**WP2– Sustainable Development of Industry 4.0 Competence Development Training Program**

**Task 2.1 Designing an Industry 4.0 Competence Development Training Program/ M.7 Applications of Optimization and Technology in Value Chain**

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| **Project Acronym:** | ReCap4.0 |
| **Project full title:** | Reinforcing Non-University Sector at the Tertiary Level in Engineering and Technology to Support Thailand Sustainable Smart Industry |
| **Project No.:** | 619325-EPP-1-2020-1-TH-EPPKA2-CBHE-JP |
| **Work Package N° and title** |

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| WP2-Task 2.1 Designing an Industry 4.0 Competence Development Training Program |

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| **WP Leader**  | Pisut Koomsap (AIT) and Cathal de Paor (MIC) |
| **Deliverable (Task) N°/Title**  |

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| Task 2.1 Designing an Industry 4.0 Competence Development Training Program/ M7 Applications of Optimization and Technology in Value Chain |

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| **Author responsible for the Deliverable**  | Pisut Koomsap (AIT)  |
| **Date of Deliverable submission**  | 26.01.2022 |
| **Status:** | Final |
| **Dissemination Level:** | Internal |

**Revision Sheet**

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| --- | --- | --- | --- |
|  **Version** | **Date** | **Author (Partner/Person)** | **The revision reason** |
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**5Assessment of Deliverables**

**Adequacy with the format**

Mark with X the appropriate column (Y: Yes - N: No - NA: Not applicable)

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| **Format** | **Y** | **N** | **NA** | **Comments** |
| **Does the document meet the commitments from Application Form? *(answer with Y/ N only)*** | X [P1; P3; P4; P5; P6;P7] |  | X [P2;P8 ] |  |
| **Does the document contain:** **WP number, Deliverable name, Version, Author Name and Date?** | X [P3;P6;P7 ] |  | X [P1; P2;P4; P5; P8] |  |
| **Does the document contain all the necessary official logos of the project and the program?** | X |  |  |  |
| **Does the document include a Table of Contents?** | X [P2] |  | X [P1; P3; P4; P5; P6; P7; P8] |  |
| **Does the document include a list of participants and reviewers (approvals)?** |  |  | X |  |
| **Does the document use the fonts and paragraphs defined in the official template?** | X [P3; P5; P6] |  | X [P1; P2; P4; P7; P8] |  |
| **Does the spelling, grammar etc. of the document is appropriate?** | X [P1; P2; P3; P4; P5; P6; P7; P8] |  |  |  |

**Quality evaluation**

The following scores will be utilized in the delivery review; 1-Poor;2-Average;3-Satisfactory;4-Good;5-Very Good

Mark with X the appropriate column:

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Question** | **P1** | **P2** | **P3** | **P4** | **P5** | **P6** | **P7** | **P8** | **Total** | **Score** | **Comments** |
| **How deliverable comply with the WP objectives as specified in the WP description?**  | 4 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 37 | 4,625 | Good |
| **How deliverable correspond with the activity description as specified in the Application Form?**  | 4 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 37 | 4,625 | Good |
| **The clarity of the contents of the document is evaluated as…** | 4 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 36 | 4,5 | Good |
| **How is the treatment of the contents of the document regarding the required depth?** | 4 | 5 | 4 | 5 | 5 | 4 | 4 | 5 | 36 | 4,5 | Good |
| **The quality of the contents of the document is evaluated as** | 4 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 37 | 4,625 | Good |
| **Does the document need the addition of sections to reach completeness (Yes/No)? Specify which ones** | No[P2] - I think, we must make the different header of each type of document such as: course syllabus and Activity plan[P8} - Please see observations bellow concerning D1, D2 and D3 |
| **Are there any sections in the document that should be removed (Yes/No)?** **Specify which ones** | No |

**Observations/ suggestions** (add rows as needed)

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| **Partner** | **Deliverable/Page No.** | **Section** | **Observations / Suggested Improvement** |
| P3 | D1/D3 | All pages | The contents themselves are at the advanced levels, requiring strong background in math and operations research. Is this module fit for the non-university at a tertiary education level? Are the trainees qualified for this module? Some of the learning goal may be adjusted according to the average skills of the trainees and students’ learning goals of those universities. |
| P3 | D1/D3  | All pages | Once again, the contents of this module are at the advanced levels. It is quite challenging to conduct a training with in 15 hours in order to achieve the learning goals. |
| P3 | D1 | all | In order to achieve the learning outcome 3) “Show understanding of how to write and execute the mathematical optimization model using professional optimization software,” please describe the software used for this training. They should be a free-ware, which everyone can access. |
| P3 | D3/pg16 | Line 2 from bottom | X1 conflict with “"x superscript 1"  |
| P3 | D3/ | All pages | The PPT should have slide numbers. |
| P3 | D3 | All pages | Font was quite small. It may be difficult to be viewed from the projector screen. |
| P4 | D1;2 | Time distribution | Time distribution in D1 and D2 are different. |
| P4 | D3 | every page | Page number should be added for someone wants to refer to a particular page. |
| P4 | D3 | 1.1 mathematical notation | Please check whether or not it should be x1 for “x superscript 1” |
| P4 | D3 | 1.1 mathematical notation | An explanation of  should be provided same as the previous notations. |
| P4 | D3 | The 1st formulation | There is a typing error in Dt line. It should be ‘demand’. |
| P4 | D3 | PSO | It would be great if the definition of r1, r2 will be given in 120 page. |
| P4 | D3 |  | Fonts are too small in many slides |
| P4 | D3 |  | The contents are at the advanced level. The trainees must have a very strong background in mathematics, statistics, OR and computing as well. The 15-hour-training may not be enough. |
| P4 | D1;2 | Time distribution | Time distribution in D1 and D2 are different. |
| P6 | D1;2;3;4/ |  | In document *Syllabus for ‘Application of optimization and technology in value chain’* and in document *Activities plan for ‘Application of optimization and technology in value chain’, the term ‘*automated data-driven’. This is a adjective and does not make sense here. Do you mean ‘*data driven automation’*? You can see this in points 2 and 6 of *Syllabus for ‘Application of optimization and technology in value chain’. Please see below.* 2. Recommend digital technology for automated data-driven used in the real-world optimizationModels6. Appreciate the use of digital technology for automated data-driven used in the real-worldoptimization modelsI agree with colleagues that some of the contents themselves are at the advanced levels, requiring strong background in math and operations research**.**  |
| P7 | D3 |  | Attention must be paid to the mathematical apparatus used which must be compatible with the level required for non-university at tertiary education. |
| P8 | D3/n.a. |  | Slides are not numbered. Eventually, its inclusion would help if someone needs to refer to a particular slide. |
| P8 | D1/2; D2/3  |  | Inconsistency: D1, page 2, indicates “• Training: 15hours• Coaching: 30 hours• Group project: 65 hours”while D2, page 3, indicates “• 15 training hours• 30 coaching hours• 60 self practice hours”. |
| P8 | D3/n.a. |  | Slides are not numbered. Eventually, its inclusion would help if someone needs to refer to a particular slide. |

**Reviewers Assessment**

(Mark with X the appropriate line)

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| **Document accepted; no changes required** | X [P1; P2; P5] |
| **Document accepted but changes required** | X [P3; P4; P6; P7; P8] |
| **Document not accepted; it must be reviewed after changes are implemented** |  |
| **Date of Review** |  |
| **Reviewer’s Name & Organization (from QCMB)** |  |

**QCMB Chair Consolidated Assessment**

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| **Document accepted; no changes required** |  |
| **Document accepted but changes required** | **X** |
| **Document not accepted; it must be reviewed after changes are implemented** |  |
| **Suggestions for improvement (if applicable)** | Presented above in Observations/ Suggestions |
| **Date of Quality assurance performed**  | 08.02.2022 |
| **Deadline for submission of amended version of deliverable (if applicable)**  |  |

**PEC Approval**

|  |  |
| --- | --- |
| **Document accepted; no changes required** |  |
| **Document accepted but changes required** |  |
| **Document not accepted; it must be reviewed after changes are implemented** |  |
| **Suggestions for improvement (if applicable)** |  |
| **Date of Quality assurance performed**  |  |
| **Deadline for submission of amended version of deliverable (if applicable)**  |  |