

- My name is Zhang Guangxin.
- I am from China and work for the Yunnan Institute of Metrology and Testing Technology.
- Yunnan Institute of Metrology and Testing Technology is a provincial legal measuring and verifying institute of China.
- Major functions include measuring (calibrating), inspecting, development of testing technology, dissemination of the value of quantity.



- There are over 160 employees working in Yunnan Institute of Metrology and Testing Technology, over 70 of them are senior and secondary technicians.
- The Institute has 7 professional measuring research departments and 7 integrative measuring service departments. With a constant temperature lab over 3000 square meters, the total area of all labs is over 9000 square meters. The Institute had set up 119 grade measuring standards which were certified by the China National Accreditation Service for Conformity Assessment (CNAS).
- Since 1985, I have begun my career in metrology and testing technology.
- At first, I worked in the length department, and then worked in the weighing department.



- NAWI is mainly used for trade settlement.
- There are about ten manufacturers of NAWI in Yunnan, and the total production is several thousands a year.
- Among all the NAWI products, 35% are electronic weighing scales, 15% are mechanical scales using a spring, and another 50% are mechanical balances using a weigh beam and weights.





- The accuracy classes are divided into middle accuracy class and general accuracy class.
- The maximum capacity of the weighing instrument is about 100t in Yunnan province. The middle accuracy class is the most commonly used, and the common capacities of the weighing instruments are from 10kg to 80t.
- The governmental metrology department implements the measurement law.



- NAWI includes digital indicating weighing instrument, non-self-indicating weighing instrument and analog indicating weighing instrument.
- The error of the standard weights should be less than 1/3 MPE of the capacity measured.
- Initial verification and re-verification are required. Both will be performed by the Institute of Metrology and Testing Technology once a year. The number of all the verifications is about 10,000 a year, and increasing.



- Type approvals are required, the metrology institute performs the type approvals. There are about 10 type approval tests per year.
- The general verification regulation for NAWI is OIML R76.



- We hope to have more professional training courses and exchanges with other institutes in this field.

TRAIN THE TRAINER COURSE ON
THE VERIFICATION OF MECHANICAL WEIGHING SCALE
May 13th - 16th, 2008
in Thailand

Presented by
Sri Astuti

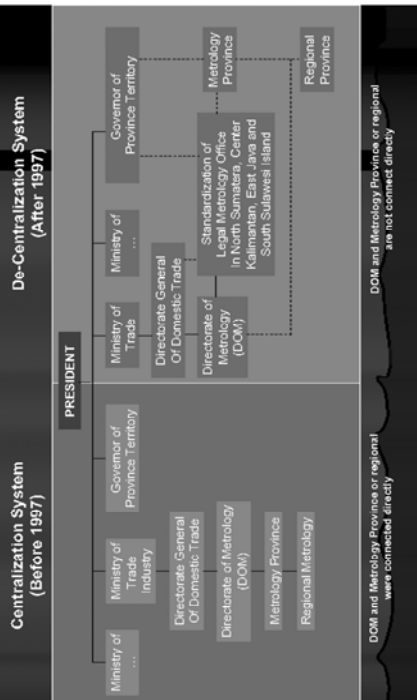


DIRECTORATE OF METROLOGY
DIRECTORATE GENERAL OF DOMESTIC TRADE
THE MINISTRY OF TRADE OF THE REPUBLIC INDONESIA

1. Self Introduction

- **My name is Mrs .SRI ASTUTI**
- I have been working for the directory of metrology under the ministry of trade since 1997, I am a graduate of the padjadjaran university, majoring physic and working as a staf of standart national unit measuring. My responsibility is verify the standart of weighing instrument.

Government Organization Structure



The Organization Chart of Directorate of Metrology

DIRECTORATE OF METROLOGY



Experience in my organization

- To carry out legal metrology control.
- To carry out law act to user which the law of legal metrology.
- To verification and re-verification of legal measuring instrument for mass, volume, length and balance.
- To calibrate the technical metrology instrument.
- To follow in house seminar.

2. NAWI in my economy

- User can use NAWI easier.
- NAWI unit is cheap.
- NAWI belongs to legal metrology instrument.
- The most of NAWI from domestic production and there are many choices of maximum capacity.
- Most of them are for measuring weight of things, goods commodities at the traditional market with lower accuracy.
- It's a simple technology, so it's easy to use for maintenance and get it in land trade.
- Until now there are 96 local corporations of NAWI.

- The total number of the production since 1993 until 2007 approximately 1653 types.

- The mention ratio for :

- a.electronic weighing scales is 35 %
- b.mechanical scales using a spring is 0.52 %
- c.mechanical balance using a weigh beam and weights is 64.48%

- The most commonly used :

- a) Accuracy class II and III
- b) The maximum capacity : 500 kg

3. Legal Metrology System in my Economy

- The organizations applying measuring law are the directorate of metrology under the ministry of trade ,the regional verification office under the directorate metrology and testing laboratory using ISO 17025.
- The Technical/Science Metrology Service have been implement by Metrology Institute (under the Indonesian Institute of Sciences).
- The Nuclear Radiation Metrology Service have been implement by government body (under the National Atomic Energy Board).
- The Calibration/testing services have been implement by calibration/testing laboratory which has been getting an accreditation certificate from the national accreditation committee.

● The types of weighing instruments are :

- a. mechanical weighing instrument
 - spring
 - beam
 - centesimal
 - gandar equals weighing instrument which have sliding poises
- b. semi digital weighing
- c. electronic weighing

- In my country we apply initial verification and re-verification, the organization perform the verification is regional verification office. The verification period is once a year. Number of the verification is performed in a year about 300 instruments, they are decreasing each year.
- the type approvals are required and the organization which perform the type approvals is the directorate of metrology.
- Every year the type approvals perform approximately 560 types.

- The units of measure used for mechanical weighing instrument are international system units, for example : kg, g.
- Each new product types neither imported or domestic product of the weighing instruments before selling and or using for commodity transaction are required the type approvals first.
- The type approval of legal metrology instruments are only issued by Directorate of Metrology.
- Initial verification and re-verification are required.

- Verification of weighing instruments have been carry out by inspectors of regional metrology offices.
- Re-verifications can be performed neither at the regional metrology office nor the other place of services.

4. Current Situation in my Economy

- Since year 2001 stamp ordinance has been change to be a special technical requirements of non-automatic weighing instruments which was adopted from OIML R-76.
- After this regulation holds for all of non automatic weighing instruments, there are some problems among other things:
 - >How way to determine the verification scale interval of weighing instruments which are not equipped a scale interval?
 - >What is our wisdom if the minimum number of verification scale interval of weighing instruments are not comply with OIML R-76?
- All of the weighing instruments are subject to OIML R-76.

- In applying the OIML R 76 , we are confronted with difficult test of deciding the class because the deciding class at OIML R 76 if applied on mechanical weighing instrument in Indonesia there is will experient decreasing of the class from the III class be come the IV class.

- **Example :**

- centesimal bascule with beam and using sliding poises capacity maximum 500kg
- e= minimum scale return in sliding poises = 200g
- n = 500.000/200 = 2500 in the class III (NAWT 's for trade use)
- if use in steelyard sliding poise capacity maximum 50 kg
- e =minimum scale =200 g
- n = 50.000/200 = 250 in the class IV (NAWT's for lower accuracy)

In Indonesia regulation law (SK dijen no 29/DJPDN/kp/XII/98) steelyard sliding poises can be trade because technique ability is good . If using OIML R 76 steelyard sliding poises in NAWT's for lower accuracy (can't trade) but a lot of people in Indonesia still use steelyard sliding poises for trade in the traditional market .

5. Problem to implement the legal metrology system in my economy

- The main problem in the type approval test are budget, capability of human resources.
- We have a lot of finance-related problem especially in equipments levying for the examination of voltage , temperature and magnetic.

The Other Requirements in my Economy

- Measure Law : No. 2 1981 Regarding Legal Metrology
 - Regulations :
 1. No. 2, 1985 concerning Measuring Instrument subject to verification.
 2. No. 10, 1987 concerning Legal Units of Measurement.
 3. No. 7, 1989 concerning the National Standardization Council.
 4. No. 2, 1989 concerning the National Standards for Measurement Units.
 5. No.2, 1998 concerning special technical conditions measuring the weighing instrument.
- and so on.

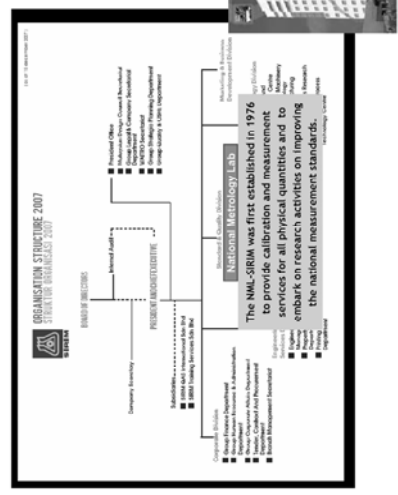
Overview of the Legal Metrology System on Non-Automatic Weighing Instruments (NAWI) in Malaysia

13 - 16 May 2008 Pattaya, Thailand

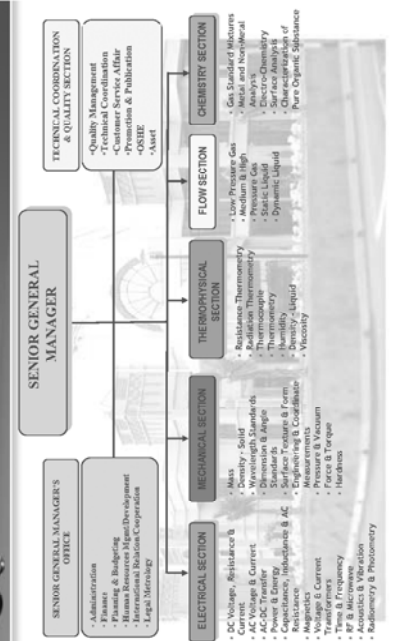
Ms. Hairani Nordin
Metrologist
National Metrology Lab
SIRIM Berhad, MALAYSIA

Thank You for Your Attention


Organizational Structure of SIRIM Berhad




Organizational Structure of NML-SIRIM




NIML's Core Activities




TO ESTABLISH, MAINTAIN AND UPGRADE THE NATIONAL PHYSICAL STANDARDS




TO PURSUE TECHNICAL COOPERATION WITH INTERNATIONAL STANDARD BODIES



TO CONDUCT RESEARCH & DEVELOPMENT ON METROLOGY MEASUREMENT TECHNOLOGY AND STANDARDS



TO DISSEMINATE AND PROMOTE MEASUREMENT PARAMETERS AND TECHNOLOGIES TO INDUSTRIES



TO PROVIDE LEGAL METROLOGY SERVICES AS REQUIRED BY THE LAWS

NAWI in Malaysia

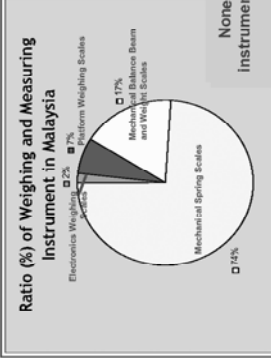
Q 2.1 : Major Purposes or Targets to use NAWI?

- For accurate weighing and measurement for sale & purchase in retail outlets.
- To protect the consumer from short-weight and measurement

Q 2.2 & 2.3 : No of manufacturer(s) & production of NAWI in Malaysia?

- Only one (1) NAWI manufacturer in Malaysia, with a total of 5000 pieces of production per year.

Introduction



Ratio (%) of Weighing and Measuring Instrument in Malaysia

- Electronics Weighing Scales: 22%
- Platform Weighing Scales: 7%
- Mechanical Balance Beam and Weighing Scales: 17%
- Mechanical Spring Scales: 14%

None of weighing and measuring instrument verified and re-verified in Malaysia : 250,000 pieces

NAWI in Malaysia

Q 2.4 : Approximate ratio (%) of numbers in use for various scales

NAWI in Malaysia

Q 2.5 : The Accuracy Classes and Max Capacity

- Accuracy based on the Pattern or Specification for Weights and Measures or Instruments for Weight or Measuring Order 1981.
- Accuracy class based on the prescribed by the Order:
 - (i) Class 'B' for precious metal, pharmaceutical products
 - (ii) Class 'C' for other retail product
- Range : 30 g to above 100 kg
- Commonly used : Class B

NAWI in Malaysia

Legal Metrology System in Malaysia

Q 3.1 : Who implements the measurement law ?

WEIGHTS AND MEASURES ACT, 1972 (WMA 72)

- Regulated and governed by Enforcement Division under the Ministry of Domestic Trade and Consumers Affairs (MTDCA).
- Section 14 of WMA72 requires mandatory verification and re-verification for all weighing and measuring instruments used for trade.
- Enforcement of the Act were initially been carried out by Weights and Measures Inspector under the Enforcement Division.
- From April 2005, the service were privatized and done by a company, namely Metrology Corporation Malaysia (MCM). Weights and Measures Inspector only enforces the WMA and oversee the company performance.
- Each standard used to perform the verification is traceable to national standards maintained by NML-SIRIM.

Legal Metrology System in Malaysia

Q 3.2 : Types of weighing instruments and its range, which covered by the measurement law ?

Section 14 (5A) WMA72 requires all weighing and measuring instruments to be approved by the Custodian before they can be used for trade.

- Linear measures,
- Liquid capacity measures,
- Weights,
- Beam-scales,
- Balances,
- Counter machines,
- Spring balance and scales,
- Dead-weight machine,
- Platform weighing machines,
- Weightbridges,
- Crane weighing machines,
- Automatic weighing machines,
- Instrument for measurement of liquid fuel lubrication,
- Liquefied petroleum gas dispenser,
- Parking meters and time recorders,
- Instrument for the measurement of alcohol liquor,
- Any other instrument for weighing or measuring approved by Custodian, from time to time.

Legal Metrology System in Malaysia

Q 3.3 : Are initial verification & re-verification required?

- Yes. All weighing and measuring instruments require initial verification and re-verification.
- It will conducted by the Verification Officer of MCM after being serviced by licenced repairer.
- Verification interval : Once a year.



Legal Metrology System in Malaysia

Q 3.4 : Are type approvals required ?

- Yes. They are required under the WMA72. The NML-SIRIM is conferred the responsibility to perform the type approval as the Custodian of WMA72.
- For the past few years, no new instruments have been submitted to NML for approval.

Q 4 : Explain current situation in Malaysia about the compliance of the international standards, such as OIML R76?

All new weighing instruments (NAWI) are required to comply to the requirements of OIML R76. Verification of such standards are also generally in accordance with the recommendation.

Legal Metrology System in Malaysia

**Q 5 : Are there any other requirements from your economy?
Do you have problem to implement the legal metrology system?**

- Malaysia looks forward to more training opportunities to upgrade the technical competence and knowledge of legal metrology personnel.
- Funding support from donor countries and funding agencies is very much appreciated.



**Thank You
Very Much
For Your
Attention !**

**Trainer Course on the Verification of
Mechanical Weighing Scales
PATTAYA-THAILAND
May 13th-16th, 2008**

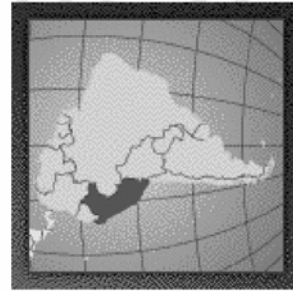


**ECONOMY: PERU
ORGANIZATION: INDECOPI -
NATIONAL METROLOGY SERVICE
TRAINEE: Nikko Meza**



Asia-Pacific
Economic Cooperation

LOCATION



**PERU IS PART OF
LATIN AMERICA.
IT IS LOCATED IN
THE OCCIDENTAL
PART OF SOUTH
AMERICA.**

Peru is the land of the INCAS Empire



Machu Picchu
one of the wonders of
the world

INFORMATION

- Country (long form) Republic of Peru
- Capital Lima
- Total Area 1 285 215 square kilometers
- Population 27 483 864
- Languages Spanish (official), Quechua (official), Aymara
- Religions Christians (Catholic and others) 98 %
- Government Type Constitutional Republic
- Currency 1 Nuevo Sol (S/.) = 0.36 US\$
- Industry mining of metals, petroleum, fishing, textiles, clothing, food processing, cement, steel, metal fabrication
- Agriculture coffee, cotton, sugarcane, rice, wheat, potatoes, coca; poultry, beef, dairy products
- Peru has the biggest biodiversity of the world
- Natural Resources copper, silver, gold, petroleum, wood, fish and others

INTRODUCTION

- Explain about your organization and department.
National Institute for the Defense of Competition and the Protection of Intellectual Property -INDECOPI was created by Law N° 25868 in November 1992, to promote a culture of loyalty and fair competition in the Peruvian Economy and to protect all forms of intellectual property: from copyrights to patents and biotechnology.



INDECOPI

The NATIONAL METROLOGY SERVICE was created in 1983 to promote the development of metrology in Peru and to contribute to the spreading of the units of the SI. Currently it is the only entity in Peru capable of offering a reliable service of metrological assurance, which is necessary for institutions looking for a quality system, and subsequently getting recognition through the ISO 9 000 certification.



INTRODUCTION

- Explain your professional experience in your organization.
I am technical metrologist of Mass and Volume and Density laboratories in National Metrology Service – INDECOPI. I am in charge of the calibration service of weights, scales and Volumetric Standard.



Asia-Pacific
Economic Cooperation



Non-Automatic Weighing Instruments (NAWI) in your economy

- What are the major purposes or targets to use NAWI?

Using these scales in industry and commerce.



- How many manufacturers of NAWI are there in your economy?

There are approximately:

03 manufactures of Mechanical Scales
06 manufactures of Electronic Scales



If you know, please mention approximate total number of production of NAWI.

Production approximate of NAWI in my economy :
150 scales between mechanicals and electronics for month

If you know, please mention approximate ratio (%) of numbers in use for the (a) electronic weighing scales, (b) mechanical scales using a spring, and (c) mechanical balances using a weigh beam and weights.

Electronics Weighing Scales: 65 %
Mechanical Scales: 35 %
(spring; weigh beam and weights)

What are the accuracy class and the maximum capacity, which are most commonly used?

The more common are the weighing scales class III and IV
The capacity is: 10 kg until 50 000 kg

• Describe briefly the types of weighing instruments and its measuring range, which are covered by the measurement law.

There are no laws. However the scales for commercial transactions must comply with the Peruvian Metrological Standard, which is an adaptation of the OIML R 76.

Are initial verification and re-verification required? If yes, which organization performs the verification? How long is the re-verification period? How much verification is performed in a year? Are they increasing or decreasing?

In my economy this not is required, but the enterprises request the service of calibration and re-calibration will according to their need.

The recalibration is required for custom scales and road scales, for other scales the recalibration is not required .



Are type approvals required? If yes, which organization performs the type approvals? How many type approval tests are performed in a year?

In my economy this not required.



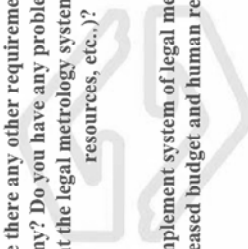
Explain current situation in your economy about the compliance to the international standards / recommendations, such as OIML R76?

Although there is no control by government, there are rules established for customs scales (rules of Customs National Superintendent's Office) and for road scales (rules of Ministry of Transport) which demand that these instruments must have a calibration certificate every 6 months and the Metrological standard, which is an adaptation of the OIML R 76.



Are there any other requirements from your economy? Do you have any problems in order to implement the legal metrology system (budget, human resources, etc.,)?

To implement system of legal metrology need increased budget and human resources, etc..



Thank you!

Nikko Meza Valencia
INDECOPI - PERU
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Asia-Pacific
Economic Cooperation



The Singapore Weights and Measures Programme

Jessie Koh
Weights and Measures Office

13 May 2008



Weights and Measures Programme

Background

- ❖ The Weights and Measures (W&M) Programme aims to protect consumers and traders by regulating the use of weighing and measuring instruments for trade use by weight or measure and pre-packaged goods.
- ❖ Governed by the Weights and Measures Act and Regulations.
- ❖ SPRING Singapore administers the W&M Programme since 1 April 2000.
- ❖ There are about 40 000 weighing and measuring instruments in Singapore.



2

5 Categories of Weighing and Measuring Instruments

The following weighing and measuring instruments are regulated in Singapore



- (a) Instrument for measurement of liquor
- (b) Flow meters
- (c) Oil dispensing pumps
- (d) Linear measures
- (e) Non-automatic weighing instruments



3

Roles of WMO

Pre-market Activities

- Designate Authorised Verifiers to perform verification on weighing and measuring instruments for trade use.
- Register approved weighing & measuring instruments.
- Verify and stamp/seal all new or repaired weighing and measuring instruments for trade use.



Post-market Activities

- Inspect weighing and measuring instruments used for trade purposes for inaccuracies and to ensure that they have not been tampered with. To inspect pre-packaged goods or goods sold to ensure that they are not short weight or short measure.
- Investigate complaints pertaining to weight and measure matters from consumers and traders.



4

Verification Seals



Tamper proof paper adhesive seal



Plastic Seal



5

Accuracy Label



Introduced on 1 April 2004, the Accuracy Label is affixed on all verified weighing and measuring instruments for trade use to further boost the confidence of consumers and businesses alike.



6

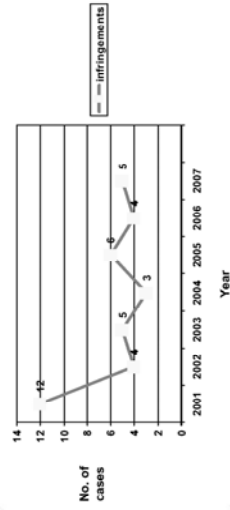
WMO Outreach Programme



7

Achievements

Since 2001, the number of infringements has gone down significantly.



8

COUNTRY REPORT ON LEGAL METROLOGY IN THAILAND

TRAIN THE TRAINER COURSE ON THE VERIFICATION OF MECHANICAL WEIGHING SCALES IN THAILAND

PRESENT BY PISAKORN PISANKUL

Department of Internal Trade
Bureau of Weights & Measures

Thank you!

9

Organization (continued...)

- ❖ The Northern Verification Center (Chiang Mai)
- ❖ The North-eastern Verification Center (Khon Kaen)
- ❖ The Eastern Verification Center (Chonburi)
- ❖ The Southern Verification Center (Surat Thani)

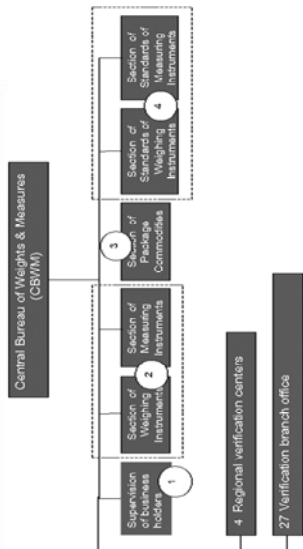
Organization

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    graph TD
      MoC[Ministry of Commerce] --> DiT[Department of Internal Trade]
      DiT --> CBWM[Central Bureau of Weights and Measures]
      CBWM --> NV[Northern Verification Center]
      CBWM --> NEV[North-eastern Verification Center]
      CBWM --> EV[Eastern Verification Center]
      CBWM --> SV[Southern Verification Center]
      CBWM --> WMO[27 Weights and Measures Branch Offices]
  
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Organization (continued...)



DUTIES AND SERVICES

1. Supervision of business holders



DUTIES AND SERVICES (continued...)

2. Control of Weighing and Measuring Instruments



DUTIES AND SERVICES (continued...)

3. Control of packaged goods





DUTIES AND SERVICES (continued...)

4. Governance of legal weighing and measuring standards and services



LAW AND REGULATIONS



- ❖ The law of Weights & Measures B.E.2466 (1923)
- ❖ The law of Weights & Measures B.E.2542 (1999)



LAW AND REGULATIONS (continued...)

The WMI under the Regulations are as follow:

- ❖ Non-Automatic Weighing Instruments
- ❖ Automatic Weighing Instruments
- ❖ Weights
- ❖ Length-measuring Instruments
- ❖ Automatic Level Gauges
- ❖ Liquid-measuring Instruments
- ❖ Water Meters
- ❖ Gas Volume Meters
- ❖ Direct Mass Flow Meters
- ❖ Package commodities
- ❖ Rice Moisture Meter
- ❖ Etc.,



SELF VERIFICATION

As a following :

- ❖ Water Meter since 2006 (5 companies)
- ❖ Length Measurement since 2007 (1 company)
- ❖ Spring Scale since February 2008
- ❖ And the next instruments which now is in process : fuel dispenser and truck scale



SELF INTRODUCTION

I am responsible for verification of scale and weights which are manufactured, repaired and imported and supervision of uses of scale to ensure that no taking advantage of abuse of such instruments takes place.

I will go to inspect and examine the conditions, properties and accuracy of scale used at markets, stores and purchasing places and make public understanding regarding a correct means on the use of scale.



2. NAWI in Thailand

2.1 The major purposes or target to use NAWI

- ❖ To weigh products/goods for transaction.
- ❖ To weigh the products for recheck the weights.
- ❖ To weigh objects for analysis.(In Laboratory).
- ❖ To weigh the raw material for industrial work.
- ❖ To weigh the vehicle (limiting the vehicle weight of Department of Land Transport).
- ❖ etc.,



2. NAWI in Thailand

- ❖ Number of NAWI manufacturers: ~ 70 manufacturers.
- ❖ Number of production of NAWI is about 570 000 / year.
- ❖ Its consist of following:

560,000 spring scale	↑	around 98%	}	around 2%
1,000 electronic weighing	↑			
9,000 mechanical balance using a weigh beam and weights	↑			



2. NAWI in Thailand

- 2.5 The accuracy class and the maximum capacity which are most commonly used in Thailand.
- ❖ The electronic weighing scales with accuracy class III is the most commonly used.
- ❖ The mechanical weighing scale which are used in Thailand almost are accuracy class IV .
- ❖ Spring Scale with capacity of 7kg is the most commonly used in Thailand. The Maximum capacity of spring scale is 60 kg.



3. Legal metrology system in Thailand

- 3.1 Who implements the measurement law ?
- ❖ The organization which implements the measurement law is Central Bureau of Weights and Measures, Department of Internal Trade, Ministry of Commerce.



3. Legal metrology system in Thailand

3.2 The types of weighing instruments and its measuring range, which are covered by measurement law.

Weighing instruments are divided into 3 types as follows:

- ❖ Non-automatic weighing instruments.
- ❖ Automatic weighing instruments.
- ❖ Weights.



3. Legal metrology system in Thailand

The measuring range that cover by law:
In Thailand, the measurement law concerning non-automatic weighing instruments is followed by OIML R76 and there are no limit the measuring range in the measurement law except for the spring scales and weights. It is limited the range as follows:

- ❖ Weights: the measuring range is 1g ~ 50 kg. (Verification)
- ❖ The spring scales: the measuring range as follows:

1 kg	20 kg
3 kg	35 kg
7 kg	60 kg
15 kg	



3. Legal metrology system in Thailand

3.3 Initial verification and re-verification is done by CBWM.

Initial verification	re-verification
The weighing instruments which use for trade	Truck scale (2 years)



3. Legal metrology system in Thailand

3.4 Type Approval:
No Type Approval.



4. Current situation in Thailand about the compliance to the international standards/recommendation?

- ❖ Non-automatic Weighing Instruments are based on **OIML R76**
- ❖ Automatic Weighing Instruments are principally based on **OIML R50, R51, and R107.**
- ❖ Length-measuring Instruments are based on **OIML R35.**
- ❖ Automatic Level Gauges are based on **OIML R85.**
- ❖ Liquid-measuring Devices Gauges are based on **OIML R117.**
- ❖ Gas Volume Meters are based on **OIML R6, R31 and R32.**
- ❖ Direct Mass Flow Meters are based on **OIML R105.**
- ❖ Weights are based on **OIML R111.**
- ❖ Pre Packaged goods are based on **OIML R79 and R87.**

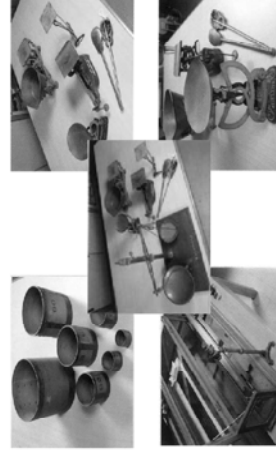


5. Are there any requirements from your economy? Do you have any problems in order to implement the legal metrology system?

Human resources: According to the downsizing policy of the government 10 years ago, nowadays there are a lot of tasks under the legal metrology while number of officers who supervise that tasks is not enough.



THANK YOU



COUNTRY REPORT

Training course on the Verification of Mechanical Weighing Scales

May 13th-16th, 2008
Pattaya, Thailand

Tran Thi Thuy Ha
Directorate for Standards and Quality
(STAMEQ)

1

Vietnam Country

- Area: 331 690 km²
- Location: Vietnam situated in South - East Asia. It borders China in the North, Lao and Cambodia in the West and look out the East sea (Pacific) in the east and the south.
- Population: 87 millions
- Capital: Hanoi

2

Map and flag of Vietnam



3

Directorate for Standards and Quality

- National Authority for legal metrology is The Directorate for Standards and Quality (STAMEQ).
- STAMEQ is the Governmental Agency under the Ministry of Science and Technology which, according to legal provisions, undertakes the function of the State management on standardization, metrology and quality of products and goods as well as to represent Vietnam in international and regional organizations under decisions of competence State agencies.

4

Metrology Department

1. To assist the General Director of STAMEQ in performing the uniform State management over the system of measurement standards, including:

To submit to the General Director of STAMEQ the plan on development standards; national system of measurement standards; to assign agencies to keep and preserve national measurement standards;

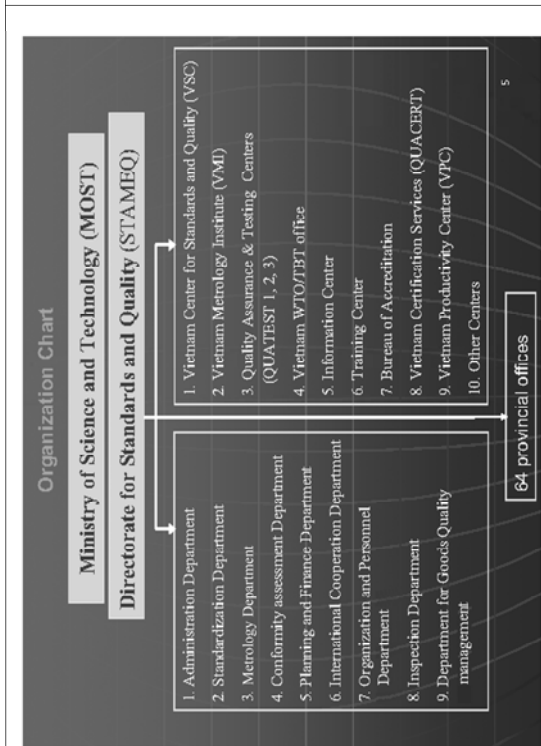
6

Metrology Department

2. Metrology Department will perform the following tasks:

- To build and manage the system of national measurement standards; to guide ministries, branches and localities in building the system of measurement standards;*

6



Metrology Department

To submit to the General Director of STAMEQ for promulgation the regulations on measurements and measuring methods, and the regulations requesting the measurement organizations and individuals to create favorable conditions for measuring device-users to inspect measurements and measuring methods.

7

Metrology Department

- To organize and manage the expertise and standardization of measuring devices, recognize the capability to expertise measuring devices;
- To certify standard samples, approve measuring-device samples before the production or import thereof according to law provisions;
- To grant and withdraw measurement verifier's cards.

9

Non-Automatic Weighing Instruments (NAWI) in Vietnam

- Non-Automatic weighing instruments belong to “list of measuring instruments are subjected to compulsory verification”.
- The major purposes or targets to use NAWI are to create fair in trade, protect legal benefits of users.
- Up to now, there are more ten manufacturers of NAWI in Vietnam.

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Non-Automatic Weighing Instruments (NAWI) in Vietnam

- Total number of production of NAWI in Vietnam about 2.5 million including 50% of mechanical scales, 45% of electronic weighing scales and 5% other (mechanical balances using a weigh beam and weights).
- NAWI of accuracy class IV, the maximum capacity is 1 kg, 2 kg, 4 kg, 5 kg, 8 kg, 10 kg, 12 kg, 15 kg, 20 kg, 30 kg, 60 kg, 100 kg, 120 kg, 150 kg which are most commonly used in Vietnam.

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Legal metrology system in Vietnam

- Government, Metrology State Management Agency, Metrology Institute, verification body, testing laboratory, etc., implement the measurement law.
- All types of weighing instrument above mentioned are covered by measurement law.

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Legal metrology system in Vietnam

- All types of weighing instrument are subjected to compulsory verification including initial verification and re-verification.
- Bodies will perform the verification: Vietnam Metrology Institute (VMI), Quality Assurance and Testing Center 1, 2, 3, Department for Standard, metrology and quality in province and Verification authorized Units.
- However, mechanical verification is mostly performed by 64 provincial verification offices and verification authorized Unit (NhonHoang spring dial scale Manufacturer).

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Legal metrology system in Vietnam

- The re-verification period is one year.
- There are 2.5 million verification is performed in a year and they are increasing annually.
- All types of weighing instrument must be approved before the production or import.
- STAMEQ is measurement State management Agency to perform the type approvals.

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Legal metrology system in Vietnam

- Verification is performed for non-automatic weighing instruments according to verification procedure (Method and Means of verification) issued by STAMEQ. It complies with OIML R76.

Thank you for your attention !

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