

Additional Meeting Document 53-CIML-AMD-05

2018-08-23

Agenda item 11.1

OIML Certification System (OIML-CS)

Report by the OIML-CS Management Committee Chairperson

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1. Report of the OIML Certification System (OIML-CS) Management Committee Chairperson

1.1 Activities of the OIML-CS Management Committee, Review Committee and MC Working Groups (including the Maintenance Group)

1.1.1 Meetings

The first OIML-CS Management Committee (MC) meeting was held on 21-22 March 2018 in Sydney, Australia. The meeting was chaired by Cock Oosterman (MC Chairperson) and was attended by 41 participants. All 21 of the voting members were represented, either at the meeting or by proxy. Representatives from ILAC, IAF, IEC, CECIP, CECOD, SIM and WELMEC were also present at the meeting as observers.

Key items discussed at the meeting were:

- Transition arrangements, including transition periods from Scheme B to Scheme A
- Use of "old" test data for issuing OIML-CS Certificates
- Approval of experts
- Application of ISO/IEC 17065 for the competence of OIML Issuing Authorities
- Improvements to the OIML-CS documentation
- Inclusion of additional categories of measuring instrument and their respective OIML Recommendations in the OIML-CS
- OIML Recommendations to have separate type evaluation report and test report formats
- Comparison table ("Gap analysis") to be developed for revised OIML Recommendations

The MC has made a number of recommendations to the CIML for approval as outlined in Section 2 of this report.

A meeting of the Review Committee (RC) was held in conjunction with the MC meeting and took place on 20 March 2018. The meeting was chaired by Harry Stolz (RC Chairperson) and was attended by eight of the eleven RC members. Key items discussed at the meeting were:

- Membership, Terms of Reference and Rules of Procedure
- Voting rules
- Operation of the RC
- Information exchange on the reviews of applications
- Proposals for changes/improvements to the OIML-CS documentation



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1.1.2 MC Working Groups

At its second meeting in June 2017, the provisional Management Committee established a Maintenance Group (which is effectively a permanent Working Group) which is responsible for the maintenance and revision of the OIML-CS documentation (B 18, OD-01, OD-02 and PD-01 to PD-08).

A meeting of the Maintenance Group (MG) was held in conjunction with the MC meeting and took place on 20 March 2018. The meeting was chaired by Bill Loizides (MG Chairperson) and was attended by 15 participants. Key items discussed at the meeting were:

- Conditions on the approval of experts
- Transition periods from Scheme B to Scheme A
- Use of 'old' test data
- Use/application of ISO/IEC 17065
- Modular approach
- Review of recommendations from the Review Committee meeting

At its first meeting the MC established a further two Working Groups:

- 1. R 60 Working Group responsible for developing a comparison table ("gap analysis") between R 60:2017 and R 60:2000
- 2. 17065 Working Group responsible for reviewing the application of ISO/IEC 17065 and identification of possible alternative routes for OIML IAs to demonstrate competence

1.1.3 Changes to OIML-CS Documentation

1.1.3.1 B 18 Framework for the OIML Certification System (OIML-CS)

The MG developed a Draft revision of B 18 to implement the decisions taken at its meeting in March 2018. The MG presented the Draft revision of B 18 to the MC for an electronic vote. 100 % of the responses were in favour so the Draft revision of B 18 was accepted by the MC in accordance with the voting rules specified in subclause 11.4.3 of B 18.

The Final Draft revision of B 18 has therefore been submitted for approval at the CIML meeting under agenda item 11.2.1. Key changes that have been implemented in the Final Draft revision are:

- inclusion of an acknowledgement to the IEC for allowing use of their intellectual property,
- clarification of representation on the MC, including identification of the "MC Member" from
 a country that is eligible to vote, and the inclusion of observers from countries that have
 expressed a clear intention to participate in the OIML-CS,
- improvement to the wording regarding the inclusion of revised editions of OIML Recommendations in the OIML-CS, and



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 clarification that when there is an OIML IA under Scheme A the OIML Member State does not need to designate a Utilizer where the particular category of measuring instrument is not regulated in their country.

The MC recommends that the CIML approve the Final Draft revision of B 18.

1.1.3.2 Operational Documents (OD-01 and OD-02)

The MG is developing a revision of OD-01 *Management Committee* to implement the decisions taken at the first MC meeting and to reflect the experience that has been gained from using the document since the launch of the OIML-CS. Key changes that are being implemented in OD-01 are:

- clarification of representation on the MC, including identification of the "MC Member" from a country that is eligible to vote and the inclusion of observers from countries that have expressed a clear intention to participate in the OIML-CS,
- clarification that RC members can contribute to a recommendation on an application from their country but they cannot contribute to a recommendation on an application in which they have participated in the assessment team as an expert,
- documenting the MG as a permanent Working Group,
- including the concept of proxies for RC meetings, and
- removal of the requirement for Legal Metrology Experts to have assessment experience.

A revision of OD-02 *Test Laboratories Forum* is also being developed but the changes are of an editorial nature.

The MC will conduct an electronic vote on the approval of these new versions. When these documents have been approved by the MC they will be published on the OIML website as Edition 2.

1.1.3.3 Procedural Documents (PD-01 to PD-08)

The MG is developing revisions of the Procedural Documents PD-01 to PD-08 to implement the decisions taken at the first MC meeting and to reflect the experience that has been gained from using the documents since the launch of the OIML-CS. Key changes that are being implemented in the revised PDs:

- PD-02 changes to terminology to reflect the terms now used in B 18, clarification of the process for an LME to change their scope, and a change to allow MC members to be LMEs and/or MSEs,
- PD-03 changes to terminology to reflect the terms now used in B 18, clarification that the
 assessment team shall include all of the necessary competencies to conduct the assessment,
 the removal of superfluous clauses relating to the approval of Utilizers and Associates, and
 the removal of some duplication,
- PD-04 inclusion of information relating to the transition to ISO/IEC 17025:2017, changes to terminology to reflect the terms now used in B 18, clarification that the assessment team shall include all of the necessary competencies to conduct the assessment, and the removal of some duplication, and
- PD-07 changes relating to the use of "old" test data, i.e. test data obtained when issuing an OIML Basic Certificate or OIML MAA Certificate, to issue OIML-CS Certificates under Scheme B



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and Scheme A, allowing (under conditions) test data from a Basic Certificate to be used to issue a Scheme A certificate (this is not permitted in Edition 1), and the extension of the transition period for OIML IAs to demonstrate compliance with ISO/IEC 17065 through accreditation or peer assessment.

The changes to PD-01, PD-05, PD-06 and PD-08 are of an editorial nature.

The MC will conduct an electronic vote on the approval of these new versions. When these documents have been approved by the MC they will be published on the OIML website as Edition 2.

1.2 Categories of measuring instruments and respective Scheme

The categories of measuring instruments and the respective OIML Recommendations included in the OIML-CS under Scheme A or Scheme B are shown in the table below.

Measuring Instrument Category	Recommendation		IML-CS on ry 2018
Weasuring instrument category	Recommendation	Scheme A	Scheme B
Taximeters	R 21		✓
Active Electrical Energy Meters	R 46		✓
Water Meters	R 49		✓
Continuous Totalisers	R 50		✓
Automatic Catchweighers	R 51		✓
Load cells	R 60	✓	
Automatic Gravimetric Filing Instruments	R 61		✓
Heat Meters	R 75		✓
Non-automatic Weighing Instruments	R 76	✓	
Level Gauges for Stationary Storage Tanks	R 85		✓
Vehicle Exhaust Emissions	R 99		✓
Automatic Rail-weighbridges	R 106		✓
Discontinuous Totalisers	R 107		✓
Liquids other than Water	R 117		✓
Evidential Breath Analysers	R 126		✓
Multi-dimensional Measuring Instruments	R 129		✓
Weighing Road Vehicles in Motion	R 134		✓
Gas Meters	R 137		✓
Compressed Gaseous Fuel systems for Vehicles	R 139		✓

Due to the availability of experts for the assessment of OIML Issuing Authorities and Test Laboratories for the above-mentioned categories of measuring instruments, a decision was taken at the first MC meeting in March 2018 to propose to the CIML to extend a number of the transition periods as follows:



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- R 49 will transition from Scheme B to Scheme A on 1 January 2019,
- R 51 and R 117 will transition from Scheme B to Scheme A on 1 July 2019,
- R 46 and R 137 will transition from Scheme B to Scheme A on 1 January 2020,
- R 61, R 85 and R 129 will transition from Scheme B to Scheme A on 1 July 2020, and
- R 21, R 50, R 75, R 99, R 106, R 107, R 126, R 134 and R 139 will transition from Scheme B to Scheme A on 1 January 2021.

In addition, a number of OIML Recommendations have been identified for automatic inclusion in the OIML-CS. It is proposed that R 16, R 35, R 58, R 81, R 88, R 93, R 102, R 104, R 110, R 122, R 128, R 133, R 136, R 143, R 144, R 145 and R 146 enter the OIML-CS in Scheme B on 1 January 2019 and transition to Scheme A on 1 January 2021.

The MC proposes that the transition periods from Scheme B to Scheme A be extended and that the additional categories of measuring instrument covered by the OIML Recommendations identified above be included in the OIML-CS. A recommendation has been made to the CIML and this will be considered at the CIML meeting under agenda item 11.2.2.

1.3 Functioning of the OIML-CS

1.3.1 Number of OIML-CS Certificates issued

Information on the OIML-CS Certificates issued during the period 1 January 2018 – 30 June 2018 is shown at Annex A.

1.3.2 Reasons for non-acceptance

The OIML-CS Executive Secretary has not been made aware of any instances of non-acceptance of OIML-CS Certificates.

1.4 OIML Issuing Authorities

1.4.1 Approvals

Based on the recommendations of the Review Committee, applications to be OML Issuing Authorities under the OIML-CS from the following organizations have been approved by the MC:

- CMI (Czech Republic)
- FORCE (Denmark)
- LNE (France)
- METAS (Switzerland)
- NIM (P.R. China)
- NMi (Netherlands)
- NMIA (Australia)



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- NMIJ/AIST (Japan)
- NMO (United Kingdom)
- PTB (Germany)
- RISE (Sweden)*
- SLM (Slovakia)

Based on recommendations from the Review Committee, corresponding applications for 25 Test Laboratories have also been approved by the MC.

Information on the organizations, their scopes and their Test Laboratories can be found at:

https://www.oiml.org/en/oiml-cs/oiml-issuing-authorities

Summary information relating to the OIML Issuing Authorities can be found at Annex B.

1.4.2 Rejections

The MC has not rejected any applications to be an OIML Issuing Authority or Test Laboratory.

1.4.3 Suspensions

The MC has not suspended any OIML Issuing Authorities or Test Laboratories.

1.4.4 Continuing compliance of OIML IAs and their Test Laboratories

As the OIML-CS has been in operation for less than one year there has been no periodic review of continuing compliance.

1.5 Utilizers and Associates

The organizations that have applied to be Utilizers and Associates, and their corresponding scope of acceptance, are shown in Annex C.

The following organizations have specified Additional National Requirements (ANRs):

- Australia
- Belgium
- Canada
- France
- Germany
- India
- Namibia
- Switzerland

^{*} awaiting a signed Declaration



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- United Kingdom
- United States

Information on the ANRs for each organization is available on the OIML website at:

https://www.oiml.org/en/oiml-cs/utilizers-and-associates

1.6 Legal Metrology Experts and Management System Experts

1.6.1 Appointment of experts

The RC has reviewed and made positive recommendations on the approval of eight Management System Experts and over sixty Legal Metrology Experts. The applications have been approved by the MC, either at its meeting in March 2018 or by electronic ballot. Applications continue to be received and these will be reviewed by the RC and approved by the MC on a continual basis.

1.6.2 Status and scope of experts

A summary of the Management System Experts that have been approved by the MC is shown at Annex D.

A summary of the Legal Metrology Experts that have been approved by the MC is shown at Annex E.

Work is being undertaken with ILAC and IAF to publish the list of approved experts as ILAC/IAF/OIML experts.

1.7 Appeals

There have been no appeals against decisions of the MC.

1.8 Promotional activities

1.8.1 Seminars and training courses

Following the successful seminars that were held in Shanghai in June 2017 and Cartagena in October 2017, a training event organized by AFRIMETS was held in Nairobi, Kenya in November 2017 as part of a wider training activity. A further seminar, in association with the AFRIMETS General Assembly, was held in Enugu, Nigeria in July 2018.

An OIML-CS seminar was organized by COOMET in Moscow, Russia in May 2018. Participants from Armenia, Bosnia-Herzegovina, Cuba, Kazakhstan, Kirgizia, Russia, Slovakia, South Africa and Uzbekistan were informed about the operation of the system and how to become OIML Issuing Authority and/or Utilizers.



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The OIML-CS MC Chairperson and the OIML-CS RC Chairperson participated in a seminar organized by NIM in JingDeZhen, China in March 2018. The purpose of the seminar was to answer questions from members of different provincial institutes that are (or are intending to become) Test Laboratory under NIM.

The OIML-CS Executive Secretary attended the WELMEC WG8 meeting in January 2018, the CECIP General Assembly in June 2018 and will be attending the NoBoMet meeting in September 2018 to provide information to stakeholders in Europe and to promote the OIML-CS.

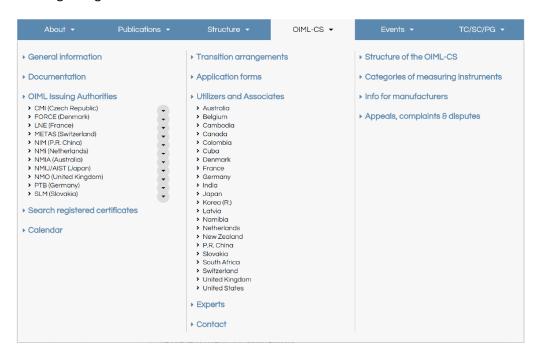
The OIML-CS is also being promoted by some of the OIML Issuing Authorities during various other events.

1.8.2 OIML-CS webpages and promotional materials

An OIML-CS section has been implemented on the OIML website at:

https://www.oiml.org/en/oiml-cs

A menu structure has been implemented to provide stakeholders with access to all of the relevant information regarding the OIML-CS as shown below.



The MC is developing suitable promotional materials in the form of a brochure/leaflet and will be developing simple guides to support potential participants in and users of the OIML-CS. A 'standard' presentation has also been developed that can be used by speakers at events to promote the OIML-CS.



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1.9 Finances of the OIML-CS

Information on the expenditure associated with the development and implementation of the OIML-CS during 2017 and the income from OIML Certificate registration fees is provided under agenda item 8.1.

1.10 Other activities

1.10.1 Liaison activities

The OIML-CS Executive Secretary has been working with ILAC and IAF on the development of Joint Assessment Procedures to support the accreditation assessments of Test Laboratories and OIML Issuing Authorities under the OIML-CS.

A revised Joint ILAC-OIML Assessment Procedure in the field of legal metrology, which relates to the accreditation assessment of Test Laboratories according to ISO/IEC 17025, was published in February 2018.

A Joint IAF-OIML Assessment Procedure in the field of legal metrology, which relates to the accreditation assessment of OIML Issuing Authorities according to ISO/IEC 17065, is currently under development.

1.10.2 OIML D 29, D 30 and D xx

At the MC meeting in March 2018 a proposal to move responsibility for OIML D 29, D 30 and the new OIML D xx *Guide of the application of ISO/IEC 17065 to the assessment of certification bodies in legal metrology* to the OIML-CS MC was considered. The MC agreed to the proposal and a recommendation has been made to the CIML and this will be considered at the CIML meeting under agenda item 11.2.3.

1.10.3 Structure of OIML Recommendations

At the MC meeting in March 2018 a decision was taken to require revisions of OIML Recommendations that are to be included in the OIML-CS include a comparison table ("gap analysis") to identify the differences between the previous edition and the new edition of the Recommendation. In addition, a proposal that OIML Recommendations in the OIML-CS should contain separate type evaluation report and test report formats was considered. The MC agreed to the proposal and a recommendation has been made to the CIML to change the structure of OIML Recommendations to address these two requirements. This will be considered at the CIML meeting under agenda item 11.2.4.



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2. MC Recommendations for CIML approval

The OIML-CS MC recommends that the CIML

- a) approves the Final Draft revision of B 18 Framework for the OIML Certification System (OIML-CS) (see agenda item 11.2.1 and Draft Resolution 2018/xa),
- b) decides that R 60:2000 and R 61:2004 shall be retained in the OIML-CS (see agenda item 11.2.2 and Draft Resolution 2018/xb),
- c) decides that the transition periods for moving instrument categories from Scheme B to Scheme A shall be as follows: R 49 will transition on 1 January 2019, R 51 and R 117 will transition on 1 July 2019, R 46 and R 137 will transition on 1 January 2020, R 61, R 85 and R 129 will transition on 1 July 2020 and R 21, R 50, R 75, R 99, R 106, R 107, R 126, R 134 and R 139 will transition on 1 January 2021 (see agenda item 11.2.2 and Draft Resolution 2018/xb),
- d) decides that the measuring instrument categories covered by R 16, R 35, R 58, R 81, R 88, R 93, R 102, R 104, R 110, R 122, R 128, R 133, R 136, R 143, R 144, R 145 and R 146 will enter into Scheme B on 1 January 2019 with a transition to Scheme A on 1 January 2021 (see agenda item 11.2.2 and Draft Resolution 2018/xb),
- e) decides that responsibility for D 29, D 30 and D xx Guide for the application of ISO/IEC 17065 to assessment of certification bodies in legal metrology shall move from TC 3/SC 5 to the OIML-CS Management Committee (MC) (see agenda item 11.2.3 and Draft Resolution 2018/xc)
 - Note 1: Project TC 3/SC 5/p 5 (development of D xx Guide for the application of ISO/IEC 17065 to assessment of certification bodies in legal metrology) will be completed under TC 3/SC 5 before responsibility for D xx is moved to the OIML-CS MC,
 - Note 2: Project TC 3/SC 5/p 12 (revision of D 30) shall move to the OIML-CS MC,
- f) decides that when an OIML Recommendation that is included in the OIML-CS is revised, the relevant Project Group shall develop a comparison table ("gap analysis") that identifies the differences between the previous edition and the new edition of the Recommendation (see agenda item 11.2.4 and Draft Resolution 2018/xd), and
- g) decides that new and revised OIML Recommendations that are to be included in the OIML-CS shall include separate type evaluation report and test report formats (see agenda item 11.2.4 and Draft Resolution 2018/xd).

Approval of these recommendations will take place under agenda item 11.2.

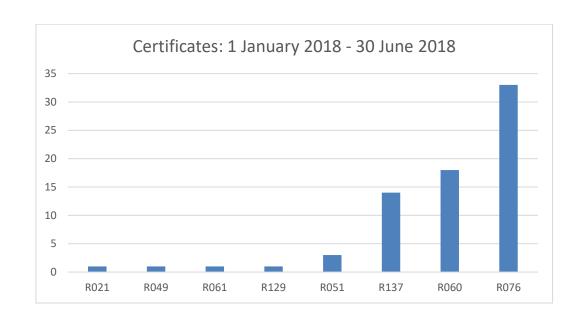


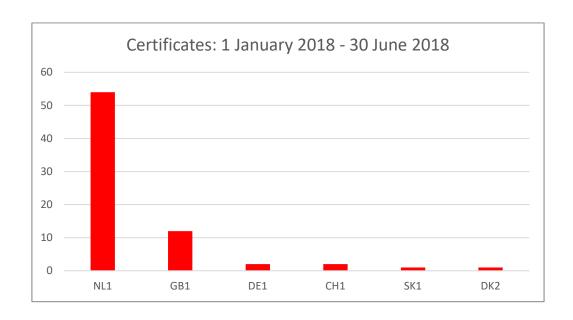
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Annexes

Annex A: OIML-CS Certificates issued (1 January 2018 – 30 June 2018)

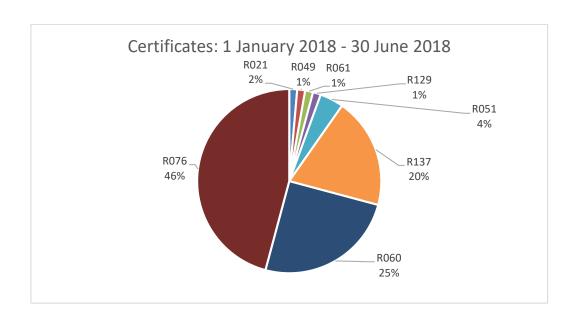


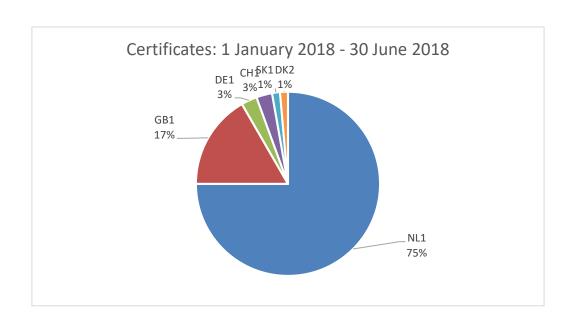




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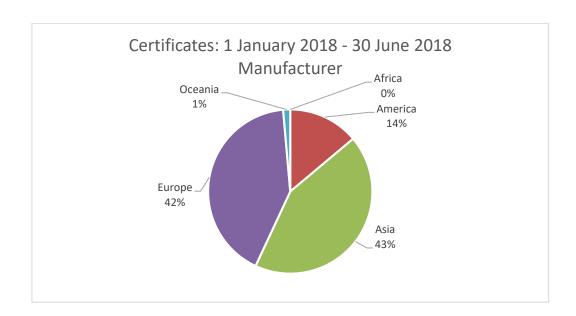






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Annex B: Summary of OIML Issuing Authorities and their scope

		R 21:2007	R 46:2012	R 49:2006	R 49:2013	R 50:2014	R 51:2006	R 60:2000	R 61:2004	R 75:2002	R 76:1992	R 76:2006	R 85:2008	R 99:2008	R 106:2011	R 107:2007	R 117:1995	R 117:2007	R 126:1998	R 129:2000	R 134:2006	R 137:2012	R 139:2014
AU1	National Measurement Institute Australia (NMIA)											•											
CH1	Federal Institute of Metrology (METAS)		•			•	•	•	•			•			•	•			•		•		.
CN2	National Institute of Metrology, China (NIM)		•			•		•	•							•		•			•		
CZ1	Czech Metrology Institute (CMI)												•										•
DE1	Physikalisch-Technische Bundesanstalt (PTB)						•	•		•		•											
DK2	FORCE Certification A/S			•	•	•	•		•			•			•	•				•	•	•	
FR2	Laboratoire National de Métrologie et d'Essais (LNE)				•	•		•				•							•				
GB1	NMO	•			•	•	•	•	•			•	•		•	•	•	•		•	•		
JP1	NMIJ/AIST							•			•	•											
NL1	NMi Certin B.V.		•	•	•	•		•	•	•	•		•	•		•			•		•	•	•
SK1	Slovak Legal Metrology (SLM)																						

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Annex C: Summary of Utilizers and Associates

2 = So 3 = So	heme A only heme A and MAA heme A and B heme A, B and MAA	R 21:2007	R 46:2012	R 49:2006	R 49:2013	R 50:2014	R 51:2006	R 60:2000	R 61:2004	R 75:2002	R 76:1992	R 76:2006	R 85:2008	R 99:2008	R 106:2011	R 107:2007	R 117:1995	R 117:2007	R 126:1998	R 129:2000	R 134:2006	R 137:2012	R 139:2014
AU	National Measurement Institute, Australia (NMIA)				2			2			2	2											
BE	Federal Public Service Economy	3	3		3	3	3	1	3	3		1	3	3	3	3		3		3		3	3
CA	Measurement Canada							2		1		2											
СН	Federal Institute of Metrology (METAS)		1	2	2	1	1	2	1	1		2			1	1			1	1	1	1	
CN	National Institute of Metrology, China (NIM)							2			2	2											
СО	Superintendencia de Industria y Comercio (SIC)	3	3	4	4	3	3	2	3	3	2	2	3	3	3	3	3	3	3	3	3	3	3
CU	National Bureau of Standardization (NBS)	3	3	3	3	3	3	2	3	3	2	2	3	3	3	3	3	3	3	3	3	3	3
DE	Physikalisch-Technische Bundesanstalt (PTB)				4	3	3	2	3	3		2	3		1	3		3		3	1		3
DK	FORCE Certification A/S			2	2	1	1	2	1		2	2			1	1				1	3		
FR	Laboratoire National de Métrologie et d'Essais (LNE)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1	1
GB	NMO Certification	3		4	4	3	3	2	3		2	2	3		3	3	3	3		3	3		
IN	Legal Metrology Division, Department of Consumer Affairs	3	3		4	3	3	2	3	3		2	3		1	3		3		3	1	3	3
JP	National Metrology Institute of Japan / National Institute of Advanced Industrial Science and Technology (NMIJ/AIST)							2			2	2											
KH	National Metrology Centre (NMC)	3	3	3	3	3	3	1	3	3	1	1	3	3	3	3	3	3	3	3	3	3	3
KR	Korea Testing Certification (KTC)										2	2											
LV	LNMC Ltd. Metrology Bureau																		3		3		
NA	Namibian Standards Institution		3	4	4	3	3	2	3		4	4	3		3	3	3	3	3	3	3		



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2 = Sc 3 = Sc	cheme A only cheme A and MAA cheme A and B cheme A, B and MAA	R 21:2007	R 46:2012	R 49:2006	R 49:2013	R 50:2014	R 51:2006	R 60:2000	R 61:2004	R 75:2002	R 76:1992	R 76:2006	R 85:2008	R 99:2008	R 106:2011	R 107:2007	R 117:1995	R 117:2007	R 126:1998	R 129:2000	R 134:2006	R 137:2012	R 139:2014
NL	NMi Certin B.V.	3	3	3	4	3	3	2	3	3	1	2	3	3	3	3	3	3	3	3	3	3	3
NZ	Trading Standards (Ministry of Business, Innovation and Employment) (MBIE)			4	4	3	3	2			2	2	3		3	3	3	3		3	3		
SK	Slovak Legal Metrology (SLM)											2											
US	National Conference on Weights and Measures (NCWM)							2															
ZA	NRCS: Legal Metrology			3	3		3	1			1	1	3		3	3	3	3	3	3	3	3	3

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Annex D: Summary of Management System Experts

		Peer Assessi	ment Activity
Expert Name	Country	Test Laboratories ISO/IEC 17025	OIML Issuing Authorities ISO/IEC 17065
Gulian Couvreur	CH	✓	✓
Hans Dalsgaard Jensen	DK	✓	
Erik Bruun Lorentzen	DK	✓	
Jos Verbeek	NL	✓	
André Barel	NL	✓	
Dick Verkuil	NL	✓	✓
Aleksander Premuš	SI	✓	✓
Håkan Källgren	SE	✓	✓

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Annex E: Summary of Legal Metrology Experts

	1 -									OIML R	ecomme	ndation									Assessment	Experience
Expert Name	Country	R 21	R 46	R 49	R 50	R 51	R 60	R 61	R 75	R 76				R 107	R 117	R 126	R 129	R 134	R 137	R 139		ISO/IEC 17065
Petra Milota	AT			✓																	<i>√</i>	·
Yi Chen	AU				✓	✓	✓			√											✓	
Mario Zamora	AU														✓							
Dirk Bils	BE														✓					✓	✓	
Gulian Couvreur	СН					✓	✓	✓		✓			✓	✓				✓			✓	✓
Jian Wang	CN					✓				✓											✓	
JianLiang Zhao	CN			✓																	✓	
Chao Chen	CN			✓											✓				✓			
Zhiqiang Han	CN		✓																			
Yichao He	CN																		✓			
Gang Hu	CN						✓															
Man Hong Hu	CN				✓	✓		✓		✓				✓				✓				
Jile Jiang	CN						✓															
Chen Li	CN			✓																		
Chunhui Li	CN																		✓			
Binghui Ma	CN									✓												
XiaoHui Mao	CN									✓												
Qi Pan	CN														✓							
Xiaoxiao Peng	CN		✓																			
Leibing Shi	CN		✓																			
Yi Su	CN						✓			✓												
Can Wang	CN														✓				✓			
Lei Wang	CN		✓																			
Jing Yang	CN														✓							
Youtao Yang	CN																		✓			
Jianzhong Zheng	CN		✓																			
Ruilin Zhong	CN				✓	✓		✓		✓				✓				✓				
Bihong Zhou	CN		✓																			
Shaoyuan Zhou	CN		✓																			

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										OIML R	ecomme	ndation									Assessmen	t Experience
Expert Name	Country	R 21	R 46	R 49	R 50	R 51	R 60	R 61	R 75	R 76	R 85	R 99	R 106	R 107	R 117	R 126	R 129	R 134	R 137	R 139	ISO/IEC 17025	ISO/IEC 17065
Miroslava Benkova	CZ			✓											✓						✓	
Ivan Kriz	CZ				✓	✓		√		✓			✓	✓				✓			✓	
Tomás Valenta	CZ																		✓		✓	✓
Jakub Vacula	CZ														✓						✓	
Timo Schwabe	DE					✓																
Christophe Brun	FR														✓					✓	✓	
Denis Vogel	FR				✓	✓	✓	✓		✓				✓							✓	
Emeric Morel	FR			✓																	✓	
Reuven Perez	IL			✓																	✓	
Nobuhiko Azami	JP						✓															
Shinsuke Mikura	JP						✓														✓	
Tomohiro Nagano	JP									✓											✓	
Satoshi Otani	JP									✓											✓	
Takeshi Ito	JP														✓						✓	
Erik Beumer	NL			✓					✓		✓				✓						✓	
Marc Schmidt	NL														✓					✓	✓	
Marcel Cloo	NL		✓																		✓	
Paul van Rooij	NL			✓											✓						✓	
Roy Scholten	NL					✓		✓		✓				✓			✓				✓	
Baris Yilmaz	NL					✓				✓							✓				✓	✓
Hans Boereboom	NL		✓																			
Paul Kok	NL	✓			✓	✓		✓		✓		✓		✓		✓	✓	✓			✓	✓
Carl Van Wijngaarden	NL																		✓		✓	
Aldemar Tjoa	NL		✓	✓		✓				✓					✓		✓		✓		✓	
Mathias Meijer	NL	✓					✓			~											✓	✓
Srinivas Bobbala	NZ									✓					✓						✓	
Hakan Källgren	SE				✓	✓	✓	✓		✓			✓	✓							✓	✓
Matej Grum	SI				✓	✓		✓		✓			✓	✓							✓	✓
Aleksander Premuš	SI	✓	✓																		✓	✓
Sevda Kacmaz	TR				✓	✓	✓	✓		✓			✓	✓				✓			✓	
Marek Bokota	UK			✓																	✓	✓
Wei Ji	UK						✓														✓	✓
Gregory Glas	UK	✓				✓				✓											✓	✓

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