



**25th ASIA-PACIFIC LEGAL
METROLOGY FORUM AND
WORKING GROUP MEETINGS**
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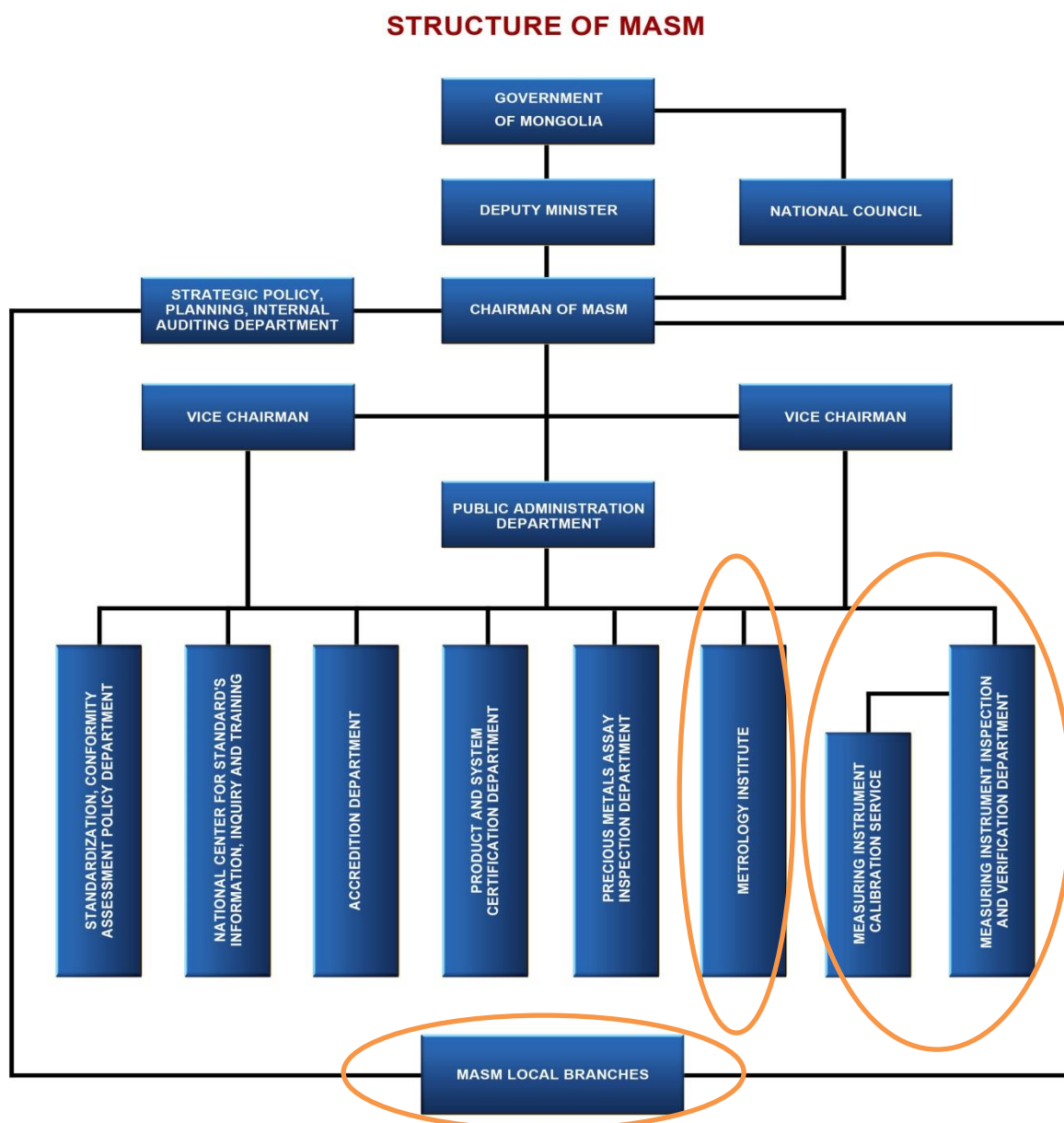
Economy Report - 2018

Mongolia

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SECTION 1 – Organisation and structure for metrology

Organisation Structures

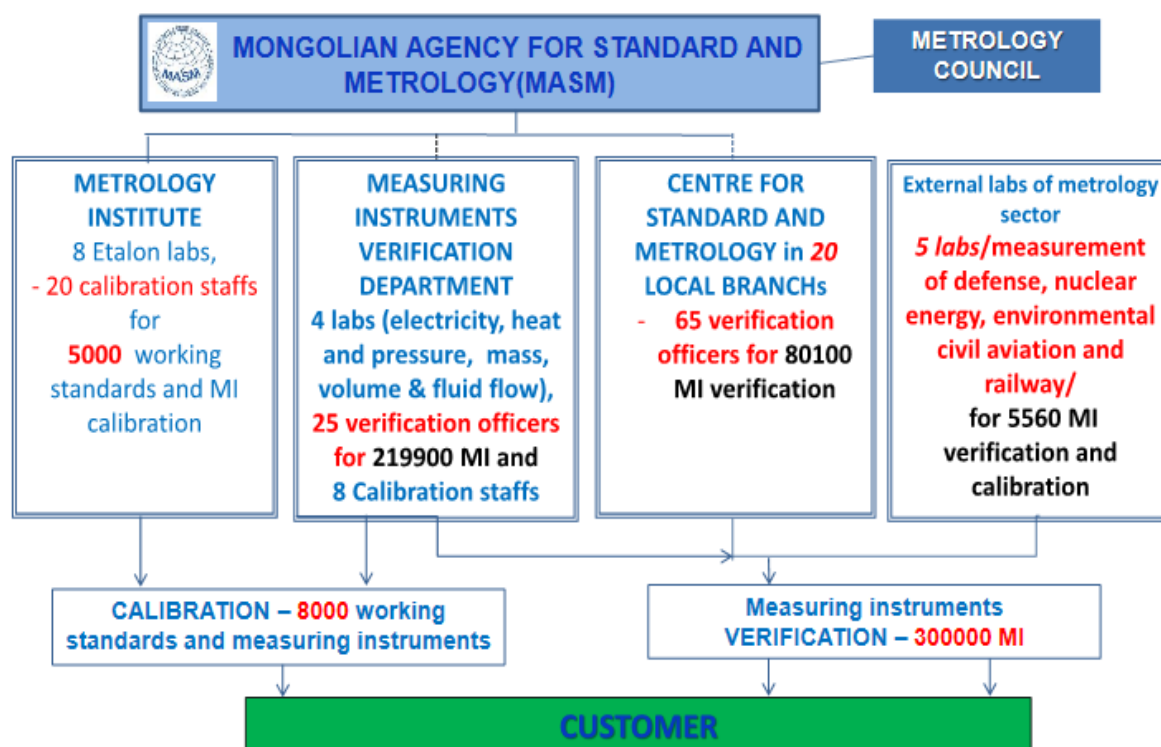


Mongolian agency for Standard and Metrology (hereinafter referred to as MASM) including 20 local province centers for Standard and Metrology is regulatory agency of the government of Mongolia, support to the implementation policies and programs of the Mongolian government for improvement of national society and economy, Industry, technology, trade and services by activities by standardization, METROLOGY, accreditation, conformity assessment and assay control.

Mongolian Agency for Standard and Metrology has expanding in 8 departments; standardization, technical regulation and conformity assessment, metrology institute, measuring instruments verification, accreditation, assay inspection, certification of product and system, monitoring and national centre for information and training. The MASM has

about 420 employees and it provides occupational and methodical management to the local branches about Standardization and Metrology in 20 provinces.

Structure of metrology



Metrology institute is one of the departments of the MASM, it's main activities are following:

- identifying metrology policy for develop metrology;
- develop a metrology law and regulations in conformity with international standards and principal and control of implementation of legislation;
- establishment, maintain and development of measurement unit standards;
- traceability of standards;
- calibration of working standards and measuring instruments;
- type testing and pattern approval of measuring instruments;
- registration and license for metrological service;
- organization of trainings and
- Internal and International cooperation and others.

MASM Department of measuring instrument verification and 20 local province centers for Standardization and Metrology are carried out initial and subsequent verification of measuring instruments such as of mass, electricity power and heat, pressure and volume flow, motion parameter measurement, according to the Law on ensure the uniformity of measurement and relevant rules.

Legislative Frameworks

The Mongolian Law on Ensuring the Uniformity of Measurement regulates metrology issues at the national level since 1994. In 2013, MASM started making amendment on the law, including studied the law implementation, need for amendments to the law, the metrology legislation of more than 60 countries and the OIML D1 standards, and processed the draft Law. As result of the work on with the objective the draft law have discussed by the Government of Mongolia in June 2018 and to submit the law proposal to the Parliament of Mongolia for approved it by the parliament.

Draft Law on Metrology has been submitted to the Parliament and is on the agenda of discussion in this October.

International arrangements and engagement

Membership of MASM for metrology:

- OIML – International Organization for Legal Metrology, as corresponding member, 1998
- APLMF - Asia Pacific Legal Metrology Forum, as state member 1999
- APMP – Asia Pacific Metrology Programme, as state member 2002
- CGPM - General Conference on Weights and Measures, as associate member 2013
- Signature of CIPM MRA in 2013.

Bilateral cooperation:

- KRISS – Korea Research Institute of Standards and Science
- UNMZ - The Czech Office for Standards, Metrology and Testing , Czech
- PTB- National Metrology Institute of Germany
- NIM - National Institute of Metrology of People's Republic of China
- ROSSSTANDART – Federal Agency on technical regulation and metrology ,Russia
- SAMR- State Administration of Market Regulation of People's Republic of China.

Implementation of projects for metrology:

1. In 2016- the National Quality program of Mongolia
2. Since 2012, Implementation PTB followings projects supporting by Ministry of Economy and technical cooperation of Germany:
 - Supporting quality infrastructure under special consideration of the energy sector
 - Supporting quality infrastructure under special consideration of the mining sector.
3. Participating in the activities organized by APMP/APMLF MEDEA1 project and the knowledge and experience we have gained, we aim to implement the following activities:
 - the Metrology law shall be ratified by Parliament;
 - A strategy to develop metrology shall be approved and implemented;

- Calibration of GNSS receivers used in CCTF-K001 inter-comparison, expected to be calibrated by using NIM calibrator within G2 group in September, 2018.
 - to provide preparations for submitting CMC and to organize the assessment the peer reviews by mass and electricity measurements.
 - In frame of the MEDEA project, Mongolian specialists participated in 40 training courses organized by APMP, APMLF and GMA and these staffs are disseminating their knowledge of the subject matter of the relevant measurement types.
 - Furthermore, we have drafted a proposal to increase the workshop and training base of the legal metrology inspection, pattern approval test, verification and calibration of measuring instruments.
 - for mass measurements - Non automatic weighing instruments (NAWI), for flow measurements - Pattern approval of Bulk Flow meter, we will ratify and implement new procedure according to verification procedure of NMIA.
 - To provide a legal environment for the verification and calibration of measuring instruments in certain measurement types to be performed DI-s, not only MASM.
 - In frame of the MEDEA project, Mongolian specialists participated in 40 training courses organized by APMP, APMLF and GMA and these **staffs** are disseminating their knowledge of the subject matter of the relevant measurement types. These include:
 - OIML R 49-1, OIML R 49-2, OIML R 49-3 and
 - MNS 2662: 2002 "Cold water meter" Methods and means for verification
 - OIML R 46-1, OIML R 46-2 Electricity meter
 - OIML R 60 Metrological regulation for load cells
 - MNS 3015 Fuel dispenser. Methods and means for verification.
 - OIML R 87 Quantity of product in pre-packages.
 - OIML R 59 Moisture meters for cereal grains and oilseeds
4. Since 2018, Implementation MASM and NIM joint project supporting by Ministry of Science and technology of Mongolia and Republic of China, Where:
- China-Mongolia Joint Research on Key Measurement Standards and Technologies in Energy”.
5. In the framework of MOU between MASM and KRISS, MASM experts are participating in the activities organized by APMP and KRISS GMA and getting state reference standards calibrated.
6. In the framework of MOU between MASM and NIM, MASM experts are participating in capacity building trainings, experience exchange and state reference standards are getting calibrated.
7. MASM organized “Development prospects of quality infrastructure” international symposium in October, 2018.

SECTION 2 – Key activities of 2017/18

Working with industry

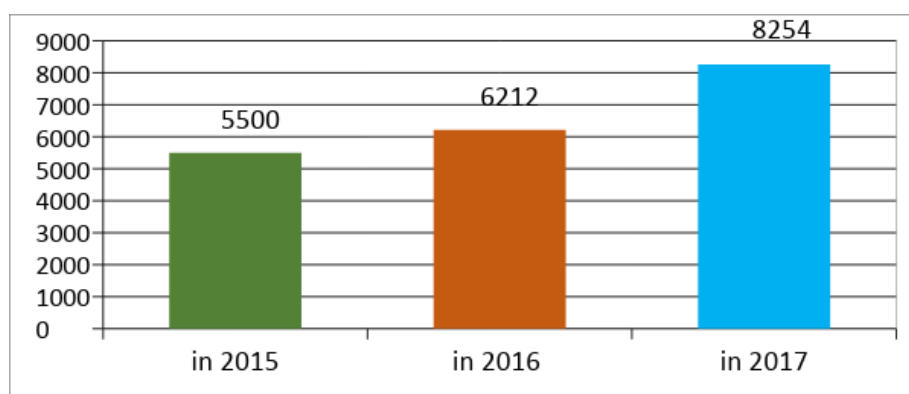
1. There are knowledge transferred to 1500 participants by more than 40 training courses organized in metrology infrastructure, Metrology in general, mass, volume, electricity, length, time and frequency, pressure, physical and chemical measurement since 2014.
2. MASM implemented following activities by acquired expertise from MEDEA project:

2.1. The legal metrology activities of MASM are as follows:

Metrology service	In 2015		In 2016		In 2017	
	Quantity /piece/	Revenue / million MNT /	Quantity /piece/	Revenue /million MNT /	Quantity /piece/	Revenue / million MNT /
Verification of MI	189553	1370,5	188730	1416,3	180841	1560,6
Testing and type approval of MI	35	10.66	37	11.3	50	11.58

- 1.2. Customer calibration needs are increasing every year but instrument type is not increase for mass, electricity, volume, time and frequency, chemical measurement and length except for graduated leveling rod.

The MASM calibration service is shown below in the last 3 years:



- 1.3. Calibration procedure were newly developed and determined uncertainty budget(all components) for following measuring instruments:

- LIF
- CRM for and
- Multi meter
- glassware and
- hydrometer

- 1.4. ISO and OIML standards are translated and approved and used in measuring instruments type approval and verification activities.

- ~ ISO 77001 and ISO 77002 Rice moisture

- ~ OIML R 79 labeling of pre-packaged product.
- ~ OIML R 21 Taxi meter.

Protecting consumers

Following activities have been carried out in the framework of consumer protection:

- Some regulations on consumer protection has been included in the draft law on metrology.
- MASM organized “Consumer’s day”, in which MASM provided information on measuring instrument usage and verification and QA sessions.
- In order to raise awareness on metrology and measuring instruments, MASM participated in various well known TV programs and talk shows, in which MASM provided information on its operation and new law on metrology.

Major projects - What we did and what we learned

1. National Quality Program of Mongolia was developed and approved in 2016. The quality program includes the following issues:

1.1 revision and ratification of metrology legislation, including:

- In 2018 the draft law on Metrology was submitted to the Government for debate and has to be approved by the State Great Hural;
- To renew and approve the testing and verification procedures of measuring instruments in case of law approval;
- re-validate the list of instruments for obligatory testing and verification;
- to provide technical regulations for electricity meters;
- We are co-organizing trainings with the PTB on the creation of DI in the energy sector and supporting its operation.

1.2. to refine and improve metrological practice through following:

- within the framework of strengthening technical capacity for metrology operations to organize capacity building of MASM's staff in the framework of MEDEA project and in cooperation with KRISS GMA and NIM ;
- However, there is no financial support from the Mongolian side to improve the capacity of the reference standard to use for metrology activities.

1.3. State verification officers and experts of MASM and related organizations participated in measurement instruments pattern approval and verification training in frame of the topic on flow measurement and calibration (FMC), taxi meters, traceability in rice moisture measurement, CNG dispensers, fuel dispensers, mass standards, water meters, pre-packaged goods, and weigh bridges,

They also gained experience and practice learning from the ISO or OIML Standards and APMLF member organizations test procedures.

Mongolian Metrology trainers attended Train-the-Trainer Courses and are training in the following areas: In this regard:

- on the Verification of Fuel Dispensers
- on the Verification of Non-automatic Weighing Instruments

on the Verification of Bulk Flow metering Systems using a Master Meter.

1.1. In frame of the MEDEA project, Mongolian specialists participated in 40 training courses organized by APMP, APMLF and GMA and these employees are disseminating their knowledge of the subject matter of the relevant measurement types.

These include:

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SECTION 3 – Future focus

New initiatives planned (next 1-2 years)

Following changes will be made in upcoming 1-2 years after the enactment of the Law on Metrology, in the framework of implementation of National Quality Program:

- activities on raising awareness on Law on Metrology;
- type testing of measuring instruments used in hospitals, national and environmental security and military shall be conducted by professional bodies in the related field;
- if necessary, special specifications on measuring instruments used in hospitals, national and environmental security, trade and services shall be defined by technical regulations;
- requirements on entities and organizations manufacturing, importing, installing and repairing measuring instrument shall be defined by standards;
- metrology rules and procedures, such as procedure on measuring instrument type testing and verification, shall be revised;
- propositions shall be made on increasing state budget or implementing projects on strengthening capacity of legal metrology laboratories, especially local laboratories;
- newly published OIML standards and internationally recognized methodologies on measuring instrument verification and type testing shall be adopted and implemented;
- capacity building trainings for legal metrology trainers shall be organized.

Emerging issues – challenges and opportunities

Following challenges and opportunities were defined in our legal metrology activities:

- Mongolian Law on Metrology will be established and implemented in accordance with international standards and development policies of Mongolia;
- Designated professional institutes will carry out legal metrology activities such as measuring instrument verification and type testing. This will decentralize metrology services;
- At present, as the workload increases year by year for calibration, type testing and verification of measuring instruments. Therefore it is necessary to increase enough budget to implement of improvement and upgrading for reference and working standards, qualification of metrology employees, laboratory environmental conditions;
- Depending on lack of sufficient technical capacity including personnel, laboratories and measurement standards, the legal metrology activities, such as same of measuring instruments testing and verification of MASM and its province centers for metrology can't carry them out in accordance with international standards completely. Therefore, it is necessary to implement project on strengthening capacity of legal metrology;

- We would like to continue participating in trainings and workshops organized in frame of APMP/APLMF MEDEA projects.