

D. Obtain from URAL in the United States any item subject to the EAR with knowledge or reason to know that the item will be, or is intended to be, exported from the United States except directly related to safety of flight and authorized by BIS pursuant to section 764.3(a)(2) of the Regulations; or

E. Engage in any transaction to service any item subject to the EAR that has been or will be exported from the United States and which is owned, possessed or controlled by URAL, or service any item, of whatever origin, that is owned, possessed or controlled by URAL if such service involves the use of any item subject to the EAR that has been or will be exported from the United States except directly related to safety of flight and authorized by BIS pursuant to section 764.3(a)(2) of the Regulations. For purposes of this paragraph, servicing means installation, maintenance, repair, modification, or testing.

*Third*, that, after notice and opportunity for comment as provided in section 766.23 of the EAR, any other person, firm, corporation, or business organization related to URAL by ownership, control, position of responsibility, affiliation, or other connection in the conduct of trade or business may also be made subject to the provisions of this Order.

In accordance with the provisions of sections 766.24(e) of the EAR, URAL may, at any time, appeal this Order by filing a full written statement in support of the appeal with the Office of the Administrative Law Judge, U.S. Coast Guard ALJ Docketing Center, 40 South Gay Street, Baltimore, Maryland 21202-4022.

In accordance with the provisions of section 766.24(d) of the EAR, BIS may seek renewal of this Order by filing a written request not later than 20 days before the expiration date. A renewal request may be opposed by URAL as provided in section 766.24(d), by filing a written submission with the Assistant Secretary of Commerce for Export Enforcement, which must be received not later than seven days before the expiration date of the Order.

A copy of this Order shall be provided to URAL and shall be published in the **Federal Register**.

This Order is effective immediately and shall remain in effect for 180 days.

**Matthew S. Axelrod,**

*Assistant Secretary of Commerce for Export Enforcement.*

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**BILLING CODE 3510-DT-P**

## DEPARTMENT OF COMMERCE

### National Institute of Standards and Technology

#### Hydrometer Calibrations

**AGENCY:** National Institute of Standards and Technology, Department of Commerce.

**ACTION:** Notice of workshop; request for comments.

**SUMMARY:** The National Institute of Standards and Technology (NIST), an agency of the United States Department of Commerce, is examining the economic impact and continued need for Hydrometer calibration services as provided to U.S. industry by the Fluid Metrology Group on NIST's campus in Gaithersburg, Maryland. NIST is also interested in whether there is a need for liquid density calibration services not presently offered by NIST. NIST publishes this notice to announce a workshop that will guide NIST planning for the future of its hydrometer calibration capabilities, and to request comments on government and industry interest in and needs for hydrometer calibrations. This is part of the effort to systematically review NIST's Measurement Services to assess gaps and ensure alignment with stakeholders' needs as discussed in the Government Accounting Office report GAO-18-445.

#### **DATES:**

*For Comments:* NIST will accept written responses to this request for information until 11:59 p.m. Eastern Time on May 2, 2023. Submissions received after that date may not be considered. Written comments in response to this notice should be submitted according to the instructions in the **ADDRESSES** section below.

*For Workshop:* A public workshop will be held on Tuesday May 2, 2023, from 1:00 p.m. to 3:00 p.m. Eastern Time, virtually by web conferencing. Interested parties must register to participate in the public workshop no later than 5:00 p.m. Eastern Time on Monday May 1, 2023, by sending an email to [sherry.sheckels@nist.gov](mailto:sherry.sheckels@nist.gov).

#### **ADDRESSES:**

*For Comments:* Comments should be submitted to Sherry Sheckels, Sensor Science Division, Physical Measurement Laboratory, National Institute of Standards and Technology, 100 Bureau Drive, Mail Stop 8361, Gaithersburg, Maryland 20899, or by electronic mail to [sherry.sheckels@nist.gov](mailto:sherry.sheckels@nist.gov). Comments referencing studies, research, and other empirical data should include copies of the referenced materials. All comments, including attachments and other

supporting materials, submitted in response to this document will become part of the public record and may be subject to public disclosure. Therefore, do not submit confidential business information or otherwise sensitive, protected, or personal information, such as account numbers, Social Security numbers, or names of other individuals.

*For tours:* Individuals or groups interested in touring the liquid density standard laboratories in person are welcome and can schedule tours by writing to the email address, [sherry.sheckels@nist.gov](mailto:sherry.sheckels@nist.gov), before or after the workshop.

#### **FOR FURTHER INFORMATION CONTACT:**

*Mail:* Fluid Metrology Group, Attn: Sherry Sheckels, Hydrometer Calibrations, 100 Bureau Drive, Mail Stop 8361, Gaithersburg, Maryland 20899. Email: Sherry Sheckels at [sherry.sheckels@nist.gov](mailto:sherry.sheckels@nist.gov). Phone number: 301 975-5940.

**SUPPLEMENTARY INFORMATION:** NIST provides calibration services for reference hydrometers to measure liquid density. These reference standard hydrometers are generally used as laboratory standards to calibrate other hydrometers.

Reference hydrometers accepted for calibration include specific gravity, proof spirit for alcohol solutions, API degrees for petroleum measurements, degrees Baume heavy and degrees Baume light, and other arbitrary scales, all subject to discussion with the technical contacts. Specific gravity hydrometers cover the specific gravity range of 0.65 to 2.

NIST is seeking comments on the following topics; however, NIST does not intend to limit the responses to the topics listed below, provided that the responses address topics that would be useful in planning NIST offerings for liquid density calibrations service. When addressing the topics below, respondents may describe the practices of their organization or organizations with which they are familiar. Providing such information is optional and will not affect NIST's full consideration of the comment.

#### *Topics of Interest:*

1. Have you purchased hydrometer calibrations, if any, including:
  - a. If you have purchased calibrations from NIST, whether you purchased from NIST due to convenience, accuracy, cost, customer service, regulatory requirement, or some other reason;
  - b. If NIST was to terminate the hydrometer calibration service(s) you presently use, whether you have another source lined up that would meet your requirements; and

c. Whether it would pose a problem to your organization if the calibration service was not available at NIST.

2. How NIST calibration results are applied in your organization, including numerical examples of “leverage” to assess the economic impact of NIST hydrometer calibration services.

3. Whether hydrometer calibrations in your organization are traceable to NIST, including:

a. Whether you refer to NIST hydrometer publications or research to support your hydrometer measurements; and

b. If not directly traceable to NIST, whether you know how your hydrometer measurements compare to NIST hydrometer standards (for example by comparison against a hydrometer traceable to a NIST calibration).

4. Feedback on the cost, availability, turn-around time, business systems, and customer service provided by NIST hydrometer calibration services.

5. Whether you purchase hydrometer calibrations from another National Metrology Institute (NMI) or from another calibration laboratory, and your organization’s experience with this approach.

6. Your opinions about the range, uncertainty, quality and cost of the NIST hydrometer calibration services.

7. Whether you manufacture and sell hydrometers or sell calibrations of such hydrometers; if so, whether your hydrometer calibration values are traceable to NIST; and, if not NIST, whether you use a secondary laboratory, another NMI, or have your own primary standard(s).

*Authority:* 15 U.S.C. 272(b) & (c).

**Alicia Chambers,**

*NIST Executive Secretariat.*

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BILLING CODE 3510-13-P

## DEPARTMENT OF COMMERCE

### National Institute of Standards and Technology

#### Existence and Use of Large Datasets To Address Research Questions for Characterization and Autonomous Tuning of Semiconductor Quantum Dot Devices

**AGENCY:** National Institute of Standards and Technology, U.S. Department of Commerce.

**ACTION:** Notice of workshop; request for comments.

**SUMMARY:** The National Institute of Standards and Technology (NIST) is

seeking input regarding needs and gaps in data-sharing approaches to accelerate innovations in using artificial intelligence and machine learning techniques to improve the experimental characterization and control of semiconductor quantum dot devices. As part of this effort, NIST hopes to identify the needs for quantum dot device tuning automation, including existing and future quantum dot related datasets that may be useful for research, means and methods currently deployed for tuning, barriers for advancing the current state of the art techniques to enable automation of large quantum dot arrays, and the meaningful measures of success for the various stages of characterization and control. NIST plans to hold a workshop on July 19–20, 2023, in conjunction with this notice. The information received in response to this notice and during the workshop will inform efforts and coordination needed to develop a reference database of experimental and simulated data. The reference database will ideally represent the various phases of tuning quantum dot devices, along with metrics for benchmarking the characterization and control methods for quantum dot devices.

#### **DATES:**

*For Comments:* Comments must be received by 5:00 p.m. Eastern Time on June 12, 2023. Written comments in response to this notice should be submitted according to the instructions in the **ADDRESSES** section below. Submissions received after that date may not be considered.

*For Workshop:* The in-person Workshop on Advances in Automation of Quantum Dot Devices Characterization and Control will be held on July 19–20, 2023, from 9:00 a.m. to 5:00 p.m. Eastern Time at the National Cybersecurity Center of Excellence (NCCoE), 9700 Great Seneca Highway, Rockville, MD 20850. Attendees must register at the workshop website by 5:00 p.m. Eastern Time on June 19, 2023.

#### **ADDRESSES:**

*For Comments:* Written comments may be submitted only by email to Dr. Justyna Zwolak at [aqd@nist.gov](mailto:aqd@nist.gov) in any of the following formats: ASCII; Word; RTF; or PDF. Please include your name, organization’s name (if any), and cite “Automation of Semiconductor Quantum Dot Devices” in the subject line of all correspondence. Comments containing references, studies, research, and other empirical data that are not widely published should include copies of the referenced materials. All comments responding to this document

will be a matter of public record. Relevant comments will generally be made publicly available at <https://www.nist.gov/news-events/events/2023/07/advances-automation-quantum-dot-devices-control> as submitted. NIST will not accept comments accompanied by a request that part or all of the material be treated confidentially because of its business proprietary nature or for any other reason. Therefore, do not submit confidential business information or otherwise sensitive, protected, or personal information, such as account numbers, Social Security numbers, or names of other individuals.

*For Workshop:* The workshop will be held at NCCoE, 9700 Great Seneca Highway, Rockville, MD 20850. Please note admittance instructions under the **SUPPLEMENTARY INFORMATION** section of this notice. To register, go to: <https://www.nist.gov/news-events/events/2023/07/advances-automation-quantum-dot-devices-control>. Additional information about the workshop will be available at this web address as the workshop approaches.

**FOR FURTHER INFORMATION CONTACT:** For questions about this notice contact Justyna Zwolak or Jacob Taylor by email at [aqd@nist.gov](mailto:aqd@nist.gov) or Justyna Zwolak by phone at (301) 975-0527. Please direct media inquiries to NIST’s Office of Public Affairs at (301) 975-2762.

#### **SUPPLEMENTARY INFORMATION:**

*Background:* Over the past five years, researchers working with semiconducting quantum dot devices have begun to take advantage of the data analysis tools provided by the field of artificial intelligence and, more specifically, supervised and unsupervised machine learning. When provided with proper training data, machine-learning-enhanced methods may have the flexibility of being applicable to various devices without any adjustments or retraining. Moreover, by learning the governing rules and dynamics directly from the data, machine learning algorithms may be less susceptible to programming errors. However, machine learning models typically require large, labeled datasets for training, validation, and benchmarking. They also often lack information about the reliability of the machine learning prediction. Moreover, since the application of machine learning to quantum dot tuning, characterization, and control is a relatively new field of research, it lacks standardized measures of success. The success rates reported in the various publications vary significantly in both the level and meaning of the reported performance statistics, making it hard (if