

9 Desirable legal metrology framework for the APLMF

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1. Introduction

Considering legal and economical peculiarities in the Asia-Pacific region, I try to focus on some specific and inevitable demands and to prospect a future shape of the international legal metrology framework that should satisfy such demands. One of the main characteristics of APLMF demands is the vast diversity in their sense of values among various economical and cultural different member economies. Will it be possible to satisfy the different needs by an internationally unified regulatory legal system? It is clear that, for APLMF member economies, desirable functions of a future legal system should not be realized by the usual and traditional legal metrology structure and concept. Now I am going to try to draw a future sketch of Legal Metrology that shall be possibly a new complex system that should cover future social demands, and the system should consist of governmental/intergovernmental legal control and reliable metrology in various markets and fields.

Legal Metrology has a very old history that goes upstream to thousands years ago because it has been indispensable for the foundation of national system. Many of APEC member economies have enacted their own metrology law. Originally such law was established for only domestic purposes, therefore each metrology law has different field and scope depending on its economical situation and law system. These days, even domestic legal metrology should adapt to international purposes in order to satisfy the strong demand from APEC/WTO activities. However it is easily expected that many difficulties will come up if we will mix together many different metrology laws of all economies or force them to use only one of them under the name of harmonization. Because the task for legal metrology is new, the system shall be a new one that will be made through international activities.

2. Characteristics among Asia-Pacific area

Since I took over the presidency of APLMF from Mr. Birch at January of this year, I have visited several economies to have frank talks with the responsible persons to the legal metrology. Basing on this survey, I summarize the common problems of our member economies.

We should correspond to trade globalization so as to meet the needs from WTO/APEC activities and to adapt ourselves to a new infrastructure of international trade. Their motivation might be in the competition of trade race or just seek their survival in the coming new framework.

We usually see the bad footwork of Legal Metrology while confronting such global needs, because the legal system was established originally for domestic purposes in order to control least technical necessity.

There are various and different conditions in legal metrology among member economies.

We have difficulties in acquiring enough budgets to restructure our works. In order to get the budgets, it is essential to make a better advertisement to people and politicians.

We have to make good collaboration with sharing common information so as to go to the common direction.

3. Common benefits of APLMF

In order to have good collaboration and cooperation, we have to find common benefits in our activities. Firstly many economies, especially small economies, are eager to have right information about the international activities and technical matters.

APLMF are going to start information delivering service about OIML and other relating articles. In legal metrology, OIML recommendations and documents have been the model standards and now are becoming almost regulatory standards in the international activities as well.

We need coordination of techniques in testing, verification, and calibration in the fields of legal metrology. Trainings those are usually technical supports and aides are strongly asked by almost all economies. In APLMF, there have been several training courses concerning testing/verification of NAWI (Non-Automatic Weighing Instruments), Oil Dispenser, and Rice moisture meters.

For these activities, we have used mainly our APLMF own budget or bilateral aide between members. But the amount is far from that is needed. APLMF will make more cooperation with APEC, more participation in APEC activities, and more application to TILF funding. One of them is a project of “Study and Training of Rice Moisture Meters”, which is specific demanded measurement in Asia-Pacific area. The project started 2001, and 2002 is the second year for this project.

The project is shifting to the next phase. Based on results of survey and training, we are preparing to propose a revision plan of OIML-R for ‘Moisture Meters for Cereal Grains and Oilseeds’ so as to introduce an article that covers rice moisture meters.

4. Common subjects

In Asia-Pacific area, we have to think about a possibility of restructuring legislation in Legal Metrology.

We will need new methodology to guarantee for metrological confidence by national or international body.

It is surely predicted that the technical part of Legal Metrology should be placed more dynamic position near private sectors. And this change may be realized by using

Internationally approved Documented Standards and Laboratory Accreditation activities.

5. Diversity among different economies

As for the metrology law has been thought to act domestically, there has been no special rule for international acceptance of verification results made by other economies. Each economy has to judge by itself for such acceptance. But we notice that there are so many differences among member economies in the economical structure and status, the industrial fields, the development stage in each industry, the size of each industry, Natural circumstances such as climate and natural resources and size of land, and Culture, population and political situations. Those differences cause diversity difference in demanded category subjects, and diversity in required quality level of goods. Therefore it is very difficult to determine the only one acceptable standard model for all such different economies. If the coming new solution would be the determination one standard that is selected from existing ones, and force it to all economies to follow, it is clear that many troubles would happen in the process. Harmonizing the differences is essential to establish a new international framework of legal metrology. Now OIML is developing a new Mutual Acceptance Agreement rule, the purpose of which is to accept the testing result data of the type approval of measuring instruments. I think that the MAA is a preliminary reform to lead to future reforms. We look at these several comparable lists to make sure of the differences between traditional/present and new/future purposes of legal metrology.

6. New purposes of legal metrology

6.1. Traditional / Present purpose of legal metrology

The main purposes are related to tax collection, penalty, and to fair trade that means the consumer protection. In some economies, safety, medical and/or environmental metrologies are also included in legal metrology. In general, legal metrology should be performed in order to make a judgment with referring to the only one acceptable threshold level that was determined by the government as the standard. Because the law is acting as a crackdown, usually such reference level is relatively low enough in technical sense so that ordinary people can easily achieve the level.

6.2. New / Future purpose of legal metrology

On the other hand, the main purposes of newly demanded legal metrology will be shifted to focus on the quality of human life, and the transparency of confidence level of its related activities will be more essential because of international accessibility. For example in usual supermarkets, major consumers are interested not only in quantity of food but also in quality and safety of it as well. In many cases such products are imported. This means that each consumer needs more information to estimate a total quality value according to each consumer's interest. Therefore the coming new legal metrology should realize various kinds of measurements, showing the values in dynamic scale with some estimation of confidence levels. New law will act as a governor or a supervisor that grades and adjusts the confidence level of every wanted

measurement rather than act as a player of such measurements. In the future, legal metrology will cover, in addition to the present, such fields like analytical chemistry, safety grading, health estimation, food quality, game fairness, reliability of data, security of information and so on.

7. New technology and instruments for legal metrology

7.1. Traditional / Present instruments and technologies

Major instrumentations of traditional legal metrology are attached to limited technical areas namely weights and measures, which mean trading quantity measurements in principle. The instruments are such as weighing balances or oil dispensers used in the retail shops or gas filling stations, and water meters and gas meters used in houses. Mainly these instruments are used for consumer trade. Beside to trade metrology some economies have introduced safety metrology and recently environmental and medical metrology as well, but covered areas are still limited.

7.2. New / Future instruments and technologies

Future instrumentation shall involve information technology (IT) and reliable network system those are progressing and changing very rapidly. The technical problem of such new instrumentation is that we need to develop reliable interfacing methodology between IT; electrical and non-IT; mechanical, analytical, and chemical measuring instrumentations. There is an example such that some of utility meters have already been connected with information network and automatic data collection has been achieved. In order to show an acceptable confidence of such automatic system, security of network and information will be the new subject.

8. New active player for legal metrology

8.1. Traditional / Present players in legal metrology

In traditional concept of metrology law, government should be responsible for all the measurements those the law covers on behalf of the people, and therefore all technological basis, i.e. instrumentation, should be supplied by the government because only the government could afford these technologies with confidence. Consequently there should have been a certain amount of metrology officers for testing and verifying all utility meters and their standards. But this system has become difficult to operate because the number of such kind meters has increased so rapidly. At present many economies have been introducing a system that enables the government to commission private sectors such as manufactures to verify the instruments on behalf of the government. Farther more in new technological fields such as analytical chemistry for food safety measurements, it is difficult to involve instantly new instruments into governmental full control because the necessary technological information usually does not belong to the government but to industries.

8.2. New / Future players in legal metrology

Considering that so many new instruments will appear and that they will have to be controlled by the government so as to meet the new framework of dynamic trade, it is quite clear that the traditional legal metrology style is not suitable to keep for such new technologies. The main player of legal metrology field will be changed from the government to the private sectors such as manufactures, market traders, or IT companies. The problem of this transition of responsibility is how to realize acceptable confidence levels in private sectors. There should be introduced some new reform concept into metrological law and its structure in order to involve the information technology as a powerful tool for managing confidence of metrology.

9. New role of government for legal metrology

There are supposed four different players concerning legal metrology. The first is a demander of qualified measurement results, the second is a controller of such measurement and estimate its confidence, the third is a supplier of such measurement technology, and the fourth is an object holder of such measurement. The demander is usually the people, traders or consumers. The controller is the government. The supplier has been historically the government, but in the future a main part of the role will be taken by private sectors. There are problems because the objected technical field has been the trade measurement, but other measurements have been involved such as safety, medical, environmental, and food measurements, and these cannot easily be involved into this system. When the purpose of legal metrology is to show to the people a confidence level for every item that should be controlled by the government, the demanded contents and their quality levels will become more diversified in future. The essential changes of legal metrology will be a separation of the role of supplier of the measuring technology from the government to private sectors in order to correspond to lots of possible variable demands, which will enable the on demand supply of metrology. The new role of government will be a supervisor for the harmonization of domestic diversity as well as international wider diversity. The domestic and international problems may be solved by the similar methodology mentioned above using information technology. I would like to emphasize that the biggest role of the government shall be the establishment of information control system for legal metrology with acceptable level of confidence and transparency so that this system can be easily accessible from other economies and to the international legal metrology framework. This system should be flexible technologically and stable in confidence.

Discussion

Comment: It has been suggested to have a common roof for legal metrology activities related not only to trade, but also to health, safety and environmental protection and this proposal should be supported. However there is a problem resulting from the fact that, in most administrations, there are separated responsibilities for all these fields so it is difficult to achieve common views. Has the APLMF any ideas about how to succeed?

Reaction: This is a governmental responsibility. Metrologists have to explain the situation to their governments and convince decision makers that a big change in policy is needed. In particular, the decrease in metrological human and financial resources which may be observed in many countries should stop.