

# National Metrology System Development Master Plan III (2017 – 2021)

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สถาบันมาตรวิทยาแห่งชาติ  
National Institute of Metrology (Thailand)

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# Foundation & Present status



# Metrology in Thailand

## Scientific Metrology

National Metrology System Development Act  
B.E. 2540 (1997)

**National Institute of Metrology (Thailand)**

Ministry of Science and Technology

## Legal Metrology

Weights and Measures Act  
B.E. 2466 (1823)

Central Bureau of Weights and Measures  
Ministry of Commerce

**National Metrology System Development Act  
B.E. 2540 (1997)**

**Autonomous institution** under Ministry of Science and Technology

**Designated national highest authority** in scientific metrology



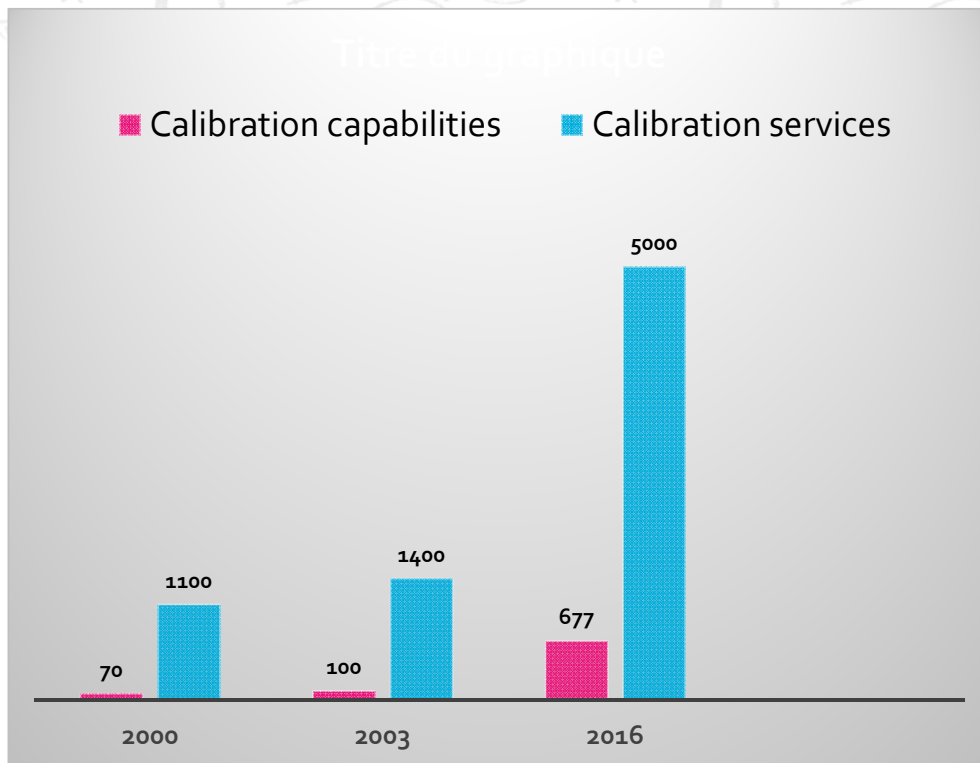
## Labs & Offices

Two (2) campuses:	Organisation:
- One in Pathum thani	- 7 Metrology Departments
- The other in Bangkok	- 2 Administrative Departments
	- 1 MIS Center
47 labs with strictly controlled temperature and humidity	Easy maintenance with minimum interruption
Good vibration control	Energy conservation
Good working environment	24 hour operation

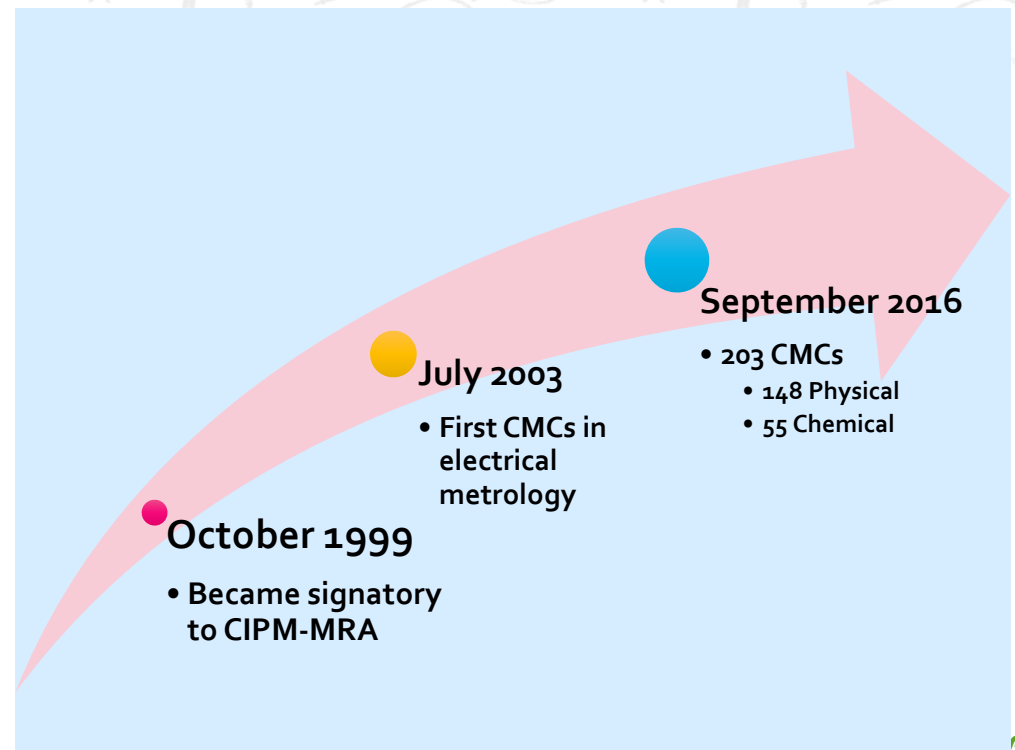
## Staff & Budget

- Staff ~ 210
  - ~ Metrologist: 140  
(Bachelor: 27, Master: 65, PhD: 45, Others: 3)
  - ~ Supporting staff: 70  
(Bachelor: 40, Master: 21, PhD: 3, Others: 6)
- Budget:
  - ~ 300 million THB from government
  - ~ 50 million THB from services
  - ~ 2000 million THB for upgrading national measurement standards and facilities, 2013 - 2017

# Calibration capabilities & services



# CIPM-MRA and CMCs



# Some lessons learnt – Influential factors

- Good understanding and strong support from decision makers
- Continuity
- Starting from practical level
- Demand pull: find partners and work with them
- Friends: support and guidance
- Delivery: keep one's promise





# Challenge & Approach





# Challenge

**Link** national metrology development to national economic and social development

**Create** tangible impacts

Number of NIMT's service capabilities: **677**

Standards of public & private calibration labs serviced by NIMT: **5000** items

In use in production, QC and inspection: **8 – 10 million** items

'AM NIMT'

# Our Approach

Create Tangible  
**Impacts**

Building  
**Network**

Building  
Stronger  
**Foundation**

## New transfer measurement standards

SME and Industry

Quality of Life

Consumer Protection & Fair Trade

### Domestic Network

- Metrology Club
- Chemical Metrology Laboratory Network

### Regional Network

- ASEAN Experts Group on Metrology
- APMP, APMP-DEC

### International Network

- Bilateral collaboration e.g. NMIJ, NICT, PTB, NIM, KRIS
- Participation in international forum: BIPM, IMEKO

Chemical Metrology &  
Biometry

Physical Metrology

International recognition

New lab  
building

New  
equipment

Upgrade  
measureme  
nt standards

New  
quantities,  
ranges &  
techniques

Participate  
in Key  
Comparisons

Research  
collaborations





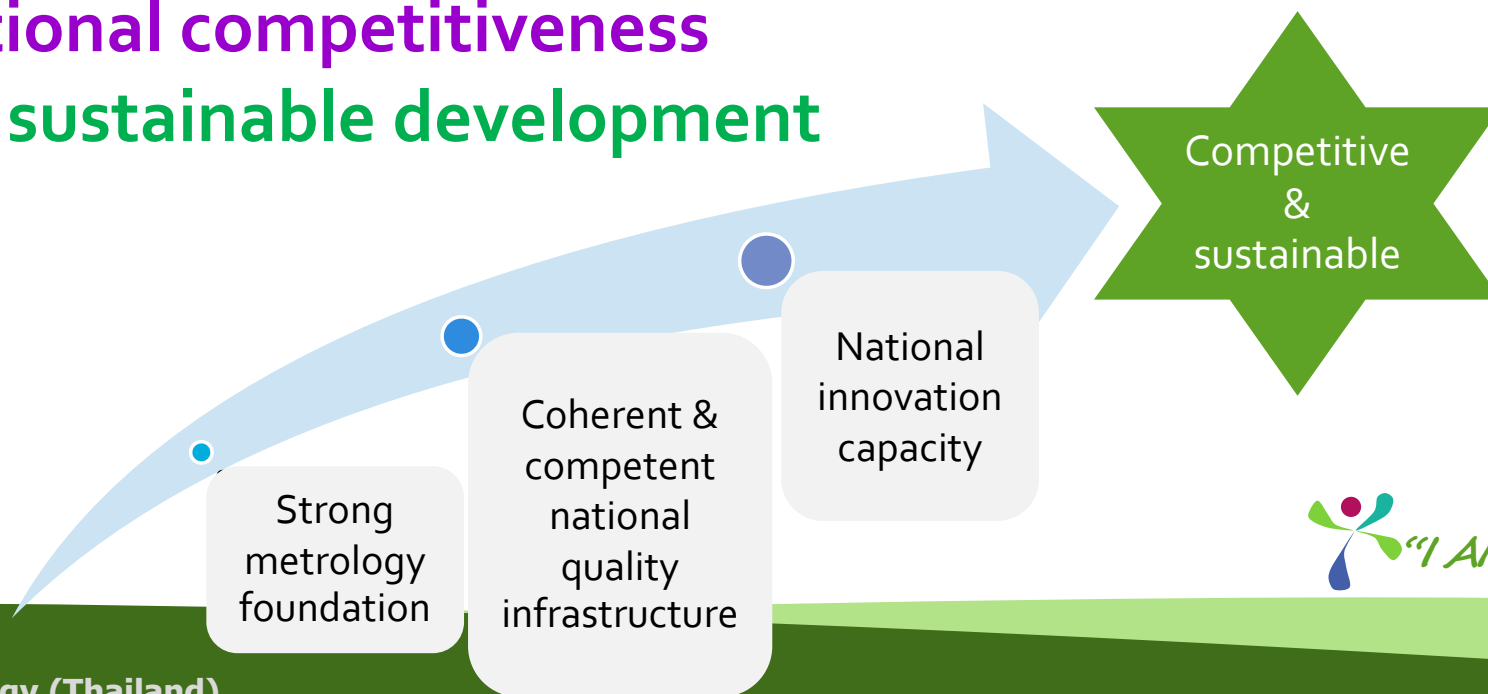
# National Metrology System Development Master Plan III (2017 – 2021)

APPROVED IN PRINCIPLE BY THE NATIONAL METROLOGY COMMITTEE



# Vision

**Strong metrology foundation** for a  
**coherent and competent national quality infrastructure**  
to enhance **national innovative capacity** in order  
to raise **national competitiveness**  
and enable **sustainable development**



# Structure of Strategic Intentions

## COMPETITIVE THAILAND



STRATEGIC INTENTION 3  
**Productive & Innovative  
Economy**



STRATEGIC INTENTION 2  
**Coherently Functioning  
NQI**



STRATEGIC INTENTION 4  
**Sustainable Society with  
Quality Culture**



STRATEGIC INTENTION 1  
**Demand-pulled Measurement Capabilities & Innovations**



STRATEGIC INTENTION 5  
**Capable and Respectable NMI**

'AM NIMT'

# Areas & impacts focused in the Master Plan

## Social

- ✓ Improved public health services
- ✓ Enhanced road safety
- ✓ Enhanced consumer protection
- ✓ Better managed energy & environment



## Environment

- ✓ Waste reduction
- ✓ Effective pollution control
- ✓ Increase Green energy
- ✓ Improved natural Disaster management
- ✓ Carbon footprints reduction



## Economy

- ✓ Efficient manufacturing process
- ✓ Efficient energy consumption for manufacturers
- ✓ Increase productivity for industry
- ✓ Cost-saving from importing foreign know-how



# Programmes to deploy the strategies

## Economic development

Programme 1:  
Supporting **Government's  
Infrastructure  
Development** Projects

Programme 2:  
Raising **competitiveness  
of targeted industries &  
SMEs**

Programme 3:  
Metrology for **productivity  
improvement**: knowledge  
& technology transfers

## Social development

Programme 4:  
Building **quality society  
and quality culture**

Programme 5:  
Metrology for  
**energy & environment  
management** and  
sustainable development

## S&T development

Programme 6:  
Metrology for **national  
STI infrastructure**

Programme 7:  
**Smart** and internationally  
engaged **NIMT**

NIMT

# Key projects: examples

- Measurement capability development to support national infrastructure development project: Upgrade national transmission lines to 500 kV
- Measurement capability development to support processed agricultural products and food cluster project: CRM/RM for special food testing including Halal food
- Project to develop new measurement transfer standards to support SME
- AEC metrological skill development centre project
- Improving energy efficiency in industry through metrological applications project
- Metrology demand research project







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# Thank you for your kind attention!



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