



**25th ASIA-PACIFIC LEGAL
METROLOGY FORUM AND
WORKING GROUP MEETINGS**
7-9 Nov 2018, Christchurch, New Zealand



Economy Report - 2018

Republic of Korea

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SECTION 1 – Organisation and structure for metrology

Organisation Structures

Specialty	Scientific metrology	Legal metrology
Organization	Korea Research Institute of Standards and Science (KRISS)	Korean Agency of Technology and Standard (KATS)
Business unit	Measurement Standards Laboratory	Metrology & Measurement Division
Manager		Dr.Mi-Ae, Choi
Location	Daejeon-si	Eumseong-gun, Chungcheongbuk-do

Relevant organizations

- [Korea Testing Certification](#)(KTC) – Type approval & verification of measuring devices
- [Korea Testing Laboratory](#)(KTL) – Type approval & verification of measuring device(Electricity meters only)
- [Korea Association of Standards & Testing Organizations](#)(KASTO) – Association
- [Ministry of Food and Drug Safety](#)(MFDS) – Medical Devices
- [Ministry of Environment](#)(MoE) – Electric Vehicle chargers, Hydrogen station

Legislative Frameworks

Measures Act 2018

Enforcement decree of the Measures Act 2018 (presidential decree)

Enforcement rule of the Measures Act 2017 (ordinance of the ministry of trade, industry and energy)

22 regulations

- 10 technical regulations related to testing 12 MIs`
- 12 by-laws for implementation of legal metrology

International arrangements and engagement

OIML TC 5/SC 2/p 3 meeting participation

(Apr. 17 ~ Apr. 18/Netherlands)

The 2nd Korea-China cooperation committee for Legal Metrology

(Apr. 18 ~ Apr. 21/Shanghai, China)

OIML TC 12 meeting participation

(May. 7 ~ May. 12/Sydney, Australia)

The 41st Korea-Japan cooperation committee for Legal Metrology

(Sep. 10 ~ Sep. 11/Gyeongju, Republic of Korea)

The 53rd CIML meeting participation

(Oct. 8 ~ Oct. 12/Hamburg, Germany)

SECTION 2 – Key activities of 2017/18

Working with industry

Support project research and development with industry

KATS has supported research and development budget (1.3 million dollars) with industry for several years. The main purpose is supporting industry to prepare IoT convergence technology and fair commercial transaction between customers and business owners. This project has two categories, one is for developing measuring technology with information and communications the other is for establishing testing infrastructure and system, law in accordance with international standard. Annually, more than 15 manufacturers and testing laboratories have participated and received budget from government.

Smart Inspection of NAWI

We have developed a mobile app that can be used on Android phones and iPhones to support NAWI, NAWI users, inspection information collection and inspection.

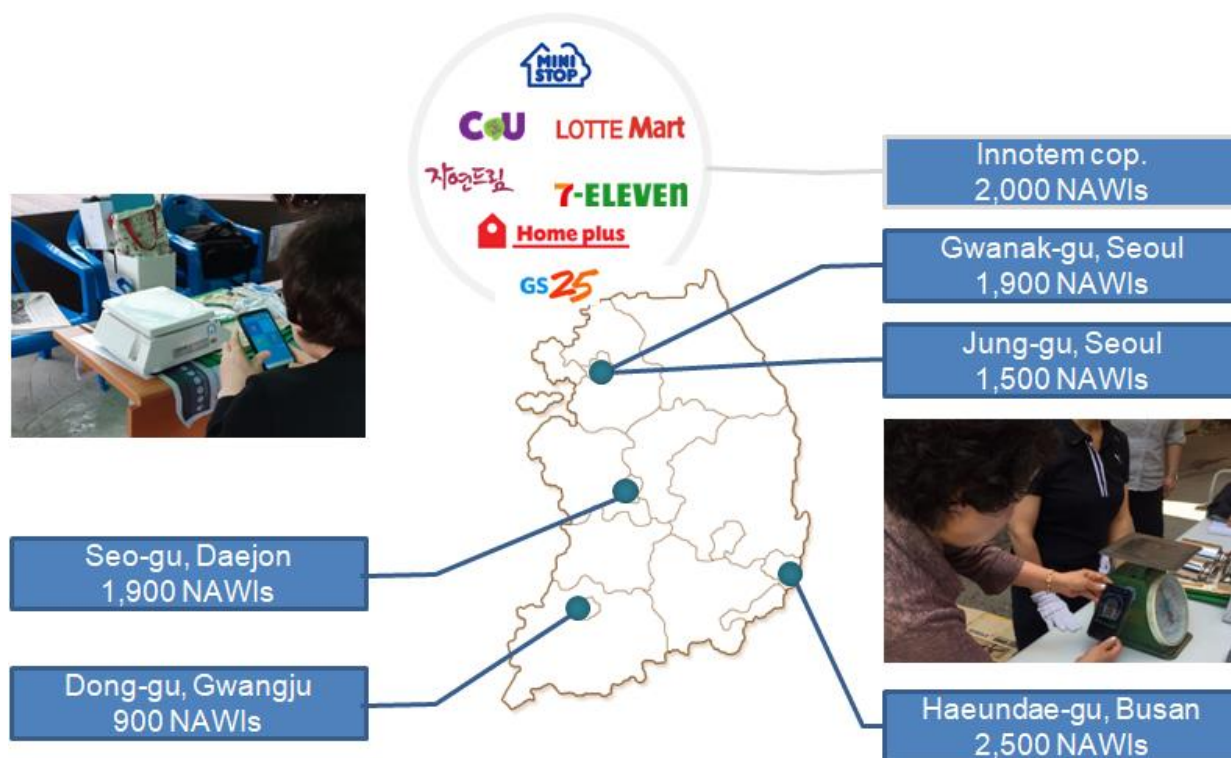
NAWI inspections had the following problems.

1. Inefficient collection procedures such as inputting balance information, user information,
2. It is difficult to identify the location of the NAWI.
3. There is an increasing need for NAWI that require field visits

Smart Periodic Inspection is a system that checks scales and user information using mobile phones like a photo and registers the results of periodic inspection.

In order to evaluate and complement the system, we carried out a pilot project for 2,000 units of our periodic inspection companies and convenience store delivery NAWI in 2017.

In 2018, we are working with five local governments to carry out a pilot project for smart scans for NAWI used in a variety of environments

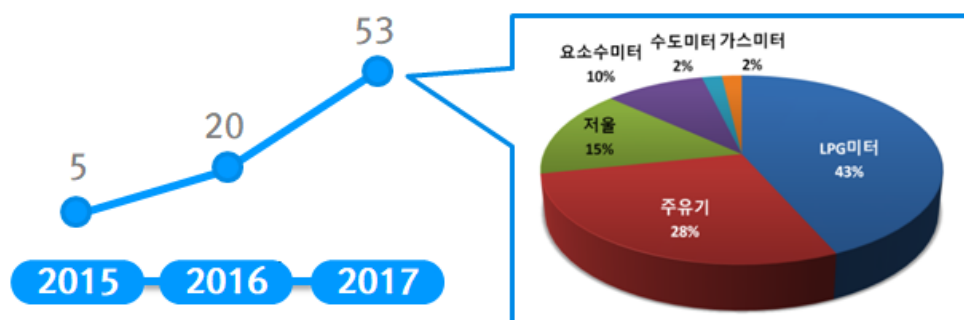


Illegal & faulty MI Call Center

The use of illegal & faulty meters violates the interests of consumers and disturbs the fair trade order. Every year, complaints about illegal & faulty meters are increasing. In Korea, we operate a MI Call Center for illegal & faulty meters that are on the market, minimizing consumer damage. In addition, when the illegal & faulty meter is reported, an inspection TF is dispatched to the site for inspection.

- Establishment of "MI Call Center Operation Rules" in order to respond quickly to complaints
- We divide the whole country into five regions, and we appoint regional specialists as investigators
- Promote how to report illegal & faulty meters
-

<Trend of Illegal & faulty meter complaints by year>



<Field inspection pictures>



Protecting consumers

Every year, we carry out the surveillance management of quantity products which are related with daily life. This year, we surveyed 524 products focusing on imported products and warehouse-type mart products. We are investigating whether the indicated quantities of the product are equal to the actual quantities contained.



Major projects - What we did and what we learned

Duplicated certification between Measure Act and Radio Act

From 2015, National Radio Research Agency (herein after NRRA) has reviewed EMC requirements for legal measuring instruments. According to Radio Act (Article 47-3, Electromagnetic Compatibility, etc.) any person who intends to manufacture or import equipment which cause electromagnetic

interference or are affected by electromagnetic waves, shall ensure that the relevant equipment does not exceed a certain level specified in the technical requirements for EMC.

There are already EMC requirements in each technical regulations of legal measuring instrument which correspond with OIML recommendation. However, OIML recommendation shall require only electromagnetic susceptibility. EMC consists of electromagnetic susceptibility (EMS) and electromagnetic interference (EMI).

NRRA officially request to KATS to consider EMI and exempt of duplicated certification, they agree to control EMI part in Measures Act not in Radio Act. Moreover, there will be an article of exemption in Radio Act so that manufacturers shall only have type approval and verification. Each technical regulation will be revised to add EMI requirement which is correspond with CISPR 32

SECTION 3 – Future focus

New initiatives planned (next 1-2 years)

Management system of weighing instruments over 10 tons

Non-Automatic Weighing Instruments (NAWI) is legal measuring instruments and completely corresponded with OIML R 76. According to Measures Act article 30, NAWI (which are under 10 tons) shall be managed regular inspections in every two years by local governments. Before placing on the market, NAWI shall have type approval and verification, however there are different management system whether over 10 tons or not.






1. Over 10 tons : re-verification in every 2 years
2. Under 10 tons : regular inspection in every 2 years

The management system for NAWIs over 10 tons in use was changed from regular inspection conducted by local governments to re-verification conducted by verification body in 2015. Because regular inspections by some of local governments were not in compliance with law and regulations due to the lack of expertise and equipment.

As due to the re-verification by verification body, it increases re-verification fee for transporting, operating of the weights and it will be burden on the NAWI business owners.

To solve the issues, KATS has conducted a survey on how to improve the NAWIs (over 10 tons) management system with following items:

1. Tracing the error trends during usage of NAWIs
2. Extending re-verification period if accuracy class is higher (Max. or e)
3. Omitting the maximum capacity inspection (only case of acquire of the error trends)

Amendment of Measures Act(2015)		
	Regular Inspection(~2014)	Re-verification(2015~)
	Local Government	KOLAS* accredited inspection body * Korean Accreditation body
	Government official (under 1 year experience)	Expertised inspector (over 5 years experience)
	1.5 ~ 10 t weights for 30~50 t NAWIs	25 t
 Legal Fee	X	30t : ₩ 50,000, 50 t: ₩ 90,000
 Weights control	₩ 35,000 ~ 100,000	₩ 300,000

Emerging issues – challenges and opportunities

Designation of the 13rd Legal measuring instrument: Electric Vehicle Supply Equipment(EVSE)

For fair commercial transaction between EVSE business owners and customers, EVSE shall be controlled in legal metrology in nearly future. A scope of EVSE in legal metrology is AC and DC charging system.