Economy Report - 2019

[MALAYSIA]

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SECTION 1 – Organisation and structure for metrology

Legal Metrology Structure

Malaysia has numbers laws to govern the metrology system. The National Measurement System Act 2007 (NMSA 2007) synchronize all Act related to measurement in Malaysia such as Weights and Measures Act 1972 (WMA 1972). The former act is an act to provide for uniform units of measurement standards and measurement traceability and the coordination of Malaysia's national measurement system, and for matters connected therewith. This act plays role as an umbrella act for all measurement legislations in Malaysia to enables an individual or organization to have the means to make accurate and traceable measurements. Under this act, National Metrology Institute of Malaysia (NMIM), SIRIM Berhad has been appointed as the National Measurement Standards Laboratory (NMSL) to

realize, maintain or caused to be maintained the national measurement standards (which include certified reference materials) for the purpose of providing national reference and traceability of units of measurements.

The latter act is an Act to regulate weights and measures and instruments for weighing and measuring; used for trade. The enforcement of this act is govern by the Ministry Domestic Trade and Consumer Affairs (MDTCA) via the Enforcement Division. In 2005, the Minister has granted a license to a company, known as Metrology Cooperation Malaysia (MCM) to perform the functions of the Inspector of Weights and Measures such as verification, stamping, etc. (except enforcement duties). Figure 1 shows the legal metrology structure in Malaysia

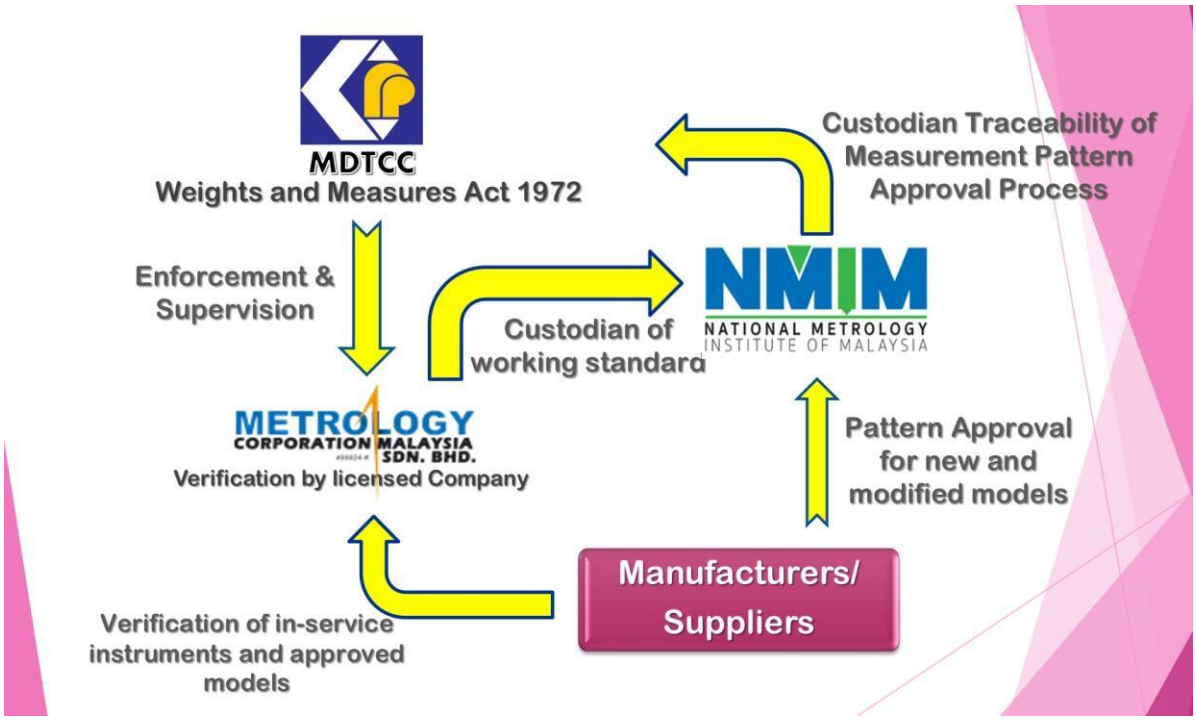

Figure 1: Legal metrology structure in Malaysia

Legislative Frameworks

The NMSA 2007 provides the basis for establishing Malaysia's legislative infrastructure to ensure traceability of measurement to the International System of Units (SI) and establishes the national measurement system for Malaysia. The Act links measurement units used in Malaysia to the SI system and require that SI units be the only legal units in Malaysia. It provides for the realization, establishment, custody, maintenance, determination and reproduction of the Malaysian Standards. The Act sits above all legislations involved in measurements and require these legislations to be coherent in their approach to measurement traceability. The Act however contains no enforcement provisions and no penalties. These provisions come in the Acts and legislations concerning the respective field of measurements.

The NMSA takes account of Malaysia's present and future needs within the context of the international standards and conformance environment. It facilitates harmonization arrangements with other countries by structuring the Malaysian standards and conformance infrastructure such that it is consistent with internationally recognized protocol. As a signatory of the WTO TBT Agreement, it is inevitable that Malaysia's standards and conformance infrastructure needs to fit into the global measurement system. This goes a long way towards promoting trade acceptance of our goods and attracting foreign direct investments.

Figure 2 shows the National Legislative Framework in Malaysia. The national measurement frameworks is well supported by Malaysia's membership and obligations with international organizations such as the International Bureau of Weights and Measures (BIPM), World Trade Organization (WTO), International Organization of Legal Metrology (OIML) and Asia Pacific Metrology Programme (APMP). There exists a comprehensive traceability system for all measurements whether for legal, scientific or industrial purpose which passes on accurate measurements to the various fields in the national value chain.

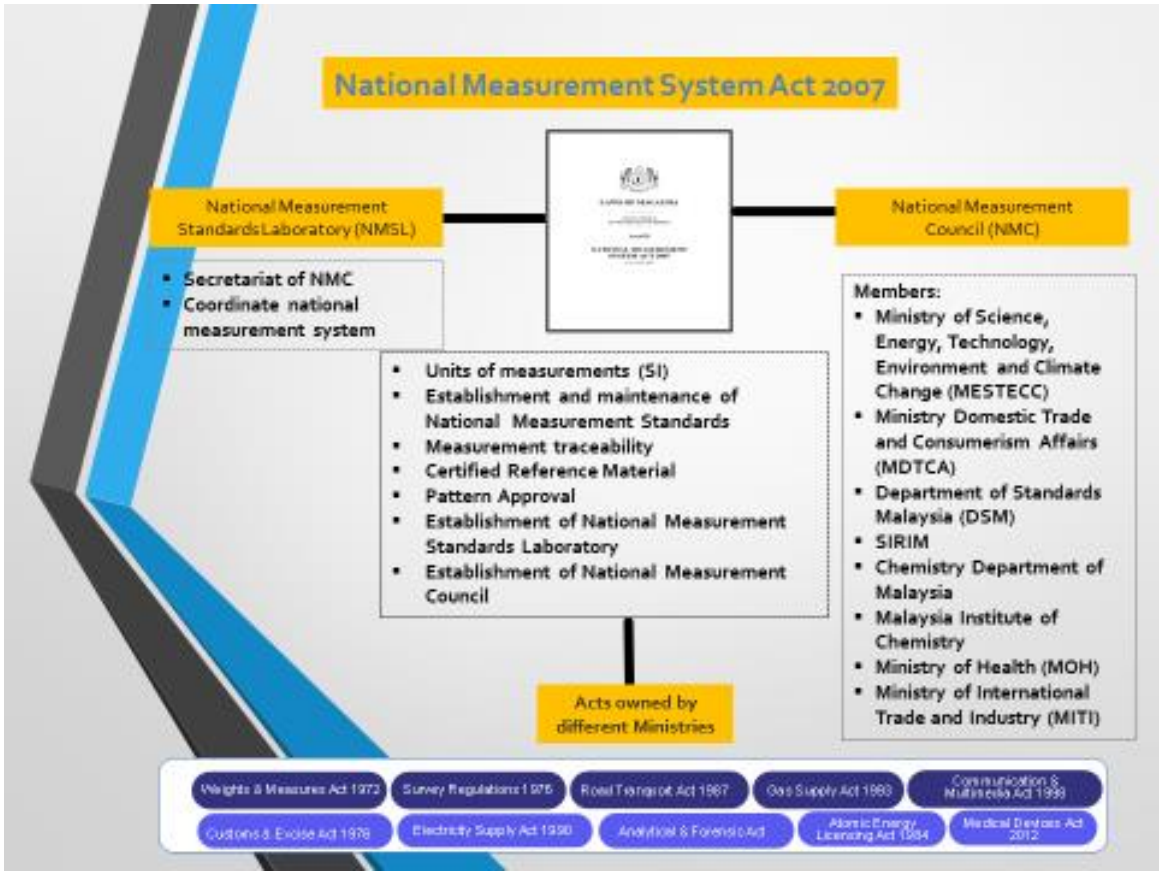

Figure 2: National legislative framework in Malaysia

International arrangements and engagement

Malaysia connected to the international metrology system through the following meetings and workshops:

- ASEAN Consultative Committee for Science and Quality Working Group on Legal Metrology (ACCSQ-WG3)
- APMP/APLMF mid-year meeting 2019
- MEDEA-CABUREK workshop
- Expert Group Metrology (EGM) meeting
- APMP/APLMF meeting 2019

SECTION 2 – Key activities of 2018/19

2.1 Working with industry

The following dialogues and public consultation programs has been carried out in promoting legal metrology involving MDTCA, NMIM, Legal Advisors, repairers and end users:

- ❑ Dialogues with weighing instrument repairer about the importance of pattern approval and verification.
- ❑ Technical forum on High Speed Weigh in Motion System involving Ministry of Transport, Ministry of Works, and MDTCA.
- ❑ Assistance to the Ministry of Domestic Trade and Consumer Affairs (MDTCA), National Water Management Commission (NWMC/SPAN), Energy Commission (EC/ST) and Royal Malaysian Customs (RMC/KDRM) in technical matters related to pattern approval of fuel dispenser, water dispenser, water meter, gas meter, electricity meter and hydrocarbon meter respectively.
- ❑ Development of pattern approval specifications and verification procedures to support implementation of legislation for use-for-trade timing device of massage chair, laundry dryer, sports and recreations.

2.2 Protecting consumers

- Assistance to the Ministry of Domestic Trade and Consumer Affairs (MDTCA), National Water Management Commission (NWMC/SPAN), Energy Commission (EC/ST) and Royal Malaysian Customs (RMC/KDRM) in technical matters related to pattern approval of fuel dispenser, water dispenser, water meter, gas meter, electricity meter and hydrocarbon meter respectively.
- The joint spot-check operation between enforcer's team from MDTCA and verifier's officer team from MCM was performed to ensure the accuracy of the verified weighbridges used in palm oil industries, cement factories, etc are well within MPE, at the same time to check any possibility of manipulation that might took place.
- Assistance to electricity, gas and water meter industry player to fulfill pattern approval requirements as stated in the tender/procurement and compliance of laws.
- Development of pre-packaged draft regulation under Trade Description Act 2011 with MDTCA Legal Division.
- Providing certification programme for certified personnel for inspector, repairer, verification officer and metering calibration and validation

2.3 Training

International Level

NMIM hosted MEDEA Training Course on the Pattern Approval and Verification of Water Meters – OIML R49 from 15 to 18 October 2019, at Sepang. All trainers are from NMIM namely Dr Abdul Rahman Mohamed, Mr Mohd Noor Mohd Ghaffar and Mr Hafidzi Hamdan.

Major projects - What we did and what we learned

Competency Program

NMIM introduce a competency program to certify the inspector, repairer and verification officer on their competency in verification of measuring instruments under Weights and Measures Act 1972.

Training course on Certified Personnel for Metering Validation and Calibration- a collaboration between NMIM and Institut Teknologi Petronas (INSTEP) to assess the competency of personnel involve in metering system validation activity in Malaysia. The training course comprises of two parts; lecture (classroom and practical demonstration) and assessment by assessor from NMIM who are competent in this field (written examination and practical assessment). The participant has to pass both tests in order to be recognised as competent personnel in metering validation and calibration.

Legalizing Software for Measuring Instruments

Software has become one of the most critical parts of a measuring instrument. Despite the sophistication and complexity of measuring instruments, legal metrology framework on the software are still poor. Several legal cases related to manipulation and modification of software used in measuring instrument have been discovered in ASEAN countries particularly in Malaysia. Therefore, NMIM has provide new service for software pattern approval where software examination for weighbridge software, software for IOT device for massage chair including mobile apps, app-based parking meter and valet parking device and energy meter were developed.

One of NMIM staff, Mr Muhammad Azwan Ibrahim has attended Software Testing Training at PTB Berlin, Germany from 12th May to 4th June 2019.

SECTION 3 – Future focus

New initiatives planned (next 1-2 years)

- Development of verification procedure for positive displacement meter used at gantry and depot terminal for WG3 ACCSQ.
- Strengthen the Guideline for Electricity Meter issued by the Energy Commission (EC) such additional software testing requirement.
- To establish national guidelines for electricity meter verification with Energy Commission (EC) and related enforcement.
- National Measurement Infrastructure for custody transfer instruments used in oil and gas industry; a collaboration between oil and gas industry player, government agencies and NMIM under the supervision of Technical Committee on Petroleum and Gas

New Regulated Instruments

- High Speed Weigh in Motion for enforcement under Road Transport Act for road users safety and reduce road maintenance
- Timing devices (time clock, timer, time recorder, IoT and NTP-enabled device) used for trade.

R&D on Legal Metrology

- Development of measurement capability in length measuring instrument up to 25 meters
- Development of Private NTP Time Synchronization Server and Remote Verification Service for NTP-enabled timing devices.

Emerging issues – challenges and opportunities

Verification / Software Examination

Malaysia are still having a problem related to verification of software's used in regulated measuring instruments especially for weighbridges, which we suspect that the most manipulations are happening in our country. Software vulnerability leads to software piracies, code stealing and software tampering. The demands for pattern approval of software related to measuring instrument including electric meter is increasing.

NMIM had provide new service which is software examination for weighbridge software, software for IOT device for massage chair including mobile apps, app-based parking meter and valet parking device and energy meter.