



Why Europe fosters education and training in measurement science in chemistry

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Measurements and legislation

- Millions of measurements are performed every year to implement European directives and regulations

Such checks shall in particular aim at ascertaining that the level of melamine, if any, does not exceed 2,5 mg/kg product.

- ‘3. For products intended for direct processing, paragraph 1 shall not apply to traces of authorised GMOs in a proportion no higher than 0,9 % or lower thresholds established under the provisions of Article 30(2), provided that these traces are adventitious or technically unavoidable.’

(5) The addition to chocolate products of vegetable fats other than cocoa butter, up to a maximum of 5 %, is permitted in certain Member States.

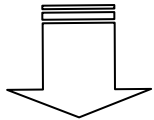




Directives requiring measurements for implementation

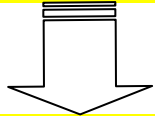
Design

EC



Adopt

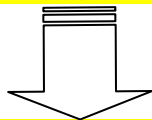
EU & National



Implement equivalently
across EU

National

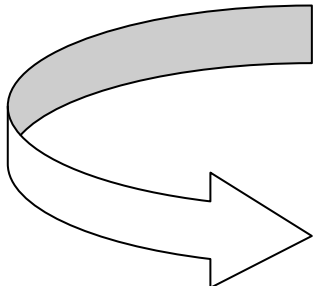
Crucial link between
directive and implementation
uniform implementation
across EU



measurements

National

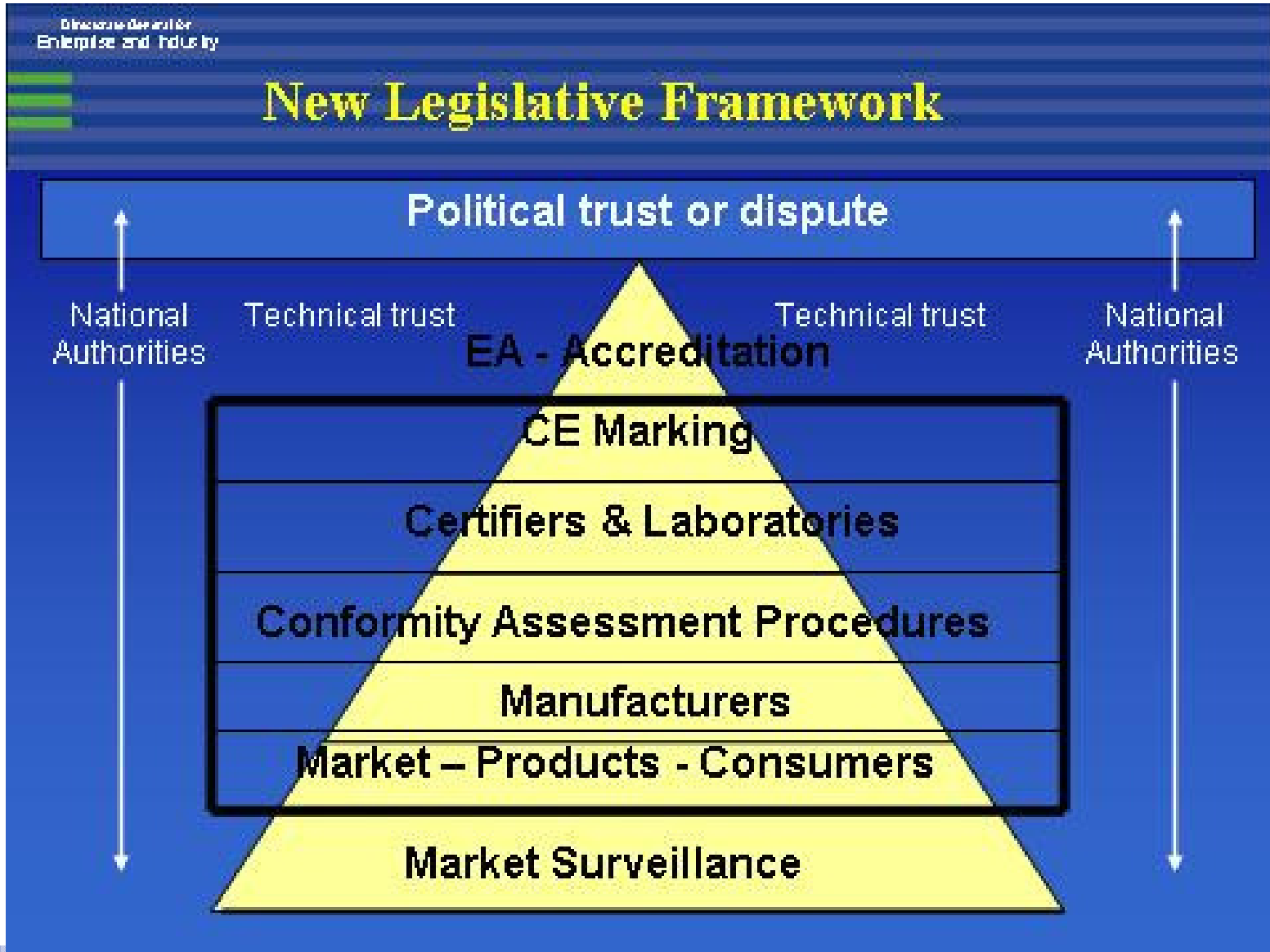
competent people



- Competent labs in the member states
- Competent national accreditation body
- Competent national reference labs



European Legislation Accreditation





Air Quality directive :

Framework Directive 96/62/EC : evaluation and control air quality

- 1999/30/EC relating to limit values for SO₂, NO₂, NO, particles and Pb in air
- 2000/69/EC relating to limit values for benzene and CO in air
- 2002/3/EC ozone levels in air

Traceability of the standards used, uncertainty requirements



Food safety

Commission Regulation (EC) No 645/2000 of 28 March 2000

setting out detailed implementing rules necessary for the proper functioning of certain provisions of Article 7 of Council Directive 86/362/EEC and of Article 4 of Council Directive 90/642/EEC concerning the arrangements for **monitoring the maximum levels of pesticide residues** in and on cereals and products of plant origin, including fruit and vegetables, respectively



WATER FRAMEWORK DIRECTIVE:

Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000
establishing a framework for the community action in the field of water policy

The implementation of the Directive will be based on river basin management plans. It includes the design of monitoring programmes to be carried out by all Member States. The effectiveness of those programmes, and hence of the overall Directive implementation, will highly depend on the ability of laboratories in Member States to measure ecological, biological and chemical properties of Community waters.





Metrological issues in directives : some examples

- **REGULATION (EC) No 466/2001, setting maximum levels for certain contaminants in foodstuffs**
- **DIRECTIVE 2001/22/EC laying down the sampling methods and the methods of analysis for the official control of the levels of lead, cadmium, mercury and 3-MCPD in foodstuffs**



Good times for analytical chemists, or not ?

*Declining students, loss of interest, less funding,
poor image, disappearing chairs ,*



The paradox

big market need : appropriate
knowledge about analysis

- Testing labs
- research labs
- industry
- public authorities
- accreditation bodies

poor link ...

providers of
this knowledge

A problem :

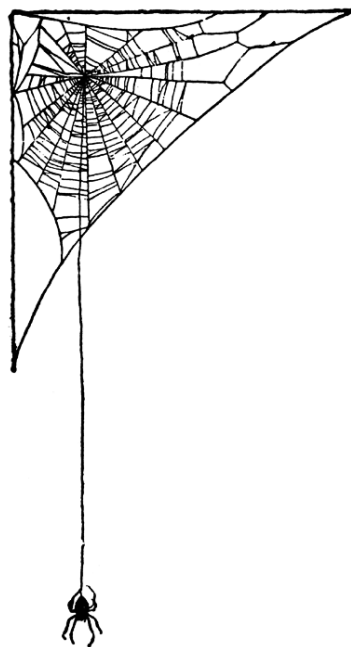
Most students leave university without knowledge on ISO/IEC-17025



knowledge gap



The challenge



Upgrading and Innovating Analytical Sciences





IRMM initiatives since 2005



Bringing together those that teach



*1st AcadeMiC summer school,
Rogaška Slatina, July 2005*



*2nd AcadeMiC Summer school,
Wieliczka, June 2007*



2005

Rogaška Declaration

hereby commit themselves

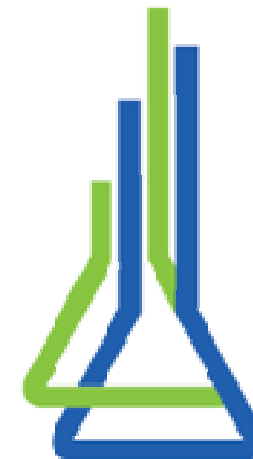
- *to promote such courses*
- *and to cooperate in making these available across Europe*

and recommend that Analytical Chemistry courses both at bachelor and master level should incorporate Metrology in Chemistry and Quality Assurance topics.

[list of signatories in annex]



Measurement Science in Chemistry



University of Maribor



UNIVERSITY of OULU
OULUN YLIOPISTO





EUROPEAN COMMISSION

Brussels, 6.10.2010
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**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN
PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL
COMMITTEE AND THE COMMITTEE OF THE REGIONS**

**Europe 2020 Flagship Initiative
Innovation Union**

SEC(2010) 1161





Innovation Union

"Our education systems at all levels need to be modernised.

*Excellence must even
more become the guiding principle. ...
raise skill levels"*



Thinking ahead ...

