

METROLOGY FOR THE DIGITIZATION (NIMT)

Ajchara Charoensook National Institute of Metrology (Thailand)

OUTLINE

Thailand 4.0 MODEL - Introduction

National Metrology Development Master Plan (2017-2021)

Metrology for the Digitization (NIMT)

Time Dissemination

Digitized Technology for Dimension measurement- example



Division of Economic Information Department of International Economic Affairs Ministry of Foreign Affairs , Thailand.



NATIONAL METROLOGY DEVELOPMENT MASTER PLAN (2017-2021)



PROGRAMMES TO DEPLOY THE STRATEGIES

Economic development

Programme 1: Supporting Government's Infrastructure Development Projects

Social development

Progra ness of Building qua es & and qual

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

Development Projects

Programme 2: Raising competitiveness of targeted industries & SMEs

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

METROLOGY FOR THE DIGITIZATION (NIMT)

Time Dissemination

Digitized Technology for Dimension measurement

✓ TIME Dissemination



Time Dissemination in Thailand









The **Royal Hydrographic Department**, **Royal Thai Navy** announce Thailand Standard Time with traceability to UTC(NIMT) through a standard method for time comparison called GNSS common-view.

Access by dial **1811** and listen to the time via speaking clock and make a setting at the been!

TIME DISSEMINATION IN THAILAND



NIMT GNSS TIMING STATION

NIMT provides better accuracy in terms of timing and positioning by establish our GNSS timing ground station in Thailand to enhance the capability of GNSS positioning determination and time synchronisation in Thailand.







Telecommunicati on network







Child tracking Land navigation



Aircraft

Banking

operations

naviaation aid



systems

Positioning Navigation and Timing applications

Precision farmina





Machine control



UTC(NIMT); 1 GNSS CORS



• NIMT is now contributing our GNSS observation data to the Asia-Pacific Reference Frame to be part of the tracking station in the regional reference frame determination.



• We are part of the area-based augmentation network of 6 GNSS Continuously Operating Reference Station, or GNSS CORS, which is a collaborated work between our ministry of science and technology and ministry of interior to share our national infrastructure on positioning and timing determination. This area based GNSS CORS network is now working on the performance test to be used for kinematic positioning determination in real-time.

• In the near future, Thailand will integrated the existing GNSS CORS as a national geodetic network for many practical usages.

NIMT timing station: components

Antenna

pole



Clock room

NIMT GNSS TIMING STATION FOR WATER MANAGEMENT



✓ Digitized Technology for Dimension measurement

"On Machine Verification (OMV)"



method can help measure and monitor process parts in real

Increasing productivity by

- 30% saving production time
- Cost reduction
- More accurate (better than 20 micrometer.)

time.

https://www.youtube.com/watch?v=Ur1 9VveVoWw

