24rd APLMF Meeting
Siem Reap, Cambodia

Economy Report

MALAYSIA

Report developed by	Dr. Abdul Rahman Mohamed
Position	Deputy Director
Organisation	National Metrology Institute of Malaysia (NMIM)

SECTION 1 - ORGANISATION AND STRUCTURE FOR METROLOGY

Organization Structures

There are 2 Acts in Malaysia which are specifically focus on metrology. They are **National Measurement System Act 2007 (NMSA 2007)** and **Weights and Measures Act 1972 (WMA 1972).** The national measurement system is the totality of administrative and technical infrastructure within a country which enables an individual or organization to have the means to make accurate and traceable measurements. The NMSA 2007 provides for the establishment of a National Measurement Standards Laboratory (NMSL) to realize, maintain or caused to be maintained national measurement standards (which include certified reference materials) for the purpose of providing national reference and traceability of units of measurements.

On the other hand, the Weights and Measures Act 1972 (WMA 1972) is an Act to regulate weights and measures and instruments for weighing and measuring, and to make to make provisions for matters connected therewith. This Act is applicable to the whole of Malaysia and is enforced by the **Ministry of Domestic Trade, Cooperatives and Consumerism (MDTCC)**. In 2005, the Minister has granted a license to a company, known as Metrology Cooperation Malaysia (MCM) to perform any of the functions of the Inspector of Weights and Measures such as verification, stamping etc. (except enforcement duties).

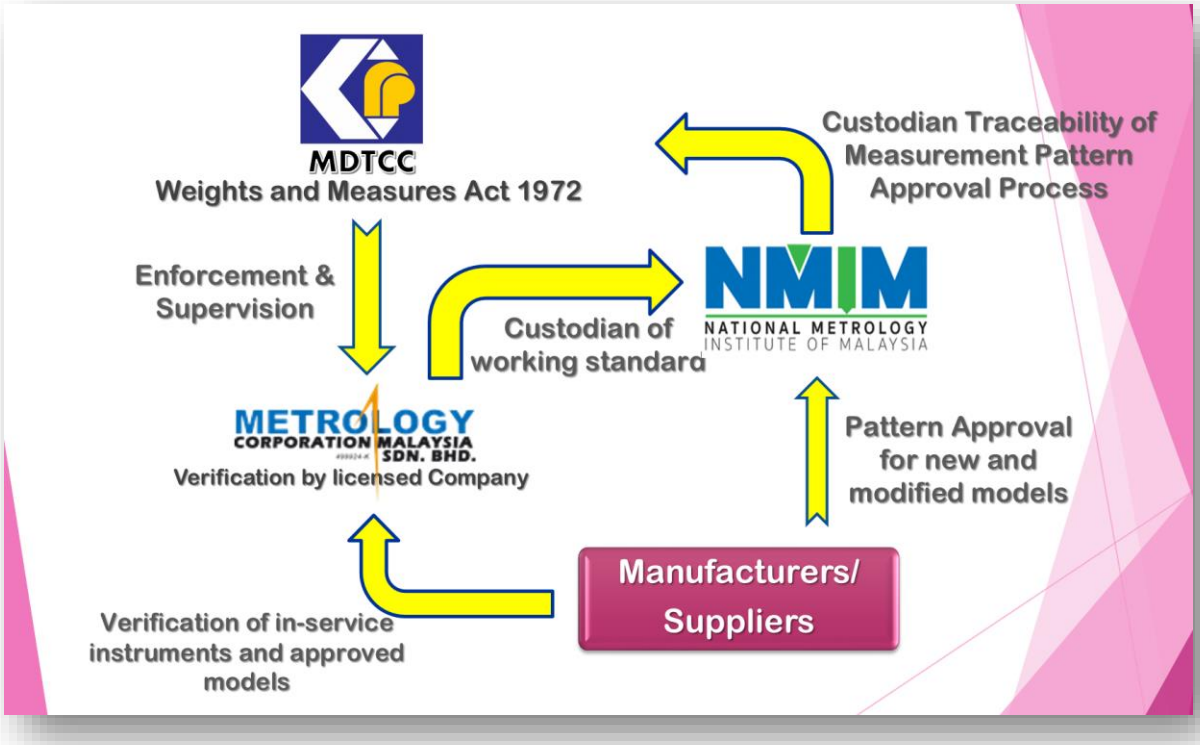


Figure 1: Structure for Metrology in Malaysia

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.

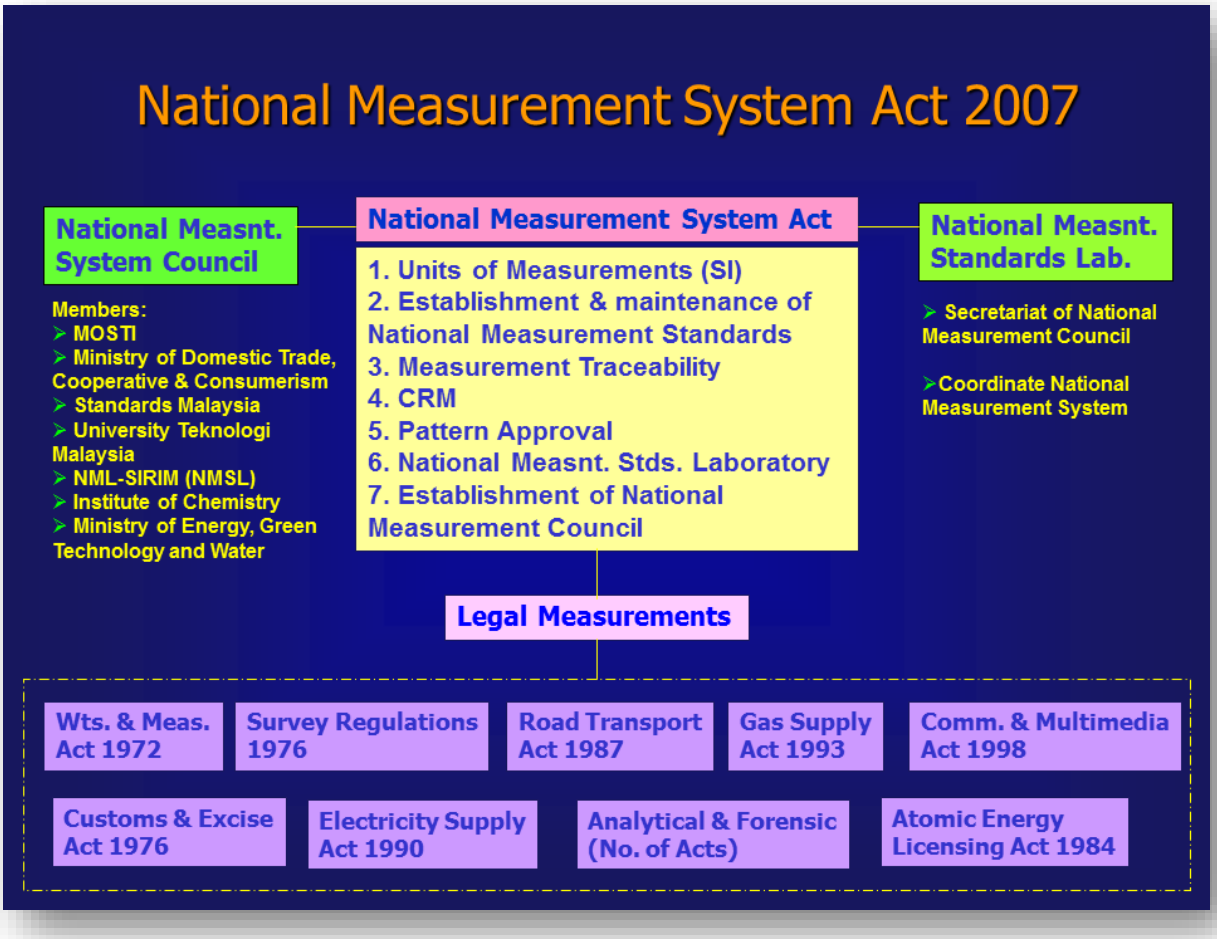


Figure 2: Legislative Frameworks

Figure 2 shows the National Legislative Frameworks 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.

International Arrangements and Engagement

To date Malaysia is a signatory of the Metre Convention and CIPM MRA, a corresponding member of the International Legal Metrology Organization (OIML), and a full member of the Asia-Pacific Metrology Programme (APMP) and Asia-Pacific Legal Metrology Forum (APLMF). At the ASEAN level it is the current Chair of the ASEAN Consultative Committee for Science and Quality (ACCSQ) and also the Chair of the ASEAN Consultative Committee for Science and Quality Working Group on Legal Metrology (ACCSQ-WG 3). Malaysia's participation in the CIPM MRA has enabled certificates of calibration issued by NMIM to be recognized by other national measurement standards laboratories outside Malaysia. It has also strengthened NMIM's power to recognize a certificate of any reference material issued by any person or body as provided in the Act.

Training attended/Hosted

Train the Trainer Course on the Verification of Non- Automatic Weighing Instruments on November 28 to December 1, 2016 at Istana Hotel, Kuala Lumpur. It is a project managed by Physikalisch Technische Bundesanstalt (PTB) and funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) which aims to foster and further develop the capabilities of the Asia Pacific Metrology Programme (APMP) and the Asia Pacific Legal Metrology Forum (APLMF) to support developing economies in the Asia-Pacific region. Participants are from Bangladesh, Cambodia, Bhutan, Nepal and Malaysia. The trainers are Mr Matthew Lux from NMIA, Australia and Mrs Suliana Ghazalli form NMIM, Malaysia.

Training Course on NAWI at Istana Hotel, Kuala Lumpur

The Asia Pacific Metrology Programme (APMP) Mid-Year Meetings and Joint APMP/APLMF Workshop on Modernising National Metrology Infrastructure at Hatten Hotel, Malacca from May 22 - 26, 2017. Malaysia as the host for this event gathered more than 24 countries in Asia Pacific consisting of representatives of the international metrology bodies along the Directors of National Metrology Institutes (NMIs) and representatives of the authorities of Legal Metrology. By successfully organising this event, Malaysia has gained more respect globally in matters related to metrology. Furthermore, Malaysia through NMIM has been actively providing the traceability of measurements to the whole country based on the International System of Units.

APMP Mid-Year Meetings & Joint APMP/APLMF Workshop Modernising National Metrology Infrastructure at Hatten Hotel, Malacca

Training Course on Traceability in Rice Moisture Measurement on July 17 – 22, 2017 at Nilai Springs Hotel. On behalf of the host economy, Ms. Irene Safinaz Hassan (Deputy Director of NMIM) delivered an opening address. Mr. Phil Sorrell and Dr. Tsuyoshi Matsumoto followed and delivered addresses on behalf of APLMF and the WG on Quality Measurement of Agricultural Product, respectively. The target group of this training course was officers and technical experts working in national/regional authorities or research institutes in metrology, who were involved in developing traceability system for moisture measurement or capacity building activities in their economy. On completion of this program, the participants were expected to lead the establishment of sound traceability systems within their economy by delivering training to their colleagues. Applicants needed to have at least one year of practical experience in the verification/calibration of measuring instruments.

Training Course on Traceability in Rice Moisture Measurement at Nilai Springs Hotel, Putra Nilai

SECTION 2 – KEY ACTIVITIES OF 2016/2017

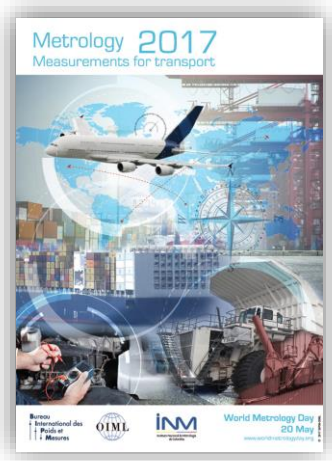
Supporting Industry

World Metrology Day (WMD)

World Metrology Day (WMD) is an annual event that is celebrated to commemorate the diplomatic treaty known as the' Metre Convention. Malaysia became a member of the agreement in 2001. This agreement, originally signed on 20 May 1875 was the beginning of a formal agreement and cooperation at the international level in the field of measurement science or metrology. One of the main objectives of the agreement is to facilitate trade among member countries through the application of the SI system for ensuring uniform measurement.

We celebrated **WMD 2016** which carrying the theme of **"Measurements in a Dynamic World"** with great emotion and pride as the Opening Ceremony was officiated by YB Datuk Seri Panglima Madius Tangau, Minister of Science, Technology and Innovation (MOSTI). It was such a most memorable occasion as two main events were held in conjunction with the celebration alongside the presence of our stakeholders, which were:

- The declaration of NML-SIRIM becoming National Metrology Institute of Malaysia (NMIM)
- The launching of NMIM Website (www.nmim.gov.my).



World Metrology Day (WMD) 2016

On 2017, NMIM took the opportunity to launch the celebration of **World Metrology Day 2017** which falls on 20 May annually, with the presence of world leaders on metrology. The theme for this year's celebration is **"Measurements for Transport"**. It was the most memorable event to the local measurement scene as the opening of all the programmes were officiated by Minister of Science, Technology and Innovation, YB Datuk Seri Panglima Wilfred Madius Tangau.

During the memorable event, Malaysia is truly honoured to have the presence of world leaders on metrology; Dr. Barry Inglis President of the International Committee Of Weights and Measures (CIPM), Dr. Stephen Patoray Director of International Bureau of Legal Metrology (BIML), Dr. Toshiyuki Takatsuji Chair of Asia Pacific Metrology Programme (APMP), Mr. Stephen O'Brien President of Asia-Pacific Legal Metrology Forum (APLMF) and regional experts on scientific and legal metrology.

World Metrology Day (WMD) 2017

Inspection and enforcement for protecting consumer

The objective to regulate the weights and measures and instruments for weighing and measuring used for trade with ensuring the weights or measures or instruments for weighing or measuring conform to the patterns and specifications specified by the Custodian of Weights and Measures and ensuring the weights or measures or instruments for weighing or measuring used for trade are verified. Regulating the licences issued to manufacturers, repairers and sellers of weights or measures instruments. To regulate the licensed company providing services in relation to the verification of any weight or measure or instrument for weighing or measuring.

Enforcer's was joint spot-check operation between MDTCC, Metrology Corporation of Malaysia (MCM) and Malaysia Palm Oil Board (MPOB) in ensuring accuracy of the verified weighbridges used in palm oil industries are well within MPE, at the same time to check any possibility of manipulation that might took place.

In addition, enforcement to regulate the law also to ensuring the industry in the Spa services are follow the rules regarding of the measuring tools time with new Standard

of Procedures and also ensuring accuracy at laundry outlet by using the time as laundry business. Meanwhile for the safety on the road, the enforcer also do the verification for tyre pressure gauge to ensure the safety of road users.

MDTCC Enforcer's do the inspection and verification at the field

The following photos show an example of MDTCC's mobile customer service counter which 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.

MDTCC Mobile Unit

Customer Service Counter

Major projects - What we did and what we learned

AMMENDMENT OF WEIGHTS AND MEASURES ACT – ACT 71

The Amendment of the Act was tabled in Parliament in March 2017. The amendments to fines/penalties in the Weights and Measures Act (Amendment) 2017 have been approved and the commencement is on 1st August 2017. For information, previously the highest penalty was RM5000.00 and after the amended value increased by 10 times to RM50,000. Indirectly increase the ethics of traders where cases involving manipulation of weighing instruments are less. Besides engaging in self-regulatory methods among owners of weighing instruments to improve the level of consumer confidence in the services provided.

NEW REGULATED INSTRUMENTS

Additional regulations will be introduced in the Weights and Measures Act in 2017, where rice moisture and tyre pressure measurements will be included. Tyre pressure gauge verification is very important to ensure road safety and to ensure that motor vehicle tyres can be optimally utilized based on actual life expectancy. On top of that, egg grading machine will also be regulated, based on its measured weight - with reference to the existing Malaysia Standards on egg grading.

Egg Grading

Rice Moisture

REAR SIDE MARKING

COMMERCIAL VEHICLE REAR AND SIDE MARKINGS

The rear and side markings are to enhance visibility and assist motorists in the early detection and identification of trucks and lorries. Laws require vehicles in the transportation industry to be marked with conspicuity material. **MS 828:2011** compliant **ORALITE®** (previo usly known as Reflexite®) conspicuity marking tapes. It can quickly install and get the truck to comply with the requirements. **ORALITE®** is the leading brand, preferred by most OEM because of the durability, performance, and comprehensive warranty. The **ORALITE®** microprismatic technology has the longest sight detection distance in the industry with the highest nighttime reflectivity performance, and our conspicuity material is remarkably easy to install, resulting in minimal labour costs.

WHAT IS MS 828:2011

MS 828:2011 is the Malaysian Standard that specifies requirements for retro-reflective markings on the rear and sides of heavy goods vehicles. The requirements include design, colorimetric, photometric and mechanical properties. The retro-reflective markings must carry the "MS 828:2011 SIRIM logo mark" which means the tape complies with the minimum requirements of the standard

AES

The installation of another 1,200 **Automated Enforcement System (AES)** cameras at highways nationwide should not be viewed as a measure to educate motorists to obey traffic rules.

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.

Installing more AES cameras at strategic locations would discourage motorists from speeding throughout the whole stretch of the highways concerned.

Usually, when motorists enter the camera zone, they tend to slow down and then speed once past the zone. But they won't be able to do that after more cameras are installed.

The AES camera could hardly be considered as a "trap" because it was easily visible and there were ample signboards to alert motorists.

View of reports that Malaysia has one of the highest number of road accidents in the world, it has to implement effective measures to bring down the accident and fatality

rates. The system had worked well in several developed countries in Europe, as well as Australia and the United States. Globally, more than 90 countries have been using the AES since the late 1970s.

According to the Malaysian Road Transport Department website, France's AES has helped to reduce the number of deaths due to road accidents by 27 per cent within three years of its implementation. In the United Kingdom, traffic violations decreased by six per cent while in Kuwait, accidents decreased by 48 per cent.

SECTION 3 – FUTURE FOCUS

New Initiatives Planned (next 1-2 years)

E-Repairer

We 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 MDTCC under Act 71

Emerging Issues – Challenges and Opportunities

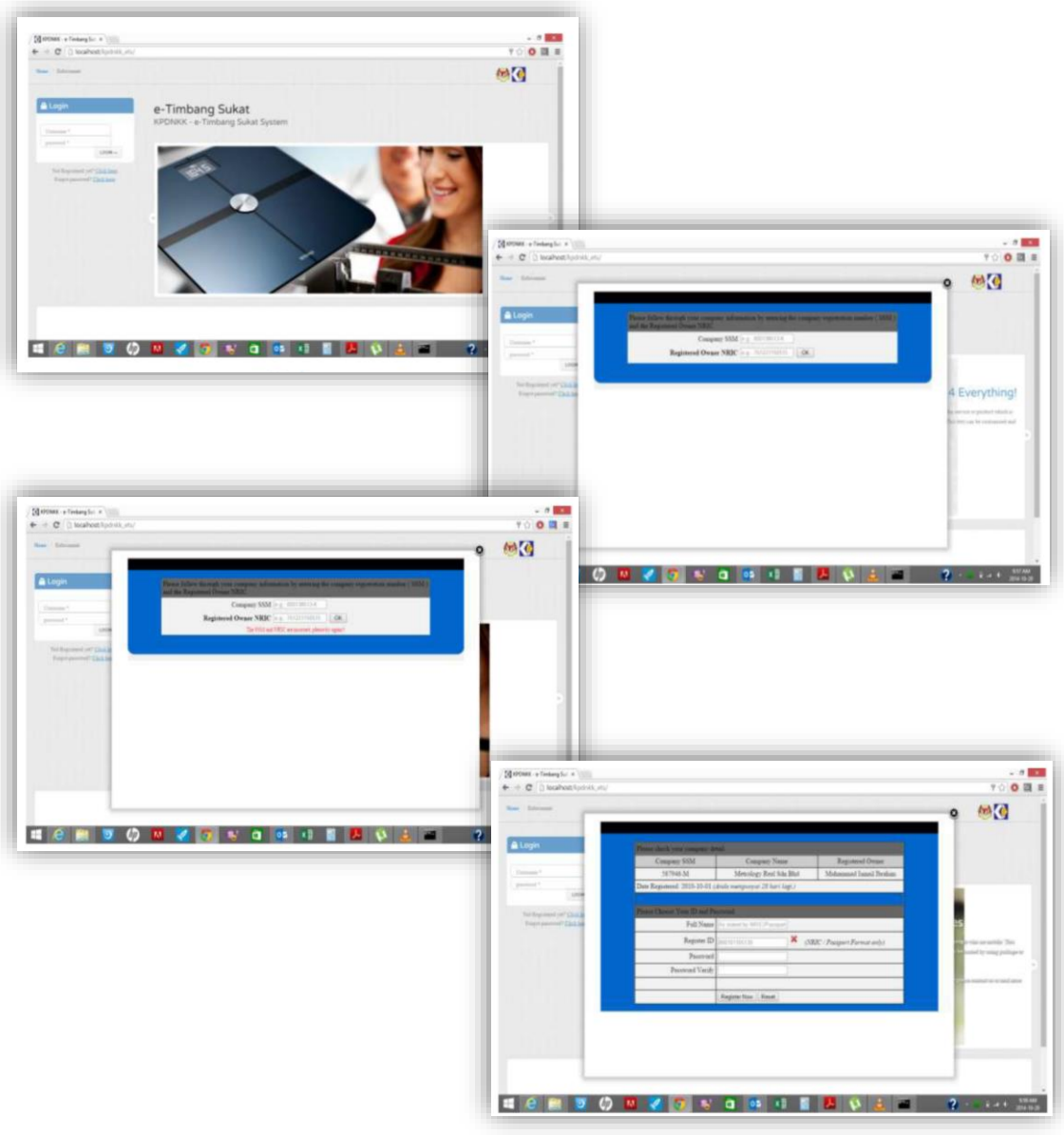
Verification / Software Examination

We 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. Therefore we are looking forward towards capacity building in this field through training programs offered by any institutions or authorities outside Malaysia which is the best solution to effectively reduce manipulations. In the digital era, everything is now relies on software. Software plays an important part in banking, trades, medical, production, entertainment and education. Software vulnerability leads to software piracies, code stealing and software tampering.

This does not only affecting the software industries, but can caused more troubles such as in economic and legal situation, where people nowadays tend to tamper or manipulate software in the favours of their purposes in every sectors. Illegal manipulation of software is one of the biggest issues in software security. Some of them have existed for try do the manipulation in market even enforcement still being doing until today. There are numbers of real life cases where tampering could be a serious threat to community, for instance; a case as of petrol station in Silibin, Ipoh has been reported in the year of 2013 by the Malaysian enforcement authority where the

owner had manipulated their fuel pumps to gain more profit. Similar cases also had been reported in India in the year of 2008.

The suggestion an effective method and framework in the future for detecting and securing software by utilizing some of the methods need to do. The application would be on the protection of software based instruments that relate with trade and consumer activities. This would directly benefit both business and consumers community by means of trustworthy transaction.



The System E-Repairer