EMPOWERING GRADUATES FOR ENGINEERING JOBS IN THE AUTOMOTIVE INDUSTRY

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PROJECT OBJECTIVES

DEVELOP A VET TRAINING
THAT PREPARES RECENT GRADUATES
FOR SUCCESSFULLY MAKING THEIR FIRST STEPS
IN THE AUTOMOTIVE INDUSTRY
AS AUTOMOTIVE ENGINEERS

inspired by major industry stakeholders who have been observing that engineering graduates without prior practical experience in the automotive domain have hardly any specific knowledge about the automotive industry
PARTNERSHIP: CREATORS AND USERS

1. SYMBOL BV, THE NETHERLANDS:
   • a training and consulting SME specialised in business and process improvement, and quality management for more than 10 years, with a lot of automotive clients.

2. ISCN, AUSTRIA AND IRELAND:
   • a training and consulting SME specialised in automotive development process quality with a strong focus on software and electronics quality and systems engineering for more than 20 years.

3. INNO++, FRANCE:
   • a training and consulting SME working very closely with ISCN with about the same fields of specialisation, for more than 2 years.
PARTNERSHIP: USERS

1. ROC TER AA, THE NETHERLANDS:
   • a well-established VET training organisation that also actively participates in the MBO Automotive Center.

2. ROC SUMMA COLLEGE, THE NETHERLANDS:
   • 22 schools for secondary VET with more than 22,000 students and 1,700 employees. Also the coordinator of the MBO Automotive Center.

3. ECQA, AUSTRIA:
   • the European Certification and Qualification Association, an independent Europe-wide certification association for more than 20 years, currently promoting and certifying more than 30 job roles in various sectors (including automotive).

4. LSSA, THE NETHERLANDS:
   • the Lean Six Sigma Academy, an independent Europe-wide certification association for Lean Six Sigma qualification levels (belts).
NEEDS: STANDARDS, NORMS, AND LEGISLATION

NEEDS ANALYSIS: 34 COMPANIES

- 15% OEM,
- 60% tier 1,
- 60% tier 2,
- 12% tier 3,
- 3% tier 4

<table>
<thead>
<tr>
<th>Topic</th>
<th>Current level: No knowledge at all</th>
<th>Industry requires foundation</th>
<th>Industry requires practitioner</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO/TS 16949</td>
<td>76%</td>
<td>56%</td>
<td>19%</td>
</tr>
<tr>
<td>ISO/IEC 15504</td>
<td>71%</td>
<td>50%</td>
<td>19%</td>
</tr>
<tr>
<td>ISO 26262</td>
<td>82%</td>
<td>69%</td>
<td>13%</td>
</tr>
<tr>
<td>APQP/PPAP</td>
<td>71%</td>
<td>50%</td>
<td>44%</td>
</tr>
<tr>
<td>World Class Performance</td>
<td>73%</td>
<td>63%</td>
<td>19%</td>
</tr>
<tr>
<td>Topic</td>
<td>Current level: No knowledge at all</td>
<td>Industry requires foundation</td>
<td>Industry requires practitioner</td>
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<td>--------------------------------------------</td>
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<td>-------------------------------</td>
</tr>
<tr>
<td>Product Lifecycle Management</td>
<td>64%</td>
<td>71%</td>
<td>21%</td>
</tr>
<tr>
<td>V-model</td>
<td>61%</td>
<td>77%</td>
<td>7%</td>
</tr>
<tr>
<td>Functional flows</td>
<td>71%</td>
<td>62%</td>
<td>31%</td>
</tr>
<tr>
<td>Risk management (e.g. FMEA)</td>
<td>86%</td>
<td>69%</td>
<td>23%</td>
</tr>
<tr>
<td>Product Development Process</td>
<td>57%</td>
<td>69%</td>
<td>23%</td>
</tr>
<tr>
<td>Project management</td>
<td>29%</td>
<td>54%</td>
<td>38%</td>
</tr>
<tr>
<td>Lean Manufacturing</td>
<td>57%</td>
<td>62%</td>
<td>31%</td>
</tr>
<tr>
<td>Six Sigma techniques</td>
<td>64%</td>
<td>62%</td>
<td>31%</td>
</tr>
<tr>
<td>Systems engineering</td>
<td>71%</td>
<td>69%</td>
<td>23%</td>
</tr>
<tr>
<td>Problem solving (e.g. 8D)</td>
<td>71%</td>
<td>54%</td>
<td>38%</td>
</tr>
</tbody>
</table>
1. **INTRODUCTION**
   - THE AUTOMOTIVE INDUSTRY
   - CHARACTERISTICS IN THE AUTOMOTIVE INDUSTRY
   - LEGISLATION, REGULATIONS, NORMS, AND STANDARDS
   - PROCESS THINKING

2. **PRODUCT AND PROCESS DEVELOPMENT**
   - PRODUCT LIFECYCLE MANAGEMENT
   - MECHANICAL ENGINEERING
   - SYSTEMS ENGINEERING
   - RISK MANAGEMENT
3. PRODUCTION
   • SUPPLIER QUALITY ASSURANCE
   • PROCESS CAPABILITY
   • PROCESS CONTROL
   • MANAGEMENT OF CHANGE

4. CONTINUOUS IMPROVEMENT
   • PROBLEM SOLVING
   • LEAN MANUFACTURING
   • QUALITY AWARENESS
   • SUSTAIN IMPROVEMENTS
NOVEMBER 2014 – NOVEMBER 2016

- conducting a needs analysis;
- composing two skill sets;
- writing a book about automotive engineering in English, Dutch, German and French;
- writing an exercise book;
- creating training slides for training people at foundation level;
- creating training slides for training people at practitioner level;
- organising two pilot trainings (Train-the-Trainer);
- organising at least four student trainings with a minimum of 30 trainees each;
- organising automotive events in the Netherlands, Austria and France;
- writing exam questions; and
- taking exams (hard copy and online).
ACKNOWLEDGEMENTS

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