UNECE WP6 meeting 2.11.2010

Global Product Marketing and Multiple Product Certification

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Endress+Hauser
People for Process Automation
The Endress+Hauser Group - People for process automation

- Holding company in Reinach, Switzerland
- 19 production facilities in 11 countries
- Sales centers in more than 40 countries
- Representatives in over 70 other countries
- 8400 Employees worldwide
- 1.1 Billion Euro Turnover in 2009
Our customers

Endress+Hauser provides safe and reliable instrumentation for many industries

- **Chemicals**: We make processes safe
- **Environmental**: We take care of our environment
- **Oil & Gas**: We guarantee high accuracy
- **Primaries & Metal**: We provide robust solutions
- **Pulp & Paper**: We support with modern techniques
- **Food & Beverages**: We ensure absolute hygiene
- **Life Science**: We observe the highest standards
- **Power & Energy**: We help to use resources efficiently
- **Renewable Energies**: We focus on sustainable development
- **Marine Business**: We combine tradition with innovation

We speak the language of our customers!
We provide instruments and systems for tasks in the field of:

- Level measurement
- Flow measurement
- Pressure measurement
- Temperature measurement
- Liquid analysis
- Data acquisition
- Sampling
Global product marketing and multiple certification

Global product approvals for Process Instrumentation

<table>
<thead>
<tr>
<th>Approvals</th>
<th>Markets</th>
<th>Europe</th>
<th>USA</th>
<th>Canada</th>
<th>Japan</th>
<th>Russia</th>
<th>China</th>
<th>Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electromagnetic compatibility</td>
<td></td>
<td>EMC (CE-mark)</td>
<td>UL</td>
<td>CSA</td>
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<td>C-Tick</td>
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<td>Manufacturer</td>
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<td>Electrical Safety</td>
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<td>LVD (CE-mark)</td>
<td>FM, UL</td>
<td>CSA</td>
<td>Manufacturer</td>
<td>GOSST</td>
<td>CCC</td>
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<td>Manufacturer</td>
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<td>Explosion Safety</td>
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<td>ATEX (CE-mark)</td>
<td>NRTLs</td>
<td>CSA, FM, UL</td>
<td>TIIS</td>
<td>GOSST</td>
<td>NEPSI</td>
<td>IEC Ex Testsafe</td>
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<td>PTB, Exam, TÜV ... KEMA, LCIE, BASEEFA, FTZU</td>
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<td>Metrology</td>
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<td>MED (CE-mark)</td>
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<td>GOSST</td>
<td>PAC</td>
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<td>PTB, NMI</td>
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<td>Radio Equipment</td>
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<td>RTTE (CE-mark)</td>
<td>FCC</td>
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<td>RegTP, SEE,enton ....</td>
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<td>Canada</td>
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<td>Pressure vessels</td>
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<td>PED (CE-mark)</td>
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<td>CRN</td>
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<td></td>
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<td>TÜV</td>
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<td>Nuclear Power Plants</td>
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<td>National Regulations (e.g. TÜV, EDF...)</td>
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<td>Food Equipment</td>
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<td>3A-San.</td>
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<td>Weihenstefan,TNO, ...</td>
<td>Standard</td>
<td>e.g. TÜV, Exida, UL, FM</td>
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<td>Functional safety</td>
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<td>IEC 61508/61511</td>
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<tr>
<td>Marine Equipment</td>
<td></td>
<td>GL, LR,DNV, BV, RINA</td>
<td>ABS</td>
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<td>NK</td>
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</table>

Others: India, South-Korea, Singapore, Brazil, South-Africa …
In total 2700 current product certificates

- Self-assessment
- Third party approval
Current Situation for Endress+Hauser

Endress+Hauser serves the global market - consequences:

- For global sales **national certificates** for many countries/regions required (e.g. Europe, North America, China, Japan ….)

- Several **surveillance systems** with many factory audits (approx. 8-10 Ex-audits per year and factory location!)

- Extensive costs and long **time to market!**
  - >100.000 Euro certification fees per product
  - 1..2 years delay to global market
The IEC Ex System – a short track to the global market?

- Scope of the IEC Ex System
- Current situation for a manufacturer of Ex equipment
- Experience with the IEC Ex system
- Expectations and Vision
Scope of the IEC Ex System

- The IECEx Certified Equipment Scheme
- The IECEx Certified Service Facilities Scheme
- The IECEx Conformity Mark Licensing System
- The IECEx Certification of Personnel Competencies (CoPC)
Global product marketing and multiple certification

Global Ex-certificates

<table>
<thead>
<tr>
<th>Market</th>
<th>Europe (ATE X)</th>
<th>USA</th>
<th>CAN</th>
<th>China</th>
<th>Japan</th>
<th>Australia (IEC Ex)</th>
<th>others</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market share</td>
<td>37 %</td>
<td>8 %</td>
<td>3 %</td>
<td>8.5 %</td>
<td>3.2 %</td>
<td>&lt; 2 %</td>
<td>18.3 %</td>
<td>100 %</td>
</tr>
<tr>
<td>No. Certificates</td>
<td>282</td>
<td>178</td>
<td>190</td>
<td>120</td>
<td>193</td>
<td>91</td>
<td>246</td>
<td>1300</td>
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<tr>
<td>No. Audits p.a.</td>
<td>1</td>
<td>4</td>
<td>4</td>
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<td>-</td>
<td>1</td>
<td>~1</td>
<td>~ 10</td>
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Experience with the IEC Ex system

Acceptance of IEC Ex certificate (CoC)
- CoC legally acknowledged in Australia and New Zealand 😊
  - no national Certificate required 😊
  - direct trade with IEC Ex certified equipment (Group II) 😊
- CoC legally not accepted in other global countries 😞

Acceptance of IEC Ex Testreport (ExTR)
- Ex TR accepted in over 30 IEC Ex member states 😊
- National Certificates issued based on ExTR 😊

Acceptance of IEC Ex Quality Assessment:
- QAR of any ExCB accepted internally in the IEC Ex system 😊
- QAR for national certification not accepted 😞
IEC Ex System – our expectation

- globally accepted IEC Ex Testreport
- globally accepted IEC Ex Certificate
- globally accepted surveillance (QAR)
- avoid multiple testing and audits!
- reduce time to market!

Only a vision?