

# IMPLEMENTATION OF MID IN SLOVAK REPUBLIC\*

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*Abstract: This research is a part of ETIQUM Tempus Project which is focused on development of training courses in the field of quality management and metrology. The article covers the analyse of steps which were required for transposition EU Directive on measuring instrument (MID) into national legislation of Slovak republic. It covers not only information about implementation but also mandatory periodic verification after placing on the market as well.*

**Key words:** Education, EU Directives, Metrology, TEMPUS, Project

## 1. INTRODUCTION

This work is a part of results from international ETIQUM Tempus Project which has been focused on enhancement of continuing engineering education in Serbia. Duration of a project has been from September 2007 till August 2009. One of the results of the project is a development of pilot courses for professionals from Serbian institutions and enterprises in quality standards and metrology. One of the project partner from EU member states is Slovak Institute of Metrology in Bratislava (SMU), Slovak republic. SMU together with experts from Mechanical Engineering Faculty of University of Belgrade and Faculty of Technical Sciences of University of Novi Sad has been responsible for development of a course relating to EU Directives on conformity assessment.

One of the EU Directive which related to conformity assessment is an EU Directive No. 2004/22/EC of the European Parliament and the Council of 31 March 2004 on measuring instruments (MID). This article presents way of implementation of MID into Slovak national legislation.

Slovakia has had a long tradition in legal metrology – as from 1754, when was granted a patent by the empress of Austria, Maria Theresa, then in 1874 was passed a law on metric units by Hungarian Parliament and finally the Austro-Hungarian Monarchy signed the Metric Convention in 1875. The history continued in the XX century by Czechoslovak Acts on metrology from 1962 and 1990. The last act on metrology was passed by Slovak parliament in 2000.

The directive MID process began by annotation of directive proposal with working name METRO in the end of eighties of the last century. After some years of development the proposal was submitted to the European Parliament and European Council in September 2000. After several years of discussions with representatives of all interested sides – producers and consumers – the provision was finally approved as a Directive 2004/22/EC of the European Parliament and of the Council of 31 March 2004 on measuring instruments and was issued in Official Journal on 30 April 2004.

## 2. MID – LEGAL REQUIREMENTS

Directive has to be implemented in national legislation in accordance with the procedures of the individual Member States.

MID applies to the devices and systems with a measuring function defined in its instrument – specific annexes and is concerning ten types of legally controlled measuring instruments:

- MI-001 Water meters
- MI-002 Gas meters and volume conversion devices
- MI-003 Active electrical energy meters
- MI-004 Heat meters  
(MI-001 to MI-004: utility meters for residential, commercial, light industrial use)
- MI-005 Measuring systems for the measurement of quantities of liquids other than water
- MI-006 Automatic weighing instruments
- MI-007 Taximeters
- MI-008 Material measures (length, capacity measure)
- MI-009 Dimensional measuring instruments

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#### MI-010 Exhaust gas analysers

According to MID the measuring instruments are legally controlled measuring instruments if they are used for measurements resulting from public interest, public health, safety and order, protection of the environment, protection of consumers, levying taxes and duties and fair trading.

Instrument types and instrument designs covered by the directive must undergo conformity assessment procedures before they are placed on the European market. Those procedures are worked to and delivered by Notified Bodies appointed by the member state and notified to the European Commission. There are a number of different conformity assessment routes that a Notified Body can provide and the scope of their services can be limited to particular instrument types or sub categories.

MID directive was transposed into Slovak legislation by Governmental Decree No. 294/2005 Coll. on measuring instruments.

### 3. PROCEDURE OF APPLICATION IN SLOVAKIA

Slovak republic during the preparation of transposition and implementation of MID utilized two projects. The first one was PSO Project PPA/SK/9/2: Implementation of the new EU Directive – MID in the Slovak Republic was carried out. The project dealt with the questions of marketing in the field of MID, implementation of the EU directives of a new approach and establishment of notified bodies for instruments, mentioned in the MID directive.

And a second one was a Project Twinning light: 2005/017-464.02.01- Reinforcement of administrative capacity as regards measuring instruments. The project was focused on prevention from ambiguous interpretation of MID and for solution of infrastructure relationships between MID and other directives, e.g. MDD, ATEX, etc.

Within years 2004 – 2008 SMU organized several trainings for interested sides which were focused on implementation of MID. The education centre at SMU included detailed information on MID into its courses.

#### 3.1 CONFORMITY ASSESSMENT BY NOTIFIED BODIES IN THE SLOVAKIA

In 2006 the governmental body, responsible for metrology – Slovak Office of Standards, Metrology and Testing – granted a notification to Slovak Institute of Metrology (SMU), with identification number 1781 and Slovak Legal

Metrology (SLM), identification number 1432. The certificates issued by these notified bodies are presented at particular web side.

For purposes of conformity assessment the manufacturer may choose from following conformity assessment procedures: B+D or B+E or B+F or A1 or D1 or E1 or F1 or G or H or H1, depending on type of measuring instrument.

**Module B** is a part of a conformity assessment procedure represents the type examination, based on which the notified body issues an European Community - type examination certificate (later only „EC“). The EC type examination certificate shall have validity for ten years from date of its issue and its validity may be renewed for subsequent periods of ten years each. For this module there are notified bodies in Slovakia: SMU (Annexes MI-001, MI-002, MI-003, MI-004, MI-005, MI-008) and SLM (Annexes MI-001, MI-002, MI-003, MI-004, MI-005, MI-007, MI-008, MI-010).

**Module D** is part of conformity assessment procedure, which links to the type examination, and based on quality assurance of the production process which had been approved by notified body. The notified body carries out the surveillance in order to make sure that the manufacturer fulfils the obligations arising out of the approved quality system. The manufacturer shall issue the EC declaration of conformity to type based on quality assurance of the production process. For this module there are notified bodies in Slovakia: SMU (Annexes MI-001, MI-002, MI-003, MI-004, MI-005, MI-008) and SLM (Annexes MI-001, MI-002, MI-003, MI-004, MI-005, MI-007, MI-008, MI-010).

**Module E** is part of conformity assessment procedure, which links to the type examination, and based on quality assurance of final measuring instrument inspection and testing which had been approved by notified body. The notified body carries out the surveillance in order to make sure that the manufacturer fulfils the obligations arising out of the approved quality system. The manufacturer shall issue the EC declaration of conformity to type based on quality assurance of final measuring instrument inspection and testing. For this module there are notified bodies in Slovakia: SMU (Annex MI-008) and SLM (Annex MI-008).

**Module F** is part of conformity assessment procedure, which links to the type examination, and based on verification of measuring instrument by notified body. The manufacturer shall issue the EC declaration of conformity to the type based on verification of measuring instrument. For this module there are notified bodies in Slovakia: SMU (Annexes MI-001, MI-002, MI-003, MI-005)

and SLM (Annexes MI-001, MI-002, MI-003, MI-004, MI-005, MI-007, MI-010).

**Module A1** is conformity assessment procedure based on internal production control and measuring instrument testing by notified body. The manufacturer shall issue the EC declaration of conformity based on internal production control and measuring instrument testing by notified body. For this module there are notified bodies in Slovakia: SMU (Annex MI-008) and SLM (Annex MI-008).

**Module D1** is conformity assessment procedure based on quality assurance of production process approved by notified body. The notified body carries out the surveillance in order to make sure that the manufacturer fulfils the obligations arising out of the approved quality system. The manufacturer shall issue the EC declaration of conformity based on quality assurance of the production process. For this module there are notified bodies in Slovakia: SMU (Annex MI-008) and SLM (Annex MI-008).

**Module E1** is conformity assessment procedure based on quality assurance of final measuring instrument inspection and testing approved by notified body. The notified body carries out the surveillance in order to make sure that the manufacturer fulfils the obligations arising out of the approved quality system. The manufacturer shall issue the EC declaration of conformity based on quality assurance of final measuring instrument inspection and testing. For this module there are notified bodies in Slovakia: SMU (Annex MI-008) and SLM (Annex MI-008).

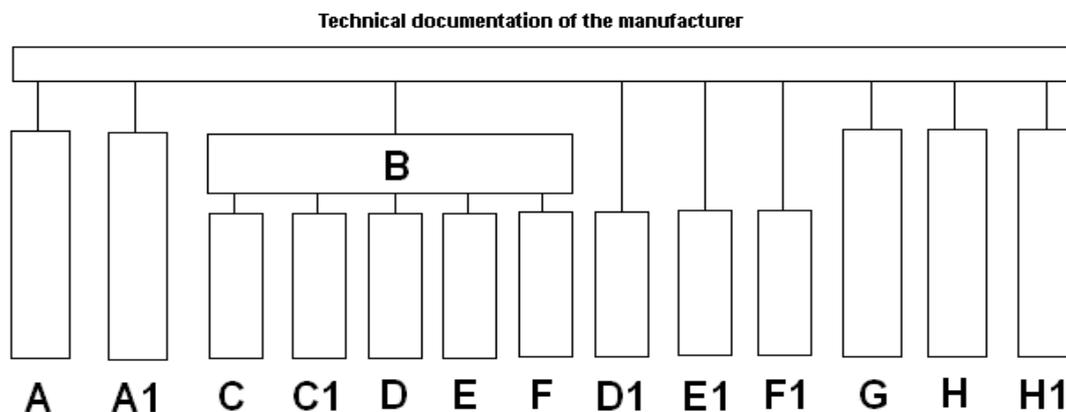
**Module F1** is conformity assessment procedure based on verification of measuring instrument by notified body and notified body shall issue a certificate of conformity. The manufacturer shall issue EC declaration of conformity based on verification of measuring instrument. For this

module there are notified bodies in Slovakia: SMU (Annex MI-008) and SLM (Annex MI-008).

**Module G** is conformity assessment procedure based on verification of each measuring instrument by notified body and notified body shall issue a certificate of conformity. The manufacturer shall issue EC declaration of conformity based on verification of each measuring instrument. For this module there are notified bodies in Slovakia: SMU (Annex MI-005, MI-009) and SLM (Annex MI-005).

**Module H** is conformity assessment procedure based on full quality assurance of production process approved by notified body. The notified body carries out the surveillance in order to make sure that the manufacturer fulfils the obligations arising out of the approved quality system. The manufacturer shall issue the EC declaration of conformity based on full quality assurance of the production process. For this module there are notified bodies in Slovakia: SMU (Annex MI-008) and SLM (Annex MI-008).

**Module H1** is conformity assessment procedure where notified body shall approve full quality assurance and shall issue the EC design examination certificate. The notified body carries out the surveillance in order to make sure that the manufacturer fulfils the obligations arising out of the approved quality system. The EC design examination certificate shall have a validity of ten years from date of its issue and may be renewed for subsequent periods of ten years each. The manufacturer shall issue the EC declaration of conformity based on full quality assurance of the production process and design examination. For this module there are notified bodies in Slovakia: SMU (Annexes MI-001, MI-002, MI-003) and SLM (Annexes MI-001, MI-002, MI-003, MI-004, MI-005, MI-007, MI-010).



*Figure 1: Flow chart of conformity assessment procedures (Global Approach). The quality management systems are applied in the modules D, D1, E, E1, H, H1.*

### 3.2 WELMEC GUIDES USAGE

WELMEC is the European Cooperation in Legal Metrology. For the practical application of conformity assessment there have been used WELMEC guides [7], which are not obligatory. Because development of guides have been based on large consensus of Working Groups members, the WELMEC guides are fully respected by member states. Slovakia is represented in WELMEC by Slovak Office for Standards, Metrology and Testing and Slovak Institute of Metrology actively participate in activities of several WELMEC Working Groups.

There are several guides which are relating to conformity assessment – 4.1, 5.2, 7.1, 7.2, 8.0, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.11, 8.11-1, 8.12-1, 8.14, 8.15, 8.16-1, 8.16-2, 8.16-3, 8.16-4, 8.16-5, 8.17, 8.18-2, 8.19-1, 8.19-2, 8.19-3, 8.20.

### 3.3 SURVEILLANCE IN SLOVAKIA

As a surveillance body in Slovak republic serves Slovak metrology inspectorate, which is in the same time supervision body for area of measuring instruments regulated by provisions of Old approach, it means for regulated non-harmonized area. The personnel of Slovak metrology inspectorate attended preparation courses and trainings for surveillance within the projects PSO and Twinning light.

## 4. SOME PRACTICAL EXPERIENCES

### 4.1 CREDIBILITY IMPROVEMENT OF THE NOTIFIED BODY – SMU

Although SMU has applied Quality management system according to ISO 9001:2000 a its laboratories have been accredited according to EN ISO/IEC 17025:2005, SMU has accredited its competence for conformity assessment as well.

### 4.2 THE INDIVIDUAL SUB-ASSEMBLIES ACCORDING TO MID AND SEGMENTS

According to MID the individual sub-assembly is only gas volume conversion device (MI-002), thermometer, flow sensor and calculator (MI-004). In the real practice there are other segments (MI-005, MI-006, etc.) It was necessary to solve several questions, which related to these segments. After unsuccessful trials of approach unification of the individual national legislations there was issued Guide 8.8 WELMEC Voluntary System of Modular Evaluation of Measuring Instruments under MID.

### 4.3 AFFIXING AND CARRYING OUT CONFORMITY ASSESSMENT MARKINGS AND SUPPLEMENTARY MARKINGS

There were established possible alternatives of grouping of „CE“ and supplementary metrological marking. MID does not define the exact way of ordering of individual parts of CE marking, whether all parts are in the one row or two rows. Each national legislation regulates the layout of marking individually.



Figure 2: Conformity assessment marking of SMU

### 4.4 ACCURACY CLASSES OF ELECTRICAL ENERGY METERS

In the case of electrical energy meters for active electrical energy measurement, MID defines accuracy classes A, B, C. These classes are in compliance with standard EN 50470-1, -2 and -3. Provisions issued before 30.10.2006 are in compliance with accuracy classes 0,5; 1 and 2 according to standard EN 62053. There is a big discrepancy in this issue and therefore is necessary to update present legal regulations for electrical energy meters.

### 4.5 TRANSITIONAL PERIOD VALIDITY OF PRESENT LEGAL REGULATIONS CONCERNING PLACEMENT OF THE MEASURING INSTRUMENT ON THE MARKET

There were solved questions related to transitional period of validity regulations related to placement measuring instrument on the market, which type approval was issued before 30.10.2006. There were possibility of type approval certificate amendment according to previous legal provisions. Within the amendment it can be accepted only:

- change in the name of manufacturer
- change of commercial name or trade mark
- different specification in the certificate, which has no effect on metrological and technical parameters of measuring instrument
- change in software, which does not represent change in metrological and technical parameters of measuring instrument.

## 5. CONCLUSIONS

The transposition of MID into the legislation of Slovak republic represented adoption and transformation of mandatory elements of MID into the Governmental Decree of Slovak republic No. 294/2005 Coll. on measuring instruments, which was passed by Slovak Government.

The implementation of MID into the Slovak legislation has solved a lot of tricky questions and processes. There were included a preparation process for implementation (Dutch PSO project), solution of infrastructural connections with other EU (Twinning light project), improvement of metrology awareness of stakeholders, different educational activities for all affected bodies, development of training courses and trainings for inspectors of Slovak metrology inspectorate, usage of WELMEC guides, etc.

In the same time there was included also processing of the particular notification documents by Slovak Office for Standards, Metrology and Testing and particular documentation developed by notified bodies.

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