

TABLE OF ACHIEVED / PLANNED RESULTS

<u>Title and reference number of the work package (WP)</u>	Gap Analysis (WP1)
<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	<ul style="list-style-type: none"> • The working plan is ready by M1 • Analytical review of MSIE curricula being offered, and of learning & teaching methods being applied by M6 • Results from surveying and interviewing industry and students by M9 • Gaps assessment between needs and graduates' competences by M10 • Competitive factor analysis by M11 • The specifications and areas of specialization for the curriculum by M12

Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
Task 1.1	Developing a gap analysis working plan	01/01/2018	22/11//2018	CMU, UMinho, AIT, KMUTNB, TU, KKU, PSU, UPB, CUT	Developed a working plan containing: a) a list with WP1 working group members and responsibilities among the project partners, a list with companies, organizations, student associations and other stakeholders who will be the involved in the survey. b) Specific MSc curricula in MSIE to be reviewed in Thailand and in EU partners' countries, c) Criteria for evaluation d) templates and documents for the analyses e) Procedures and rules for the analyse process and for the control and quality assurance of the	An official report for Outcome 1.1 - Gap Analysis working plan (GD-T1.1_O1.1 (V3)) Available at https://msie4.ait.ac.th/wp-content/uploads/sites/5/2019/03/GD-T1.1_O1.1-V3.pdf

					results f) Planning of the Gap Analysis activities.	
Task 1.2	Analysing of MSIE curricula & of learning and teaching methods	14/03/2018	10/01/2019	UMinho, CMU, AIT, KMUTNB, TU, KKU, PSU, UPB, CUT	<ul style="list-style-type: none"> Collected, reviewed and analysed 26 MSIE curricula being offered by 22 universities, and teaching and learning methods being used currently in Thailand and EU partners' countries. Collected, reviewed and analysed 23 best practice narratives. Surveyed and analysed most apply and most effective teaching and learning methods from the viewpoint of 38 instructors. 	<p>An official report for Outcome 1.2 - Comprehensive analysis of MSIE curricula being offered in Thailand and in EU partner countries (GD-T1.2_O1.2 (v6))</p> <p>Available at https://msie4.ait.ac.th/wp-content/uploads/sites/5/2018/12/GD-T1.2_O1.2-V6.pdf</p> <p>An official report for Outcome 1.3 - Assessment of learning and teaching tools and methods in Thailand and in EU partner countries (GD-T1.2_O1.3 (V5))</p> <p>Available at https://msie4.ait.ac.th/wp-content/uploads/sites/5/2019/01/GD-T1.2_O1.3-V5.pdf</p>
Task 1.3	Assessing needs of industry and students	15/05/2018	24/01/2019	UMinho, CMU, AIT, KMUTNB, TU, KKU, PSU, UPB, CUT	<ul style="list-style-type: none"> Interviewed, summarized and analysed the needs of 72 companies (50 companies based in Thailand and 20 companies based in EU) Surveyed and analysed the needs of 450 students of whom 232 were Thai and 218 were EU. 	<p>An official report for Outcome 1.4 - Analysis of needs of industry and students (GD-T1.3_O1.4 (V7))</p> <p>Available at https://msie4.ait.ac.th/wp-content/uploads/sites/5/2019/01/GD-T1.3_O1.4-V7.pdf</p>
Task	Identifying gaps	15/09/2018	05/02/2019	UMinho,	Analysed gaps between the actual	An official report for Outcome 1.5 -

1.4				CMU, AIT, KMUTNB, TU, KKU, PSU, UPB, CUT	competence of MSc graduates in Industrial Engineering, and the real needs of industry for Thailand 4.0 and Industry 4.0 and the needs of students to support the industry from the findings reported in outcomes 1.2-1.4,	Gaps between the needs and graduates' competences (GD-T1.4_O1.5 (V4)) Available at https://msie4.ait.ac.th/wp-content/uploads/sites/5/2019/02/GD-T1.4_O1.5-V4.pdf
Task 1.5	Identifying competitive factors for the curriculum	15/10/2018	24/02/2019	UMinho, CMU, AIT, KMUTNB, TU, KKU, PSU, UPB, CUT	Conducted blue ocean strategy for MSIE 4.0 curriculum, including identifying competitive factors for MSIE curricula, assessing current offerings, and creating new offering for MSIE 4.0 curriculum	An official report for Outcome 1.6 - Competitive factors for the curriculum (GD-T1.5_O1.6 (V4)) Available at https://msie4.ait.ac.th/wp-content/uploads/sites/5/2019/02/GD-T1.5_O1.6-V4.pdf
Task 1.6	Developing recommendations for the curriculum	15/11/2018	13/03/2019	UMinho, CMU, AIT, KMUTNB, TU, KKU, PSU, UPB, CUT	Recommended the specifications and areas of specialization for the curriculum based on the previous outcomes,	An official report for Outcome 1.7 - Recommendations for specifications and areas of specialization for the curriculum (GD-T1.6_O1.7 (V2)) Available at https://msie4.ait.ac.th/wp-content/uploads/sites/5/2019/03/GD-T1.6_O1.7-V2.pdf

Activities to be carried out to achieve this outcome (before the end of the project)

Activity N°	Activity Title	Start date	End date	Place	Description of the activity to be carried out	Specific and measurable indicators of progress

Changes that have occurred in this result since the original proposal:

- Workplan for WP1 was revised one time after the kick-off meeting in Feb 2018. The revised plan was reported in PMCP-V1 (Outcome 6.1) available in the report for WP6. WP1 took about 12 months to finish as an initial plan, but because the WP1 officially started after the kick-off meeting, we could not finish WP1 by the initial end date as in the proposal. Our team tried to speed up all activities, but to ensure the quality of the outcomes we could not finish them quickly.
- WP1 leader was changed at the beginning of Dec 2018.

Please add as many tables as necessary

TABLE OF ACHIEVED / PLANNED RESULTS

<u>Title and reference number of the work package (WP)</u>	Curriculum Development I: Curriculum Structure and Courses (WP2)
<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	<ul style="list-style-type: none"> • Approved curriculum structure and the list of courses by PEC by M13 and complete curriculum by M30 • 15 approved course syllabuses by PEC by M18 • 9 offered courses with avg. of 10 students per course by M29 • Assessment results of 9 pilot courses by M30 • Submission of MSIE4.0 curriculum for accreditation by M31

Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
Task	Developing	23/01/2019	-	CUT,	<ul style="list-style-type: none"> • Conducted VDO conference meetings 	An unofficial note for Task 2.1 listing the 12

2.1	curriculum structure and academic program learning outcomes			AIT, UMinho, CMU, KMUTNB, TU, KKU, PSU, UPB	<p>to prepare for group works on course design and development</p> <ul style="list-style-type: none"> Organized group work during the 3rd MSIE 4.0 meeting at CMU at the end of January 2019 with all the participants involved in identifying program learning outcomes (PLOs) and in identifying courses for MSIE 4.0 curriculum Conducted VDO conference meetings to finalize 12 PLOs according to the recommendations from WP1, a list of 16 courses to be developed to support the PLOs, to design the structure of the MSIE 4.0 curriculum, 	<p>PLOs, the curriculum structure containing the list of 16 courses.</p> <p>Available at https://msie4.ait.ac.th/wp-content/uploads/sites/5/2019/04/Unofficial-Note-for-Task-2.1.pdf</p> <p>An official report is expected by May 31, 2019</p>
Task 2.2	Developing courses and course learning outcomes based on a matrix that maps course learning outcomes with program learning outcomes and also teaching and learning methods	30/01/2019	-	CUT, AIT, UMinho, CMU, KMUTNB, TU, KKU, PSU, UPB	<ul style="list-style-type: none"> Organized group work during the 3rd MSIE 4.0 meeting at CMU at the end of January 2019 with all the participants practiced writing course learning outcomes (CLOs), and selecting teaching and learning methods Conducted VDO conference meetings to form the 16 course development teams, to select the leaders and to follow up the progress of the 16 courses Drafted the course objectives and CLOs for the 16 courses Working on course assessment 	<p>An unofficial note for Task 2.2 listing the 16 courses with course objective, and course learning outcomes</p> <p>Available at https://msie4.ait.ac.th/wp-content/uploads/sites/5/2019/04/Unofficial-Note-for-Task-2.2.pdf</p> <p>An official report for Outcome 2.2- Syllabuses for all courses in the curriculum is expected by June 30, 2019</p>

Activities to be carried out to achieve this outcome (before the end of the project)

Activity N°	Activity Title	Start date	End date	Place	Description of the activity to be carried out	Specific and measurable indicators of progress
Task 2.1	Developing curriculum structure and academic program learning outcomes	29/01/2019	31/05/2020	CUT, AIT, UMinho, CMU, KMUTNB, TU, KKU, PSU, UPB	<ul style="list-style-type: none"> Prepare an official report for Outcome 2.1- A modernized curriculum for Master's degree in Industrial Engineering (for PEC approval by 31/05/2019) Revise the report, if necessary, after the assessment of the pilot test 	An official report for Outcome 2.1- A modernized curriculum for Master's degree in Industrial Engineering (An official report is expected by May 31, 2019 and finalized after the pilot test by May 31, 2020)
Task 2.2	Developing courses and course learning outcomes based on a matrix that maps course learning outcomes with program learning outcomes and also teaching and learning methods	30/01/2019	30/06/2019	CUT, AIT, UMinho, CMU, KMUTNB, TU, KKU, PSU, UPB	<ul style="list-style-type: none"> Finalize the course objectives, CLOs and assessment for the 16 courses Develop contents for the 16 courses Identify teaching and learning methods for delivery of the contents Complete syllabuses of all 16 courses Prepare an official report for Outcome 2.2- Syllabuses for all courses in the curriculum 	An official report for Outcome 2.2- Syllabuses for all courses in the curriculum (Course syllabus catalogue)
Task 2.3	Conducting pilot test of the key courses	01/08/2019	31/05/2020	CUT, AIT, UMinho, CMU, KMUTNB, TU, KKU, PSU, UPB	<ul style="list-style-type: none"> Select 9 courses for pilot test Conduct pilot test in August 2019 and January 2020 semesters for Thai partners and October 2019 and February 2020 for EU partners 	All 9 selected courses are offered at partner universities
Task 2.4	Assessment of pilot test of the key courses and finalize the curriculum and the courses	01/05/2020	31/05/2020	CUT, AIT, UMinho, CMU, KMUTNB, TU, KKU,	<ul style="list-style-type: none"> Conduct course evaluation by students and instructors Analyse the evaluation Recommend improvement if necessary Prepare an official report for Outcome 2.4- Assessment of pilot test of the key courses and 	An official report for Outcome 2.4 – Assessment of pilot test of the key courses and improved courses

				PSU, UPB	improved courses	
Task 2.5	Preparation for accreditation of the curriculum	01/11/2019	31/05/2020	CUT, AIT, UMinho, CMU, KMUTNB, TU, KKU, PSU, UPB	<ul style="list-style-type: none"> Collect document Prepare document for submission Submit the curriculum for accreditation 	Submission of MSIE4.0 curriculum for accreditation
Task 2.6	Accreditation of the curriculum by the national accreditation institution in Thailand	01/04/2020	30/09/2020	CUT, AIT, UMinho, CMU, KMUTNB, TU, KKU, PSU, UPB	<ul style="list-style-type: none"> Follow up on the status of the submission 	An official memorandum on the status of the accreditation of the curriculum for WP2 leader to PEC

Changes that have occurred in this result since the original proposal:

- Workplan has already been revised three times: the first time was after the kick-off meeting, the second time was after the 2nd MSIE 4.0 meeting at UMinho in September 2018, and the third time was after the 3rd MSIE 4.0 meeting at CMU in January 2019 due to the delay of the completion of WP1. These workplans are included in the three versions of PMCP available in the report for WP6.
- WP Co-leader has been changed.
- The curriculum structure and the list of courses are expected to be approved by PEC by May 31, 2019.
- The number of courses to be developed has been changed from 15 to 16 to introduce a course focusing on transversal competence development.
- The development of the 16 courses will be finished in June 2019, instead of March 2019.
- Pilot test will be conducted in August 2019 and January 2020 for Thai partners and October 2019 and February 2020 for EU partners.
- Assessment of the pilot test of the key courses and finalize the curriculum and the courses will be done May 2020, instead of March 2020 as in the proposal.
- The submission of the curriculum for accreditation will be delayed by one month.

Please add as many tables as necessary

TABLE OF ACHIEVED / PLANNED RESULTS

<u>Title and reference number of the work package (WP)</u>	Curriculum Development II: Modernisation of Teaching Methods and Tools for MSC Programmes (WP3)
<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	<ul style="list-style-type: none"> • 5 new teaching documents are ready for pilot test by M21 • 5 new learning materials are ready for pilot test by M21 • A platform developed for online learning is ready by M11 • 12 Thai teachers and staffs are trained on teaching tools and methods by M18 • 9 teaching/learning material are available online by M29 • Teaching equipment is purchased and installed by M24 • A laboratory equipped with online remote access from partner locations is ready by M29

Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
Task 3.3	Developing a web-portal for online learning	01/04/2018	-	AIT	<ul style="list-style-type: none"> • Developed an online-learning platform. • Drafted a report for outcome 3.3- Developing a web-portal for online learning 	A learning platform with the following key modules: <ul style="list-style-type: none"> • List of courses • List of students attending each course • Course contents (in modules) with lectures, presentation, videos • Forum • Access log • Grading system

						<p>A draft version of Outcome 3.3 - Developing a web-portal for online learning</p> <p>Available at https://msie4.ait.ac.th/wp-content/uploads/sites/5/2019/04/A-draft-version-of-CD-T3.3_O3.1-V1.pdf</p>
Task 3.4	Training of staff on new tools and best practice exchange on modern teaching techniques	15/02/2018	-	AIT, PSU, UMinho, KMUTNB, CMU	<ul style="list-style-type: none"> • Conducted a seminar at AIT • Conducted a seminar at PSU • Conducted a workshop on PBL at UMinho • Conducted a seminar at KMUTNB • Conducted a seminar at CMU 	<p>4 seminars during the two meetings in Thailand by EU partner and AIT members</p> <p>The lists of participants at the four seminars are available at https://msie4.ait.ac.th/activities-events-reports/</p> <p>24 instructors from Thailand were trained on PBL at UMinho in September 2018.</p> <p>The list of participants is available at https://msie4.ait.ac.th/msie-4-0-training/</p>
Task 3.6	Purchase and installing of teaching equipment	18/02/2019	-	AIT	<ul style="list-style-type: none"> • Discussed among AIT members to formulate a conceptual model for a learning factory laboratory • Communicated with some companies (National Instruments, Festo) who can provide equipment/tools/software for building the laboratory 	<p>The first draft of a learning factory laboratory with online remote access is available at https://msie4.ait.ac.th/initial-concept-for-msie-4-0-remote-laboratory/</p>

					<ul style="list-style-type: none"> Searched for information about AGV 	

Activities to be carried out to achieve this outcome (before the end of the project)

Activity N°	Activity Title	Start date	End date	Place	Description of the activity to be carried out	Specific and measurable indicators of progress
Task 3.1	Developing teaching materials	01/06/2018	30/04/2020	CUT, AIT, UMinho, CMU, KMUTNB, TU, KKU, PSU, UPB	<ul style="list-style-type: none"> Develop teaching materials for the 16 courses Develop learning materials for the 16 courses 	<ul style="list-style-type: none"> 5 new teaching documents are ready for pilot test by Aug 2019. 5 new learning materials are ready for pilot test by August 2019.
Task 3.2	Translating teaching materials between English and Thai	01/06/2019	30/06/2020	TU, CMU, KMUTNB, TU, KKU, PSU,	<ul style="list-style-type: none"> Translate teaching materials for the 16 courses Translate learning materials for the 16 courses 	<ul style="list-style-type: none"> 5 new teaching documents in Thai are ready for pilot test by Aug 2019. 5 new learning materials in Thai are ready for pilot test by August 2019.
Task 3.3	Developing a web-portal for online learning	01/04/2018	31/05/2019	AIT	Installed the online learning platform on a project server	A platform is ready for providing online learning.
Task 3.4	Training of staff on new tools and best practice exchange on modern teaching techniques	15/02/2018	31/05/2020	CUT, TU, KKU, UPB	<ul style="list-style-type: none"> Conduct a workshop on E-Learning at CUT Conduct a seminar at TU Conduct a seminar at KKU Conducted a workshop on data acquisition at UPB 	Instructors from Thailand are trained on E-Learning and on data acquisition.
Task 3.5	Adapting learning materials developed to the online learning	01/07/2019	31/05/2020	AIT	<ul style="list-style-type: none"> Convert the teaching and learning material to appropriate forms for online learning 	9 teaching/learning material are available online

Task 3.6	Purchase and installing of teaching equipment	18/02/2019	30/09/2019	AIT, CMU, KKU, KMUTNB, TU, PSU	<ul style="list-style-type: none"> Finalize the design of the leaning factory laboratory Purchase equipment Install equipment 	Teaching equipment is purchased and installed.
Task 3.7	Laboratory equipped with online remote access from partner locaions	01/10/2019	31/03/2020	AIT, CMU, KKU, KMUTNB, TU, PSU	<ul style="list-style-type: none"> Construct the learning factory laboratory Install a network protocol for remote accessing Install equipment needed to access the laboratory 	A laboratory equipped with online remote access from partner locations is ready.

Changes that have occurred in this result since the original proposal:

- Workplan has already been revised three times: the first time was after the kick-off meeting, the second time was after the 2nd MSIE 4.0 meeting at UMinho in September 2018, and the third time was after the 3rd MSIE 4.0 meeting at CMU in January 2019 due to the delay of the completion of WP1. These workplans are included in the three versions of PMCP available in the report for WP6.
- The online learning platform has been developed with nearly all main modules and tested with two courses at AIT. However, the module responsible for online lectures and video conference needed to be revised completely. This module used Java version of BigBlueButton. But from 2019, all browsers will not support Java anymore. Due to this, we have to change from Java to WebRTC. Another problem is with the capacity limitation of the current server due to the fact that AIT has recently outsourced IT service. Without an on-site server, running several courses at the same time is ineffective. To solve this issue, a new server has been ordered. We are waiting for the server to be delivered from the vendor. We expect to complete this task by the end of May 2019.

Please add as many tables as necessary

TABLE OF ACHIEVED / PLANNED RESULTS

Title and reference number of the work package (WP)	Quality Plan for the Implementation of the Project (WP4)
Indicators of achievement and or/performance as indicated in the project proposal	<ul style="list-style-type: none"> • QCMB and plan are ready by M4 • 6 project partner QCM are analysed • 3 QCM visits by M12, M24 and M35 • 6 QCMB meetings • External QCM audit by M18 and M35 • External financial audit by M36

Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
Task 4.1	Developing a quality control and monitoring system	01/02/2018	12/10/2018	UPB, PSU, TU, AIT, KKU, CMU, CUT, UMinho, KMUTNB	<ul style="list-style-type: none"> • Established the Quality Control and Monitoring Board (QCMB) • Conducted the QCMB kick-off meeting • Developed Quality Control and Monitoring Plan (QCMP) • Developed Coding system for documentation • Developed templates for QCM process • Formed a QCM team for conducting internal QCM 	<p>An official document for Quality Control and Monitoring Plan (QCMP) (QCMP (V4))</p> <p>Available at https://msie4.ait.ac.th/wp-content/uploads/sites/5/2019/01/QCMP-Quality-Control-and-Monitoring-Plan-v4_2018.12.03.pdf</p>

Task 4.2	Implementing the internal quality control and monitoring of the project	01/05/2018	-	UPB, PSU, TU, AIT, KKU, CMU, CUT, UMinho, KMUTNB	<ul style="list-style-type: none"> Conducted 2 QCMB regular meetings Assessed the outcomes from other WPs prior to the approval of PEC including 7 outcomes from WP1, and 2 outcomes from WP5 Implemented internal QCM to evaluate the progress of the project 	<p>The official outcomes reported under the other WPs</p> <p>3 QCMB reports (including from QCMB kick-off meeting) are available at https://msie4.ait.ac.th/qcmb_reports/</p> <p>3 QCMB Meeting Minutes Reports (including from QCMB kick-off meeting) are available at https://msie4.ait.ac.th/qcmb-kick-off-meeting-minutes-report/</p> <p>2 internal QCM reports are available at https://msie4.ait.ac.th/qcm_reports/</p>
Task 4.3	Inviting independent external evaluation of the project results	03/01/2019	-	PSU, AIT	<ul style="list-style-type: none"> Obtained a list of candidates for an external auditor Assessed the qualifications of the candidates and selected Submitted the selected candidate for PEC approval. Contacted the approved candidate Obtained the second list of candidates for an external auditor due to the concern of PC on having independent evaluation Assessed the qualification of the candidate in the second list and selected Submitted the selected candidate from the second list for PEC 	The two lists of candidates (available upon request)

					approval. • Contacting the approved candidate	

Activities to be carried out to achieve this outcome (before the end of the project)

Activity N°	Activity Title	Start date	End date	Place	Description of the activity to be carried out	Specific and measurable indicators of progress
Task 4.2	Implementing the internal quality control and monitoring of the project	01/05/2018	30/09/2020	UPB, PSU, TU, AIT, KKU, CMU, CUT, UMinho, KMUTNB	<ul style="list-style-type: none"> • Conduct 4 QCMB meetings • Assess the remaining outcomes to be produced by other WPs prior to the approval of PEC • Carry on the internal QCM to evaluate the progress of the project 	<p>Official outcomes to be reported under the other WPs</p> <p>4 QCMB Meeting Minutes Reports</p> <p>Official reports for internal QCM</p>
Task 4.3	Inviting independent external evaluation of the project results	03/01/2019	30/09/2020	PSU, AIT	<ul style="list-style-type: none"> • Prepare contract between the project and the auditor • Facilitate the midway external auditing process • Facilitate the final external auditing process 	2 official assessment reports from the independent external auditor for midway and final assessments
Task 4.4	Inviting independent external financial audit of the financial part of the final report- “Audit Certificate on Final Financial Report”	01/08/2020	14/10/2020	PSU, AIT	<ul style="list-style-type: none"> • Obtain a list of candidates for an external financial auditor • Assess the qualifications of the candidates and select • Submit the selected candidate for PEC approval • Prepare contract between the project and the auditor • Facilitate the financial auditing process 	An Audit Certificate on Final Financial Report

Changes that have occurred in this result since the original proposal:

- Workplan for WP4 has already been revised two times after the kick-off meeting in February 2018 and after the 2nd meeting at UMinho in September 2018.
- Bi-monthly internal QCM was started in the second year of the project.
- The project auditor selection process started a little late and has taken time longer than expected. The second round of the selection process was conducted to avoid a criticism and to assure independency.

Please add as many tables as necessary

TABLE OF ACHIEVED / PLANNED RESULTS

<u>Title and reference number of the work package (WP)</u>	Dissemination and Exploitation of the Project Results (WP5)
<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	<ul style="list-style-type: none"> • Approval of DESP by PEC by M3, • Launching a project website by M2 • Dissemination materials by M6 • 18 Publications by M36 • Short-term courses organized for professionals by M30 • 5 dissemination events organized by M12, M18, M24, M30, M34 • A conference organized by M35 • A cooperation network between project partners and enterprise.

Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
Task 5.1	Development of a Dissemination, Exploitation and	12/02/2018	-	UPB, KKU	<ul style="list-style-type: none"> • Developed a Dissemination, Exploitation and Sustainable Plan (DESP) • Submitted to QCMB for approval 	A QC approved DESP

	Sustainable Plan				<ul style="list-style-type: none"> Revising the DESP 	
Task 5.2	Creating a project website and maintain it throughout the project lifetime to support the dissemination strategy, and communication and collaboration among partners	12/01/2018	-	AIT	<ul style="list-style-type: none"> Prepared content for a project website Created a project website Launched the website on January 15, 2019 Created password-protected area for internal communication among the project members Maintained the website Updated contents Updated the design of the website 	<p>The Official MSIE 4.0 project website (https://msie4.ait.ac.th)</p> <p>The number of visitors: 36,655 (as of April 13, 2019)</p>
Task 5.3	Production and dissemination of project materials	30/03/2018	-	AIT, KKU, KMUTNB, CUT, Seoul National University, Hong Kong University, Kasetsart University, Valencia	<ul style="list-style-type: none"> Created an official project Facebook page on February 8, 2018 Created an official MSIE 4.0 YouTube Channel on March 1, 2019 Designed 4 Designs of posters to introduce MSIE 4.0 project in 4 different languages: English, Thai, Polish and Romanian A 4.5m*2.0 m exhibition board for introducing MSIE 4.0 project at the Exhibition of Science and Modern Technology at KMUTNB. Her Royal Highness Princess Maha Chakri Sirindhorn visited the display during the opening ceremony. Produced 11 VDO clips to present the outcomes of the project Introduced MSIE4.0 to international participants at Advances in Production Management Systems- APMS 2018 International Conference in Seoul, Korea, 	<p>facebook.com/MSIE4Thailand/ Like: 1018 (as of April 13, 2019) Follow:1029 (as of April 13, 2019)</p> <p>youtube.com/channel/ UCZjqUrH6bOwCHGAsC9nnTA Subscribed: 30</p> <p>The Acting Secretariat of the Council of University Presidents of Thailand sent our brochure and shared the info of the project to all Thai university Presidents.</p> <p>The information is available on the project website, Facebook and YouTube Channels.</p> <p>Reports on dissemination of</p>

					<p>August 2018.</p> <ul style="list-style-type: none"> • Introduced MSIE 4.0 project to Thai members at the cluster meeting for Erasmus+ Capacity Building in Higher Education Projects involving Thai HEIs at Kasetsart University (KU), November 2018. • Introduced MSIE 4.0 project in the 9th International Conference on Advanced Manufacturing Technologies (ICAMaT 2018), Bucharest, Romania, November 2019 • Promoted project at the 19th Asia Pacific Industrial Engineering and Management Systems (APIEMS 2018), Hong Kong, December 2018 • Introduced the project in the Council of University Presidents of Thailand • Introduced MSIE 4.0 project to international participants at the 13th annual International Technology, Education and Development Conference (INTED 2019), Valencia, Spain March, 2019 • The project poster appeared in Production Engineering Archives Journal • Introduced MSIE4.0 to international participants at the 20th International Symposium on Quality in Pula, Croatia, March 2019 	<p>project materials are available at https://msie4.ait.ac.th/reports-on-dissemination-of-project-materials/</p>
Task 5.4	Publication in professional journals, newspapers, magazines, brochures and social media	25/08/2018	-	AIT, CUT UMinho, KKU, CMU	<ul style="list-style-type: none"> • Published 12 articles in international conferences: CUT: 4 AIT: 2 UMinho: 1 CUT-KKU: 1 AIT- UMinho-CUT: 2 	<p>The list of publications is available at https://msie4.ait.ac.th/publications-reports/</p>

					AIT- CUT- UMinho-CMU: 2	
Task 5.6	Organizing dissemination events with relevant stakeholders	15/07/2018	-	PSU, KKU, AIT, CMU, KMUTNB	<ul style="list-style-type: none"> Organised Industry Viewpoint and MSIE 4.0 Public Seminar at AIT, February 2018 Organised MSIE 4.0 Public Seminar at PSU, February 2018 Organised a public seminar on Industry 4.0 Readiness for Industry in Southern Thailand at PSU, July 2018 Organized an event to introduce MSIE 4.0 project to first-year Master students and teaching staff of Engineering and Management of Technological Systems at UPB, November 2018 Organised a MSIE 4.0 Public Seminar at KMUTNB, January 2019 Organised a MSIE 4.0 Public Seminar at CMU, January 2019 Organised an MSIE 4.0 public seminar at KKU, March 2019 	The list of dissemination events is available at https://msie4.ait.ac.th/activities-events-reports/

Activities to be carried out to achieve this outcome (before the end of the project)

Activity N°	Activity Title	Start date	End date	Place	Description of the activity to be carried out	Specific and measurable indicators of progress
Task 5.1	Development of a Dissemination, Exploitation and Sustainable Plan	12/02/2018	31/05/2019	UPB, KKU	<ul style="list-style-type: none"> Revise DESP Submit for PEC approval 	An official report for Outcome 5.1- Dissemination, Exploitation and Sustainable Plan
Task 5.2	Creating a project website and maintain it throughout the project lifetime to support the	12/01/2018	14/10/2020	AIT	<ul style="list-style-type: none"> Maintain the website Update contents 	Up-to-date content on the Official MSIE 4.0 project website (https://msie4.ait.ac.th)

	dissemination strategy, and communication and collaboration among partners					
Task 5.3	Production and dissemination of project materials	30/03/2018	30/09/2020	AIT, KKU, KMUTNB,	<ul style="list-style-type: none"> Produce materials for upcoming project outcomes Disseminate the project outcomes 	<ul style="list-style-type: none"> The number of visitor on the website The number of follow and like on Facebook The number of subscriber on YouTube New sets of posters
Task 5.4	Publication in professional journals, newspapers, magazines, brochures and social media	25/08/2018	31/08/2020	UPB, PSU, TU, KKU, CMU, KMUTNB	<ul style="list-style-type: none"> Publish at least 7 more articles 	<ul style="list-style-type: none"> 18 publications
Task 5.5	Developing joint short-term courses in the field of Industrial Engineering in cooperation with industry for professionals	01/10/2019	31/07/2020	KMUTNB, KKU, PSU, CMU, TU	<ul style="list-style-type: none"> Develop training materials from the outcomes 3.1 and 3.2 for short course training Offer training courses to professionals 	<ul style="list-style-type: none"> Training materials 5 training course being offered
Task 5.6	Organizing dissemination events with relevant stakeholders	15/07/2018	31/08/2020	TU, KKU, PSU, AIT, CMU, KMUTNB	<ul style="list-style-type: none"> Organise events to disseminate the project outcomes and to promote the visibility of the project 	Additional dissemination events at all Thai partner universities
Task 5.7	Organising the final dissemination-sustainability conference	01/07/2019	31/08/2020	AIT	<ul style="list-style-type: none"> Organize an International Engineering Education Conference in August 2020 	An International Conference

Changes that have occurred in this result since the original proposal:

- Workplan for WP5 has already been revised one time after the kick-off meeting in February 2018.
- The approval of DESP has been delayed due to miscommunication and misunderstanding of the WP leader and co-leader. The plan will be approved by PEC before the end of May.

Please add as many tables as necessary

TABLE OF ACHIEVED / PLANNED RESULTS

<u>Title and reference number of the work package (WP)</u>	Project Management (WP6)
<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	<ul style="list-style-type: none"> • Approved PMCP by PEC by M1 • 7 PEC meetings are organized and decisions are implemented • Project is implemented according to plan. Efficient and successful project and financial management by M36 • Submission of final report by M36

Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
Task 6.1	Finalizing management structure	1/11/2017		AIT	<ul style="list-style-type: none"> • Established Project Executive Committee (PEC) • Prepared and processed 8 Partnership Agreements between AIT and the 8 partners • Structured MSIE 4.0 consortium • Identified roles and responsibilities of members • Created project management flow 	Project Executive Committee (available in PCMP) 8 active partnership agreements An official report for Outcome 6.1 – PMCP-V1- Project Management and Communication Plan Available at http://ise-portal.ait.ac.th/wp-content/uploads/sites/5/2018/08/PMCP-V1-Project-Management-and-Communication-Plan.pdf

					<ul style="list-style-type: none"> Revised workplan for entire project after the kick-off meeting on February 2018 Established project financial management Established internal communication channels Created document templates for managing the project Developed Project Management and Communication Plan (PMCP) 	Document templates are available at https://msie4.ait.ac.th/category/resources/wp6/wp6-forms/
Task 6.2	Organizing kick-off and regular consortium meetings	12/02/2018	-	AIT, UMinho, CMU	<ul style="list-style-type: none"> Organised Kick-off meeting at AIT, February 2018 Organised 2nd MSIE4.0 meeting at UMinho, September 2018 Organised 3rd MSIE 4.0 meeting at CMU, January 2019 	3 MSIE 4.0 meetings Meeting minutes report are available at https://msie4.ait.ac.th/pec-meeting-minutes-reports/
Task 6.3	Monitoring and controlling the project	07/12/2017	-	AIT	<ul style="list-style-type: none"> Submitted the scanned copies of the 8 signed partnership agreements to EACEA on April 17, 2018 Processed 13 completed money transfers to partners: first installments for all 8 partners and second installments for 6 partners, except KKU (in process), CMU and UPB Sought a solution on VAT issue with AIT finance department, an officer from Department of Revenue and the project advisor. Monitored, assessed, and gave 	<p>A series of exchanged emails with supporting documents with the project advisor on VAT issue</p> <p>The official reports of the outcomes are reported under WP1, WP4 and Task 6.1</p> <p>Financial reports and documents are available at https://msie4.ait.ac.th/category/resources/wp6/wp6-financial-report/ (unavailable or incomplete information means the partners have not submitted the documents or the documents were returned for correction.)</p> <p>The updated PMCP is available at https://msie4.ait.ac.th/project-management-and-</p>

					<p>feedback to related WPLs about the concerns of PC on the progress of tasks under their supervisions</p> <ul style="list-style-type: none"> • Reviewed and gave feedback on financial statement and related financial documents to the partner leaders. • Reminded the WPLs and partner leaders for submission of WP monthly reports and financial statements respectively • Made 7 final reviews of the WP1 outcomes approved by QCMB, and made reviews of QCMP and of PMCP • Updated PMCP on workplan for WP2 and WP4 after the 2nd meeting at UMinho on September 2018 and the 3rd meeting at CMU on January 2019 • Changed WP1 leader and WP2 Co-leader to move the project forwards. • Purchased and delivered equipment for Thai partners • Designed a structure of “resource” section on the project website for internal communication. All WPs have directories for forms, gallery, presentations, and reports. (user id and password are required to access this section) 	<p>communication-plan-pmcp/</p> <p>A report on money transfers is available at https://msie4.ait.ac.th/pre-financing-reports/</p> <p>A WP monthly report for October 2018 is available at https://msie4.ait.ac.th/wp-content/uploads/sites/5/2018/11/WPs-Monthly-report-for-Oct-18.pdf (Due to late submissions from WPLs and accuracy of information, only one WP reports could be produced before this technical report)</p> <p>A list of equipment purchased is available at https://msie4.ait.ac.th/equipments/</p>
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					<ul style="list-style-type: none"> Created an additional directory in WP6 for financial report. Financial documents are arranged by partner in three sub directories: financial statement, staff costs, travel costs and costs of stay. Uploaded official reports approved by PEC and financial documents passed the screen of PC on the website 	

Activities to be carried out to achieve this outcome (before the end of the project)

Activity N°	Activity Title	Start date	End date	Place	Description of the activity to be carried out	Specific and measurable indicators of progress
Task 6.2	Organizing kick-off and regular consortium meetings	12/02/2018	31/08/2020	CUT, KKU, UPB, AIT	<ul style="list-style-type: none"> Organise 4th MSIE 4.0 meeting at CUT, June 2018 Organise 5th MSIE4.0 meeting at KKU, December 2018 Organise 6th MSIE 4.0 meeting at UPB, May 2020 Organise 7th MSIE 4.0 meeting at AIT, August 2020 	7 MSIE 4.0 meetings
Task 6.3	Monitoring and controlling the project	07/12/2017	14/10/2020	AIT	<ul style="list-style-type: none"> Monitor, assess and give feedback to related WPLs on the progress of tasks under their supervisions Review and give feedback on financial statement and 	<p>The official reports of the outcomes to be reported under WPs or task.</p> <p>Update of information on Financial reports and documents at https://msie4.ait.ac.th/category/resources/wp6/wp6-</p>

					<p>related financial documents to the partner leaders.</p> <ul style="list-style-type: none"> Remind the WPLs and partner leaders for submission of WP monthly reports and financial statements respectively Make final reviews of the remaining project outcomes approved by QCMB Update PMCP if it is necessary Upload official reports approved by PEC and financial documents passed the screen of PC on the website Purchase equipment and deliver to Thai partners 	<p>financial-report/</p> <p>The updated PMCP if it is necessary.</p> <p>Update of information on money transfers at https://msie4.ait.ac.th/pre-financing-reports/</p> <p>WP monthly reports</p> <p>Update of the list of equipment purchased at https://msie4.ait.ac.th/equipments/</p>
Task 6.4	Closing the project and final reporting	01/07/2020	14/10/2020	AIT	<ul style="list-style-type: none"> Collect all documents Prepare a draft of the final report Review and finalize the report Submit the final report 	Submission of a final report

Changes that have occurred in this result since the original proposal:

Workplan for WP6 has already been revised one time after the kick-off meeting in February 2018.

Please add as many tables as necessary

