU-23	–	6.2.3.3 & 6.2.2.7	Notes (on audit trail as evidence)	ed	The document contains duplicate notes stating that audit trails provide evidence of interventions. In particular, Clause 6.2.2.7 and Clause 6.2.3.3 apparently both have notes highlighting that an audit trail is a means of providing evidence of interventions. Repeating this note can be considered redundant and might even create a circular reference between clauses.	If the note is identical in both places, keep it in one place and remove it from the other. Alternatively, modify one occurrence to avoid redundancy. For example, in one of the clauses change the phrasing to “see also 6.2.x.x” instead of just “see 6.2.x.x”, to clearly indicate a cross-reference rather than implying the other clause is providing new information. This will avoid confusion and circular references.	See response to DE-08.
RU-24	–	6.2.3.3.1	Second sentence	ed	Clause 6.2.3.3.1 contains the sentence: “If applicable, the source of the modification shall be recorded in the audit trail.”. The phrase “if applicable” is vague in this normative context – it’s unclear who decides applicability or in what cases it would not apply. Additionally, this might actually belong as a guidance note rather than a requirement, since not all modifications have an identifiable source to record.	We suggest two alternatives: (1) Move this sentence to a Guidance paragraph (since it may not be universally enforceable, but is a good practice), or (2) reword “if applicable” to “if possible” to indicate that the source should be recorded whenever it is technically feasible to do so. The first option (moving to guidance) is preferred to keep normative requirements clear-cut. In either case, clarify the intent so that implementers know when this is required.	See response to DE-09.

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RU-25	–	6.2.3.3.1 (bullet points)	–	ed	In the list of bullet points under 6.2.3.3.1 (which presumably enumerates what an audit trail entry should contain), one suggestion from the UK was to include the reference number from the event counter in each audit event. This would improve traceability, as each audit entry could be correlated with a specific increment of the event counter. While not strictly an error, it's an enhancement to consider for completeness of data recorded.	Add an item or note in 6.2.3.3.1 such as: “– the identification (or index) of the event, corresponding to the increment of the event counter.” This ensures that each audit trail record can be cross-referenced with the event counter value at the time of that event. Including the event counter reference number could help in forensic analysis of the audit trail.	Event counters and audit trails are two means of providing evidence of intervention. They are typically not used in conjunction.
RU-26	–	6.2.3.3.2	3rd paragraph	te	Clause 6.2.3.3.2 currently states (in summary) that “it shall not be possible to change or delete the data of the event counters or audit trails... and it shall not be possible to change the audit trail(s) or event counter(s) when the software is updated.” This effectively prohibits adding entries to the audit trail during software updates. Japan has pointed out that such a blanket prohibition is problematic: for a “traced update” (see 6.3.9.4.3), recording the outcome of a software update in the audit trail is actually desirable and may be required. We agree that the requirement should allow adding new entries for updates.	Revise the text of 6.2.3.3.2 to allow audit trail entries for updates. For example, split into two sentences as Japan proposed: – “It shall not be possible to change or delete the data of the event counter(s) or audit trail(s), unless to add new entries or to free up storage capacity (see below).” – “It shall not be possible to otherwise alter the audit trail(s) or the value of the event counter(s); however, recording software update information in the audit trail (as described in 6.3.9.4.3) is permitted.” This wording prevents unauthorized modifications but explicitly permits adding audit entries for software updates.	This should be solved by the change proposed by AU-09.
RU-27	–	6.2.3.4	Documentation (Note)	ed	In the documentation requirements of 6.2.3.4, there is a typo: “conain a list” instead of “contain a list”. This appears in a note or guidance line. It's a minor spelling mistake that should be corrected.	Correct “conain” to “contain” so the phrase reads “contain a list”. This simple fix aligns the text with proper spelling.	See response to CA-04.
RU-28	–	6.2.3.5 (Note 3) and throughout document	Note 3 (National requirements phrasing)	ed	There are multiple phrasings used to refer to national legal requirements – e.g. “national requirements”, “national legislation”, “national jurisdiction”, “national regulation”, “national laws”. This is potentially confusing; it would be better to use consistent terminology when referring to national legal provisions.	Harmonize the terminology for national requirements throughout the document. For example, use a single term such as “national regulations” (as suggested by Germany) uniformly. Replace other variants with this chosen term. Consistency in wording will help avoid any implication that different terms mean different things when they are intended to be the same concept.	See response to DE-14.
RU-30	–	6.2.3.7.1	–	ed	The term “type approval authority” is used in clause 6.2.3.7.1 (and possibly elsewhere) only once, whereas “type evaluation authority” is the term more commonly used in OIML context (especially in D31 and related documents). This single usage of “type approval authority” could be a mistake or inconsistency.	Replace “type approval authority” with “type evaluation authority” in 6.2.3.7.1 (and any other occurrences if present). This aligns with the prevalent terminology (since type evaluation is the process usually discussed, and authorities conducting them are often referred to as type evaluation authorities).	See response to UK-24.

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RU-29	–	6.2.3.7.1	Requirement statement	te	Clause 6.2.3.7.1 includes a requirement that “Functions that are triggered through the protective interface shall be declared and documented.” This phrasing is a bit unclear and possibly redundant. Saying “declared and documented” might imply two separate actions, but in practice everything should be documented. It was noted that “declared” may not add information and could be dropped. Alternatively, we could rephrase for clarity.	Simplify or clarify the requirement. Two options: Remove the word “declared” – so it reads: “Functions that are triggered through the protective interface shall be documented.” (The act of documentation inherently includes declaring what the functions are.) Rephrase the sentence – e.g.: “The documentation shall contain a declaration of all functions that are triggered through the protective interface.” Either change will make the intent clearer: all such functions need to be identified in the documentation. We prefer option 1 for simplicity.	We should use the phrasing proposed in DE-16 for consistency with other documentation requirements.
RU-31	–	6.3.1	Second-to-last line	ed	Similar to an earlier terminology issue, Clause 6.3.1 uses the term “instrument” alone, where it should likely say “measuring instrument”. Maintaining the full term here is important for consistency and clarity, as done in the OIML Vocabularies.	Insert the word “measuring” before “instrument” in the relevant sentence of 6.3.1. For example, if the text says “the instrument shall...”, change it to “the measuring instrument shall...”. This ensures alignment with proper terminology.	Agreed, see response to DE-35.
RU-53	–	6.3.10.3	3rd paragraph	ed	In 6.3.10.3, the text currently says: “All legally relevant software modules shall communicate with other modules or components through a protective interface, see 6.2.3.6.1.” Germany’s convener noted a subtle issue: legally relevant modules can communicate with both other modules and/or components. The current wording “modules or components” might imply one or the other exclusively, but we should make clear it could be either or both.	Revise the phrase to “modules and/or components”. So it would read: “...shall communicate with other modules and/or components through a protective interface...”. This matches similar phrasing elsewhere and covers all scenarios (module-to-module, module-to-component). It’s a minor editorial change that ensures completeness.	No, the text is part of clause 6.3.8.3.3, see response to DE-05.
RU-54	–	6.3.10.3	Example (3rd gray box, Example 1)	te	Example 1 in 6.3.10.3 contains the phrase: “...which is higher than for normal processes...” in reference to assigning a priority level. The term “normal processes” is not very specific – presumably it means processes that are not legally relevant. To avoid ambiguity, the example should clarify this.	Add clarification that “normal” means non-legally relevant in this context. For instance: “A priority level is assigned to the legally relevant function which is higher than that for normal (non-legally relevant) processes.” This explicitly defines “normal processes” as those that are not legally relevant, ensuring readers understand the comparison being made.	This change should be discussed at the meeting.
RU-55	–	6.3.11.4.3	Paragraph under last gray box	ed	The sentence in 6.3.11.4.3 states: “It shall only be possible to resume the download procedure or to show an error.” This sentence is a bit terse and could be interpreted in different ways. Germany found it imprecise and suggested a clearer wording to explain the two allowed outcomes after a failed download.	Rephrase the sentence for clarity: “Only two actions shall be possible: either the user can manually restart (resume) the download process, or the instrument shall display an error message.” This makes it crystal clear that after an interruption, the design permits exactly two possibilities. The wording provided by Germany is essentially as above and should be adopted for precision.	See response to DE-07.
RU-32	–	6.3.2.1	–	ed	In clause 6.3.2.1, there is a minor punctuation issue: a missing comma after the word “seal.” The text likely enumerates conditions or steps (for example, “if a seal is broken then..., if X then..., etc.”) and a comma would improve readability and grammatical correctness.	Add a comma after “seal” in the sentence in 6.3.2.1. For instance, if the sentence is “If a seal is broken the software shall...”, change it to “If a seal is broken, the software shall...”. This is a straightforward editorial fix.	OK. See response to UK-27.

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RU-33	–	6.3.2.2 (Example 2)	–	ed	In Example 2 of 6.3.2.2 (gray box), the phrase “the program stops execution” is used. The suggestion from Germany is that “aborts execution” would be a better wording here. “Stops execution” is not incorrect, but “aborts” more strongly implies an abrupt, intentional termination (which fits an error reaction scenario).	Change “the program stops execution” to “the program aborts execution” in Example 2 of 6.3.2.2. This change in verb conveys a clearer meaning of an immediate termination due to a fault, aligning with typical technical phrasing.	OK
RU-34	–	6.3.3	Title	ed	The title of Clause 6.3.3 uses the term “significant durability error.” However, the body text of 6.3.3 talks about durability errors generally and does not specifically distinguish a subset as “significant”. The word “significant” in the title seems unnecessary and potentially confusing, since no criteria for significance are given here.	Remove the word “significant” from the title of 6.3.3. The title should simply read “Durability error” (or “Durability errors”) to match the content of the clause. This aligns with Japan’s comment that “significant” is not needed in this context.	See response to RU-34.
RU-35	–	6.3.3.1	Note	te	The Note in 6.3.3.1 discusses manufacturer actions regarding significant faults but the phrasing is problematic. It uses the word “choice”, implying the manufacturer may choose not to take action on significant faults. This is concerning because if a significant fault is detected, the manufacturer should not have discretion to ignore it – they should be required to take appropriate action.	Strengthen the requirement and clarify the intent. For example, change the note or requirement to: “Upon detection of a significant fault, the manufacturer shall take appropriate action.” Specifically, replace any language implying optional action (like “choice”) with a clear obligation. If this note was meant as a requirement, possibly reword as: “The manufacturer shall take the appropriate action when a significant fault is detected (for example, triggering an error indication or blocking measurements).” This ensures significant durability errors are always addressed.	The requirement clearly states that, according to D 11, the manufacturer may choose to implement detection features in hardware or software. D 31 should not deviate from the D 11 text.
RU-36	–	6.3.3.2 (Annex B related)	–	te	In the context of durability protection, the current text (as reflected in Annex B) says: “If software is involved in durability protection, it performs [XYZ]...” without mentioning significant fault detection. Poland observed that it should also consider detection of significant faults as part of durability protection. This is logical because software might be involved in detecting significant faults (significant durability errors), not just protecting durability.	Modify the clause (and corresponding Annex B entry) to read: “If software is involved in durability protection or in the detection of significant faults, it performs...”. This addition makes the statement more comprehensive by including the role of software in detecting significant durability faults, which complements the removal of “significant” from the clause title as noted above.	Only Annex B requires an update, the clause itself is already correct.
RU-37	–	6.3.4.1	First paragraph	ed	Clause 6.3.4.1 contains a sentence like: “This may be achieved by the use of a short statement, clearly understood markings, symbols or other indications.” The phrase “or other indications” is vague. It’s not clear what falls under “other indications” distinct from statements, markings, or symbols. This could confuse implementers about acceptable methods.	Clarify what is meant by “other indications”. For example, specify in parentheses what that could include (if known) or rephrase the sentence to avoid an open-ended category. Perhaps: “...symbols, or other equivalent means of indication (e.g. obvious visual cues).” If no specific examples can be given, at least note that “other indications” refers to any method providing a clear and unambiguous indication to the user. This will ensure readers don’t overlook this clause or misinterpret it.	See response to UK-29.

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RU-38	–	6.3.4.1 + 6.3.4.2	–	te	The document assumes that when software algorithms are updated (e.g. improved or corrected over time), they will always function correctly. However, consideration is needed for cases where an updated algorithm might negatively impact the instrument’s legally relevant performance. Additionally, it’s not explicit how updates to algorithms are logged or made apparent to users and authorities. In an era of dynamic or learning algorithms, the requirements should ensure transparency and accountability for software changes.	Introduce a requirement or guidance addressing software algorithm updates. For instance: – Logging: Require that any change to a legally relevant algorithm (through update or machine learning adaptation) is logged (e.g., in an audit trail or change log) and that this log is accessible during verification (perhaps link to 7.3). – Notification: Suggest that manufacturers should document how users are informed that an algorithm has changed (especially if it could affect measurement results). – Mitigation: Add guidance that if an algorithm update could degrade metrological performance, the manufacturer is expected to take action (such as additional testing or notifying authorities). These changes would ensure that dynamic software changes are transparent and that the instrument’s integrity remains under control. (This comment aligns with concerns raised by the UK about algorithm changes and user awareness.)	See response to UK-31.
RU-39	–	6.3.5.1	First sentence	ed	The first sentence of 6.3.5.1 is somewhat redundant or awkwardly phrased. As written, it might repeat information or use more words than needed, possibly saying in two clauses what could be said in one. Germany indicated it could be tightened up.	Streamline the first sentence of 6.3.5.1. For example, Germany proposes: “Each of the operating system requirements in 6.3.5.1 and 6.3.5.2 shall be met by measures on application level, operating system level or a combination of both.” This condensed sentence covers the intent clearly and removes redundancy. Adopt this revised wording to improve clarity and readability.	See response to DE-13.
RU-40	–	6.3.5.3.3	Last sentence	ed	The clause 6.3.5.3.3 ends with: “Bootting via open interfaces shall be prohibited.” Germany noted that “prohibited” might not be the ideal term, since the goal is to ensure it’s impossible to boot via open interfaces at all. Using “disabled” could convey that the interface is non-functional for bootting, which is more precise (you’re not just forbidding it by rule, but technically preventing it).	Change the wording to “Bootting via open interfaces shall be disabled.”. This implies that the instrument’s design disables any attempt to boot from an open (uncontrolled) interface, which is the actual intent. It’s a subtle editorial improvement that aligns wording with technical reality.	See response to DE-02.
RU-41	–	6.3.5.3.5	Documentation requirement	ed	Clause 6.3.5.3.5 says: “The manufacturer shall identify the hardware and software environment that is suitable.” This phrasing stands out as not following the pattern used elsewhere (where documentation clauses typically start with “The documentation shall contain...”). It could be rephrased to align with the agreed style from the last meeting, and to make it clear this identification needs to be in documentation, not just an action by the manufacturer.	Reword the sentence for consistency. For example: “The documentation shall contain the identification of a suitable hardware and software environment for the instrument.”. This way, it’s clear that the manufacturer’s obligation is to include this information in the documentation provided, fitting the template used in similar requirements.	See response to DE-17.

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RU-42	–	6.3.6.3	2nd paragraph (under 1st gray box)	ed	The sentence in 6.3.6.3 goes: “The software that displays, or further processes, the measurement data shall check the authenticity and integrity of the data after having read the data from the storage.” The word “data” is used three times. The third occurrence can be replaced with a pronoun for clarity and conciseness.	Replace the third “data” with “them” (referring back to the measurement data). The sentence would read: “The software that displays or further processes the measurement data shall check the authenticity and integrity of the data after having read them from the storage.”. This avoids repetitive wording.	See response to RU-42 DE-31 .
RU-43	–	6.3.7.3	5th and 6th paragraphs (first paragraph s under gray box)	ed	In 6.3.7.3, there are a couple of paragraphs that refer to “data” in a context where it likely means “measurement data.” Given earlier versions of the document and Annex D still use “measurement data,” it seems these two instances accidentally dropped the word “measurement”. To avoid ambiguity (since “data” could be general), it should explicitly say “measurement data.”	Insert the word “measurement” before “data” in those two paragraphs. Thus, they would read “...the measurement data...” accordingly. This edit clarifies that we are talking about measurement results/data, not any data. It also aligns with terminology elsewhere in the document (which uses “measurement data” as a term of art).	See response to DE-32 RU-43 .
RU-44	–	6.3.7.4	Guidance section	te	The guidance in 6.3.7.4 uses the phrase “Disabling of further measurements” as an action when a certain condition is met. Germany suggests that “blocking further measurements” would be a better phrasing. “Disabling” could be interpreted as deactivating a feature, whereas “blocking” clearly conveys preventing measurements from continuing. This is more descriptive of the actual intended action (stop measurements from being taken).	Change the phrase to “blocking further measurements” in the guidance of 6.3.7.4. For example, if the guidance sentence is “Disabling of further measurements is recommended when X happens,” it should become “Blocking further measurements is recommended when X happens.” This subtle change improves the clarity of the guidance.	See response to DE-04.
RU-45	–	6.3.8.2.1	Example 1)	ed	In Example 1) of 6.3.8.2.1, the phrase “Other, legally non-relevant, device” contains unnecessary commas. The commas around “legally non-relevant” are not needed and their presence is grammatically incorrect, breaking the flow of the phrase.	Remove the comma between “Other” and “legally”. The phrase should read “Other legally non-relevant device” (meaning a device that is not legally relevant). This correction simplifies the text and eliminates the comma splices.	We can put “legally non-relevant” in brackets to highlight that this is an explanation rather than part of the example.
RU-46	–	6.3.8.2.3	Example 2)	ge	Example 2 in 6.3.8.2.3 refers to a “mechanical seal.” Elsewhere, the document (and particularly other updated parts) use the term “hardware seal” instead of mechanical, to distinguish from software/electronic sealing. For consistency and to use the latest terminology, this example should also adopt “hardware seal.”	Change “mechanical seal” to “hardware seal” in Example 2 of 6.3.8.2.3. This matches the terminology changes made in other parts of the document (as noted by Poland’s comments). It ensures readers don’t wonder if there’s a difference between mechanical and hardware seals or why both terms are used.	Agreed. See response to PL-05.
RU-47	–	6.3.8.3.3	Second gray box (Example)	te	The example given in the second gray box of 6.3.8.3.3 is not very informative in its current form. It should demonstrate how priority is managed between legally relevant and non-relevant software, but as written it might be too abstract. Germany recommends rewriting this example to provide more concrete information. A clearer example would improve understanding of the requirement.	Rewrite the example for clarity. For instance, one could say: “The operating system grants priority to the legally relevant software over the legally non-relevant software when accessing shared resources, ensuring that legally relevant processes are always served first.” (Germany’s suggested wording is: “The operating system grants priority to the legally relevant software over the legally non-relevant software when using resources.”) This revised example clearly illustrates the intent of prioritization.	See response to DE-20.

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RU-48	–	6.3.9.1	1st Guidance	ed	In the first guidance paragraph of 6.3.9.1, there is a typo: the phrase “should to decide” appears. This is grammatically incorrect (extra “to”). It should likely be just “should decide”. Poland and Japan both pointed out this error and proposed to fix it.	Remove the extraneous “to”. Change “should to decide” to “should decide”. This correction yields proper English grammar in the guidance sentence.	Agreed.
RU-49	–	6.3.9.3.1	1st paragraph	ed	The paragraph in 6.3.9.3.1 includes a marker “Note:” for “Verified update”. Two issues: (1) By convention, the word “Note” should be in italics to denote an editorial note, and (2) “Verified update” might be capitalized incorrectly (it appears as “Verified Update” in the text, which seems like a typo). This formatting inconsistency should be corrected.	Format “Note:” in italics (i.e., <i>Note:</i>). Also, ensure the phrase following it is correctly capitalized – likely it should be “Verified update” (lowercase “u”) instead of “Verified Update” unless it’s a title. In summary, revise the line to read: “ <i>Note:</i> Verified update”, making “Note” italic and having “update” in lowercase. This aligns with how notes are styled elsewhere.	Agreed. See also response to JP-06. The note has been deleted because of CA-11.
RU-51	–	6.3.9.3.3	First sentence	ge	The first sentence of 6.3.9.3.3 currently refers to “physical or electronic seal.” Recent edits elsewhere in the document have updated terminology to use “hardware seal” instead of physical, and “software seal” instead of electronic (this was done for consistency). To stay consistent, this clause should use the new terms. In fact, Poland and others have recommended changing “electronic seal” to “software seal” and likewise “physical seal” to “hardware seal” throughout.	Update the terminology in 6.3.9.3.3: replace “physical or electronic seal” with “hardware or software seal”. Additionally, if the phrase “electronic seal” alone appears elsewhere in 6.3.9.3.3, change it to “software seal”. This ensures the document consistently distinguishes seals as either hardware (physical, tangible seals) or software (digital sealing mechanisms).	See response to CA-12.
RU-50	–	6.3.9.3.3	Guidance and Certificate markers	ed	In 6.3.9.3.3, certain lines begin with “Guidance:” and “Certificate:” (likely indicating specific guidance and certificate information). These markers should be stylistically consistent with other notes/guidance – typically they are italicized to set them apart as labels. Currently, they may be in normal font, which doesn’t follow the usual convention (similar to “Note:” which is italic).	Italicize the words “Guidance:” and “Certificate:” wherever they appear as labels in clause 6.3.9.3.3. For example, write them as <i>Guidance:</i> and <i>Certificate:</i> (in italics). This will clearly distinguish these as editorial labels, similar to how “Note:” is handled, and improve consistency in the document’s formatting.	See response to JP-07.
RU-52	–	6.3.9.4.3	2nd paragraph under 3rd gray box (and Note)	te	In 6.3.9.4.3 (which deals with “traced updates”), there’s a statement: “The software update is recorded in an audit trail.”. This sounds like a factual statement rather than a requirement. Given the importance of audit trails for software updates, it should be phrased as a requirement (“shall”) to ensure compliance. Additionally, there’s a Note that effectively states a requirement: something like “For each software update, an entry in an audit trail shall be generated.” This note should be integrated into the normative text because it is not just explanatory—it’s prescribing an action.	Change the wording to a clear requirement and merge the note’s content. For example: “The software update procedure shall be recorded by an audit trail. For each software update, an entry in an audit trail shall be generated.” By doing so, we make it explicit that every software update must result in an audit trail entry. This addresses Germany’s observation that the note appears to contain a requirement and should be part of the enforceable text.	The topic will be discussed at the meeting. See response to DE-19.

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RU-56	–	7.1.1 & 7.1.2	(general document ation content)	te	The list of documentation contents in 7.1.1 and 7.1.2 should be exhaustive regarding what information needs to be provided. Two points: It is suggested to explicitly include algorithms in the list of items to be documented. While algorithms might be implied by “functions” or other items, stating them removes doubt. For instruments with remote verification capabilities, the documentation should include information on the range of measurement performance over the operating range, as this is crucial for evaluating remote verification results. In other words, how far the instrument’s performance can be extrapolated under remote test conditions should be documented.	– Add “algorithms” to the documentation requirements. For example, in 7.1.2, if listing what documentation shall contain, include an item like: “– a description of all legally relevant software algorithms,” possibly combined with functions if appropriate. – Add a bullet in 7.1.2 for remote verification (perhaps only required if remote verification is supported by the instrument): “– for instruments capable of remote verification, the documentation shall include the expected measurement performance across the full operating range, to enable evaluation of results obtained remotely.” This addresses the UK’s suggestion to include extrapolated performance ranges for remote verification.	Typically, algorithms do not need to be documented. If risk level II is used, the source code has to be submitted, anyway. In all other cases, a description of the functions should suffice.
RU-57	–	7.1.2	First bullet point, first hyphen	ed	In 7.1.2, many bullet points list items like “List of LR software modules / commands / parameters / ...”. To make it unambiguous that all such items must be listed, adding the word “all” is recommended. For example, “List of all LR software modules...”. This was suggested to ensure the phrasing cannot be read as just an example list.	Prepend “all” in the phrasing of each list item in 7.1.2 where appropriate. E.g., “List of all legally relevant software modules / commands / parameters / durability errors / components...” for the first bullet’s first sub-hyphen, and similarly ensure other bullet points imply completeness. Also verify other lists in Clause 7.1.2 use “all” consistently if they enumerate documentation items.	Agreed, see response to DE-15.
RU-59	–	7.1.2	Specific bullet points (formatting)	ed	There are a couple of minor formatting issues in 7.1.2 where references are cited. For example: “description of all legally relevant functions, see6.2.2.2” and “functions, see6.3.4.2” – here there is a missing space after “see” before the clause number. These appear to be typos (missing space).	Insert a space in these instances. They should read “... see 6.2.2.2” and “... see 6.3.4.2”. Do a find throughout the document for “see<digit>” patterns to catch any similar occurrences and fix them to “see <digit>”.	OK
RU-58	–	7.1.2	Whole clause (order of bullets)	ed	The bullet points in 7.1.2 appear in a somewhat random order. Since they are a collection of documentation requirements drawn from clauses 6.2 and 6.3, it would be more user-friendly if they were ordered in the same sequence as those clauses. That way, one can cross-check the documentation requirements while reading through 6.2/6.3. Currently, it might jump around (e.g., durability errors listed before some general functions, etc.).	Reorder the bullet points in 7.1.2 to follow the order of topics as they appear in clauses 6.2 and 6.3. For example, start with items related to 6.2 (software identification, separation, interfaces) then those related to 6.3 (errors, updates, etc.), in the logical order of the main document. This reordering will make 7.1.2 a more structured summary of documentation needs.	See response to DE-29.

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RU-60	–	7.1.2	3rd from last bullet point, 2nd hyphen	te	The documentation requirement reads (paraphrased): “description of the access rights to the instrument for remote verification and a description how test items can be obtained and made available to relevant authorities depending on national legislation, see 6.3.10.3;”. However, Clause 6.3.10.3 does not actually mention documentation of test items. This cross-reference seems misleading because 6.3.10.3 (dealing with software separation, I believe) doesn’t cover providing test items. There’s a disconnect between 7.1.2 and 6.3.10.3 here.	There are two possible resolutions: Option A: Remove the part “..., see 6.3.10.3” from this bullet in 7.1.2 if 6.3.10.3 indeed has nothing about test items, or adjust the reference to the correct clause if it was meant to point elsewhere. Option B: Alternatively, add content in 6.3.10.3 (or a related clause in 6.3) to address documentation of test items for remote verification, so that the reference becomes valid. For example, include a requirement in 6.3.10.3 that the manufacturer shall provide or identify test items (data sets, etc.) for verifying the instrument, which would then be documented. Given the immediate need, Option A (deleting or correcting the reference) is straightforward unless the project group decides to expand 6.3.10.3. This avoids confusing the readers with an irrelevant reference.	6.3.10.3 addresses remote verification and not software separation. The documentation requirement in question may be found on page 53, see response to DE-22.
RU-61	–	7.2.2	Point 7 (presumably in a list)	ed	In clause 7.2.2, item 7 (which might be a point about verifying instruments with certain features), the text is unclear. Specifically, there’s something about “their unique identification used for remote verification procedure” which is not well explained. Possibly, this point is trying to say that the instrument’s unique ID must be used or referenced in the remote verification process, but as written it’s confusing (“Dash 2, what is their unique identification used for remote verification procedure” was noted by UK).	Clarify the intent of point 7 in 7.2.2. If it’s about identification: for example, “ensure that each device has a unique identification that can be used in the remote verification procedure.” If it’s about referencing a part of the document: add a reference to where in the document this unique ID is defined or required. Essentially, rewrite this sentence to clearly state what the unique identification is and how it is used in remote verification. Without the exact text it’s hard to propose more, but the key is to remove the ambiguity so the reader knows what action or information is expected.	See response to UK-50.
RU-62	–	7.3.1	Table 2 (header or title)	ed	Table 2 in clause 7.3.1 provides “Recommendations for combinations of evaluation (examination level A) and verification (examination level B) methods for various software requirements”. However, it is not immediately clear which parts of the table correspond to type evaluation and which to verification. The table’s purpose might be confusing without context. The UK noted that it needs to be made clear which part of the table is for type evaluation vs verification.	Improve the labeling of Table 2. For example, if Table 2 has columns or sections for exam Level A (type evaluation) and Level B (verification), label them explicitly as such. Possibly add a subtitle or footnote to Table 2: “Note: In this table, ‘examination level A’ corresponds to type evaluation, and ‘examination level B’ corresponds to verification.” Ensure the table’s title or column headers clearly separate the two contexts. This will help the reader use the table correctly.	None of the methods listed in the table address verification of an instrument. “Verification and evaluation methods” is a term referring to procedures of type evaluation, see introduction to clause 7.
RU-63	–	7.3.2.3	–	te	Clause 7.3.2.3 (possibly describing a test or check) raises a question: Will the algorithm need to be checked to ensure it hasn’t been altered (for instance by machine learning)? This concern stems from earlier notes that software might change over time (AI, ML). During verification or inspection, one must consider if the algorithm itself has evolved from its approved state. If the current text doesn’t address this, it might be a gap in the test procedures for software.	Add clarification or a requirement in 7.3.2.3 that addresses algorithm integrity. For example: “The examination shall include a check that the algorithm used in the instrument’s software corresponds to the approved version (i.e., has not been modified beyond allowed self-learning adjustments).” Or “If the software incorporates machine learning or AI that can alter the algorithm, procedures shall be in place to verify that no unauthorized changes to legally relevant algorithms have occurred.” This addition would ensure that remote or periodic verifications consider the possibility of algorithm drift or alteration.	The provided justification does not seem to be linked to the addressed problem, see UK-51. 7.3.2.3 already addresses checks using functional verification rather than software integrity measures.

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RU-64	–	7.3.2.5	Application (or context)	te	Clause 7.3.2.5 mentions an “extended examination intensity” (perhaps a higher level of scrutiny). It is not explained under what conditions this extended intensity is required, leaving the reader guessing. The UK comment essentially asks: Under what circumstances would extended examination intensity be required? This needs clarification so that authorities know when to apply a more rigorous test.	Provide guidance or criteria for applying extended examination intensity. For instance, add a sentence or note: “Extended examination intensity (Level 2) should be applied in cases such as [...examples: when significant software changes have occurred, when remote verification yields borderline results, etc...].” If concrete examples cannot be given, at least state that it’s at the discretion of the verifying authority but give some factors to consider. Including one or two typical scenarios would greatly help interpret this clause.	See response to UK-52RU-64 . No change should be necessary.
RU-65	–	7.3.2.6	Application	te	Similarly, 7.3.2.6 introduces something (perhaps another examination method or level) but doesn’t state when it is to be applied. The UK noted this and asked for circumstances to be described. Without context, implementers might ignore this clause or be unsure when to use it.	Add an explanation in clause 7.3.2.6 about its application. For example: “This procedure is to be applied in situations where [...].” Provide at least one circumstance or trigger. If 7.3.2.6 corresponds to a specific scenario (like alternative evaluation methods), say something like “Apply this procedure when standard testing is not feasible, such as in cases of [...].” The key is to give the reader a hint or example so they understand the intent behind including this clause.	See response to UK-53.
RU-66	–	7.4	–	te	Clause 7.4 deals with “level 2” (perhaps of remote verification or evaluation), but the reader is not given any illustration of when Level 2 will be applied. The UK commented that examples would be helpful. Without examples, this section is theoretical and hard to implement uniformly.	Include a few examples in Clause 7.4 of scenarios that warrant a Level 2 application. For instance: “Level 2 remote verification could be applied in cases such as: (a) when the instrument has a complex AI-based algorithm that requires specialized evaluation, (b) when a standard Level 1 check indicates potential issues, or (c) when mandated by national regulations for certain instrument categories.” Adding such examples (even brief) will guide users on how to use Level 2 appropriately.	See response to UK-54.
RU-67	–	7.5	–	te	Clause 7.5 might be discussing additional requirements if an instrument supports remote verification. The question raised is whether, if the measuring instrument has remote verification, its documentation or testing should include “data training sets.” The phrasing in the UK comment suggests considering data sets used to train any algorithms (possibly relevant if machine learning is used). This is a forward-looking point, acknowledging that if ML is involved, authorities might need those data sets to test the instrument properly.	If applicable, add a requirement or note in 7.5: “For instruments employing remote verification with machine learning or AI components, include or make available relevant training data sets for evaluation by the authority.” This ensures that any data used to train the instrument’s algorithm (which could affect its measurement behavior) can be reviewed or tested. If 7.5 is not the right place, perhaps include in documentation requirements that any ML training data or validation data be described. The main idea is to address this potential need for transparency in AI-driven systems.	See response to UK-55.
RU-68	–	8.1	First sentence	te	The first sentence of 8.1 contains both “In use” and “during operation”. These two phrases mean essentially the same thing in this context. The redundancy could be removed, and it’s noted that throughout the document similar concepts should be described uniformly. It would be preferable to choose one term and stick with it (e.g., use “during operation” consistently).	Harmonize the terminology by using only one phrase. For instance, change the sentence to use “during operation” instead of “in use”, if “during operation” is the preferred term across the document. Do a quick scan for other occurrences of “in use” versus “during operation” and make them consistent (Germany prefers “during operation” as it was used elsewhere). The revised first sentence might read: “During operation, ... (the instrument shall ... etc.).”	See response to DE-23RU-68 .

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RU-69	–	8.1 (and 8.3.2)	4th paragraph (8.1), 4th & last paragraphs (8.3.2)	ed	There are instances in clause 8 (specifically 8.1 and 8.3.2) where the text says “PGs shall...” do something. For example, guidance to Project Groups is written with “shall”. This is confusing, because normative “shall” shouldn’t apply to PGs in a document that is itself guidance for PGs. These should be written as guidance (with “should”) or as notes, not as requirements. Essentially, any instruction to PGs in drafting OIML Recommendations should not be worded with “shall” as that implies a binding requirement in the context of the instrument (which it is not).	Recast these statements as guidance. For 8.1’s case: if a paragraph currently reads “PGs shall ensure X...”, change it to “ <i>Guidance</i> : PGs should ensure X...”. Similarly, in 8.3.2, replace “shall” with “should” and mark the sentences as guidance notes. For example, “PGs should consider ...” etc. This makes it clear those are not requirements on the instrument or manufacturer, but instructions for those drafting related documents.	Agreed. We should use consistent wording throughout the document.
RU-70	–	8.2.2	Point 2	ed	In 8.2.2, point 2 likely contains a reference or instruction that could be improved by linking it to a specific section of the document. The UK commented to “refer to relevant section in the document”. This suggests that point 2 mentions something that has a detailed section elsewhere, but doesn’t currently point the reader to it. By adding a cross-reference, the document becomes more navigable.	Identify what point 2 is talking about (e.g., if it’s about responsibilities, procedures, or definitions), and insert a reference to the clause or section where that is elaborated. For instance, if point 2 says “... shall be done according to the prescribed method,” add “(see Clause X.Y for detailed procedure).” The idea is to not leave the reader wondering where to find more info. Use a parenthetical or a “see Clause ...” to direct the user appropriately.	See response to UK-56. Two additional references will be added.
RU-72	–	8.3.1	1st paragraph	ed	In the first paragraph of 8.3.1 (which introduces remote verification), there are multiple reference markers that appear incorrect. The text lists terms with reference numbers in brackets, but they don’t match the actual reference list numbering. For example, it lists “secure connection [3]”, “verification interface [4]”, “verification algorithm [5]”, and “displayed [11] and logged [2]”, none of which align with the reference numbers they likely intended. This seems to be a known editorial mistake that Japan highlighted, where the reference numbering in that sentence is offset.	Correct each of these reference numbers to the proper ones: – Change “secure connection [3]” to “secure connection [2]”. – Change “verification interface [4]” to “verification interface [3]”. – Change “verification algorithm [5]” to “verification algorithm [4]”. – Change “...displayed [11] and logged [2]” to “...displayed [7] and logged [6]”. These corrections fix the reference errors. After making these changes, double-check with the actual reference list or annex to ensure the bracketed numbers correspond to the correct sources.	OK. See response to JP-10.

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RU-71	–	8.3.1	Figure 2	ed	Figure 2 and its associated text in 8.3.1 have labeling issues. There are two related problems: The diagram uses numeric labels in square brackets (e.g. [3], [4], [5]), which unfortunately conflict with how references are numbered (also in square brackets). This is not a good practice as it can confuse the reader about what [3] refers to (a part of the figure or Reference [3]?). According to the UK, the numbering of items in Figure 2 is inconsistent with the text description. It seems item 3 and 4 might both be referring to the “verification interface,” and something labeled 5 in the text should actually be 4 on the figure. So either the figure’s numbering or the text callouts are misaligned.	For (1), consider using a different notation for figure labels to avoid square brackets – e.g., use circled numbers or just numbers without brackets in the diagram, and refer to them as “(see item 3 in Figure 2)” in text. If possible, use letters or another style for figure callouts. For (2), correct the labeling: ensure that the figure and text agree on which number corresponds to the verification interface and other components. If the paragraph above refers to an element [5] that should actually be [4], fix that reference to [4] and adjust the figure if needed. Also ensure the figure legend or caption clearly distinguishes that these numbers are figure element labels, not literature references.	OK. See response to JP-10.
RU-73	–	8.3.2	Note 2	ed	Note 2 of 8.3.2 currently states something like: “The device to be remotely verified needs to be available and ready.” This wording is somewhat blunt and not very informative. Germany suggested a rephrasing to clarify that the remote verification can only happen when the instrument is online and prepared for it. The note should convey that remote verification is contingent on the device’s availability.	Rewrite Note 2 as proposed by Germany: “The remote verification procedure can only be executed when the device to be remotely verified is available and ready.” This phrasing explicitly ties the execution of remote verification to the state of the device, which is exactly the point of the note but in clearer terms. It’s essentially the same content, just more precise.	See response to DE-21.
RU-74	–	8.3.3.1	–	te	Clause 8.3.3.1 possibly outlines requirements or descriptions for remote verification of certain instruments (like modules or scenarios). The UK raised a question here: Do we need to include the algorithm details? They specifically reference 8.3.3.3.2 sentence 2 in making this comment. It implies that perhaps in the context of remote verification tests (like certain annex examples), algorithms might be mentioned but not detailed. If algorithm details are relevant to reproducing or understanding the test, maybe the document should require their inclusion.	If Clause 8.3.3.1 describes a procedure or requirement and doesn’t mention including algorithmic details (where needed), consider adding a statement to ensure transparency. For instance: “The description of the remote verification test shall include sufficient detail of the algorithm or measurement method used by the instrument, if needed to interpret the results (see 8.3.3.3.2 for context).” This ensures that those performing or witnessing the test understand what algorithm is at work, which can be important especially for complex instruments. If 8.3.3.3.2 already contains such detail, maybe just a cross-reference is needed. But if not, adding it to 8.3.3.1 or 8.3.3.3.2 would be beneficial.	See response to UK-58.

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RU-75	–	8.3.3.3.5	1st paragraph	te	The first paragraph of 8.3.3.3.5, which describes a remote verification test (for example, for a point-to-point speed meter), is very convoluted and not easy to follow. It presently reads like a series of actions but is hard to understand, as noted by Germany. A clearer step-by-step description would help readers (especially those not intimately familiar with the scenario) understand how the test works.	Rewrite the paragraph in a more narrative form. Germany provided a proposed rewrite which greatly clarifies the process. Adopting their proposal, for example: “A test object passes in front of a point-to-point speed meter, traveling through a corridor of known length. At the beginning of the corridor, a start signal is sent to the remote verification unit (simulating a starting signal to the sensor). At the end of the corridor, a stop signal is sent to the remote verification unit. The measurement result is then retrieved from the point-to-point speed meter and compared with a reference value calculated by the remote unit to evaluate the accuracy of the instrument’s measurement algorithm.” This is essentially the content of Germany’s rewrite. It is much clearer about what is being done and why. Replace the original text with this or similar. If this rewrite is accepted, consider adding a cross-reference in Annex F to mention this scenario in any summary of tests.	See response to DE-33.
RU-76	–	Annex A (References)	Reference [12] (WELME C Guide)	ge	In Annex A, Reference [12] is WELMEC Guide 7.2 (2015 or 2023 edition). Poland has pointed out that a new edition of WELMEC 7.2 (2025) is available. Using the most up-to-date reference is important for relevance, especially since the document is under revision now.	Update Reference [12] in Annex A to cite “WELMEC Guide 7.2:2025” instead of the older edition. Ensure the title and reference details match the latest version (assumed published in 2025). If 2025 is not yet officially published but imminent, note it as forthcoming. Keeping references current will improve the document’s usefulness and longevity.	Agreed. See response to RU-06.
RU-81	–	Annex B (General)	–	ed	In Annex B, one of the texts in a box reads: “... is detected an appropriate reaction is given.” This phrasing is awkward and possibly missing punctuation. Germany notes that it should be “appropriate response” instead of “reaction”, and a comma is needed. Also, “appropriate response” aligns with wording used in similar contexts in the main clauses.	Modify the text to: “...is detected, an appropriate response is given.” That is, insert a comma after “detected” and use “response” in place of “reaction”. Additionally, ensure that throughout Annex B (and the document) the term “appropriate response” is used consistently where relevant (instead of “reaction”) for uniformity.	The comma will be added. Annex B does not use the term “reaction”. See response to DE-03.
RU-82	–	Annex F (Sealing)	–	ed	Annex F deals with sealing. It has been observed that the word “seal” is used far more frequently than “sealing” in the document, and using “sealing” as a noun in the title/text of Annex F is a bit inconsistent. For better consistency and readability, it’s preferable to use “seal” (noun) instead of “sealing” when referring to the device/means itself.	Change occurrences of “sealing” in Annex F to “seal” where appropriate. For example, if Annex F’s title is “Sealing”, consider renaming it to “Seal” or “Seals” (though that might be stylistically odd for a title – if needed, “Sealing” can remain in the title but within text use “seal”). In the content, phrases like “apply a sealing” should become “apply a seal”, etc. This will align the language with common usage in the rest of D31 and related documents.	Annex F does not deal with sealing. Annex if is the index of the document. Whereas “sealing” is a procedure, the “seal” is a physical protection means in one location. The usage of both terms appears to be consistent so far. Since “seal” is the more frequently used term, we should list it in the index instead of “sealing”, see response to DE-36.
RU-01	–	Foreword (5th paragraph)	–	ed	The Foreword contains placeholder text referencing “OIML D 31, edition 2023 (E)” and will require updating before publication. This text should be revised to reflect the final document reference and development details once the revision is finalized.	Update the Foreword’s publication reference and edition/year to the final approved version (e.g. “This publication – OIML D 31:20XX (E) – was developed by...” and ensure the Foreword is finalized with the correct publication information.	Just as during previous revisions, all placeholders will be replaced prior to publication of the FDD.

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RU-02	–	General (no specific clause)	–	ge	The term “parameters” is used extensively throughout the document, but it is not defined in the Terminology section. A clear definition would improve clarity, as readers need to understand what is meant by “parameters” in the context of software-controlled measuring instruments.	Include a definition of “parameters” in the terms and definitions. For example: “Parameter – a numerical or other measurable factor that forms one of a set defining a system or that sets conditions of its operation.” This will align with common usage and ensure consistency of understanding.	See response to UK-02.
RU-04	–	General (Scope/Introduction)	–	ge	The draft makes only a brief mention of “artificial intelligence” (AI) in passing, without providing any definition or guidance on its use. Given the increasing importance of AI and machine learning in measurement systems, the document should address how AI processes are to be handled in the context of legal metrology.	Add a definition for “artificial intelligence” in the terminology (Clause 3) and consider including a dedicated sub-section (or guidance note) on AI within the requirements. This section could outline expectations or requirements for AI-driven features (e.g. machine learning algorithms) in measuring instruments, emphasizing how they should be validated or controlled since they can alter software behavior over time. This addition will ensure the document remains up-to-date with emerging technologies.	This questions was previously discussed in TC5/SC2/p4. The conclusion was to provide general requirements for dynamic modules which may encompass AI. See response to UK-04.
RU-03	–	General (Terminology/Clause 3)	–	ge	The concept of “legally relevant software” is introduced, but the document should be more specific about which parts or functions of an instrument this term encompasses. Without clarification, there may be ambiguity about the boundaries of legally relevant versus non-relevant functions.	Clarify the definition or description of legally relevant software to specify the areas or functions of the measuring instrument to which it applies. For example, explicitly state that it refers to software modules or functions that directly affect metrological characteristics and are under legal control. This added detail will help Technical Committees understand the scope of requirements for legally relevant software.	See response to UK-03. It is important to note that D31 is currently not intended to be used for software examination. It serves as a template for Recommendations. Recommendations usually supply additional specifics.
PL-03	1	6.1	Second bullet point	ed		We propose to change “select Recommendation” to “selected Recommendation”.	The adjective should be “select” not “selected” as this refers to a limited number rather than a selection.
RU-16	1	6.1	Second bullet point	ed	In the second bullet point of Clause 6.1, the phrase “select Recommendation” is used, which appears to be a grammatical error. It likely intended to say “selected Recommendation” (referring to a chosen OIML Recommendation). This minor typo could confuse the reader about the meaning of the sentence.	Change “select Recommendation” to “selected Recommendation” to correct the grammar. This will clarify that the bullet is talking about a specific Recommendation that has been selected.	See response to PL-03.
CA-02	1	6.2.2.6		ed	6.2.2.6 Timestamps Note: Timestamps (see 3.2.67) are typically used to record when a particular event occurred, or as measurement result data to specify when a measurement took place. "Measurement result data"- only one instance of this term in the document Minor adjustment for consistency to change to “measurement result relevant data”.	6.2.2.6 Timestamps Note: Timestamps (see 3.2.67) are typically used to record when a particular event occurred, or as measurement result relevant data to specify when a measurement took place.	You are correct. This appears to be an inadvertent omission.

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CA-05	1	6.2.3.2		ge	Ref to section 6.2.3.3.2; 6.2.3.4; 6.2.3.5; 6.2.3.6 6.3.6.3 6.2.3.2 - Audit trail and event counters, Parameters, time stamps, Measurement data- all these shall be secured and protected against accidental, unintentional or intentional changes. But for LR software D31 6.2.3.2 states: it shall be secured and protected against unintentional and intentional changes and protected against accidental changes . 6.2.3.2 should be modified to be consistent with other sections.	General comment throughout document about what should be “secured and protect” and what is “protected” only. Can measurement data and stored data be protected	Measurement data and stored data can be protected, e.g. by means of physical seals or checksums in combination with a checking facility, which can provide evidence of intervention. Securing implies some form of authorization check, e.g., a query for a password (see 3.2.54). The differentiation between “secured and protected” vs. “protected” is intentional. Typically, accidental changes occur randomly and there is no possibility to secure software etc. against such random changes.
CA-03	1	6.2.3.3.2	9th	ge	"if an audit trail or event counter has no more capacity, an appropriate response is required". Is this supposed to be considered as a requirement? It's not a "shall" statement. It's on the checklist on page 81 of the draft as a requirement.	"if an audit trail or event counter has no more capacity, an appropriate response shall be required".	“is required” is an accepted “equivalent expression” for “shall” according to Annex B of B 6-2. “Shall be required” would sound odd. Therefore, the current phrase should be kept.
PL-04	1	6.2.3.4	Second Documentation	ed		We propose to change “conain a list” to “contain a list”.	OK
CA-04	1	6.2.3.4	5	ed	Documentation: The documentation shall conain a list of those parameters that have to be set by the user. The sentence contains a spelling mistake in the word “contain” RP	Documentation: The documentation shall contain a list of those parameters that have to be set by the user.	The typo will be corrected.
CA-06	1	6.3.1		ed	General Note: The requirements given in 6.3 are based on typical technical solutions in information technology, although they might not be common in all areas of legal applications. When following these requirements, technical solutions are possible that show the same degree of security and conformity to a type as instruments that are not software-controlled. Does this have to be a note? In 6.1 (2nd bullet), this information is not a note. Also see section 6.3.6.1 where information on a section is not added as a note.	Either should be a <i>Note</i> everywhere or renamed <i>Guidance</i> .	You are correct. Since Guidance is intended to give instructions to PGs, w We should make turn these into this a note .

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CA-07	1	6.3.2.1 6.3.3.1		ed	<p>Requirement is within guidance (...the manufacturer of the instrument shall be...). Should it be stated as a "may" requirement and the guidance for PGs?</p> <p>Refer to 6.3.9.4.2. They have guidance followed by the requirement if conditions of the guidance apply.</p> <p>Separate the requirement from the Guidance</p>	<p>6.3.2.1 General Guidance: PGs may require functions to detect significant defects, noting that in case of a software implemented seal a checking facility is required to check for changes, see 6.3.2.2.</p> <p>In this case, the manufacturer of the instrument shall be required to design checking facilities into the software modules or hardware components or provide means by which the hardware components can be supported by the software modules of the instrument.</p>	Agreed. The requirement should not be part of the guidance.
CA-08	1	6.3.6.2.2		ed	<p>" Measurement data stored in a component to construct measurement result can be deleted if the next software module or component has checked and stated a proper completion of all expected actions"</p> <p>Should be annotated to a "NOTE"</p>	<p>Note: " Measurement data stored in a component to construct measurement result can be deleted if the next software module or component has checked and stated a proper completion of all expected actions"</p>	<p>We should discuss if this is a note rather than a requirement. Proposal: "Measurement data stored in a component to construct the measurement result may be deleted if the next software module or component has checked and stated a proper completion of all expected actions."</p>
CA-09	1	6.3.6.2.3		ed	<p>6.3.6.2.3 Deletion of the stored measurement result The measurement result may be deleted if</p> <ul style="list-style-type: none"> • the transaction is settled, or • these data are printed by a printing device subject to legal control. <p>After the minimum storage period for results of a remote verification has elapsed and if the storage device has no more capacity, the oldest entry of records may be deleted.</p> <p>Guidance: PGs should decide how long records that store results of a remote verification shall be kept. Note: Other general national regulations (e.g., for tax purposes) may contain strict limitations for the deletion of stored measurement data or results. Guidance: PGs may define alternative conditions for data deletion</p> <p>Recommend to Move from 6.3.6.2.3 to 6.3.10.2.3</p>	<p>6.3.10.2.3 Result of the remote verification The result of the remote verification shall contain, at least, a unique ID (at least identifying the verification authority) and the date of the verification.</p> <p>Guidance: PGs should decide which additional data shall be stored. Note 1: The recognition of a verification mark and the data it contains are subject to national requirements. Note 2: National regulations may allow or disallow remote verification. If remote verification is not allowed, the manufacturer shall disable the remote verification functionality</p> <p>After the minimum storage period for results of a remote verification has elapsed and if the storage device has no more capacity, the oldest entry of records may be deleted.</p>	<p>Since the sentence is specific to remote verification it appears to fit much better in 6.3.10. However, since since securing and protection of the result of a remote verification are addressed in 6.3.10.3 rather than 6.3.10.2.3 (functional requirements) we should move it there.</p>

Country Code ¹	Part	Clause/ Sub clause	Paragraph / Figure/ Table/	Type of comment ²	COMMENTS	PROPOSED CHANGE	OBSERVATIONS OF THE CONVENER/PG on each comment submitted
CA-10	1	6.3.8.2.3		ge	<p>If legally relevant components have limited functionality and limited securing/protection capabilities (e.g., if a legally relevant operating system on a component cannot be configured according to 6.3.5), they shall have limited access to the measurement data, i.e., they shall only indicate the measurement data without modification</p> <p>Should the bold section be "measurement result relevant data" because we are talking about the limited access. That is further justified by the next part of the sentence.</p>	This finding depends on the outcome of measurement data, measurement result relevant data etc. See 6.2.2.6 comment	Agreed.
PL-05	1	6.3.8.2.3	Example 2)	ge		We propose to change “mechanical seal” to “hardware seal”	Agreed, we should correct this last occurrence of the term as agreed during the previous PG meeting.
PL-06	1	6.3.9.1	Guidance	ed		We propose to change “should to decide” to “should decide”.	Agreed.
CA-11	1	6.3.9.3.1 Note 6.3.9.4.1		ge	<p>Any reason why this is not a definition for verified update?</p> <p>6.3.9.3.1 General Note: Verified Update is the procedure of changing software in a measuring instrument or component after which the subsequent verification is necessary.</p> <p>Same comment for traced update note- Why can this not be in a definition?</p> <p>6.3.9.4.1 General Note: Traced update is the procedure of changing software in a measuring instrument or component after which a subsequent verification is not necessary. This means the traced update shall not affect existing parameters.</p>	<p>Should be in the definitions section instead for Verified update and traced update instead.</p> <p>Verified Update procedure of changing software in a measuring instrument or component after which the subsequent verification is necessary.</p> <p>Traced update procedure of changing software in a measuring instrument or component after which a subsequent verification is not necessary. This means the traced update shall not affect existing parameters.</p>	Both statements currently serve as introductory text to 6.3.9.3 and 6.3.9.4 respectively. We should discuss if replacing them with definitions would be more helpful. We cannot include the second sentence in the definition for traced update. Instead, we will add the following to functional requirements (6.3.9.4.2): “A traced update shall not affect existing parameters.” Agreed.

Country Code ¹	Part	Clause/ Sub clause	Paragraph / Figure/ Table/	Type of comment ²	COMMENTS	PROPOSED CHANGE	OBSERVATIONS OF THE CONVENER/PG on each comment submitted
CA-12	1	6.3.9.3.3		ge	6.3.9.3.3 Securing and protection Access to the verified update shall be protected by a physical or electronic seal that must be broken for the update to take effect. In section 6.2.3.1, we introduced "sealing by hardware or software". For consistency we should be using hardware or software seal in this requirement.	6.3.9.3.3 Securing and protection Access to the verified update shall be protected by hardware or software seals that must be broken for the update to take effect.	Agreed. We seem to have missed that occurrence of the term during drafting of 1CD.
PL-07	1	6.3.9.3.3	First sentence	ge		We propose to change “physical or electronic seal” to “hardware or software seal”	See response to CA-12.
PL-01	1	6.3.9.3.3.	First sentence	ge		We propose to change “electronic seal” to “software seal” as was changed in other parts of the document.	See response to CA-12.
CA-13	1	6.3.9.4.3	8	ge	The software update is recorded in an audit trail. This is a statement. The software update is recorded in an audit trail. (shouldn't this be a requirement? It is not in the evaluation section yet). This is followed by the requirements for an audit trail.	The software update shall be recorded in an audit trail.	Agreed, but we should discuss the change at the meeting. Solved by changes made in response to DE-19.
CA-14	1	6.3.9.4.3		ge	If the audit trail has no more capacity, an appropriate response is required. Should this be a statement? They have included a "should" statement in the guidance. The above statement should be a requirement. If it's “required” is a requirement and needs a shall.	If the audit trail has no more capacity, an appropriate response shall be required.	See response to CA-03.
CA-15	1	7.1.2		ed	description of all legally relevant functions, see 6.2.2.2; Add space in between see and 6.2.2.2	description of all legally relevant functions, see 6.2.2.2;	The missing space will be inserted.

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CA-16	1	7.2.2		ed	<p>6.3.9.1 for Certificate: The components that comprise the complete legally relevant hardware shall be stated in the certificate.</p> <p>Add the sentence from 6.3.91 to 7.2.2 to include requirements that the list of components that comprise the complete legally relevant hardware shall be stated in the certificate.</p>	<p>Add the sentence from 6.3.91 to 7.2.2 to include requirements that the list of components that comprise the complete legally relevant hardware shall be stated in the certificate.</p> <p>7.2.2 Information to be included in the certificate The following information shall be included in the certificate: <ul style="list-style-type: none"> list of components that comprise the complete legally relevant hardware </p>	Agreed. We should add all relevant certificate information in 7.2.2.
RU-77	1	Annex B (Table) – Clause 6.2.2.1 entry	–	ed	In Annex B’s table, for the entry corresponding to clause 6.2.2.1, there is a phrase “shall beare unambiguously” which is incorrect. It seems like a typo where “be” and “are” got combined. The intended meaning is likely to ensure something “are unambiguously [identified]”. This needs fixing.	Change “shall beare unambiguously” to “shall be unambiguously [identified/labeled]”. Possibly the text was meant to say “shall bear unambiguously” (as in “shall bear an unambiguous identification”), which still reads oddly. If that’s the case, rephrase entirely (e.g., “...such data shall be presented in an unambiguous manner.”). But to keep it simple, make it “shall be unambiguously ...” (complete the sentence appropriately). This resolves the typo.	Annex B is the test report and should contain statements rather than requirements. Therefore, the correct phrase would be, “...instrument or component are unambiguously, uniquely and correctly identified.” See response to PL-07.
RU-78	1	Annex B (Table) – Clause 6.2.2.1 entry	–	ed	Another issue in Annex B’s entry for 6.2.2.1: the phrase “printer or the identification is sent” is missing a comma and perhaps a word. It likely tries to say if there’s no printer, the identification is sent somewhere. Without proper punctuation, it reads incorrectly.	Insert a comma after “printer” so it reads: “...printer, the identification is sent...”. This small punctuation insertion makes it clear we are moving to a new clause in the sentence. The full sentence should then match the corrected version of clause 6.2.2.1 addressed in the main text (ensuring consistency between main text and annex).	Agreed. See response to PL-09.
RU-80	1	Annex B (Table) – Clause 6.3.6.3 entry	–	ed	In Annex B’s table entry for clause 6.3.6.3, the text says “if a seal is broken:” without specifying the type of seal. Given that elsewhere we’ve clarified seals as hardware vs software, and since a broken seal here presumably means a physical one, it’s better to explicitly say “hardware seal”.	Change “if a seal is broken” to “if a hardware seal is broken” in the Annex B table entry for 6.3.6.3. This matches the new terminology introduced (to differentiate from a software seal condition, if any such exists). It’s a minor edit but improves clarity.	Agreed.
RU-79	1	Annex B (Table) – Clause reference before 6.2.3.3.2	–	ed	In Annex B’s table, there is an entry whose clause reference is shown as “0” – likely a mistake – where it should reference 6.2.3.3.1. Poland noted a line where the clause was listed as “0” above an entry for 6.2.3.3.2. This appears to be a formatting or editing error in the annex table.	Change the clause number “0” to the correct clause number, which contextually should be “6.2.3.3.1”. Double-check the annex table around that area to ensure all clause references align with actual clauses in the main text (no placeholder zeros or missing numbers).	Agreed. See also response to PL-10.
UK-05	3	3.2.12 note 2		tech	How can the parameters be sealed and protected against intentional changes when the software is dynamic and may change overtime through machine learning or AI as per 3.2.16 note 1.		Note 2 refers to clause 6.2.3.4 which provides the answer directly below the requirement in an example. Any parameter change would be logged in an audit trail. Is additional information needed?
UK-08	3	3.2.29		ed	There is no definition of legal control.		According to BIML, we should refrain from defining generally applicable terms in OIML publications.

Country Code ¹	Part	Clause/ Sub clause	Paragraph / Figure/ Table/	Type of comment ²	COMMENTS	PROPOSED CHANGE	OBSERVATIONS OF THE CONVENER/PG on each comment submitted
UK-07	3	3.2.29 note 2		ed	A list of the relevant recommendations would be useful here		Since PGs will use D 31 to draft their Recommendations, we cannot know which ones will contain relevant definitions and applications.
UK-06	3	3.2.31		tech	For legally relevant software-how can this be under legal control if as per 3.2.16 states the dynamic software may change over time through machine learning or AI?		The current interpretation of the group is as follows: The legally relevant dynamic module is controlled by (a large set of) parameters that change over time. These changes are recorded, while the software itself, i.e., the learning algorithm and linear algebra of the neural network, remains unchanged. A comprehensive example is given in clause 6.2.3.4.
UK-09	3	3.2.34		ed	Suggest removing experimentally. Needs to be aligned more with the definition of 3.2.41	Process of obtaining one or more quantity values attributed to a measurand that can provide traceability and be attributed to any other relevant quantity.	Unfortunately, 3.2.34 is a definition from the VIM and should not be modified unless absolutely necessary.
UK-10	3	3.2.34		tech	Do we need a definition of what is meant by a quantity?		Interested readers will find all necessary information in VIM. We should refrain from copying all definitions to D31, especially when they are not software-related.
UK-11	3	3.2.53		tech	Sealing protects against <i>unauthorised</i> modification	Addition of unauthorised.	3.2.53 is a V1 definition. Modification of the definition was discussed at the PG meeting in March 2025 (see comment CA-01 on 1CD). The conclusion was to retain the V1 definition.
UK-12	3	3.2.65 note		tech	The note in annex C discusses measurement related terms, but the definition is for clarification of what a storage device is, annex 3 does not add any clarity to this.	Remove note and add specifics on what a storage device is (for instance are we considering remote storage such as the cloud as a storage device?)	The note address the usage of the term “measurement result”. We can add a separate note on possible implementations of storage devices. This should be discussed. Proposal: internal or external device used for storing measurement data... Agreed at the meeting.
UK-13	3	3.2.71		tech	Universal service would benefit from a note providing a few examples, as per 3.2.71	Add examples	We should discuss if we want to add examples in a note. Proposal: Example below the definition 3.2.71: An electricity meter without a display communicates over a network with tablet that is configured by software to act as the indication device. Agreed.

Country Code ¹	Part	Clause/ Sub clause	Paragraph / Figure/ Table/	Type of comment ²	COMMENTS	PROPOSED CHANGE	OBSERVATIONS OF THE CONVENER/PG on each comment submitted
UK-14	3	3.2.73		tech	As you have added the definition of verification, we will need the definition of calibration	Add definition of calibration to include remote, same for verification	See response to RU-07
UK-15	4	4.3		ed	Definition required for what shall means		Normative language is already defined in B 6-2, Annex B.
UK-16	4	4.4		ed	“It is the objective of this Document to provide the PGs responsible for drawing up OIML Recommendations with a set of requirements...”	PGs also develop OIML Documents using information from D31. Suggest adding “and OIML Documents”	Agreed.
UK-17	6	6.2.2.1	3	tech	If a measuring instrument or component has neither display nor printer, the identification shall be sent via a communication interface in order to be displayed or printed on another legally relevant component.	If a measuring instrument or component has neither display nor printer, the <i>software</i> identification shall be sent via a communication interface in order to be displayed or printed on the <i>associated</i> legally relevant component.	So far, the PG has not seen the need to be more specific regarding the “other” legally relevant device. Using “associated” may actually introduce additional ambiguity. We should discuss this. We should use the same term “software identification” throughout the document. This will help make a distinction with other terms such as “device identification”. The adjective “associated” will not be added.
UK-18	6	6.2.2.2 documentat ion		tech	How would hidden or undocumented legally relevant functions be identified?	It shall be possible to examine <i>all</i> algorithms and functions either by metrological tests, software tests or software examination (as described in 7.3). Documentation shall contain all legally relevant functions including all associated algorithms and functions and how to access them.	We typically do not require algorithm descriptions for risk level I. We can add the requirement regarding how to access them, “Documentation shall contain all legally relevant functions and describe how to access them.”
UK-20	6	6.2.2.4	Example 1(I)	ed	The means described in 6.3.8.3.3 guarantee that the legally relevant software can read and display the measurement results before such data are made available to other legally non-relevant software modules	The means described in 6.3.8.3.36.3.8.3.36.3.10.3 guarantee that the legally relevant software can read and display the measurement results before such data are made available to other legally non-relevant software modules (as per comments from marked up document)	The proposed text already appears to be implemented in 1CD.
UK-19	6	6.2.2.4	Examples	tech	It would be useful to describe how the user would identify a measuring instrument that realises software separation		Presumably, 6.2.2.5 is meant. WELMEC and other RMOs do not have such a transparency requirement. Clause 6.3.8.3 already ensures that the user is protected against any inadmissible influence from legally non-relevant software.
UK-22	6	6.2.3.3.10	Table 2	ed	Functional requirements	Change to 6.2.3.3.1	OK
UK-21	6	6.2.3.3.1bullet points		ed	Consider the addition of the reference number from the event counter.		If we were to provide a reference to clause 3 here, we would need to implement this for all terms, which would render the text very cluttered.

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UK-23	6	6.2.3.4	Documentation note	ed	Change “conain” to “contain”		OK
UK-25	6	6.2.3.7.1		ge	Will there be a list of documented functions that are acceptable for transparency?		Such a list cannot be provided in D31 since the contents would depend on the type of measuring instrument.
UK-24	6	6.2.3.7.2, 6.3.8.2.1, 7.1.2, 6.2.3.7.1.		ed	“type approval authority” is used once. In contrast, “type evaluation authority” is more commonly used.	Replace “type approval authority” with “type evaluation authority” in clause 6.2.3.7.1.	Agreed.
UK-26	6	6.3	Table2	Ed	Configurations	Change font	OK
UK-40	6	6.3.10	general	tech	Include a description or example of how a verifier can access the software		During the previous revision, SG2 intentionally decided not to impose any restrictions or requirements on verification software as this is out of scope of D 31..
UK-41	6	6.3.10.2	table	ed	Do we need this title in the table?	remove	The title is needed to allow readers to distinguish between 6.3.10.1 and 6.3.10.2.1 which both have the same title.
UK-42	6	6.3.10.2.1	note		As this is new to everyone it would benefit from an exemplar description		An example may be found immediately below the note. We should discuss if the example needs to be extended. <u>Proposal:</u> The instrument engages with a verifier in a software remote attestation protocol. The instrument receives a random challenge from the verifier, calculates a checksum of the executable code (including the software module for data transmission) concatenated with the challenge, and presents the result. The verifier that has access to a corresponding rainbow table then checks the outcome of the computation.
UK-43	6	6.3.10.2.1	Example 1(II)	ed	Move to 6.3.10		The example describes an implementation of the requirement stated immediately above. Moving it to 6.3.10 would mean losing that connection.

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UK-45	6	6.3.10.2.2	1 st para	tech	How will items be uniquely identified- more information required, particularly for remote/ verification purposes		At the meeting, we should discuss if we can provide some generic examples. The proponent is kindly asked to make a more detailed proposal. At the moment, the PG is not aware of any suitable examples.
UK-44	6	6.3.10.2.2	Note	ed	Would examples be better put into an annex?		Examples were intentionally placed in clause 8.3 since they may be copied to a Recommendation. Annexes simply intend to support the use of the document or (in the case of Annex B) may become an additional part of a Recommendation.
UK-46	6	6.3.10.3	1 st sentence	ed	There is not a reference in 6.2.3.7 that interfaces for remote verification shall be protected.	Include interfaces for remote verification into 6.2.3.7	Remote verification is already covered in clause 6.3.10.3. We should amend the text to highlight that interface protection in general is addressed in 6.2.3.7: “Interfaces for remote verification shall be protected. <i>Note:</i> General guidance on interface protection may be found in 6.2.3.7.”
UK-27	6	6.3.2.1		ed	Comma after seal		Agreed. This would improve readability.
UK-28	6	6.3.3.1	Note	tech	The note used the word choice so it infers the manufacturer will knowingly not take action on significant faults	The manufacturer shall take the appropriate action on identification of the detection of	See response to RU-35.
UK-29	6	6.3.4.1	P1	tech	This may be achieved by the use of a short statement, clearly understood markings, symbols or other indications.	Clarify what is meant by “or other indications”	The phrase is intended to give manufacturers the option of using similar forms of indication. We should change the text to “...or similar indications”.

Country Code ¹	Part	Clause/ Sub clause	Paragraph / Figure/ Table/	Type of comment ²	COMMENTS	PROPOSED CHANGE	OBSERVATIONS OF THE CONVENOR/PG on each comment submitted
UK-31	6	6.3.4.1+6.3.4.2		tech	There is the assumption that the algorithm will always be right, consideration needs to be made on the manufacturers response to updated algorithms that negatively impact legally relevant software of the instrument		Agreed, we could add a cautionary note to that affect. The note should be discussed at the meeting. <u>New requirement: A learning facility shall not lead to a violation of the MPE.</u> <u>Proposal: “Note: It is assumed that any learning facility will not lead to a violation of the MPE.”</u> <u>Addition to 6.2.2.2 “Measures shall be taken to minimize the risk of violating the MPE if a learning facility is used for dynamic modules of legally relevant software.”</u>
UK-30	6	6.3.4.1+6.3.4.2	P2	tech	how and where will updates to the instruments algorithm be logged and found, what action will be taken to ensure that the users of the instrument know that is has changed?		D31 interprets changes to a dynamic module (6.3.4.1) as parameter changes, whereas legally relevant operating system updates (6.3.4.2) are considered software changes. Such changes are typically logged in an audit trail see 6.2.3.4 and 6.3.9 respectively.
UK-34	6	6.3.5.3.5	document ation	tech	The manufacturer shall identify the hardware and software environment that is suitable.	At this is the requirements of the environment and constraints for operation, consider The manufacturer shall <i>specify</i> the hardware and software environment that is suitable.	We should discuss the correct phrasing at the meeting. <u>See response to DE-17.</u>
UK-33	6	6.3.5.3.5	5(I)(II)	tech	Universal device- can there be a specific example either here or in the definition.		At the meeting, we should discuss if additional examples need to be added to the definition. <u>Solved by changes resulting from UK-13.</u>
UK-35	6	6.3.5.3.5	certificate	tech	Minimum resources and a suitable software configuration management	Details of the minimum resources and suitable software configuration management system (e.g., processor, memory, specific communication, version of operating system, configuration management of dynamic modules of legally relevant software, etc.) required for the correct functioning of the legally relevant software shall be declared by the manufacturer and stated in the certificate.	The proposed text was stems almost word for word from D31:2023. This text was discussed and replaced by SG1 when drafting 1WD.

Country Code ¹	Part	Clause/ Sub clause	Paragraph / Figure/ Table/	Type of comment ²	COMMENTS	PROPOSED CHANGE	OBSERVATIONS OF THE CONVENER/PG on each comment submitted
UK-37	6	6.3.6.3	example	tech	Clarification or definition required on what intermediate measurement data is.		<p>We should discuss if we need to be more specific in this clause. We should delete the term “intermediate” altogether. In 6.3.6.3 we will use “measurement process data”, instead. -In 6.3.8.3.3. we will use “This does not preclude legally relevant software modules from showing measurement process data.” Clause 7.3.2.4: “From this variable, the processed value is read by another subroutine and so forth until the completed measurement result is output to the display.All variables that are used for buffering measurement data and all subroutines processing and transporting these data can be found in the source code.” 8.3.3.3.4: “Simulating a digital sensor and sending measurement process data to the digital data processing unit and retrieving the measurement result to evaluate the accuracy of the measurement algorithms in the digital data processing unit.” Checklist entry for 6.3.6.3. needs to be updated.</p>
UK-38	6	6.3.7.3	P2	tech	Raised risk levels might require application of cryptographic methods.	Raised risk levels should require application of cryptographic methods.	<p>Using “should” would turn this statement into a requirement. This should be discussed at the meeting. New proposal: Guidance: PGs may require a raised risk level when considering a publicly accessible open network. Raised risk levels may require application of cryptographic methods</p> <p>Means shall be provided whereby cryptographic keys used by cryptographic methods can only be input or read if a seal is broken. 6.3.6.3 will be modified accordingly.</p>

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UK-39	6	6.3.8.2	Table 2	Ed		change to 6.3.8 Specification and separation of legally relevant components and software modules	6.3.8 is not separately listed in Table 2 as requirements are given in 6.3.8.2 and 6.3.8.3 respectively.
UK-47	7	7.1.1+7.1.2	P1	tech	Include algorithms		Algorithms are typically only documented for risk level II.
UK-48	7	7.1.2		Tech	For remote verification purposes, include the extrapolated range of measurement performance across the operational range of the measuring instrument under evaluation and test.		We can only list items in 7.1.2 that are required elsewhere in the document. We should discuss if we need to add a clause on the extrapolated range of measurement performance to 6.3.10. The proponent is kindly asked to provide a more detailed comment for 2CD.
UK-50	7	7.2.2	Point 7	ed	Dash 2, what is their unique identification used for remote verification procedure		We should discuss at the meeting if we want to provide an example for such an identifier. See response to UK-45.
UK-49	7	7.3.1	Table 2	ed	It needs to be made clear which is for type evaluation and verification	Recommendations for combinations of evaluation (examination level A) and verification (examination level B) methods for the various software requirements	See response to RU-62.
UK-51	7	7.3.2.3		tech	Description: will the algorithm need to be checked to ensure that it hasn't been altered? Or any changes made through machine learning?		7.3.2.3 addresses algorithm checking by means of functional testing. If used on a modified instrument it would already cover the potential implications of an altered algorithm
UK-52	7	7.3.2.5	Application	tech	Under what circumstances would extended examination intensity be required?		The answer should be given by Table 2, where CIWT is listed as a verification method for Examination level B. The link between risk level and extended examination level is given in clause 7.4.
UK-53	7	7.3.2.6	application	tech	Under what circumstances is this to be applied, as this would help the reader.		The application scenario for 7.3.2.6 is already described under "Application". Is there any information missing in this context?
UK-54	7	7.4	P2	Tech	The reader needs to understand when level 2 will be applied, a few examples would be good here.		As stated in the paragraph, PGs shall decide if the extended examination level is warranted. We should turn the corresponding sentence into Guidance to clarify this.
UK-55	7	7.5			If the measuring instrument has remote verification, include data training sets?		7.5 addresses tests on the instrument to be certified, which should already be fully trained. Therefore, no training datasets would be needed.

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UK-56	8	8.2.2	Point 2	ed	refer to relevant section in the document		We can add references for parameters-software identification and evidence of intervention.
UK-57	8	8.3.1	Figure 2	ed	Isn't 3 and 4 the verification interface (in the test and figure) the same according to figure 2?also 5 according to the paragraph above incorrectly labelled on figure and should be 4		OK. See response to JP-10.
UK-58	8	8.3.3.1		Tech	Do we need to include the algorithm details? (see 8.3.3.3.2 sentence 2)		The algorithm details are typically unknown to the verification official during on-site verification. There appears to be no need for additional information for remote verification.
CA-01	Annex A			ed	[3] OIML D 11:2013 General requirements for measuring instruments – Environmental conditions Currently D13 is posted for 2CD comments and voting. Depending on outcome and the outcome of the 1CD comment and voting for D31 it may be updated before D31. Update reference if that happens.	[3] OIML D 11:20XX General requirements for measuring instruments – Environmental conditions	OK. We will update the reference if a new D11 is published prior to publication of D31 2CD.
PL-02	Annex A		Reference [12]	ge		We propose to change reference to the newest WELMEC Guide 7.2. (reference is to WG 2023, WG 2025 is available).	Agreed. See response to RU-06.
CZ-06	Annex B	“The following requirements were verified”	3 rd and 7 th item	ed	Compare the 3 rd item “software protection” and the 7 th item “software – securing and protection”. So the “software protection” is there twice. I propose to delete “software protection”.	So items in “The following requirements were verified” will be: <ul style="list-style-type: none"> • software identification; • correctness of algorithms and functions; • software protection; • prevention of misuse; • indications; • information for verification; • software – securing and protection; • audit trails and event counters; • data storage; data transmission.	Agreed.
PL-08	Annex B	Table	Clause 6.2.2.1	ed		We propose to change “shall be unambiguously” to “are unambiguously”.	Agreed. The Annex should contain statements rather than requirements.
PL-09	Annex B	Table	Clause 6.2.2.1	ed		We propose to change “printer or the identification is sent” to “printer, the identification is sent”.	Agreed. The text should be in line with clause 6.2.2.1.
PL-23	Annex B	Table	Clause 6.3.10.1	ed		We propose to change “6.3.12.2 to and 6.3.12.3 are met” to “6.3.10.2 to and 6.3.10.3 are met”	The cross-references will be corrected.
PL-11	Annex B	Table	Clause 6.3.3.2	ed		We propose to change “If software is involved in durability protection, it performs” to “If software is involved in durability protection or the detection of significant faults”.	Agreed. The table should reflect the text of the clause.
PL-12	Annex B	Table	Clause 6.3.6.3	ed		We propose to change “if a seal is broken: to “if a hardware seal is broken”	OK

Country Code ¹	Part	Clause/ Sub clause	Paragraph / Figure/ Table/	Type of comment ²	COMMENTS	PROPOSED CHANGE	OBSERVATIONS OF THE CONVENER/PG on each comment submitted
PL-13	Annex B	Table	Clause 6.3.6.3	ed	This part about locally stored intermediate measurement data is in the Guidance and Example not requirement	We propose to delete “Intermediate measurement data are always stored locally” from table	Agreed.
PL-16	Annex B	Table	Clause 6.3.8.2.3	ed		We propose to change “limited securing/protection” to “limited securing/protection capabilities”.	Agreed. The text should use the same language as im 6.3.8.2.3.
PL-17	Annex B	Table	Clause 6.3.8.3.2	ed		We propose to change “non legally relevant software” to “legally non-relevant software”	OK. We should use the same term throughout the document.
PL-19	Annex B	Table	Clause 6.3.9.3.3	ed		We propose to change “Access to the verified update is secured” to “Access to the verified update is protected by a hardware or software seal that must be broken for the update to take effect.”	Agreed. The text should use the same language as im 6.3.9.3.3.
PL-20	Annex B	Table	Clause 6.3.9.4.3	ed		We propose to change “measuring functions is” to “measuring functions are”.	Agreed. We should also correct a similar phrase in Annex B clause 6.3.4.2.
PL-21	Annex B	Table	Clause 6.3.9.4.3	ed		We propose to change “It is only be possible” to “It is only possible”	Agreed. “Be” should have been deleted.
PL-10	Annex B	Table	Clause above 6.2.3.3.2	ed		We propose to change clause from “0” to “6.2.3.3.1”.	Agreed. The “0” should be deleted.
PL-22	Annex B	Table	Clause 6.3.9.4.3	ed		We propose to add “The software update is recorded in an audit trail.”	At the moment, 6.3.9.4.3 makes a statement on using an audit trail rather than imposing a requirement. We should discuss this. If we turn this into a requirement, Annex B should be amended as suggested. Proposal for 6.3.9.4.3: “The software update shall be recorded in an audit trail.” Annex B will be updated accordingly.
PL-14	Annex B	Table	Clause 6.3.6.3	ed		We propose to add “Software modules that prepare data for storing or that check data after reading are part of the legally relevant software”.	The quoted text from 6.3.6.3 is not a requirement and should not be listed in Annex B.
PL-15	Annex B	Table	Clause 6.3.8.2.3	ed		We propose to change “, then these pairing parameters are secured and protected” to “then these pairing parameters are legally relevant and are secured and protected,”	The statement that pairing parameters are legally relevant is not a requirement and does not need to be repeated in Annex B.
CZ-07	Annex D	Table	1 st and 2 nd row	ed	Due to the insertion of a new article 4.3, the numbering needs to be changed.	Change “Clause” 4.3. to 4.4	The guidance referred to in both rows may indeed be found in clause 4.3.
CZ-08	Annex D	Table	3 rd and 4 th row	ed	Due to the insertion of a new article 4.3, the numbering needs to be changed.	Change “Clause” 4.4. to 4.5	There appears to be a misunderstanding. The clean version of 1CD does not contain a clause 4.5.
PL-26	Annex D	Table PG actions and decisions	0	ed		We propose to change clause “0” to “6.2.3.3.1”.	The broken cross-reference will be fixed.

Country Code ¹	Part	Clause/ Sub clause	Paragraph / Figure/ Table/	Type of comment ²	COMMENTS	PROPOSED CHANGE	OBSERVATIONS OF THE CONVENER/PG on each comment submitted
PL-27	Annex D	Table PG actions and decisions	6.3.3.2	ed		We propose to change “should to prescribe” to “should prescribe”.	Agreed.
PL-24	Annex D	Table PG actions and decisions	4.3	ed		We propose to change clause “4.3” to “4.4”.	In fact, there are two guidance statements in 4.3 and two guidance statements in 4.4. Therefore, no change is needed.
PL-25	Annex D	Table PG actions and decisions	4.4	ed		We propose to change clause “4.4” to “4.5”.	In fact, there are two guidance statements in 4.3 and two guidance statements in 4.4. Therefore, no change is needed.
UK-01	Content pages				Abbreviations, instructions doe use of these documents... is on p 19 not p21	From abbreviations on p19 onwards update all page numbers to the correct numbers	The page numbers always refer to the clean version of the document. Some discrepancies may occur in the marke-up version. The table of contents will be updated prior to publication of 2CD.