



Policy implementation options for governments

When governments make strategic decisions on the shape and size of a national metrology system, there are several different areas to consider. The assessment of the national metrology needs and national priorities (often called strategic planning) should be completed before considering the other important policy implementation aspects of the national metrology system. These implementation aspects are broadly designated as: institutional options; coordination options; regulation and enforcement policy options; and funding options.

Institutional options

A key institutional decision is the form in which the National Metrology Institute (NMI) will take, as the NMI will often become the focus of implementing the NMS. The three common forms of an NMI are:

1. A public institute owning and running its own laboratories
2. A public agency coordinating public or private institutes
3. A private institute operating under the authority of the government (with safeguards to assure impartiality and objectivity).

A second institutional decision is whether NMI-type functions in some specialized areas of metrology (for example chemical metrology) should be the responsibility of separate specialized institutes.

Although a single public national institute is the more traditional form, the choice of the form of the NMI largely depends on the existing structures and institutions that are in place, the priority fields of metrology, the national policy, and the legislative traditions of the country and resources available. It is crucial that the institutes have the legal capacity to enter into international agreements or arrangements on mutual acceptance and mutual recognition. It is highly recommended to develop synergies between scientific and legal metrology activities, in particular the study of technical requirements for new regulations, type testing, and type approval. This can be done by combining scientific and legal metrology in the same institute, or by establishing close cooperation between the institutes in charge of these two fields.

It is necessary to be clear on how the various metrology bodies interact with national standards bodies and national accreditation bodies due to the importance of metrology within the wider quality infrastructure. Accounting for the structural organization within the country, as it relates to regulation and enforcement, is essential in determining the relationship between national legal metrology and local legal metrology, and where responsibilities lie. In practice, the role of public administration in the implementation of metrology policy depends on the existing infrastructure and competencies in the country. If metrology tasks are delegated to the private sector, the government must ensure that public interests are protected, activities are performed in a transparent manner, there is no conflict of interest, and no company is given an unfair competitive advantage.

Coordination options

Effective arrangements for cooperation and coordination of metrology activities are required, given the broad range of metrology activities that must be undertaken. One successful approach for the coordination of metrology activities is for all issues of national metrology policy to be managed by a single central government authority (CGA) of the country. These issues range from studying needs, formulating the national policy, coordinating the actions of various ministries, developing and implementing legal metrology regulations, participating in the international metrology system, supervising the national bodies, and providing information to the public. It is usually desirable to set up a national oversight committee to address the national policy, to which the central authority reports. Coordination among legal metrology authorities is important to ensure uniform application of law, especially when there are several legal metrology authorities (such as in different regions of the country). It is also important to involve the very large number of stakeholders who rely on the national metrology system in some formal manner to capture their input, in order to respond appropriately to national trends and needs.

Regulatory and enforcement options

Once the decision has been made as to what shall be covered by legal metrology, one of the first decisions for governments is how international standards such as OIML Recommendations are to be incorporated or referenced in their legal system. Methods include verbatim text, inclusion of identical requirements (but not verbatim text), inclusion of compatible requirements, and reference to specific editions (or the most current edition) of a standard. The approach adopted in a country will depend on its broader legal traditions and may even vary between different areas of legal metrology. Another key decision will be which tools to use in regulation and enforcement. These will also range from pre-market verification or surveillance, market surveillance in the distribution chain or in the marketplace, and risk-based inspections. Enforcement of non-compliance could range from education and training, administrative measures and warnings, enforceable undertakings such as fines or stop-work injunctions, to criminal prosecution and publicity. In most cases, the enforcement response should be proportional to the severity of the offence and the likelihood of recurrence.

Funding options

The two areas where important policy decisions are required are the funding of the NMI and the funding of the legal metrology infrastructure. The mission of the NMI includes tasks of general importance spread over the long term, such as development of measurement standards and scientific research into advancing the state of the art of metrology, and services rendered to clients, most notably the dissemination of metrological traceability. Long-term goals require funding from the government on a sustainable basis. This funding must cover the cost of developing laboratories, purchasing equipment and instruments, maintaining that equipment, hiring technical staff, and performing the technical work to gain international acceptance of the standards. For NMI services, the most common funding model is to charge for the cost of delivering calibration and test services to the client requesting the service, whilst underpinning costs such as developing and maintaining national standards which are publicly funded. That is to say clients pay for the services that directly benefit them, but not the costs related to the wider public good. However, there is a risk that the NMI becomes dependent on the income from a service. Decisions on establishing a service, and maintaining it for the future, should be based on technical importance to the NMS rather than short term budgetary concerns.

The legal metrology infrastructure requires national support for the metrological control systems for measuring instruments, prepackaged products, transactions based on measurement, and measurement practices. It will often be appropriate for businesses to meet the direct costs of some legal metrology activities, through fees and charges. This may apply for applications requiring type approval or where the business derives benefits of assurance. In all cases, fees should be transparent and should reflect the actual cost of the legal metrology activity. Appropriate national funding will be needed in the development stage of integrating International Recommendations with the national legal metrology system, and the ongoing engagement with the international metrology community. The CGA is usually the budget holder responsible for the government support provided to those parts of the NMS that are publicly funded.

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For further information:

This insert has been developed from the BIPM and OIML joint publication:
National Metrology Systems - Developing the institutional and legislative framework.

For more complete information, please refer to this document and its references.
The document is available through the BIPM and OIML websites.

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