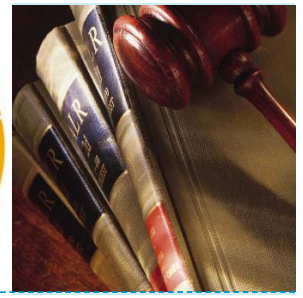


WEIGHTS & MEASURES CONNECTION



Fall 2018

Volume 9, Issue 2

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National Conference on Weights and Measures

2019 Interim Meeting

January 13 - 16, 2019
Charleston, South Carolina

Registration, lodging, agenda, and supporting documentation is available online at:

https://www.ncwm.net/sems/event_detail/2019-interim-sc

Office of Weights & Measures

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NIST/OWM UPDATES THE SECURITY AND PRIVACY POLICY STATEMENTS FOR THE OFFICE'S CONTACT SYSTEM

Byline: Kenneth Butcher and Douglas Olson

The National Institute of Standards and Technology (NIST), Office of Weights and Measures (OWM) Contacts System is web-based database used by individuals to register for the OWM training classes and to request, download, and/or review a wide variety of weights and measures technical materials and publications. Users include weights and measures officials, industry representatives, national work group (NWG) members, and the public. The OWM wants to update current users on the changes being made to better protect your business and personal information. NIST/OWM is committed to safeguarding personal privacy information. In this article, you will find options and tools that will give you more access to your information and control over how it is used. We've also updated our 'Security and Privacy Policy' to reflect the improvements made to the Contacts System.

The updates include:

- Privacy Act Statement
- How the OWM will use your information
- How the OWM will disclose your information
- How you can access, review, and update your personal information
- OWM Contacts System Assistance Point of Contact (POC)

OWM – SECURITY AND PRIVACY UPDATE

When creating an account in the Contacts System, we want you to understand our security and privacy policy and agree to those terms. What follows is the text of what you will be reading and agreeing to before the account is created. Also, each time you use the Contacts System for registering for a class or access documents, you will be reminded of that policy. At the end of this article, you will be provided with a staff contact who can give more information or assistance. Once you have created an account, our staff can also help you with class registration if you are unable to navigate the system or do not have access to the web.

PRIVACY ACT STATEMENT

The OWM does not release your personal information without your consent. We may publish your name, title, employer name, business address, phone (and fax) number(s), and e-mail in class participant and membership lists for national or other working groups if appropriate, and if applicable, it may also be published in an attendee list in reports on meetings of

(Continued on page 2)

the National Conference on Weights and Measures. If you are a federal, state, or local weights and measures official, we may also publish your information in an “online” or “print” directory of weights and measures officials. As a public service, we may share your contact information with members of the public to respond to business or consumer inquiries in your jurisdiction or involving your jurisdiction or organization. Your personal and other information may be used to determine your eligibility to participate in a training class and shared with the instructor, training host, or participants for use in organizing or providing training or other activities. If you are eligible to participate in OWM sponsored activities, your information will be used to process your registration, create a name badge, and other materials. In addition to the disclosures described above, your personal information may be used to create training certificates, maintain a record of your attendance, or to update records related to training. Except as required by law, we will not share your personal information, training record, or examination results with a third party without first receiving a written request and obtaining your written consent.

HOW THE OWM WILL USE YOUR INFORMATION

Your personal information (e.g., name, address, e-mail, and telephone number) will be used to create an account and may use the member type you select (e.g., state official, state director, public, county official, industry, or trade association representative) in the process of approving or rejecting your registration (e.g., registrations are reviewed to ensure completeness and to prevent duplications or misuse of the system). If the account is approved, among other uses, we will:

- If you visit NIST in Gaithersburg, Maryland, your personal information may be used to register you in the NIST Visitor Registration System to enable your access to the NIST campus.
- collect your username and password, security question selection and answers and other information you provided;
- contact you about your account and any training classes you are registered to attend;
- use the information to determine if you are eligible to attend a requested training class, and update your training history upon your successful completion of a training event;
- respond to your inquiries or publications requests;
- determine your eligibility to participate in certain work groups or other activities;
- add you to mailing lists about a specific subject or working group you select during the registration process;
- send you the “Weights and Measures Connection” newsletter (you can opt out of the newsletter during the registration process); and
- send you other correspondence about the OWM activities, work group activities, OWM training program, and outreach efforts.

HOW THE OWM WILL DISCLOSE YOUR INFORMATION

The OWM does not release your personal information without your consent. We may publish your name; title; employer name; business address, phone (and fax) number(s), and email in class participant lists and membership lists for national or other working groups if appropriate (e.g., to disclose who is participating in the activity or to enable other participants to contact you following the meeting); and, if applicable, it may also be published in an attendee list in reports on meetings of the National Conference on Weights and Measures. If you are a federal, state, or local weights and measures official, we may also publish your information in an “online” or “print” directory of weights and measures officials. As a public service, we may share your contact information with members of the public to respond to business or consumer inquiries (e.g., a complaint and other weights and measures related request) in your jurisdiction, or involving your jurisdiction or organization, so the parties can contact you directly for assistance. We may also use your personal and other information to determine your eligibility to participate in a training class, and we may share it with the instructor, training host, or other participants for use in organizing or providing a training or other activity. If you are eligible to participate in the activities sponsored by the OWM, your information will be used to process your registration, create a name badge, and other identifying materials (e.g., tent cards or individualized notebooks). In addition to the disclosures described above, your personal information may be used to create training certificates, maintain a record of your attendance, or to update records related to training. Except as required by law, we will not share your personal information, training record, or examination results with a third party (e.g., employer or other entity) without first re-

(Continued on page 3)

(SECURITY . . . Continued from page 2)

ceiving a written request and obtaining your written consent. (Please note that registered users have unlimited self-service access to their training records and may access and download them at any time.) If you visit NIST in Gaithersburg, Maryland, your personal information may be used to register you in the NIST Visitor Registration System (note: your citizenship status and passport information may be requested prior to scheduling a visit).

HOW YOU CAN ACCESS, REVIEW, AND UPDATE YOUR PERSONAL INFORMATION OR REQUEST OTHER ASSISTANCE?

You have the right to access, review, update, and correct inaccuracies in any of your personal information under the control of the NIST Office of Weights and Measures. Your account can be accessed at any time to review or update personal information by using your username and password in the OWM Contacts System at tsapps.nist.gov/WMD/default.aspx. At your request, your account can be made inactive or a request can be made for the OWM to update or correct your personal information by emailing or calling the contacts listed below. If you contact the OWM for these services, we may request that you confirm certain personal information in the account to verify your identity and to prevent identity theft or other fraudulent activities. The OWM will send you an email to confirm any changes within one business day of completion. Please contact the OWM immediately at (301) 975-4004 if you receive a notice about changes to your account which you did not request.

This Privacy Act Notice was updated on March 21, 2018.

UPCOMING CHANGES TO NIST HANDBOOK 143

Byline: Elizabeth Gentry

The Laboratory Metrology Program is happy to announce the availability of the draft NIST Handbook (HB) 143, 2018 edition, “State Weights and Measures Laboratories Program Handbook.” When finalized, it will establish the general requirements under which the OWM operates the recognition program for state legal metrology laboratories. Familiarity with upcoming changes are important because participating laboratories will incorporate the criteria in their quality management and technical systems that govern operations.

NIST HB 143, first published in 1985, has been updated multiple times over the years to keep step with international standards and best practices. In this revision, OWM will adopt ISO/IEC 17025:2017, and the technical requirements in NIST HB 150-2 Annexes.

HIGHLIGHTED CHANGES

Major reorganization and updates have been made in the draft NIST HB 143:2018. When published, the new edition will supersede the 2007 edition. Editorial updates and clarifications have been made to ensure continued acceptance of state legal metrology laboratory measurement results and to consistency with the National Voluntary Laboratory Accreditation Program (NVLAP) and other accreditation bodies. Proposed changes that will impact laboratory recognition include:

- To effectively implement NIST HB 143:2018, each state legal metrology laboratory will be required to purchase an official copy of ISO/IEC 17025:2017.

(Continued on page 4)

Update your personal information or request office assistance.



- By submitting a Recognition Application (formerly known as Appendix B-D), the organization will agree to comply with all Program Handbook requirements. Recognition Applications will be accepted annually between October 1 and November 1. The deadline will be November 1.
- Refinements have been made to Sections 2 (General Information and Operational Requirements) and 3 (Recognition Process), which include policy and procedure information. Added emphasis has been placed on authorized representative(s) responsibility to respond in writing to an OWM onsite assessment within 30 days of receiving a final report.
- Section 2 now includes multiple requirements for laboratories that are concurrently recognized by OWM and accredited by NVLAP. Requirements related to the application for accreditation, adjustment of an accreditation scope, and the annual submission of NVLAP assessment letters and reports to OWM. Section 2 also describes how OWM considers requests for the recognition of remote facilities.
- Section 2 reinforces that each recognized laboratory is required to maintain an organizational chart and a quality manual that implements the requirements of ISO/IEC 17025:2017 and the recognition program.
- Section 3 now describes the recognition scoring model, which is used by OWM as a program quality index.
- The nature of Conditional (limited) recognition has been clarified throughout the Program Handbook to emphasize the restricted nature of the rarely used level. For instance, a Conditionally (limited) recognized laboratory will be required to communicate their restricted status to customers during the contract review process and prominently display a statement on all calibration certificates that “Conditional (limited) recognition only meets legal weights and measures requirements within this state (or jurisdiction).”
- Table 1 (Recognition Submission Requirements) and Table 2 (Training Requirements) are included as examples because they are periodically updated. Current versions will be maintained on the OWM website (www.nist.gov/labmetrology). The flow chart that illustrates major steps of the recognition process, has been updated (Figure 1).
- Sections 4 (Management), Section 5 (Technical), which contained the requirements of ISO/IEC 17025:2005, were eliminated and replaced with a reference to ISO/IEC 17025:2017. The related Appendix C (Checklist) has also been removed.
- Section 6 (Technical Guidelines) was eliminated and replaced with reference to the technical requirements published in NIST HB 150-2 Annexes for legal metrology, mass, and volume. Section 4 (OWM Supplemental Requirements) elaborates on program requirements.
- Section 7 (References) and Section 8 (Glossary) have been incorporated in Section 1 (Program Summary).
- Appendix A (List of NIST Services) has been revised to focus on only OWM services.
- Appendix B (Request for Recognition) and D (Summary of Services) have been replaced with a Recognition Application form that is available online (www.nist.gov/labmetrology).
- Appendix B (Recognition Parameter Summary) now contains an updated table of legal metrology recognition measurement parameters.
- Appendix C (Laboratory Assessment Checklist) has been eliminated and will be replaced with an Internal Audit job aid that will be made available online (www.nist.gov/labmetrology).
- Appendix E (Uncertainties) has been eliminated. Laboratories will now submit their measurement scope, including parameters, ranges, uncertainties, and methods to OWM in a separate file that is submitted along with each annual Recognition Application.

Most OWM recognition processes remain unchanged. The timing of recognition decisions and feedback will continue to be provided to “complete and on time” applicant laboratories between November 1 and December 31. Certificate of Metrological Traceability effective dates will continue to cover periods that typically begin on January 1 and expiring on December 31, based on the recognition level.

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OPPORTUNITY TO SUBMIT ONLINE FEEDBACK

OWM encourages all state legal metrology laboratory personnel, authorized representatives, and other parties impacted by the recognition program to carefully review the draft HB 143:2018 and provide feedback. Recognition criteria is shaped through the feedback received. When submitting your comments, please provide justification and propose an alternative language suggestion, as appropriate.

Online feedback is being accepted between April 2018 through October 12, 2018, via the OWM Contact System (tsapps.nist.gov/WMD/default.aspx). The draft publication may be download from the OWM Contacts System or the NIST Handbook publications webpage (www.nist.gov/pml/weights-and-measures/publications/nist-handbooks).

If you are a new user of the OWM Contacts System, first you must establish an account. The Quick Guide for OWM Contacts System describes the account registration steps and provides helpful instructions for establishing an account (www.nist.gov/sites/files/documents/2016/09/07/Quick-Guide-for-Requesting-Training.pdf). For those with a user account, log into the OWM Contact System and go to My Items. Then press the button Request an Item (this is located before the list of any previous requests you have made). Select the item and then press the Download button.

After logging in, follow these steps to submit your comments:

- Select My Comments from the menu bar (4th item in from the left).
- Select Submit a Comment radio button that is above any lists of comments you may have previously entered.
- Select the draft document title from the list.
- Enter your Section, Page, and Comment.
- Press Continue.
- Review your submission and press Edit or Submit.

The OWM Laboratory Metrology Program is here to help all state legal metrology laboratories achieve and maintain recognition. Please feel free to share your recognition questions. OWM staff contacts can be found at the online directory (<https://www.nist.gov/pml/weights-and-measures/about-owm/staff-and-technical-experts-directory>).

UPDATED PROPOSAL TO AMEND THE FEDERAL FAIR PACKAGING AND LABELING ACT (FPLA)

Byline: Elizabeth Gentry

To facilitate the expansion of exports by U.S. manufactures, the National Institute of Standards and Technology (NIST) recommends updating the Fair Packaging and Labeling Act (FPLA) to create a new package labeling option. The FPLA relates only to the net quantity of contents information on consumer packages, goods, or commodities that are intended for sale in retail stores, such as food or department stores.

The proposal is available on the Office of Weights and Measures (OWM) Packaging and Labeling website (www.nist.gov/pml/weights-and-measures/laws-and-regulations/packaging-and-labeling) or may be downloaded using this link (nvlpubs.nist.gov/nistpubs/OWMWP/NIST.OWMWP.06-13-2018.pdf).

The proposed FPLA amendments are designed to provide U.S. manufacturers increased flexibility when labeling their products (Figure 1):

- 1) Dual Unit Label (current option) or

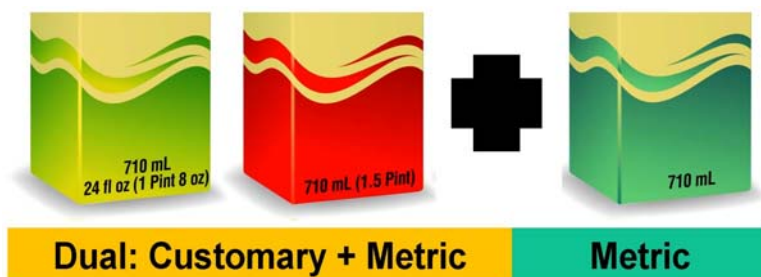


Figure 1. The NIST proposal increase U.S. manufacturer packaging options.

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2) Metric Label (additional option).

Adding the Metric option will remove a legal barrier, enabling U.S. firms that export their products to use a single (global) package label with measurement units that are compliant in all markets. The proposed amendments do not apply to unit pricing, advertising, recipes, nutrition labeling, other general pricing information, or require changes in package sizes.

Expanding the FPLA will enable U.S. manufacturers to implement the Metric option at their own pace, in the most efficient manner, and at the lowest cost, as part of the routine redesign of packaging or with the introduction of new products.

The FPLA was last amended in 1992 to require that metric units be displayed on packages. Some manufacturers have included metric units on package labels for more than 30 years. The metric units have proven informative and have helped consumers learn to relate metric quantities to the equivalent U.S. customary unit quantities.



WORTH THE WEIGHT: NEW INTERNATIONAL GUIDELINES PUBLISHED FOR MANUFACTURING LOAD CELLS

Byline: Jennifer Lauren Lee – Technical Contact: John Barton

Reprinted from: PML Impact, April 16, 2018

The revised OIML recommendation for the evaluation of load cells will affect the scales and balances used to weigh everything from people to grocery store bananas, and from blood pressure medications to cross-country shipments of goods.

At the heart of every electronic weighing instrument is a device called a load cell, which takes a mechanical force and turns it into an electronic signal. Anytime something needs to be weighed involving commerce – whether it's lunch meat at a deli counter, or a truck crossing a bridge with a weight limit, or medicine being formed into pills with exactly the right proportions there is a good chance that there's a load cell inside that scale or balance, making the measurement possible.

But before selling their products, companies that manufacture load cells need to ensure that their devices really do perform as intended. Most countries have a set of legal requirements that manufacturers must follow. The regulations that are adopted by many countries outside the United States* have, as their basis a standard established by an intergovernmental organization called the International Organization of Legal Metrology (OIML).

Recently, a revised Recommendation (OIML documentary standard) for the metrological regulation of load cells – referred to as R60 – was published by OIML. It's the first update to the recommendation in 17 years.

John Barton of the National Institute of Standards and Technology (NIST) was the convener of the project group that revised the recommendation. This group comprised representatives from 26 of OIML's member states.

Barton says that much of the revision work was focused on clarifying what is defined as a load cell since there are a number of technologies and designs that have been developed to quantify the force of gravity on an object in terms of its weight.

“Probably the biggest challenge we had in the revision was to define scope – how to be all-inclusive without discriminating against any particular technology,” Barton said. The vast majority of load cells in commercial devices use strain gauges, which convert physical stress into a measurable change in an electronic signal. But load cells can use other technologies as well, including pneumatic, hydraulic, or piezoelectric. “The project group spent a great deal of time defining the various categories of load cells based on their capabilities and, to some extent, the technologies used in their design,” Barton said.

Other changes to the recommendation were centered on updating the load cell-testing process, which is typically performed by laboratories on behalf of their member state governments. The OIML project group experts

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*In the U.S., the regulation of commercial devices is based on a different set of requirements, adopted by the National Conference on Weights and Measures (NCWM). However, one of the goals of the NIST Office of Weights and Measures is to harmonize the OIML and U.S. standards whenever possible.



THE OFFICE OF WEIGHTS AND MEASURES RECEIVES RENEWAL OF IACET ACCREDITATION

Byline: Georgia Harris

On May 21, 2018, the National Institute of Standards and Technology (NIST), Office of Weights and Measures (OWM) received approval of its accreditation renewal application from the International Association for Continuing Education and Training (IACET) based on the 2018 ANSI/IACET Standard for Continuing Education and Training. The OWM accreditation was originally approved for the period June 1, 2013, to May 31, 2018; this renewal extends the accreditation to May 31, 2023. IACET accreditation of a training program is much like accreditation of a quality system for calibration services to ISO/IEC 17025: IACET accreditation is globally recognized, includes a comprehensive documentation and on-site assessments, and benchmarks the quality of the OWM training program and processes.

During the review and assessment process, OWM demonstrated it has procedures and fulfills requirements related to its organization, the learning environment, planning of the learning event, the quality and evaluation of the instructors, needs analysis of the event, learning outcomes, content and instructional requirements, assessment of the learning outcomes, and finally awarding of CEUs. NIST OWM provides IACET-accredited Continuing Education Units (CEUs) for nearly all its training events. Accreditation sets in place a quality framework and a process for continuous improvement and succession planning. (See also: www.iacet.org/).

Training events covered by the IACET accreditation include on-site and off-site metrology seminars, webinars, field training in legal metrology devices such as scales and motor fuel dispensers, and field training in package labeling, inspection, and price verification. Although OWM has provided training for many years prior to becoming accredited, in the past five years since receiving accreditation in 2013 OWM has held over 250 training events and has trained well over 4000 students. The OWM program is the main source for training for state laboratory metrologists and state weights and measures officials. The program also provides training to private industry, other federal agencies, and international students. OWM training helps ensure traceability of legal metrology measurements to the International System of Units (SI), and provides uniformity and equity in the marketplace, protecting both consumers and businesses.

The OWM accreditation was originally approved for the period June 1, 2013, to May 31, 2018; this renewal extends the accreditation to May 31, 2023.

(WORTH THE WEIGHT. . . Continued from page 6)

amended existing test procedures to expedite the process and added new procedures that would improve testers' ability to evaluate how the devices respond to environmental influences, such as when exposed to electromagnetic fields during use.

The new revision also draws what Barton and his colleagues hope is a cleaner line between load cells and "complete weighing instruments," which typically incorporate a load cell but are sold as units that include a readout of the weight. Complete weighing instruments are addressed under the OIML system in other recommendations, such as R76. Ideally, Barton said, manufacturers and testers don't want a system where it's unclear which OIML Recommendation applies to a particular device.

As convener of the project group, Barton's job included developing meeting agendas, scheduling and chairing those meetings, collecting group members' input, incorporating their changes into subsequent drafts, and sending the revised document out for review. After receiving a set of comments, he would work them into a new draft and the cycle would start again. From beginning to end, the revision process took seven years.

"It seemed like every time we had it nailed down, someone would ask a question – 'What about this or that?' – and we would

Though consumers probably won't notice changes to their electronic bathroom scales or the process of weighing their grocery store bananas, both domestic and international manufacturers of load cells are likely to be affected by the update, as well as the laboratories that test load cells before they are put on the market.

CALENDAR OF EVENTS – TRAINING AND MEETING EVENTS

- Registration for training in the NIST Office of Weights and Measures is handled by Yvonne Branden at yvonne.branden@nist.gov.
- Course descriptions can be viewed on the Office of Weights and Measures website at <https://www.nist.gov/pml/weights-and-measures/about-owm/calendar-events> and clicking on the name of the course.

2018

- October 15 - 17 (3 days)
Central Weights and Measures Association (CWMA)
St. Charles, MO
Contact: Sherry Turvey, sherry.turvey@ks.gov
- October 15 –26 (2 weeks)
Mass Metrology Seminar
NIST, Gaithersburg, MD
Class No. 5534
- October 18 (2 hr)
Webinar – Internal Auditing Best Practices
2:00 p.m. – 4:00 p.m.
Class No. 5428
- October 22 – 25 (4 days)
Handbook 133, “Checking the Net Contents of Packaged Goods” – Basic
Baton Rouge, LA
Class No. 5561
- October 26 (1 day)
NIST Handbook 130, Price Verification
Baton Rouge, LA
Class No. 5563
- October 29 – November 2 (5 days)
Fundamentals of Metrology
NIST, Gaithersburg, MD
Class No. 5558
- November 5 – 8 (4 days)
NIST Handbook 133, “Checking the Net Contents of Packaged Goods” – Basic
Needham Heights, MA
Class No. 5559
- November 7 (2 hr)
Webinar – Measurement Systems for Legal Metrology
2:00 p.m.– 4:00 p.m.
Class No. 5575

2019

- January 17 (2 hr)
Webinar – Basic Uncertainty Concepts
2:00 p.m. – 4:00 p.m.
Class No. 5577
- January 13 – 16 (4 days)
National Conference on Weights and Measures (NCWM) Interim Meeting
Charleston, SC
Info@ncwm.net or <http://www.ncwm.net>
- January 29 – 31
Webinar – Calibration Certificate Evaluation
(see class details for more information)
2:00 p.m. – 4:00 p.m.
Class No. 5564
- February 4 – 8 (5 days)
Fundamentals of Metrology
NIST, Gaithersburg, MD
Class No. 5565
- February 7
Webinar – Conducting an Effective Management Review
2:00 p.m. – 4:00 p.m.)
Class No. 5566
- February 11 – 15 (5 days)
Fundamentals of Metrology
NIST, Gaithersburg, MD
Class No. 5567
- February 21 (2 hr)
Webinar – Internal Auditing Best Practices
2:00 p.m. – 4:00 p.m.
Class No. 5568
- March 11 – 22 (2 weeks)
Mass Metrology Seminar
NIST, Gaithersburg, MD
Class No. 5569

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CALENDAR OF EVENTS – TRAINING AND MEETING EVENTS

(CONTINUED FROM PREVIOUS PAGE)

2019

April 1 – 4 (4 days)

NIST Handbook 133, “Checking the Net Contents of Packaged Goods” – Basic

NIST, Gaithersburg, MD

Class No. 5562

April 15 – 18 (4 days)

NIST Handbook 133, “Checking the Net Contents of Packaged Goods” – Basic

Glendale, AZ

Class No. 5562

April 11 – 25

Webinar – Software Verification and Validation (Parts I & II)
(see class details for more information)

Class No. 5578

April 29 – May 9 (2 weeks)

Advanced Mass Seminar

NIST, Gaithersburg, MD

Class No. 5570

May 6 – 9 (4 days)

Central Weights and Measures Association (CWMA)

Annual Meeting

Canton, OH

Contact: Sherry Turvey, sherry.turvey@ks.gov

Tom Konst, tfkonst@hotmail.com

May 12 – 16 (5 days)

Northeastern Weights and Measures Association (NEWMA)

Interim Meeting

Portland, ME

Contact: James Cassidy, jcassidy@cambridgema.gov

July 14 – 18 (5 days)

National Conference on Weights and Measures Annual Meeting

Milwaukee, WI

Contact: info@ncwm.net

<http://www.ncwm.net>

August 12 – 16 (5 days)

Volume Metrology Seminar

NIST, Gaithersburg, MD

Class No. 5571

2019

August 15 (2 hr)

Webinar – Contract Review

2:00 p.m. – 4:00 p.m.

Class No. 5572

August 14 – 29

NCSL International Conference

“Metrology in Motion”

Cleveland Convention Center

Cleveland, OH

www.ncsli.org

August 29

Webinar – Document Control and Record Keeping

2:00 p.m. – 4:00 p.m.

Class No. 5573

October TBD

Webinar – Internal Auditing Best Practices

2:00 p.m. – 4:00 p.m.

Class No. 5576

*State W&M labs only or invitation only.

**Regional Measurement Assurance Program

“MEMBERS” (State and Industry RMAP member laboratories.)

INTERNATIONAL ORGANIZATIONS

The following international organizations hold meetings/conferences concerning varied weights and measures topics.

Asia-Pacific Legal Metrology Forum (APLMF)

<http://www.aplmf.org/>

Bureau of International des Poids et Mesures (BIPM)

Calendar of BIPM Meetings

<https://www.bipm.org/en/about-us/>

Inter-American Metrology System (SIM)

Calendar of SIM Meetings

<http://sim-metrologia.org.br/meetings.php>

International Organization of Legal Metrology (OIML)

Calendar of OIML Meetings

<https://www.oiml.org/en/events/calendar>

International Society of Weighing and Measurement (ISWM)
2019 Conference and Expo (TBD)

<http://www.iswm.org/>