

# Twinning Project “Strengthening the metrology system in Azerbaijan”

Twinning ref. AZ/15/ENP/TR/36



A Project funded by the European Union and Implemented by CMI/PTB Consortium led CMI

## Implementation of EU Directive 2004/22/EC on measuring instruments and Directive 2009/23/EC on non-automatic weighing instruments to the Czech legislation – experience

Baku November 2017

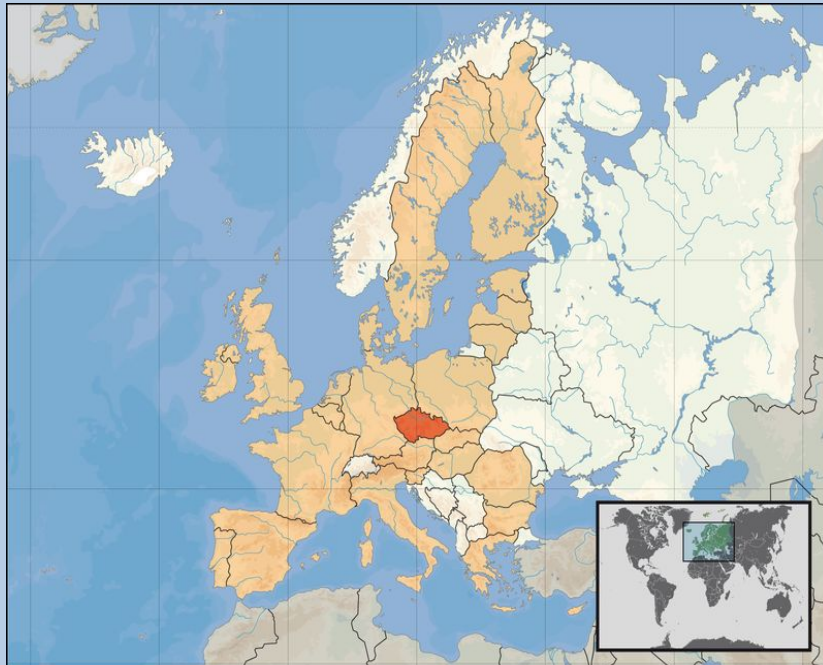


Layihə Avropa İttifaqı tərəfindən maliyyələşdirilir  
/ This Project is funded by the European Union



Layihə CMI/PTB Konsorsiumu tərəfindən tətbiq olunur  
Project Implemented by the CMI/PTB Consortium

# The Czech Republic



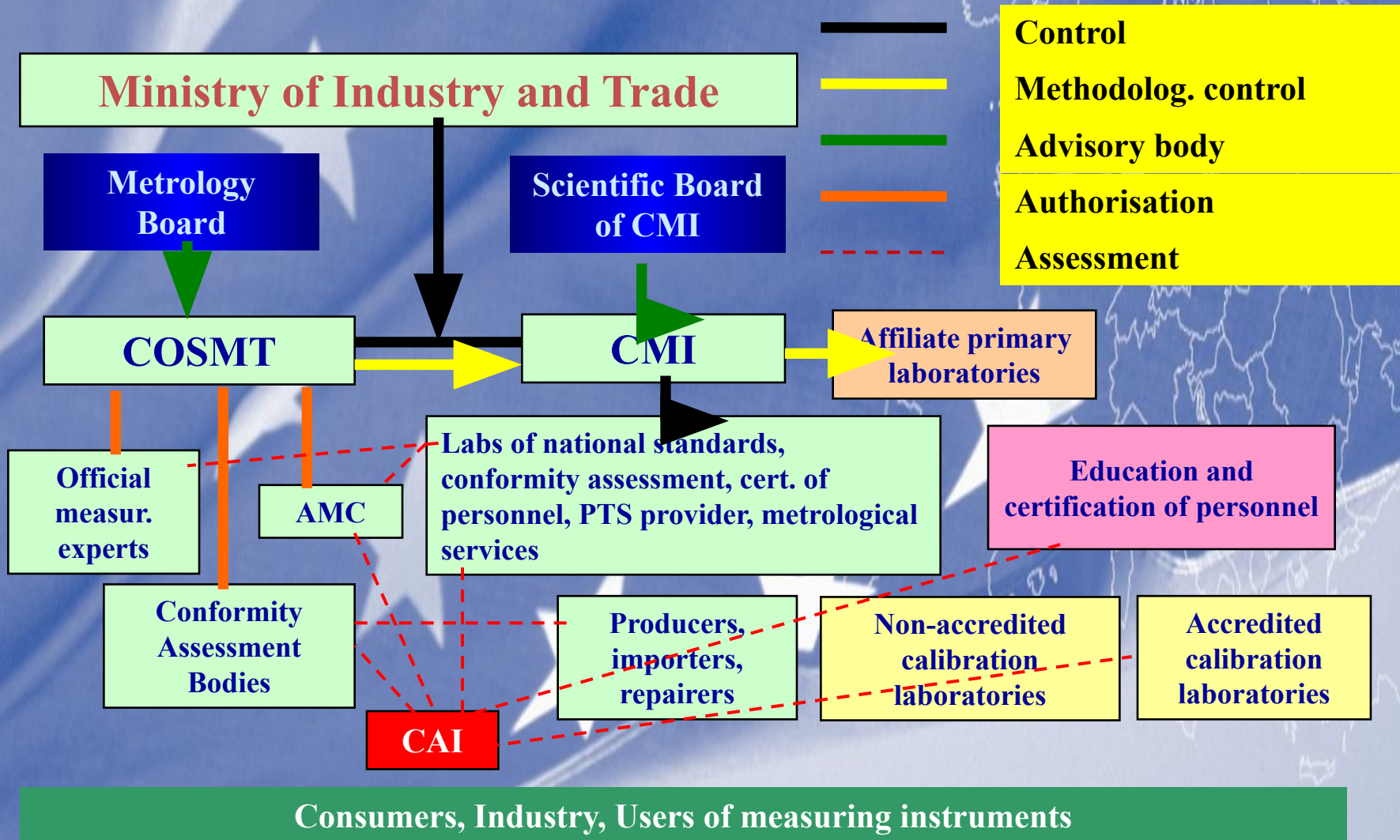
Population	10 500 000
Area	78 866 km <sup>2</sup>
Membership	EU (1.5.2004), NATO, OECD, Schengen area
Currency	CZK 1 € = 25 CZK
Capital city	Prague (Praha)

# General philosophy about legal metrology in the Czech Republic

Legal metrology in the Czech Republic:

- setting up legal requirements
- **control/ conformity assessment of regulated products and regulated activities**
- supervision of regulated products and of regulated activities
- providing the necessary infrastructure for the traceability of regulated measurements and measuring instruments

# Legal Metrology in the Czech Republic



# Overview of Legal Regulations concerning Measuring Instruments in EU and in CR



- 1) „Old Approach“ - Directives from 1971 to 1986
- 2) **Non-Automatic Weighing Instruments Directive (No. 90/384/EHS of 20/06/1990 - NAWI)**
- 3) **Measuring Instruments Directive (No. 2004/22/ES of 30/03/2004 - MID)**



- 1) Act No. 22/1997 Coll., on Technical requirements for Products
- 2) Act No. 90/2016 Coll., on Conformity Assessment in the placing products on the market
- 3) Government Order No. 326/2002 (now **121/2016**) Coll., that lays down technical requirements for non-automatic weighing instruments
- 4) Government Order No. 464/2005 (now **120/2016**) Coll., that lays down technical requirements for measuring instruments
- 5) Act No. 505/1990 Coll., on Metrology
- 6) Implementing regulations to the Act No. 505/1990 Coll. (Decreases of MIT)

# **Relation Act no. 505/1990 Coll. and Act no. 90/2016 and Act no. 22/1997 Coll.**

## **Measuring instruments which are covered by MID, NAWID and MDD**

- a) **placing on the market** and putting into using
  - **Act no. 22/1997 Coll.**, on Technical requirements on products and transposition government orders
  - **Act No. 90/2016 Coll.**, on conformity assessment
- b) regulation **after** putting into using (if it is determined)
  - **Act no. 505/1990 Coll.**, on metrology



# **Relation Act no. 505/1990 Coll. and Act no. 90/2016 and Act no. 22/1997 Coll.**

**Measuring instruments which are not covered by  
MID, NAWID and MDD (under national regulation)**

- a) placing on the market and into using – Act no. 505/1990 Coll., on metrology (national regulation) including of recognition clause
  
- b) putting into using (if it is determined) – Act. No. 505/1990 Coll., on metrology

# **Act No. 90/2016 Coll., on Conformity Assessment in the placing products on the market**

- general principles for placing products on the market and to use
- way of specification products for conformity assessment and technical requirements, which will have to fill
- conformity assessment
- state administration performance in state testing and market surveillance
- rights and obligations of persons authorized to carry out activities under this Act that are related to state testing
- obligation to provide information related to the supply of products, conformity assessment and market surveillance



# Act No. 505/1990 Coll., on Metrology, as later amended

- Decree No. 262/2000 Coll., ensuring the uniformity and accuracy of measuring instruments and measurement, as later amended
- Decree No. 264/2000 Coll., on basic units of measurement and other units and their indications
- Decree No. 332/2000 Coll., that lays down some procedures for type approval and verification of specified measuring instruments bearing EEC mark, as amended by Decree No. 260/2003 Coll.
- Decree No. 345/2002 Coll., setting down measuring instruments to legal control (obligatory verification and pattern approval), as amended by Decree No. 65/2006 Coll.

# Placing measuring instruments on the Czech market

## 1. Harmonised area

- „Old Approach“ Directives
- „New Approach“ Directives

## 2. Non-harmonised area

- Principle of mutual recognition
- „National approach“ (Act No. 505/1990 Coll.)

# HARMONISED AREA

Free movement goods

Free movement persons

Free movement capital

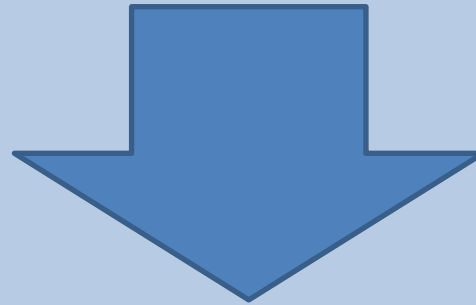
Free movement services

# Free movement of goods (MID)

- Free movement goods means that goods produced in any EU member state and goods from the third countries are imported to interior EU market without any customs and other quantitative limitations.
- Process of reach full conformity with the technical regulations, standards and procedures within conformity assessment products which are used in EU was a part of fulfilling the obligations of the Czech Republic resulting from European Association Agreement as well as from the Protocol about conformity assessment and acceptance of industrial products in this agreement (PECA). Trade with EU members was gradually facilitated.

# Main aspects of Measuring Instrument Directive (MID)

- Removing technical barrier of trade (free moving goods)
- Recognition – strengthening confidence between member states
- Technical harmonisation (Harmonised European Standard, Normative Documents, e.g. drawn up by OIML (published in the Official Journal of the European Union, C series))



**Free trade** - removing obstacles and difficulties related to the free trade of measuring instruments between the European Community and the Czech Republic

**Product conformity** – ensuring reproducibility, durability, reliability and suitability for using

# Measuring Instruments regulated by MID

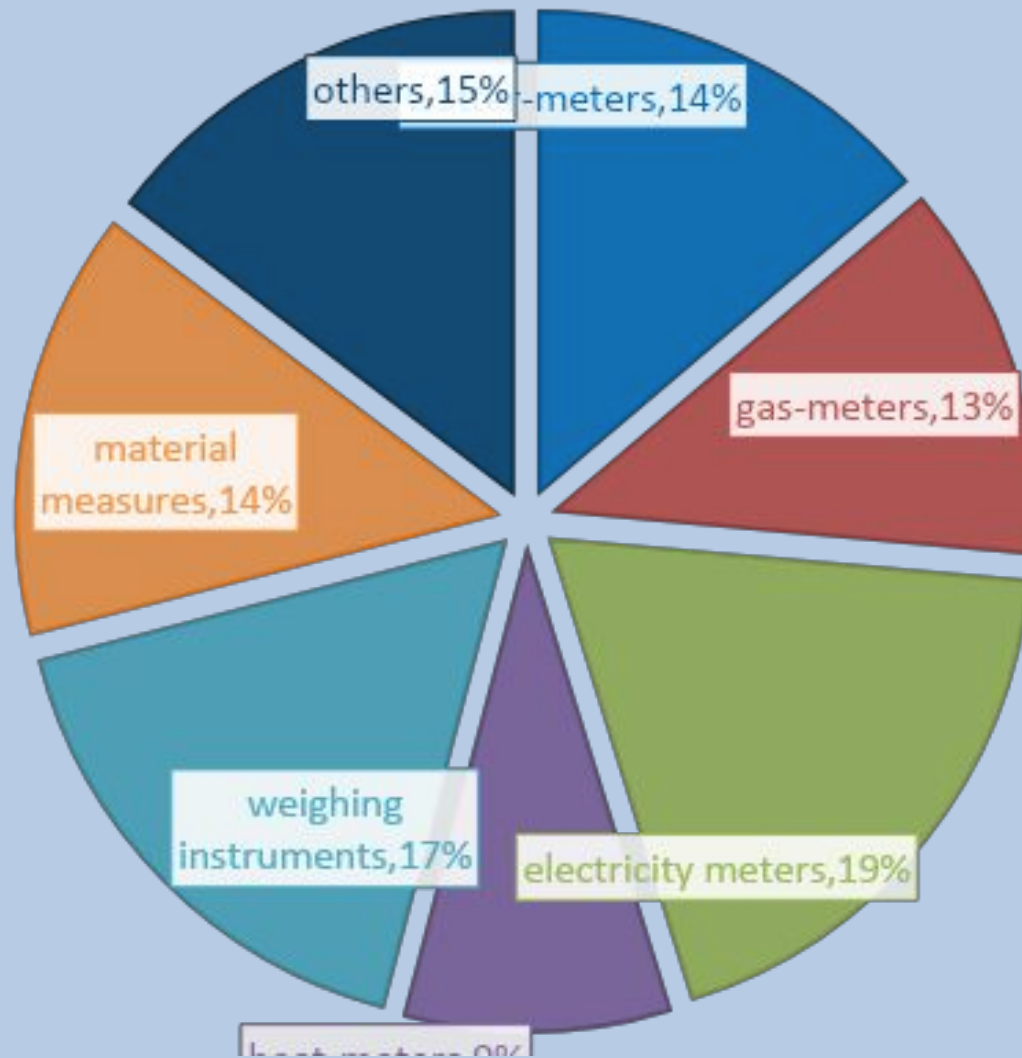


# Measuring Instruments regulated by MID

- water meters (MI-001)
- gas meters and volume conversion devices (MI-002)
- active electrical energy meters (MI-003)
- heat meters (MI-004)
- measuring systems for the continuous and dynamic measurement of quantities of liquids other than water (MI-005)
- automatic weighing instruments (MI-006)
- taximeters (MI-007)
- material measures (MI-008)
- dimensional measuring instruments (MI-009)
- exhaust gas analysers (MI-010)



# Share of measuring instruments within the market



# Regulation MI in EU and the Czech Republic

State	AL	BE	BG	CY	CZ	DK	EE	ES	FI	FR	DE	GR	HU	IR	IT	LV	LT	LU	MT	NL	PL	PT	RO	SK	SL	SE	UK	Total EC27	IC	CH	TU	NO	Total EEA			
<b>MI-001: Water Meters</b>																																				
<i>Cold Water Meters:</i>									no																											
residential use	1	+	1	-	1	+	1		final	1	+	1	+	1		1	=	1	=	1	=	1	+	1	=	0										
commercial & light industrial use	1	+	1	=	1	+	1		legal	1	+	1	+	1		1	=	1	=	1	+	1	=	0												
<i>Warm Water Meters:</i>									regu-																											
residential use	1	+	1	-	1	+	1		lating	1	+	1	+	1		1	=	0																		
commercial & light industrial use	1	+	1	-	1	+	1		until	1	+	1	+	1		1	=	0																		
									now																											
<b>MI-002: Gas Meters &amp; Convers. Dev.</b>																																				
<i>Gas Meters:</i>																																				
residential, commerc. & light ind. use	1	+	1	+	1	=	0			1	+	1	+	1		1	=	1	-	1		1	=	1	=	1	=	1	=	1	+	1	+	1	=	
<i>Volume conversion devices:</i>																																				
residential use	1	+	1		1	-	0			1	+	1	+	1		1	=	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	
commercial & light industrial use	1	+	1		1	-	0			1	+	1	+	1		1	=	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	
<b>MI-003: Active Elektr. Energy Meters</b>																																				
residential	1	+	1	+	1	=	1			1	+	1	+	1		1	=	1	=	1	=	1	=	0												
commerc. & light ind. use	1	+	1	+	1	-	1			1	+	1	+	1		1	=	1	=	1	=	1	=	0												
<b>MI-004: Heat Meters</b>																																				
residential use	1	+	1		1	=	0			1	+	1	+	1		1	=	0																		
commercial & light industry use	1	+	1		1	-	0			1	+	1	+	1		1	=	0																		
<b>MI-005: Measuring Systems for Liquids</b>																																				
<i>Fuel dispensers:</i>																																				
Liquids	1	+	1	=	1	=	1			1	+	1	=	1		1	=	1	=	1	=	1	=	0												
Liquefied gases	1	+	1	=	1	=	1			1	+	1	=	1		1	=	1	=	1	=	1	=	0												
<i>Systems on (un)loading ships:</i>																																				
Systems on (un)loading rail	1	+	1	=	1	=	1			1	+	1	=	1		1	=	1	=	1	=	1	=	0												
<i>Systems on (un)loading road tankers:</i>																																				
Systems for refuelling aircraft	1	+	1	=	1	=	1			1	+	1	=	1		1	=	1	=	1	=	1	=	0												
<i>Systems for cryogenic liquids:</i>																																				
Systems for milk	1	+	1	=	1	=	1			1	+	1	=	1		1	=	1	=	1	=	1	=	0												
<i>Systems for liquids:</i>																																				
Systems for liquefied gases	1	+	1	=	1	=	1			1	+	1	=	1		1	=	1	=	1	=	1	=	0												
<b>MI-006: Automatic Weighing Instr.</b>																																				
<i>Automatic catchweighers:</i>																																				
Automatic checkweighers	1	+	1	+	1	=	1			1	+	1	+	1		1	=	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	
Weight labellers	1	+	1	+	1	=	1			1	+	1	+	1		1	=	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	
Weight/price labellers	1	+	1	+	1	=	1			1	+	1	+	1		1	=	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	
<i>Automatic gravim. filling instruments:</i>																																				
Discontinuous totalisers	1	+	1	+	1	=	1			1	+	1	+	1		1	=	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	
<i>Continuous totalisers:</i>																																				
Rail-weighbridges	1	+	1	+	1	=	0			1	+	1	+	1		1	=	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	
<b>MI-007: Taximeters</b>																																				
1	+	1	+	1	+	1				1	+	1	+	1		1	=	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	
<b>MI-008: Material Measures</b>																																				
<i>Material measure of length:</i>																																				
Capacity serving measures	1	+	1	+	1	=	0			1	+	1	+	1		1	=	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	
<i>Serving measures:</i>																																				
Transfer measures	1	+	1	+	1	=	0			1	+	1	+	1		1	=	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	
<b>MI-009: Dimensional Measuring Instr.</b>																																				
<i>Length measuring instruments:</i>																																				
Area measuring instruments	1	+	1	0	0					0		1	+	1		1	=	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	
<i>Multi-dimensional measuring instr.:</i>																																				
1	+	1	0	0						1	+	1	+	1		1	=	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	1	+	
<b>MI-010: Exhaust Gas Analysers</b>																																				
0		1		1	-	1				1	+	1	+	1		1	=	1	-	1	-	1	-	1	-	1	-	1	+							
<b>Total MIs with no regulation</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>10</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>11</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>18</b>	<b>19</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>7</b>	<b>0</b>				

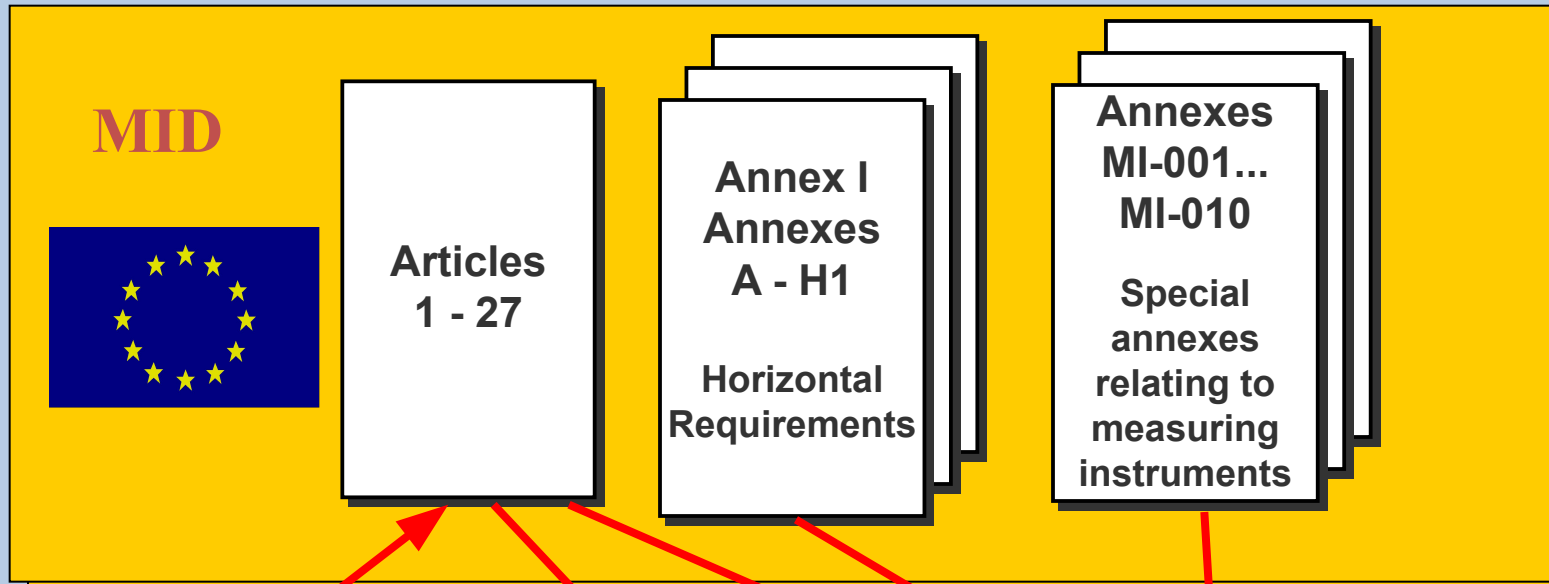
States with legal regulations for putting into use of measuring instruments, covered by the MID (16.09.2009)

1 = regulated, 0 = not regulated, allowed errors in service are equal (=) MPE of MID or larger (±)

# Structure of MID

- 1) Articles, regulating the procedures: definitions, implementation, obligations, regulations
- 2) Necessary technical documentation (Article 10)
- 3) Criteria to be satisfied by bodies designated by the member states (Article 12)
- 4) **Horizontal Essential Requirements** (Annex I)
- 5) Conformity assessment procedures (Annexes A - H1)
- 6) **Instrument specific essential requirements** (Annexes MI-001 to MI-010)

# MID Transposition to the Legal System of CR



**Act No. 22/1997 Coll.**  
**Act No. 90/2016 Coll.**  
**Act No. 505/1990 Coll.**

**Government Order  
No. 121/2016 Coll.**

**Annexes 1 - 14 of  
Government Order  
No. 120/2016 Coll.**

***National Transposition***



# „CE“ Marking

-

Number of Notified entity

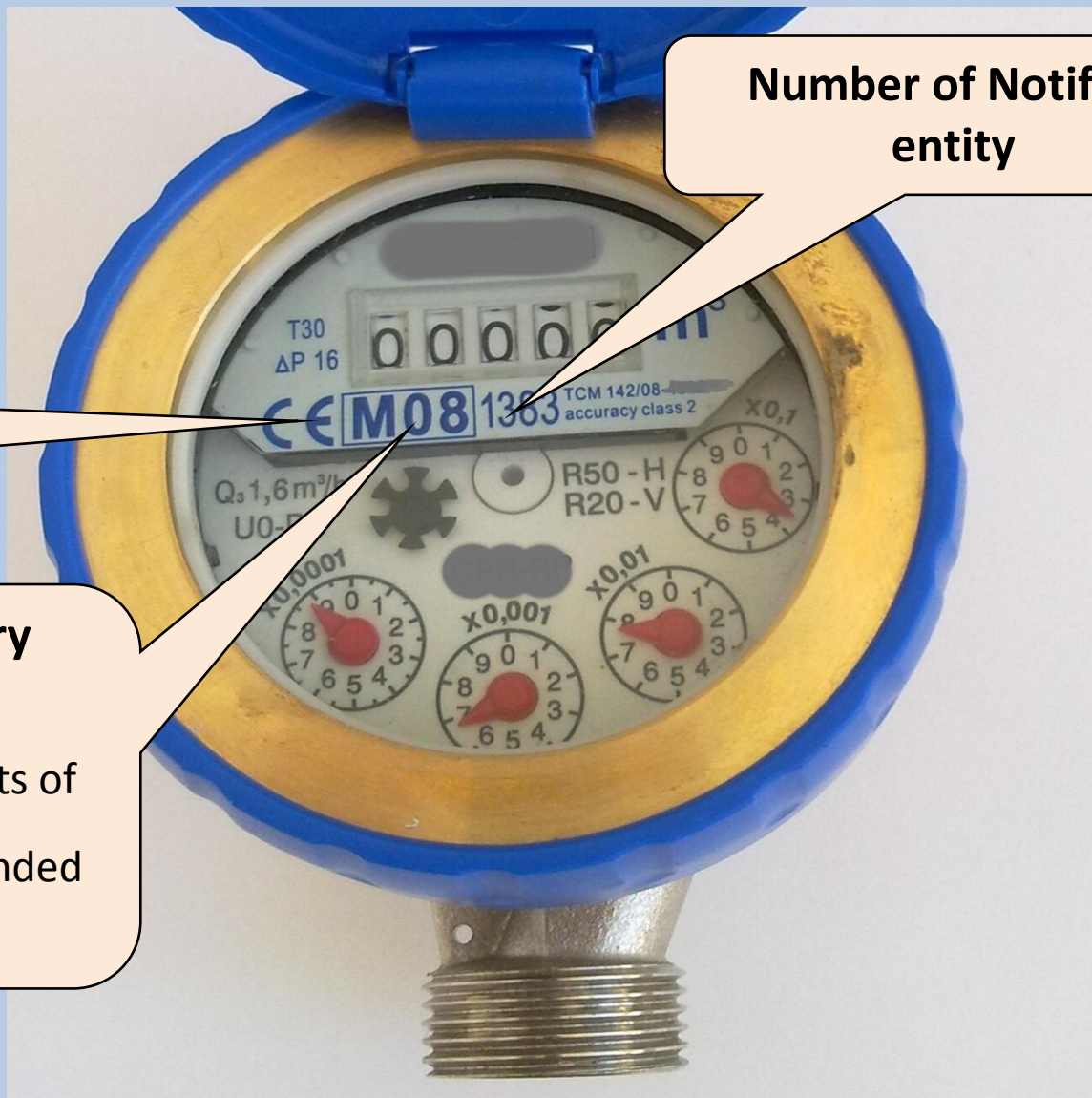


**Conformity marking**



**Supplementary metrology marking**

(M + the last two digits of the year of its affixing, surrounded by a rectangle.)



# Positive aspects

- Complete set of objectives and instrument requirements
- Mutual recognition of results
- Coherent and expanded set of conformity assessment procedures
- Recognition of OIML documents
- Flexibility of control for member state
- Influence on technological innovation

# Negative aspects

- Knowledge deficit
- Loss of direct contact with manufacturers and suppliers
- Information exchange between Member States (already the problem with Old Approach Directives and NAWI)
- Cooperation between market surveillance bodies
- Updating of pre-MID type approvals
- The problem of sub-assemblies
- Not existing harmonised standards



# NON - HARMONISED AREA

Non-Harmonized the area is based on requirements and needs of the ministries, while it is taken into account the similar purpose of measuring instruments used in EU directives, i.e. (that is) use of reason protection of the public interest, protection of the environment, protection consumers and honest trading and collecting taxes and fees.

# Principal of Mutual Recognition

- guarantees free movement of goods and services without the need to harmonise Member State's national legislation
- goods which are lawfully produced in one Member State cannot be banned from sale on the territory of another Member State, even if they are produced to technical or quality specifications different from those applied to its own products
- the only exception allowed - overriding general interest such as health, consumer or environment protection- is subject to strict conditions
- all relevant information needed in situations where the principle of mutual recognition is to be applied:

*Commission Interpretative communication*

[http://www.unmz.cz/cz/info\\_misto\\_MPO/c2003-3944\\_en.pdf](http://www.unmz.cz/cz/info_misto_MPO/c2003-3944_en.pdf)

# Verifications, Pattern Approval

- Decree No. 345/2002 Coll., setting down measuring instruments to legal control (obligatory verification and pattern approval), as amended by Decree No. 65/2006 Coll.

## List of legally controlled measuring instruments (8 fields of measurement)

1. Measuring instruments for measurement of geometrical quantities
2. Measuring instruments for measurement of mechanical quantities
3. Measuring instruments for measurement of thermal-technical quantities
4. Measuring instruments for measurement of electrical and magnetic quantities
5. Measuring instruments for measurement of optical quantities
6. Measuring instruments for measurement of time, frequency, and acoustic quantities
7. Measuring instruments for measurement of physical and chemical quantities
8. Atomic and nuclear physic measuring instruments

# National regulation and MID



National  
regulation  
(Decree.  
345/2002  
Coll.) **78%**

## Useful links

- **Czech Office for Standards, Metrology and Testing**  
<http://www.unmz.cz>
- **Czech Metrology Institute**  
<http://www.cmi.cz>

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## Thank you for your attention

Baku 14 November 2017

Ing. Štěpán Mašek,  
Czech Office for Standards,  
Metrology and Testing



Layihə CMI/PTB Konsorsiumu tərəfindən tətbiq olunur  
Project Implemented by the CMI/PTB Consortium