Cooperation WELMEC: EURAMET

EURAMET e.V.

European Association of National Metrology Institutes

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26th WELMEC Committee meeting

Bled, Slovenia
6th – 7th May 2010
European Cooperation in Legal Metrology

European union
Directives
Member States
Implementation in National laws
Common Interpretation/Application

WELMEC GUIDES are recognised and referenced by European Commission as harmonised best practice solutions
European Association of National Metrology Institutes

Cooperation quality-assured measurement
Growing demand for Metrology

NMI

NMI budgets stable or even declining

“Metrology Dilemma”

- Traditional areas of industry
  - becoming more complex
  - requiring broader measurement ranges
    and lower uncertainties
- New areas of technology
  e.g. nano-technology or biotechnology
- Areas in which of metrology is increasingly recognised
  e.g. chemistry, clinical analysis, food safety
Critical factors for success in innovation & trade

Society & Industry

(A) Testing & Calibration

(B) Metrology knowledge exchange

(C) (New) measurement knowledge
   (etalons, methods, uncertainty, …)

(D) Measurement R & D

(E)
16 European Neighbouring Policy countries (NMIs plus Ministries)

Algeria, Armenia, Azerbaijan, Belarus, Egypt, Georgia, Israel, Jordan, Lebanon, Libya, Moldova, Morocco, Palestinian Authority, Syria, Tunisia and Ukraine

TAIEX Seminar “Metrology & Conformity Assessment”
Brussels, 1 – 2 March 2010

TAIEX, Technical Assistance Information Exchange Instrument of European Commission
Example: Interlaboratory comparison
WEIGHTS OF CLASSES E₁, E₂, F₁, F₂, M₁, M₁₂, M₂, M₂₃ AND M₃

PART 1: METROLOGICAL AND TECHNICAL REQUIREMENTS
The statistical principles of the metrological surveillance of the net content of prepackages as laid down by the CEE 76/211 Directive

<table>
<thead>
<tr>
<th>Nominal content in grams or millilitres</th>
<th>Maximum permissible error MPE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of nominal content</td>
</tr>
<tr>
<td>0 to 50</td>
<td>9</td>
</tr>
<tr>
<td>50 to 100</td>
<td></td>
</tr>
<tr>
<td>100 to 200</td>
<td>4,5</td>
</tr>
<tr>
<td>200 to 300</td>
<td></td>
</tr>
<tr>
<td>300 to 500</td>
<td>3</td>
</tr>
<tr>
<td>500 to 1000</td>
<td></td>
</tr>
<tr>
<td>1000 to 10000</td>
<td>1,5</td>
</tr>
</tbody>
</table>
“Optimised uncertainty methodology”

**Decision-making and risks**

- **Economic loss (€)**
- **$U_{\text{meas}}$**
- **MPU/2**

<table>
<thead>
<tr>
<th>Measurement uncertainty (% vol)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too much testing</td>
</tr>
<tr>
<td>Too little testing</td>
</tr>
</tbody>
</table>

WELMEC Committee Meeting
Bled (SLO), 6 - 7 May 2010