Workshop 2
EUR-ACE programme outcomes in relation to national standards and requirements
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Continuous revision of standards: is there a need for changes in EUR-ACE standards in the context of new demands, revision of national standards and gained experiences?
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• CTI’s standards and guidelines (R&O) revision process
  – R&O, what’s that?
  – Regular updates of R&O
  – Latest major revision: 2015-16

• CTI and EUR-ACE criteria mirrored
  – Comparison
  – Comments and differences

• Likely evolutions

• Conclusion
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R&O? What’s that?
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R&O? What’s that?

• CTI’s standards and guidelines documents describing programme outcomes for the engineering degree (only Master’s level in France)

• Major criteria regarding the institution and co-operation with its environment (industry, research, international), the training programme, employment, internal quality assurance

• A self-assessment guide

• Description of the procedures
Every 3 – 4 years, taking into account:

• The evolution of the engineering profession and the related impact on the expected competencies

• The evolution of our external quality assurance practice (further details on demands, change of procedures)

• The evolution of engineering schools and pedagogy
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Latest major revision: 2015-16

• Rationalization of the document

• Revision of the guidelines regarding expected programme outcomes:
  - Make more explicit the coherence with EUR-ACE. For instance, existing key words take chapter head positions: design, research
  - Emphasis put on informative competencies (request by the HEIs) and on innovation (French economic context)
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CTI and EUR-ACE criteria mirrored:
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Acquisition of scientific and technical knowledge and capacity for its implementation

<table>
<thead>
<tr>
<th>CTI</th>
<th>EUR-ACE (Master)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge and understanding of a broad field of basic and applied</td>
<td>1- Knowledge and understanding</td>
</tr>
<tr>
<td>sciences; the analytical and synthesis capacity associated with them</td>
<td></td>
</tr>
<tr>
<td>Mobilize resources from a specific scientific and technical field</td>
<td>1- Knowledge and understanding</td>
</tr>
<tr>
<td>Command of the methods and tools of the engineer</td>
<td>2 – Engineering analysis</td>
</tr>
<tr>
<td>Ability to design, implement, test and validate innovative solutions</td>
<td>5 – Engineering practice</td>
</tr>
<tr>
<td>Ability to find, evaluate and exploit relevant information:</td>
<td>4 – Investigations</td>
</tr>
<tr>
<td>information: information literacy</td>
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Taking into account the needs of industry and society

<table>
<thead>
<tr>
<th>CTI</th>
<th>EUR-ACE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taking into account the stakes of industry: economic dimension, respect for quality, competitiveness and productivity, business requirements, economic intelligence</td>
<td>5 – Engineering practice</td>
</tr>
<tr>
<td>Issues of workplace relations, ethics, responsibility, safety and health at work</td>
<td>5 – Engineering practice 6 – Making judgements</td>
</tr>
<tr>
<td>Environmental issues, sustainable development</td>
<td>3 – Engineering design 5 – Engineering practice</td>
</tr>
<tr>
<td>Issues and needs of society</td>
<td>1 – Engineering analysis 6 – Making judgements</td>
</tr>
</tbody>
</table>
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**Taking into account the organisational, personal and cultural dimension**

<table>
<thead>
<tr>
<th>CTI</th>
<th>EUR-ACE</th>
</tr>
</thead>
<tbody>
<tr>
<td>To integrate into the professional life, into an organization, to animate and change it, ... Communication with specialists and non specialists</td>
<td>7 – Communication and team-working 6 – Making judgements</td>
</tr>
<tr>
<td>Entrepreneurship and innovation</td>
<td>?</td>
</tr>
<tr>
<td>Work in an international context</td>
<td>7 - Communication and team-working</td>
</tr>
<tr>
<td>Know oneself, self-assess, manage one’s competencies, capacity for life-long learning, make professional choices</td>
<td>8 – Lifelong learning</td>
</tr>
</tbody>
</table>
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Some comments arose from the comparison between R&O and EAFSG

✓ COMMUNICATION AND TEAM-WORKING (2.3.1)  
  *Could be beneficial to separate in two items*

✓ MAKING JUDGEMENTS (2.3.2)  
ability to manage complex technical or professional activities or projects that can require new strategic approaches, taking responsibility for decision making.  
  *Could be more specific/developed*

EAFSG could, from CTI’s point of view, put more stress on:  
✓ *Entrepreneurship competencies*  
✓ *SHES and soft skills, sustainability*
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A common suit but context-related specificities

The programme outcome guidelines are very compatible, but CTI is prescriptive as regards levels or means:

- Proficiency in English
- Compulsory internships in industry (28 weeks)
- Recommendation for a compulsory outgoing student mobility (work placement or academic)
- Diversification of pedagogical methods, time allocated for self-learning (limited face-to-face teaching)
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Likely evolutions

- Criteria on numerical capacities (linked to industry related criteria 4.0)
- Publishing of volumes IV and V: further thematic developments
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To conclude and open the discussion to the floor ...

- ENAEE: umbrella agency, EAFSG: umbrella guidelines
- Taking into account the diversity of contexts, without getting too specific
- All changes can not and should not be taken into account
- Taking into account major and transnational trends and evolutions
  - Both bottom up and top down approach
  - Continuous benchmark more formalized? (LC, other instances CDIO, ENQA...)
  - Periodical revision process and if necessary position statement in between if an unavoidable change occurs in between (annexed to EAFSG)
  - Formalise more a global stakeholders’ consultation in the revision process (industry, academia, pedagogy, society, ethics, ...)

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Thanks a lot for your attention 😊

Further information:

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