

## Economy Report - 2017

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### *Japan*

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## SECTION 1 – Organisation and structure for metrology

### Organisation Structures

#### 1. Relevant organizations:

##### (1) Metrology Policy Office in Ministry of Economy, Trade and Industry (METI)

Metrology Policy Office of METI supervises legal metrological systems and scientific metrology based on Measurement Act as the governmental organization. Based on Measurement Act, METI established Measurement Administration Council to discuss measurement system. The council members include intellectuals, users, consumers and so forth.

##### (2) National Metrology Institute of Japan (NMIJ) of National Institute of Advanced Industrial Science and Technology (AIST) in Tsukuba-city, Ibaraki Prefecture

NMIJ, located in Tsukuba City in Ibaraki Prefecture, is responsible for type approval (testing and issuing certificate) for most of the specified measuring instruments, and provides standards for legal metrological purposes. NMIJ maintains most of the national primary standards and provides

calibration services for JCSS (Japan Calibration Service System). In addition, NMIJ cooperates international organizations such as OIML, APLMF, BIPM and APMP in cooperation with METI.

### **(3) Local governments**

Forty-seven prefectural governments and 126 specified cities are responsible for periodic verification of some of the specified measuring instruments and inspection of prepackages. Prefectural governments also provide verification/inspection services. Prefectural governments and specified cities have regional meetings and seminars, and give lectures regarding Measurement Act; they execute Measurement System smoothly.

### **(4) Japan Electric Meters Inspection Corporation (JEMIC)**

JEMIC is responsible for type approval and verification services for electricity meters within the scope of legal metrology. It is also responsible for providing primary standards of electric power and calibration services outside the legal metrology. **(5) Japan Quality Assurance Organization (JQA)**

JQA is responsible for verification of noise-level meters, vibration-level meters, and instruments for measuring concentration of air/water pollution in legal metrology. JQA conducts verification as a “Designated Verification Body” assigned by Minister of Economy, Trade and Industry. JQA provides calibration services mainly for environmental measuring instruments other than legal metrology.

### **(6) National Institute of Technology and Evaluation (NITE)**

NITE is responsible for the national accreditation body, and it is conducting assessment of calibration laboratories for JCSS (Japan Calibration Service System) and accreditation of testing laboratories. IAJapan in NITE is a signatory to MRAs (Mutual Recognition Arrangements) of APLAC (Asia Pacific Laboratory Accreditation Cooperation) as well as ILAC (International Laboratory Accreditation Cooperation).

### **(7) Designated Calibration Organization**

**Several designated organizations, which are designated by Minister of METI, provide calibration services using specified standard. Legislative Frameworks**

**Primary legislation:** Measurement Act (1992)

**Secondary legislation:** Four cabinet orders and eight ministerial ordinances supporting Measurement Act

**Technical standards:** Some technical standards of JIS (Japan Industrial Standards) are referred from the secondary legislations.

## **International arrangements and engagement**

### **1. Activities in OIML**

#### **Attendance to a CIML meeting**

In October 2017, seven delegates attended 52<sup>nd</sup> CIML meeting in Cartagena, Colombia.

#### **Support to technical activities**

## R 139 (Compressed gaseous fuels measuring systems for vehicles)

In terms of ensuring stable supply of energy and prevention of global warming, the Japanese government vigorously promotes development and dissemination of FCVs (Fuel Cell Vehicles). In December 2014, the first production model of FCV was put into the market. Currently, the government is promoting development of HRSs (Hydrogen Refuelling Stations).

Appropriate measurement of hydrogen-fuel at HRSs is indispensable in the transaction, particularly in terms of consumer protection. For this reason, JIS (Japanese Industrial Standard) B 8576: Measurement System of Hydrogen-fuel was published in May 2016 based on the domestic and international research outcomes.

At the 51<sup>st</sup> CIML meeting in October 2016, Japan proposed a new project to OIML TC8/SC7 (gas metering) for revising R 139 (2014) as a co-convenor supporting Netherlands, and it was approved. Application to hydrogen metering systems for motor vehicles is the main objective of the revision. Followings are recent activities in 2017 after the approval of this project.

28 February - 2 March: The first PG (Project Group) meeting was held in Yokohama, Japan.

April: WD (Working Draft) of R 139 was proposed and comments were requested.

May: 1CD (1st Committee Draft) was proposed and comments were requested.

18-20 September: The second meeting was held in Netherlands.

In the second meeting, the PG members discussed on 1CD. They also agreed to provide 2CD aiming at the approval of DR (Draft Recommendation) in the 53<sup>rd</sup> CIML meeting (2018).

In addition, Japan is supporting the revision procedures of some OIML publications as shown below.

Documents	Reaction of Japan
<ul style="list-style-type: none"> <li>R 76 (Non-automatic weighing instruments) in TC9/SC1</li> </ul>	<ul style="list-style-type: none"> <li>In December 2017, Japanese experts will attend the meeting in Germany.</li> </ul>
<ul style="list-style-type: none"> <li>R 119 (pipe provers for testing of measuring systems for liquids other than water: 1996) in TC 8</li> </ul>	<ul style="list-style-type: none"> <li>OIML TC 8 Secretariat taken care by NMIJ is responsible for the revision project.</li> <li>In October 2017, TC 8 Secretariat provided WD of a new Dxx to be replaced with R 119 and asked the comments from the TC8 member countries.</li> </ul>
<ul style="list-style-type: none"> <li>B18 (Framework for the OIML Certification System) in prMC of OIML-CS</li> </ul>	<ul style="list-style-type: none"> <li>In February 2017, prMc members from NMIJ attended the meeting in Germany</li> <li>In June, NMIJ attended the meeting and OIML-CS seminar, in Shanghai. Several participants including manufacturers also attended to the seminar.</li> </ul>
<ul style="list-style-type: none"> <li>D 31 (General requirements for software controlled measuring instruments) in TC5/SC2</li> </ul>	<ul style="list-style-type: none"> <li>In September 2017, two experts from NMIJ and a manufacturer attended the PG in Berlin</li> </ul>

## 2. Activities in APLMF

Japan Hosted 23rd APLMF Meeting in Tokyo on 22-25 Nov. 2016

As an activity of WG on Quality Measurement of Agricultural Products, NMIJ organized “APLMF / MEDEA: Training Course on Traceability in Rice Moisture Measurement - Beginners Course” on 17-21 July in Malaysia. Four trainers from NMIJ and Kett Elec. Lab. Co. attended this course, and a total of 26 trainees attended from 10 economies.

## 3. Training activities

METI conducts a training program in cooperation with AOTS (Association for Overseas Technical Cooperation and Sustainable Partnerships) and NMIJ. The course in 2017 will be held on 4-15 December in Tokyo area. Participants of this training course will be researchers or officers in the field of metrology from developing countries of Asia, most of which belong to APMP/APLMF. In Asia, there are many trainees who participated in past AOTS training programs.

In addition, NMIJ accepts trainees in scientific metrology from other NMIs attaining with their own fund.

## 4. Other activities

In September 2017, NMIJ hosted the 40<sup>th</sup> annual meeting with KATS (The Korean Agency for Technology and Standards) of Rep. Korea in Karuizawa, Nagano. NMIJ also participating in annual meetings (Summit) between KRISS (Korea Standards Research Institute), and the meeting of 2017 was held in July in Seoul.

At the APMP GA (General Assembly) in November 2016 in Vietnam, NMIJ took over Presidency and Secretariat. NMIJ organized a mid-year meeting of APMP in Malacca, Malaysia in May 2017. In November, 2017, GA and associated meetings of APMP will be held in New Delhi, India.

# SECTION 2 – Key activities of 2016/17

## Review and Revision of Metrology Administration System

In 2016, METI consulted with Measurement Administration Council regarding practical implementation of Measurement Act in the future. The council offered following **three new viewpoints** after several discussions, considering the actual circumstances of measurement administration.

### **Viewpoint 1 : Promotion of entry of private business operators**

In order to assure proper implementation of metrology, entry of private manufacturers and laboratories, which have high technological capabilities in product development, testing, evaluation and quality control, will be promoted. Utilization of Certified Measurers (competent experts in metrology qualified by METI) will be also encouraged.

### **Viewpoint 2 : Response to technological innovations and changes in social environment**

In order to respond to technological innovations in metrology and changes in the social environment for metrology, the targets of current regulations are reviewed and possibility of introducing new regulations is considered.

### **Viewpoint 3 : Reclassify and/or clarify the scope and the contents of current regulations under Measurement Act**

The scopes and the contents of current regulations under Measurement Act are reclassified and/or clarified, and necessary measures will be taken to make them more appropriate.

#### **Revision of the cabinet orders and ministerial ordinances:**

In order to respond to the three viewpoints above, METI revised the cabinet orders and ministerial ordinances that support Measurement Act. The date of promulgation of the revised cabinet orders was 21 June, 2017, and that of the revised ministerial ordinances was 22 September, 2017.

Major revisions in these orders were; (1) acceptance of Designated Verification Bodies\* which mainly conducts error tests, (2) addition of AWIs (automatic weighing instruments) to the specified measuring instruments under Measurement Act, and (3) acceptance of the test results by testing laboratories accredited by NITE for type evaluation for NAWIs

*\* **Designated Verification Body:** Organization designated by Minister of METI based on Measurement Act. As important qualifications to be a Designated Verification Body, it must provide all necessary testing services including error test, structural test and type approval test in the entire Japan. At present, JQA (Japan Quality Assurance Organization) is the only Designated Verification Body.*

**Regarding the revision (1)**, the requirements for Designated Verification Bodies will be mitigated for NAWIs (non-automatic weighing instruments) and fuel dispensers. Some Designated Verification Bodies will be then allowed to conduct only error test and a part of structural test. They will be also allowed to provide services only in a specific region of the economy.

**Regarding the revision (2)**, AWIs (automatic weighing instruments) were included in the specified measuring instruments under Measurement Act from 1<sup>st</sup> October, 2017 in order to respond the needs for a metrological control on AWIs considering its close relationship with consumer protection and recent development of technical requirements in OIML. All AWIs were outside of the legal metrological control in Japan before the revision. From 2019, the categories of AWIs correspond to OIML R 50, R 51, R 61 and R107 will be gradually subject to the legal metrological control and then, type approval and verification will be implemented.

**Regarding the revision (3)**, use of the test results obtained by testing laboratories accredited by NITE will be allowed to issue national certificate of type approval of NAWIs from 1<sup>st</sup> October, 2017. Hereafter, METI, NMIJ, local governments and public organizations in metrology will cooperatively implement necessary measures in order that above reformations would be achieved appropriately.

### **Working with industry**

While cooperating with METI and municipalities, NMIJ provides consultation for manufactures of measuring instruments, conduct workshops for local verification organization and metrologists, and give seminars for metrology periodically. In addition, NMIJ gives lectures and provides booth at metrological exhibitions. These activities facilitate sharing information regarding domestic/international trend and new topics with the domestic stakeholders.

Promotional or awareness raising activities To promote awareness in metrology system, METI specified 1<sup>st</sup> November, when Measurement Act (1<sup>st</sup> November, 1993) was enforced, as Metrology Day and specified November as a special month for metrology. METI hosts a special event for Metrology Day on 1<sup>st</sup> November every year, and those who have contributed to metrology field are given “Minister of Economy, Trade and Industry Award” in this event.

In addition, METI hosts an event called “Children’s Day” in August every year, so that they get interested in METI’s work. This year, we also provided a metrology-related program in which children used scales, rules and sound-level meters.

AIST’s Open Laboratory intended for children is held in July every year. In this event, NMIJ holds an exhibition and provides experience-based programs regarding metrology.

### **SECTION 3 – Future focus**

(No topics in 2017)