

### 57 CIML Addendum 14.2.1

2022-07-04

## Agenda item 14.2.1

Project proposal for the revision of OIML D 11:2013 General requirements for measuring instruments - Environmental conditions

OIML		Proposal for a new project				
		Within:	TC	5	SC	1
			15/06/	2022		
Proposer(s) (Add line if required):         Name: Adnan Rashid         OIML TC 5/SC1 Secretariat    Country: Canada			Organisat Canada	ion:	Measure	ement
Proposed convener(s)*:	L		<u>.</u>			
Name: Adnan Rashid	Country: Canada		Organisation: Measurer Canada		ement	
Type of proposed publication:	□ New		🛛 Revise	d		
$\Box$ Recommendation $\Box$	Document 🗆 Ba	sic		oulary	🗆 Gu	ide
Title of proposed publication:						
D 11 General requirements for meas	suring instruments – enviror	nmental co	onditions			
Terms of reference of the project, in B 6-1, 6.2:	cluding detailed time frame	in accorda	ance with th	ne provisio	ons specif	ied in
A periodic review of D 11:2013 was conducted in accordance with OIML B 6-1:2019, 6.12 and resulted in a proposal to revise D 11 being approved by the OIML-CS Management Committee (17 Yes, 0 No, 0 Abstain). Information regarding the periodic review, including the comments from members of TC 5/SC 1 and the proposal from the OIML-CS Management Committee Ad-hoc Group for periodic reviews, is provided in Annex A.						
In addition to the comments received of the present status of the standard revision. D 11 will be revised to ad Project Group members.	d from members of TC 5/SC <i>ds referred to in OIML D i</i> dress these identified conce	1, an OIM 1:2013 w erns, plus a	1L expert re ill also be a any others t	eport, E 5: considerec hat may b	2015 <i>Ove</i> 1 as part o be raised b	rview of the by the
Within six months of CIML project Project Group members.	approval, a 1WD revision of	of D 11 wi	ill be distrib	outed for c	omments	from
On the basis of comments received, discuss and address comments durin	meetings (combination of v ng 2023.	virtual and	in-person)	will be sc	heduled t	0
A First CD (1CD) revision of D 11	is targeted for distribution t	o the Proje	ect Group n	nembers ir	n 2024.	
A Final Draft revision of D 11 is ex	pected to be submitted to th	e CIML fo	or approval	in Octobe	er 2025.	
Why should the OIML develop this	publication?					
This Document advises the OIM prescription of requirements and the into account the operational and environments and environments and environments and environments advises the operational and environments and environments account the operational and environments and environments and environments and environments and environments and environments account the operational and environments and environments and environments account the operational and environments account the operational account account account the operational account accoun	L Technical Committees, e selection of the appropriate vironmental factors governing	Subcomm e tests for ng the use	ittees and measuring i of these ins	Project ( nstrument struments.	Groups of ts, while t	n the aking
The periodic review exercise for the current version of D 11 (2013) clearly indicated that this Documer requires a revision to ensure it references the most current environmental conditions and international standards.				iment tional		

Countries/Economies known to, or intending to apply this publication, if applicable:

The new edition of the Document will be used by OIML Technical Committees, Subcommittees and Project Groups to prescribe the requirements and the selection of appropriate tests for OIML Recommendations. These Recommendations are used by OIML members when applying controls to measuring instruments, and they are also a core feature of the OIML-CS.

Relevant associated OIML publications:

OIML Recommendations use D 11 as a guide for developing relevant requirements for environmental conditions (see above).

List of appropriate liaisons and their work related to this proposed project (include supporting documentation as necessary and reference it here):

IEC and ISO.

\* As the CIML Member(s) of the Country(ies) holding the convenership of this project, I/we recognise the importance of TC/SC/PG secretariat/convenership work and will make available the resources to ensure the work on the publication is completed in a timely and professional manner in accordance with the provisions in OIML B 6-1 and the detailed time frame as part of this proposal.

Signature(s):	

Allan,

Diane

Digitally signed by Allan, Diane Date: 2022.07.01 17:18:50 -04'00'

#### Annex A

- A.1 Consultation responses from TC 5/SC 1 members
- A.2 Proposal from the OIML-CS Management Committee Ad-hoc group for periodic reviews

#### A.1 Consultation responses from TC 5/SC 1 members

## Result of online consultation – periodic review

OIML D 11:2013 General requirements for measuring instruments -Environmental conditions

TC 5/SC 1/p 0 Deadline: 2021-11-19 Status: Closed

Country	Opinion	Comments
AUSTRALIA	REVISE	Yes
AUSTRIA*	UPDATE	Yes
BRAZIL	REVISE	Yes
CANADA	UPDATE	Yes
FRANCE	UPDATE	Yes
GERMANY	UPDATE	Yes
IRAN	REVISE	Yes
JAPAN	RECONFIRM	No
KOREA (R.)	UPDATE	Yes
NETHERLANDS	UPDATE	Yes
SLOVENIA	UPDATE	Yes
UNITED KINGDOM	UPDATE	Yes
UNITED STATES	REVISE	Yes

\* O-member

#### Summary of P-member responses

Update:	7	
Revise:	4	
Reconfirm:	1	
Withdraw:	0	

Date: 2021-11-24

Document:

Project:

Country	Opinion	Comments	Response
Austria	Update	Update chapter "8.4.2.6 VLF and LF disturbances on mains power lines" of D11 with respect to the current status of the IEC EN 61000-4-19 standard	
Australia	Revise	<ol> <li>OIML D 11 is a document that is fundamental to all OIML Recommendations and will be ten years old in 2023. It therefore requires technical review and consideration and should be reviewed on a regular basis.</li> <li>OIML D 11 references IEC documents that have been updated in the last ten years, and a review of the updated IEC documents and an understanding of the changes made and how they apply to various electrical disturbance tests is required as part of the review of D 11.</li> <li>Specific tests having been identified as needing review include: load dump test (there have been concerns with Table 41), clarifying the application of damp heat (cyclic, condensing) test, etc.</li> </ol>	
		Update to AU comments 2021-11-11	
		We thank the TC 5/SC 1 Convenor for the extended timeframe for the submission of survey responses.	
		We fully agree with and support the US submission dated 2021-10-29.	
		We agree with the need to amend OIML D 11 with respect to updated IEC standards. However, amending references to IEC standards within OIML D 11 is not a trivial or editorial task. It requires technical review of the updated IEC standard and consideration of potential impacts on the manner in which OIML D 11 provides guidance on the application of the test procedures, equipment, severity levels and acceptance criteria for legal metrology purposes.	
		For example, the voltage dips and interrupts standard (IEC 61000-4-11) was updated in 2020 and explicitly states that it includes "significant technical amendments" from the 2004 edition. The impact of these amendments in referencing the 2020 edition of IEC 61000-4-11 in OIML D 11 should be considered by a TC 5/SC 1 project group.	
		This rationale was accepted as part of the recent Update of OIML R 60. That is, amending references to updated IEC standards was a technical matter for a TC 9/SC project group tasked with <i>revising</i> OIML R 60, not the OIML-CS Working Group tasked with <i>updating</i> the Recommendation.	
		We strongly support the option to <b><u>REVISE</u></b> OIML D 11 as part of a TC 5/SC 1 project group.	

Date: 2021-11-24

Document:

Project:

Country	Opinion	Comments	Response
Brazil	Revise	The document need to be updated according new versions of all EMC standards. Even some testing procedures briefs of tables 18 to 40 may need to be updated accordingly.	
		On the other hand, at least the following issues need to be discussed for review:	
		<ol> <li>The additional guidance for battery powered instruments (pag.29) need to be improved because, although, it is specified to use the most severe level of testing, many dispute continue appearing. It is especially critical when selecting the internal resistance of disturbance generator (which the at last define disturbance's energy), because the ISO 7637 standards left such specification too ambiguous.</li> </ol>	
		2. Additional issues about tests on environment E3 are still unsolved or unclear, the TC5/SC1 needs addressing it clearly.	
		<ol> <li>Need to review criteria NSFa and NSFd in table 5 because in some tests were defined NSFa for integrating instruments when actually it should be NSFd. For example, for ESD it appears "NSFa (1)" and "NSFd (2)".</li> </ol>	
		4. Need to discuss if DC powered instruments with a single AC/DC converter shall be consider as AC powered instruments.	
		5. Because DC power networks are becoming popular, defining it clearly may be need; for instance, suppose an instrument supplied by a photovoltaic (PV) system, for such instrument (which is not installed in an industrial environment), do apply DC mains voltage variation, Ripple and DC dips tests?	
		6. In table 23 the test level indexes are wrong. The actual indexes are 2 and 3 according to IEC 61000-4-11 instead 1 and 2.	
		7. Discuss if it is necessary to apply lower test levels below the specified test level for Surge and ESD tests. This doubt was recently risen because the surge immunity standard stablish to test all lower levels including the specified test level (see IEC 61000-4-5:2014 page 35). Although it could be obvious that lower levels have to be tested, because in many OIML recommendations just the specified tests level results appear to be filled in the format test report, TC/SC may be interpreting wrongly that the lower levels do not need to be tested.	

Date: 2021-11-24

Document:

Project:

Country	Opinion	Comments	Response
Canada	Update	There are a number areas of D11 that are either unclear or outdated.	
		Some of the requirements for EMC should be reviewed especially in regards to current sources of EMI such as cell phones and other radio devices.	
		Some of the reference IEC documents have already been updated and this should also be reflected in D11.	
		The information in expert report E 5 :2015 should be considered in updating D11.	
France	Update	It seems appropriate to update the document to study if it is relevant to include the new versions of standards, for example the standards	
		- 60068-2-11 :2021 for the table 14 dealing with the salt mist	
		- 60068-2-78 :2013 for the table 8 dealing with the damp heat, steady-state (non-condensing)	
		It could be a mean to study concerns expressed by other members or identified in the expert report E5:2015.	
		Moreover, it could be a mean to correct mistakes for example in the French version	
		- P45 : 6800-3-4 shall be replaced by 60068-3-4	
		- P51 : [11] shall be replaced by [7].	
Germany	Update	The specific technical requirements should be checked and possibly adjusted, as many of the referenced standards (especially in the area of EMC) have been revised.	
Iran	Revise	In according to "OIML E 5:2015 (E): Overview of the present status of the standards referred to in OIML D 11:2013 General requirements for measuring instruments – Environmental conditions", OIML D 11 needs to be revised in order to update referred standards.	
Japan	Reconfirm		
Korea (R.)	Update	- After reviewing Expert report E 5:2015, we consider it is necessary to update the D11:2013 document reflecting the revision of IEC standards such as EMC and IP Code. And we submit an opinion of 'update' as the related content is not a "significant technical change".	
		- In addition, we propose to review and update the following(in the box) in relation to <b>14. Battery and non-mains power supply related performance tests</b> of OIML D11:2013.	
		14.1 Low voltage of internal battery	

			Date: 2021-11-24	Document:		Project:
Country	Opinion	Comments			Res	oonse
		<ul> <li>As written in "Test procedure", when using an altenative power suinternal battery, the internal impedance of the specified type of batter the paragraph below states that the alternative power supply shall be current.</li> <li>Because it can be confusing, it needs to be clarified(e.g. the alternat of delivering sufficient current → the alternative power supply shall current as the specifications of the specified type of battery).</li> <li><b>14.2 Power from external 12 V and 24 V road vehicle batteries</b> <ul> <li>As in the above(14.1), when using an altenative power supply sour batteries, the internal impedance of the specified type of battery shall no reference to simulation of the internal impedance.</li> <li>It need to add the reference to simulation of the internal impedance the specifications of the specified type of battery.</li> </ul> </li> </ul>	upply source instead of the erry shall be simulated. Howeve e capable of delivering sufficient tive power supply shall be cap be capable of delivering ident ce instead of the road vehicle all be simulated. However, the e or delivering identical curren	rer, ent able cal re is t as		
Netherlands	Update	The document D11 is important for all other Recommendations bein be kept up-to-date and to be made robust for the upcoming decade. Some aspects of environment, particularly those related to EMC and rapidly evolving in the modern world. While we lack a comprehensiv frequencies and disturbance sources from which measuring instrum should be a general appreciation for the growing number of (radio) of for how this affects the typical EMC environment. In addition, references to various IEC standards need to be updated. the separate document 'E5', which was created with the express pur international standards referenced in D11, should be considered in t We believe that changes needed to D11 could be sufficiently minor t project.	g developed, and it deserves to conducted interference, coul e overview of any and all ents need to be protected, the devices ubiquitously in use, an The current and future form of pose to keep track of updates his matter.	co d be ere d of in		

Date: 2021-11-24	Document:	Project:
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Country	Opinion	Comments	Response
Slovenia	Update	We consider that it is necessary to update the D11:2013 document, especially in a relation to revised referenced standards. In addition and if applicable, we would like to check requirements for the operation of instrument's display under rated operating condition.	
United Kingdom	Update	<ol> <li>The UK's proposal is to update the OIML D 11 for the following key reasons:</li> <li>OIML D11 is important for most Recommendations being developed, in particualr for the OIML Recommendations for <i>Automatic weighing instruments</i> and for <i>Water Meters</i>, some of which are currently undergoing revison under the UK convenership. Hence it is crucial to ensure that D 11 is kept up-to-date to meet the requirements of these new OIML Recommendations.</li> <li>Since the last revision of D 11 in 2013, requirements related to EMC have changed and the growth of mobile (radio) devices in use increases the interference frequencies and disturbance sources to which measuring instruments need to be protected from. OIML D 11 should be updated to identify all these interference sources and solutions provided.</li> <li>Specific performance tests having been identified as needing review to include damp heat, load dump test and voltage variation tests. In addition, references to various IEC standards need to be updated.</li> <li>We believe that changes needed to D11 could be sufficiently minor to be covered in an update only project.</li> </ol>	
United States	Revise	<ul> <li>Submitting toward the end of the submission period, we see that only a few countries (P-members) have submitted the opinion of revise. We strongly believe, however, that REVISE is the correct course of action for D11 and this project group.</li> <li><u>This is the submission from Australia:</u> <ol> <li>OIML D 11 is a document that is fundamental to all OIML Recommendations and will be ten years old in 2023. It therefore requires technical review and consideration and should be reviewed on a regular basis.</li> </ol> </li> </ul>	

			Date: 2021-11-24	Document:	Project:
Country	Opinion	Comments		Re	sponse
		2. OIML D 11 references IEC documents that have been updat review of the updated IEC documents and an understanding of t apply to various electrical disturbance tests is required as part o	ed in the last ten years, and a he changes made and how the f the review of D 11.	≥y	
		3. Specific tests having been identified as needing review inclubeen concerns with Table 41), clarifying the application of damp	ide: load dump test (there hav heat (cyclic, condensing) test	e . etc.	
		We agree with all of these comments made by Australia.			
		** I have used and been involved with D11 for 20 years. I was heav project group that worked on D11 during the last revision cycle that dated 2013. I was also directly involved in reviewing all of the D11 to recent revision cycle of R117 (as PG Convener). The changes that <b>no</b> 'current' and 'correct' are much more intensive and involved that th envisioned under the quite-new 'update' process. 'Update' is not the	ily involved with the efforts of ended with the current editio esting procedures during the r ow need to be made to make I e type of changes that are e right answer.	the n nost D11	
		** D11 is a very important document for <u>all</u> of the Recommendation OIML. D11 deserves the benefit of a full PG review and a full revision	ns and <u>all of</u> technical work i on process.	n	

# A.2 Proposal from the OIML-CS Management Committee Ad-hoc group for periodic reviews

OIML-CS Management Committee

Ad-hoc group for periodic reviews

OIML publication:	D 11:2013 General requirements for measuring instruments - Environmental conditions
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Name	Preferred option	Comments
Member 1	Reconfirm □ Revise ⊠ Update □ Withdraw □	<ol> <li>OIML D 11 is a document that is fundamental to all OIML Recommendations and will be ten years old in 2023. It therefore requires technical review and consideration and should be reviewed on a regular basis.</li> <li>OIML D 11 references numerous IEC documents that have been updated in the last ten years, and a review of the updated IEC documents and an understanding of the changes made and how they apply to various electrical disturbance tests is required as part of the review of D 11.</li> <li>Many of the issues identified as part of the TC/SC survey are technical or non-trivial in nature and require consideration as part of a revision of OIML D 11 by a TC 5/SC 1 Project Group.</li> </ol>
Member 2	Reconfirm □ Revise ⊠ Update □ Withdraw □	Even with the majority of the votes received having indicated that an update of the document is sufficient it is felt by this member of this committee that a revision is necessary. Considering the level of importance, the age and the amount of changes required it is felt a revision is the best course of action.
Member 3	Reconfirm □ Revise ⊠ Update □ Withdraw □	So far, the D11 has been 9 years old. The IEC documents as some references in OIML D11 introduced that have been updated, the technical requirements of D11 should be updated.
Member 4	Reconfirm □ Revise ⊠ Update □ Withdraw □	The document is nearly 10 years old and as commented by some countries in the meantime significant changes in the corresponding standards have taken place. Moreover, it seems that some updates actually might mean revisions.
Member 5	Reconfirm □ Revise ⊠ Update □ Withdraw □	We believe that REVISION is the correct course of action for D11, as it is a very important document.

Member 6	Reconfirm □ Revise ⊠ Update □ Withdraw □	We have reviewed the D11 periodic review submissions from [Members 1, 2 and 3]. All reviewers have recommended a revision for D 11, and we agree with these recommendations and the reasons provided. 
		We strongly believe that REVISE is the correct course of action for D 11 and this project group.
		<ol> <li>OIML D 11 is a document that is fundamental to all OIML Recommendations and will be ten years old in 2023. It therefore requires technical review and consideration and should be reviewed on a regular basis.</li> <li>OIML D 11 references IEC documents that have been updated in the last ten years, and a review of the updated IEC documents and an understanding of the changes made and how they apply to various electrical disturbance tests is required as part of the review of D 11.</li> <li>Specific tests having been identified as needing review include: load dump test (there have been concerns with Table 41), clarifying the application of damp heat (cyclic, condensing) test, etc.</li> </ol>
		I have personally used and been involved with D 11 for 20 years. I was heavily involved with the efforts of the project group that worked on D11 during the last revision cycle that ended with the current D11 edition dated 2013. I was also directly involved in reviewing all of the D11 testing procedures during the most recent revision cycle of R 117 (as the R 117 PG Convener). The changes that now need to be made to make D 11 'current' and 'correct' are much more technical and involved than the type of changes that are envisioned under the quite-new 'update' process. 'Update' is not the right answer.
		** D 11 is a very important document for all of the Recommendations and all of the technical work in OIML. D 11 deserves the benefit of a full PG review and a full revision process.