

## **Review of the National Measurement System in Japan**

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### **Abstract**

The calibration and dissemination of national measurement standards are legally defined by the Measurements Law in Japan. The broad need for traceable measurements in society lead to discussion of national measurement system and new Measurement Law.

Recently legal control over hazardous substances has been constantly strengthened in areas that are directly related to the safety and security of health care, the environment and foods, as general social awareness of safety and security has been increasing. Because chemical analysis in such areas varies widely in kind, however, development of measurement standards (reference materials, in this case), which are essential to ensure traceability, has not yet caught up with the need. For that reason many users are forced to use reference materials that are independently produced by reagent manufacturers or academic societies.

Naturally the situation is considered undesirable because of the increased social costs arising from incompatible measurement values, and also because of the ineffectiveness that burdens each user, who must secure the necessary reference materials by himself. The best possible solution to this situation is to develop and use national measurement standards that are traceable to the SI units, but the drawback of this is that it takes a long time to prepare all the needed standards.

To find a way out of this dilemma a scheme is studied, in which the government designates high-quality reference materials as national measurement standards, so that measurement values' compatibility is at least domestically ensured in a short period of time. It has been also pointed out that the participation of other organizations is very important to meet increasing needs. Along these lines, NMIJ's role in the Measurement Law is under discussion.

This report presents opinions and requests voiced by concerned parties regarding Japan's measurement system. It also reports the results of the comparative survey of NMIs in different countries, which reveals the legal status of each country's NMI as well as the ways they handle metrological issues in the environment, food safety, and health care. It further indicates the direction in which the revision of Japan's measurement system is headed.