



# Slovak Institute of Metrology

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# Metrological system in Slovakia



# Slovak Institute of Metrology



- Legal entity as National Metrological Institution
- 75 employees

# Slovak Institute of Metrology



# Main tasks

- **Transfer of units and scale values** from national standards to standards used for **verification, calibration** and **measurement** of measuring quantities.
- **Measuring instruments certification and technical examinations** of measuring instruments samples for the **type approval** purposes according to MID and NAWID.
  - Technical testing of samples of measuring instruments for **type approval** purposes.
- **Research and development** in a field of metrology and their application in practice.

# Other tasks

- **Providing of professional courses and training**
  - accredited courses
  - approximately 80 professional courses / year
- **Education in the field of Metrology**
  - I. (Bc.), II. (Ing.) and III. (PhD.) degree of education

# Main characteristic

- National metrological institution of the Slovak Republic based in the capital city Bratislava
- State contributory organization established by The Slovak office of standards, metrology and testing.
- Core activities are defined by the Founding Charter issued by the Slovak Office of Standards, Metrology and Testing



# Recent development

- Adopted decision of the Slovak Government in 2014 on transition process from a state contributory organization to a non-profitable organization till the end of 2016
- The main aim of the change was transition to self financing of the SMU
- Significant reduction of Institute's number of staff from almost 160 to 66 was realized
- Transfer of a part of legal metrology activities to the separate company Slovak Legal Metrology
- Reduction of a number of laboratories and their equipment
- All these measures were aimed to significant reduction of costs as an important step prior the transition to the non-profitable institution



# Current status I (SMÚ)

- Cancellation of the transition process of the Institute from a contributory organization to the non-profitable organization. The resolution was adopted by the Slovak Government in November 2017. SMU remains in an unchanged legal form, i.e. contributory organization
- Reinforcement of expert personnel especially in metrology departments – increase by 12 employees since 2Q 2017
- More significant orientation on projects
- Restoration of inter-laboratory comparison measurements
- Gradual renewal of national standards, planned new investments, extension of measuring ranges of selected standards
- Significant orientation on legal metrology services in terms of amount and range

# Current status II (legislation)

- Approval of the new Act on Metrology in February 2018 by the Slovak Government
- The new law aims to achieve a higher degree of alignment with comparable mechanisms in other countries and a preventive action to protect consumers from products or services that could endanger their lives, health, safety or property.
- The law regulates:
  - the competence of state administration bodies in the field of metrology,
  - statutory measurement units and their use, classification and use of instruments,
  - national standards and supervision of national standards, certified reference materials

# Current status III (legislation)

- national standards and supervision of national standards, certified reference materials
- requirements on legal measuring instruments, method of metrological control of specified meters and mandatory calibrated instruments and subjects that can perform metrological control, official measurement, consumer packing, entrepreneurs who assemble and repair legal measuring instruments
- The law should enter into force on July 1, 2018.

# Scope of accreditation

- **Testing Laboratory S-374**  
(STN EN ISO/IEC 17025 : 2005)



*to perform testing of water meters, gas meters and volume conversion devices, flow meter parts of heat meters, active electrical energy meters, measuring system for continuous and dynamic measurement of quantities of liquids other than water, material measures, automatic weighing instruments*

- **Product Certification Body P-035**  
(STN EN ISO/IEC 17065 : 2012)



*to carry out certification of water meters, gas meters and volume conversion devices, electrical meters, heat meters, measuring systems for continuous and dynamic measurement of quantities of liquids other than water, materialized containers – capacity serving measures and non-automatic weighing instruments*

# Slovak Institute of Metrology

Notified Body no. 1781



## Range of Notification / Autorization

Document	Measuring instrument	Modules
<b>2014/32/EU (MID)</b>	Water meters (MI-001)	B, F, D, H1
	Gas meters and volume conversion devices (MI- 002)	B, F, D, H1
	Active electrical energy meters (MI-003)	B, F, D, H1
	Thermal energy meters (MI-004)	B, D, F
	Measuring systems for the continuous and dynamic measurement of quantities of liquids other than water (MI-005 )	B, F, G, D
	Material measures (MI-008) - Capacity serving measures	D1

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## Range of Notification / Authorization

Document	Measuring instrument	Modules
2014/31/EU (NAWI)	Non-automatic weighing instruments	B, D, D1, F, F1, G

# International Equivalence

- 29 National Standards
- 378 CMCs in KCDB
- Signatory to the international convention on the mutual recognition





# International Cooperation



# International Cooperation / Projects

No.	Project Name // EMRP / EMPIR / RMG	Duration of the Project (from - to)	Status
1.	<b>ENG52 SmartGrid II</b> Measurement Tools for Smart Grid Stability and Quality	1. June 2014 to 31. May 2017	Finished
2.	<b>ENG54 Biogas</b> Metrology for Biogas	1. June 2014 to 31. May 2017	Finished
3.	<b>ENG61 FutureGrid</b> Non-conventional Voltage and Current Sensors for Future Power Grids	1. June 2014 to 31. May 2017	Finished
4.	<b>ENG63 GridSens</b> Sensor Network Metrology for the Determination of Electrical Grid Characteristics	1. June 2014 to 31. May 2017	Finished
5.	<b>ENV58 MeteoMet2</b> Metrology of Essential Climate Variables	1. December 2016 to 30. May 2017	Finished
6.	<b>16RPT03 inTENSE</b> Developing Research Capabilities for Traceable Intraocular Pressure Measurements	1. June 2017 - 31. May 2019	In process

# International Cooperation / Projects

## ***METEOMET 2***

### ***Research Mobility Grant***

- Thermometry
- 1 junior researcher
- Internship in INRIM
- Duration 6 months



## ***16RPT03 inTENSE***

### ***EMPIR project***

Project aims to establish a competence centre for intraocular-pressure (IOP) metrology at CMI. CMI will become a service provider to other Central European metrology institutes. A subsequent expansion of this centre to other European countries and to further medical devices will be planned.



# International Cooperation / Projects

**EMPIR**



No.	Project Name // EMPIR	Duration of the Project (from - to)	Participation	Status
1.	<b>SRT-r07 DOSEtrace</b> Research Capabilities for Radiation Protection Dosimeters	01. June 2018 - 2020	Participant	Begins in 2018
2.	<b>PRT_ICRU90_ISO4037</b> Support for ICRU 90 and ISO/FDIS 4037 Series International Standards Implementation	-	Submitter	Calls 2018
3.	<b>PRT_Real-K</b> Realising of Redefined Kelvin	-	Co-author	Calls 2018
4.	Developing an infrastructure for improved and harmonized metrological checks of blood-pressure measurements in Europe	-	Co-author	Calls 2018

# International Cooperation / Projects

## ***SRT-r07 DOSEtrace***

### ***EMPIR project***

The overall objective of this project is to improve SI traceable measurements of operational radiation protection quantities in participating emerging NMI's countries, based on the stakeholder's needs. The main goal of the project is to establish and harmonize the procedures for calibration of radiation protection dosimeters in various types of radiation protection beams with special focus on achieving measurement uncertainty of 5% ( $k = 2$ ) or less.

**Coordinator:** IMBiH (Bosnia and Herzegovina)

### **Participants:**

- 9 internal funded partners (IMBiH, GUM, IRB, IST, PTB, SCK·CEN, SMU, TAEK, VINS)
- 4 external funded partners (EEAE, INM, NSC IM, USC)

# National projects



No.	Project Name // EMPIR	Duration of the Project (from - to)	Participation	Status
1.	<b>APVV 15-0017 RadoMet</b> Development of Rn-222 National Standard and ensuring of RN-222 standardization in Slovakia	01. July 2016 to 31.12.2019	Coordinator	In process
2.	<b>APVV-15-0295 METSTAT</b> Advanced statistical and computational methods for measurement	01. July 2016 to 30.06.2020	Participant	In process

# National projects

## ***APVV 15-0017 RadoMet***

### ***APVV project***

Project is aimed at building a secondary standard Rn-222 in air and water to ensure metrological continuity for workplaces dealing with Rn-222 measurement in environmental samples. At the same time, the project addresses the development of the primary radionuclide activity standard. Coordinator of the project is SMU, the participant is the Faculty of Mathematics, Physics and Computer Science of Comenius University in Bratislava.

## ***APVV-15-0295 METSTAT***

### ***APVV project***

Project is focused on the development of mathematical-statistical methods and algorithms for evaluation of measurements, with emphasis on the development of models and methods in the field of multidimensional calibration of measurement instruments. Coordinator of the project is the Institute of Measurement of the Slovak Academy of Sciences, the SMU is participant.



**Thank you for your attention**