



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



## Economy Report - 2018

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### *Malaysia*

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Report developed by	Mrs. Haslina Abdul Kadir Mr. Peter J. Berinus Agang
Position	Deputy Director Principal Assistant Director
Organisation	National Metrology Institute of Malaysia (NMIM) Ministry of Domestic Trade and Consumer Affairs (MDTCA)
Contact details	<a href="mailto:peter@kpdnkk.gov.my">peter@kpdnkk.gov.my</a>

## SECTION 1 – Organisation and structure for metrology

### Organisation Structures

#### 1.1 Legal metrology structure

Malaysia has numbers of laws to govern the metrology system. The National Measurement System Act 2007 (NMSA 2007) synchronize all Act in 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 of 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.

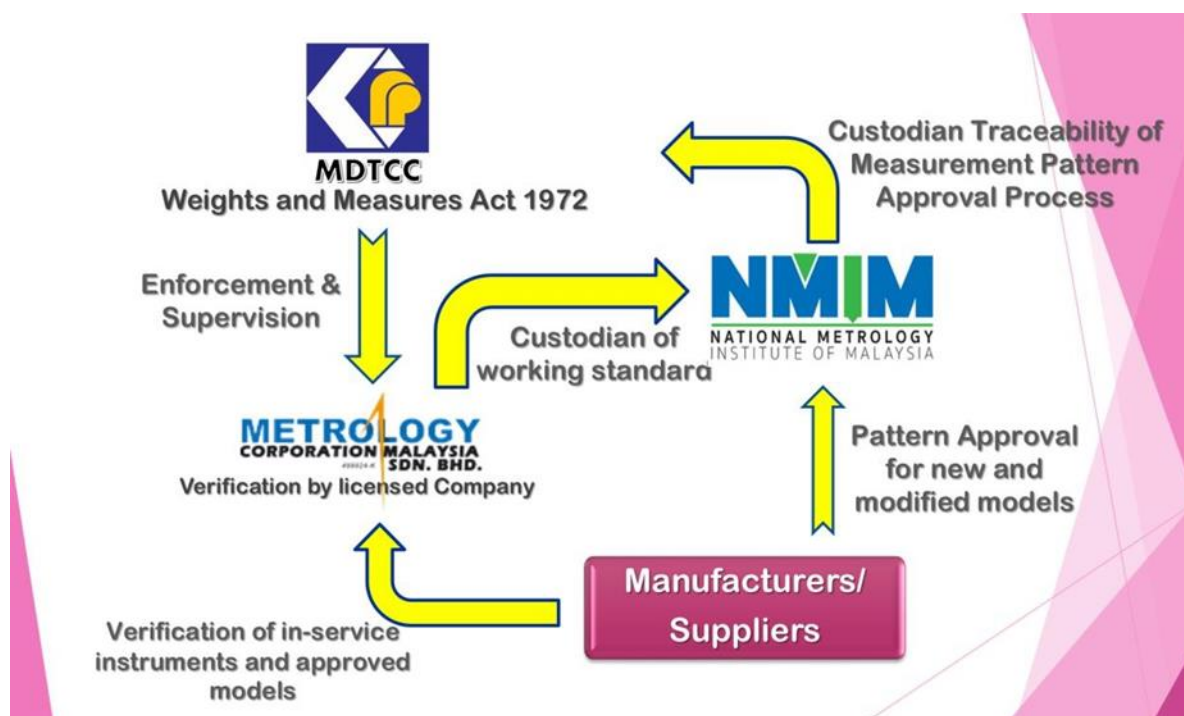
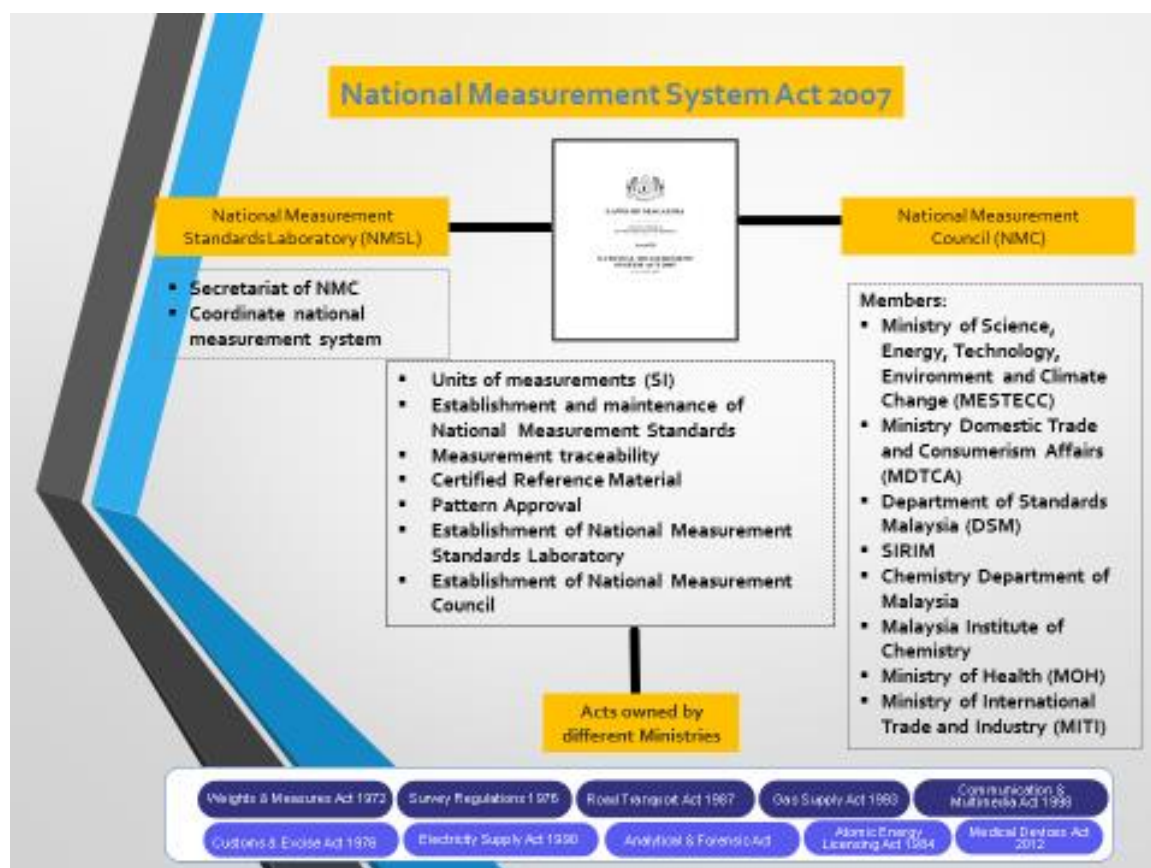


Figure 1: Legal metrology structure in Malaysia

## Legislative Frameworks

The NMSA 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.



## International arrangements and engagement

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

- Small meeting of APLMF WG on QMAP
- 53rd CIML Meeting
- ASEAN Consultative Committee for Science and Quality Working Group on Legal Metrology (ACCSQ-WG3)
- APMP/APLMF mid-year meeting 2018
- MEDEA 2: Planning Workshop
- MEDEA-CABUREK workshop
- Expert Group Metrology (EGM) meeting

NMIM had been hosted the following training course:

- APLMF-MEDEA Training Course on the Verification of Non-Automatic Weighing Instruments (NAWI) including Weighbridges from 8 to 11 May 2018, at Sepang. The trainers are Mr Matthew Lux (NMI, Australia), Mr. Peter J. Berinus Agang (MDTCA), Mrs Suliana Binti Ghazalli, Ms Suhaidah Amizam and Mr Muhammad Fadhil Sahrom (NMIM) and Mr Kiveen Suycano (National Metrology Laboratory of the Philippines).
- Training Course on Software Testing for Measuring Instruments for ASEAN Member States from 27 Nov to 1 Dec 2017. The trainer is Dr. Daniel Peters, Head of Working Group 8.54, Validation of Metrological Software from PTB Germany.

Malaysia participated in the following training organized by APLMF-MEDEA:

- Small Training Course for APLMF Working Group on Quality measurement of Agricultural Products (QMAP)
- Training Course On Pre-packaged Goods

## SECTION 2 – Key activities of 2017/18

### 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:

- Dialogue with Weighing Instrument Repairer Association
- Dialogue with Malaysian Association of wellness & SPA

(MAWSPA) on time recorder

- Dialogue with time recorder repairer

## Protecting consumers

The weighing and measuring instrument used for trade must conform to the pattern and specifications specified by the Custodian of Weights and Measures. To date, 53 units of weighing and measuring instrument has been pattern approved by NMIM.

The joint spot-check operation between enforcer's team from MDTCA and verifier's officer from MCM 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.

A mobile customer service counter of MDTCA was temporarily opened at few selected remote area (within certain period of time) to receive any complaints from consumers regarding to trade related matters such as short-weighing etc. This counter also provides information and consultation services to the consumers about their rights; complete with suitable weighing instruments for comparison purposes of what they have purchased.



Figure 3: MDTCA's Mobile unit





Figure 4: Mobile Customer Service Counter

## Major projects - What we did and what we learned

### *Amendments of Weights and Measures Act – Act 71*

The Amendment of the Act was tabled in Parliament in May 2017 to increase the fines/penalties in the Weights and Measures Act (Amendment) 2017 and came in operation in 1 August 2017. Meanwhile, the provision to empower the Minister to amend a schedule under the Act and a clause to facilitate the investigation under the Act will be commencement on 1st January 2019. For information, the provision came together with a penalty to ensure the traders compliance. The investigation clause will facilitate the enforcement officer to obtain accurate provided by any person.

### *New Regulated Instruments*

The following are additional regulated instrument that will be introduced in the Weights and Measures Act in 2018.

### *Rover*

Recently, NMIM has approved new measuring instrument known as Rover under Weights and Measures Act 1972 to be used for trade. The Rover will be used by traders or petroleum players to sell their product to a dedicated or designated area to reduce the congestion at pump station at peak hour and increase the traders' sales. Furthermore, to optimize the fleet management, fuel consumption by having the rover at their disposal to dispense the fuel to the fleet at any time without going to the pump station. It is a 12 meters long self-contained modular fuel storage and dispensing unit, with a capacity of holding up to 4000 liters of fuel, is targeted to be used for the supply of petrol at the fish landing jetty in Malaysia. Figure 5 and 6 show the picture of Rover unit and the verification of Rover unit respectively.



Figure 5: The Rover unit



Figure 6: The verification of Rover unit

### *Automated Enforcement System (AES)*

A total of 48 units of Automated Enforcement System (AES) cameras has been installed at highways nationwide in 2018. Research conducted by Malaysian Institute of Road Safety Research (MIROS) in 2014 showed that the 14 AES cameras currently installed in Perak, Selangor, Kuala Lumpur and Putrajaya have proven to be effective in reducing road fatalities due to speeding and running a red light. According to the institute's findings, there was an 87.6 per cent reduction in red light running violations after the cameras were installed at certain traffic light junctions.

## **SECTION 3 – Future focus**

## New initiatives planned (next 1-2 years)

### *E-Repairer*

Malaysia are developing a database and information system to identify the record and the number of makers, sellers and repairers for weighing, measurements and weighing instruments and the number of weights and sizes and weighing instruments or measurements that have not yet been verified. The new system so called E-Repairer to track the status of all regulated measuring instruments under Weights and Measures Act 1972 (Act 71). This system will be able to track detailed information about the instruments such as name-model-serial number-class of instrument, owner of instrument, verification date and verification due date. Thereby strengthening the regulation of monitoring and enforcement activities by the Enforcement Division of MDTCA under Act 71

## 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.

We are developing our competency in this area by attending training on software testing for measuring instrument on Dec 2017 and making a collaboration with local university in software verification and integrity inspection. A paper tittle "A proposed plan in legalizing software for measuring instruments in Malaysia will be presented on middle November 2018 at Cyber Resilience Conference 2018 in Putrajaya Malaysia.