

*Extended Abstract*

# National Metrology Infrastructure—Support for Analytical Laboratory Activity <sup>†</sup>

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**Abstract:** Reliable, traceable, and comparable measurements provide a rational basis for evaluating the quality of any result and the starting point for laboratory accreditation. Accurate and compatible measurements are, at present, essential for manufacturing, science, and trade. Additionally, a wide range of aspects of the quality of life, from healthcare to sport, is underpinned by reliable measurement results. Starting from the role of a National Institute of Metrology (INM) in securing traceability of all measurements, regardless of their end-use or level of accuracy, some aspects related to the present state-of-art in the field of metrology in Romania are presented.

**Keywords:** INM; traceability; support network; accreditation; Romanian measurement system

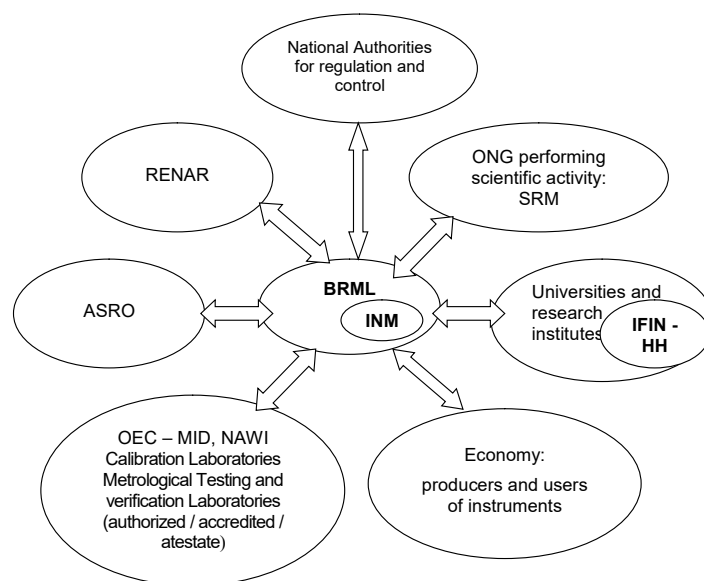
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After 69 years of activity of the National Institute of Metrology (INM), the present metrological infrastructure supports the quality of the measurement results reported nationwide. Due to the extensive use of measurements in physico-chemical testing for a wide range of materials, metrology in chemistry and biology is developing fast. INM acted as a pilot laboratory in PT schemes for calibration laboratories and authorized laboratories in the field of mass, length, pressure, electrical quantities, or temperatures.

Within this framework (Figure 1), Romania’s Calibration and Measurement Capabilities, supporting the analytical laboratory activities are presented. The experience of the INM in developing and operating its recognized Quality Management System is described. Metrology is essential in scientific research, and scientific research forms the basis of the development of metrology itself.

The INM contributes directly to the comparability and traceability of measurement results performed in Romania using specific services (calibration and reference measurements), certified reference materials provided, and ensuring the technical support for the chemical laboratory community, in good agreement with the state-of-art at the European level.

The participation of the INM in relevant comparisons is beneficial. In addition to measurements, the development and validation of higher-order measurement methods, estimation, and reporting associated measurement uncertainties and evaluating the degree of equivalence represent challenging activities for the INM in the frame of the increasing progress of science, technology, and innovation.



**Figure 1.** Romanian Measurement System.

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