

WP4: Quality Control and Monitoring

Midterm Audit Report (External Quality Control and Monitoring)

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
Funding Scheme:	ERASMUS + KA2 - Capacity Building in the field of Higher Education
Coordinator:	Asian Institute of Technology (AIT)
Work Package number	WP4
Work Package title	Quality Control and Monitoring
WP Leader	Andrei Szuder
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Author responsible for the Deliverable	Ružica Nikolić
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Version	Date	Author (Partner/Person)	The revision reason
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5 -Final	09.08.2022.	Ružica Nikolić	Accepted remarks by the Quality Control and Monitoring Board

Distribution List

Project Partner	Acronym	Responsible (for dissemination)
PEC		
P1: Asian Institute of Technology	AIT	Pisut Koomsap
P2: King Mongkut's University of technology North Bangkok	KMUTNB	Athakorn Kengpol
P3: Khon Kaen University	KKU	Kanchana Sethanan
P4: Mahidol University	MU	Eakkachai Warinsiriluck
P5: Prince of Songkla University	PSU	Thanate Ratanawilai
P6: Mary Immaculate College	MIC	Cathal de Paor
P7: Politehnica University of Bucharest	UPB	Manuela Dijmarescu
P8: University of Minho	UMinho	Rui M Lima
QCMB		
P1: Asian Institute of Technology	AIT	Huynh Trung Luong
P2: King Mongkut's University of technology North Bangkok	KMUTNB	Warapoj Meethom
P3: Khon Kaen University	KKU	Danaipong Chetchotsak
P4: Mahidol University	MU	Thananya Wasusri
P5: Prince of Songkla University	PSU	Suriya Jirasatitsin
P6: Mary Immaculate College	MIC	Margaret Murphy
P7: Politehnica University of Bucharest	UPB	Andrei Szuder
P8: University of Minho	AIT	Rui Sousa



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1. Executive Summary

The report presented here contains data on the conducted audit process of the Project "Reinforcing Non-University Sector at the Tertiary Level in Engineering and Technology to Support Thailand Sustainable Smart Industry - ReCap 4.0", which is funded by the European Commission within the Erasmus+ program, KA2 – Cooperation for innovation and the exchange of good practices – **Capacity Building in the field of Higher Education**, Project number 619325-EPP-1-2020-1-TH-EPPKA2-CBHE-JP.

This is the Mid-term audit, which covers the period of the project implementation from 01.02.2021. to 31.05.2022.

The audit process was realized in the two phases. In the first phase the auditor has reviewed documentation on the project realization provided by the Project Management Team (PMT), prepared and sent the questionnaires to all the categories of the project team members, analyzed their answers, which served as a basis for the interviews conducted in the second phase. The second phase consisted of the five-day on-site interviews with the project team members at Asian Institute of Technology in Bangkok and a visit to project realization site at Mahidol University in Salaya, Phutthamonthon District, Nakhon Pathom, Thailand. This phase of the audit process was realized according to mutually agreed Audit plan during the period from 06.06.2022. to 10.06.2022.

The auditor held the sessions with the project team members both in person and via the tele-conferencing. The interviewed team members included the Project Coordinator – professor Pisut Koomsap from Asian Institute of Technology, members of the Project Executive Committee (PEC) and the Work Package Leaders and Task Leaders, Members of the Quality Control and Monitoring Board (QCMB), as well as one administrative staff member.

The main auditor's objective and task were to review and evaluate the actual status of the project implementation half way through its implementation. That assumed establishing the level of compliance of reported results with the criteria determined for the project success, verifying the content of the project documents and reports, establishing which were the problems and/or delays in the project activities' realization, pinpointing the opportunities for eventual improvements and recommending how the project realization could be improved.

The audit process included evaluation of the quality of the project management process, evaluation of implementation of the planned activities and workload distribution across the work packages and activities actually undertaken, as well as estimation of compliance of the achieved outputs and outcomes with the planned ones. Efficiency and quality of the presented project documentation were also evaluated, as well as the efficiency of the applied project management tools. Validity and sustainability of the project results - outcomes of the further tasks, were also estimated.

The objective of this audit was neither evaluation of the project implementation compliance with the legal regulations of the European Commission program Erasmus+, nor the control of the financial matters (efficiency or correctness of spending the awarded resources).

Based on the reviewed documentation, submitted answers of the team members to presented questionnaires and the on-site visits and interviews with the team members, the auditor was able to draw conclusions on the status of the project realization, efficiency of its management, quality control and quality level of the realized activities, executed outputs, outcomes and deliverables.

The problems that were noticed in the project realization by the project team members were presented to the auditor sincerely and without hesitation.



The general conclusion by the auditor is that the project is on the right track, despite the fact that this part of the project realization was going on during the COVID-19 pandemic. The project team is doing their best to implement all the project activities in time and eventual setbacks were tried to be remedied and eliminated in time, so that the project would be completed as planned. The fact is that almost all the communications were limited to online teleconferencing and that majority of activities, except for 15-hr training, were realized without person-to person contact of the trainer(s) and trainees. The delays were thus unavoidable and the project team is really trying to make-up for the lost time. The auditor feels compelled to emphasize that none of the team members interviewed has used the COVID-19 pandemic as an excuse for the delays in the project realization.



2. Introduction

Project:

"Reinforcing Non-University Sector at the Tertiary Level in Engineering and Technology to Support Thailand Sustainable Smart Industry"

Funded by the European Commission:

Project number 619325-EPP-1-2020-1-TH-EPPKA2-CBHE-JP

Erasmus+ programme, KA2 – Cooperation for innovation and the exchange of good practices – Capacity Building in the field of Higher Education

Audit period:

01.02.2021. – 31.05.2022. (Mid-term audit)

Project is implemented by the following universities:

P1: Asian Institute of Technology (AIT)

P2: King Mongkut's University of Technology North Bangkok (KMUTNB)*

P3: Khon Kaen University (KKU)

P4: Mahidol University (MU)

P5: Prince of Songkla University (PSU)

P6: Mary Immaculate College (MIC)

P7: University Politehnica of Bucharest (UPB), Romania

P8: University of Minho (UMinho), Portugal

****Originally (in the project proposal) P2 was Chiang Mai University (Muang District, Chiang Mai, Thailand), which withdrew from the project after it was approved and was replaced by King Mongkut's University of Technology North Bangkok (Bangkok). All the documentation is attached.***

Project coordinator: Dr. Pisut Koomsap, Associate professor (AIT)

Auditor:

Professor **Ružica Nikolić**, PhD, SM, MSc, Dipl. Eng.

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2.1. Basic information on the project

[01 ReCap Project proposal 2020](#)

Project objective(s):

Wider Objective:

The objective of this capacity building project is to enhance the capacity and ability of the non-university sector at the tertiary level in Thailand for the effective delivery of engineering and technology knowledge and skills related to Industry 4.0 to support Thailand Sustainable Smart Industry and to strengthen a partnership among participating European and Thai universities as well as benefited non-university sector.

Specific project Objectives:

- *SO1 Improvement of competences and skills of teaching staff of non-university sector at the tertiary level in Thailand by training them with the Industry 4.0 competence development training program containing Industry 4.0 knowledge from the recently developed courses of MSIE 4.0 curriculum, teaching skills development and learning experience-focused course design and development.*
- *SO2 Development of innovative training modules, training materials, and delivery process for the Industry 4.0 competence development training program according to ECTS.*
- *SO3 Implementation of modern ICT tools and methodologies for effective training.*
- *SO4 Training trainers for Thai partner universities by EU partners for sustainability of the competence development training program.*
- *SO5 Establishment of an Innovative Teaching and Learning Center for Thailand Sustainable Smart Industry for continuing providing training, advice, forum and a channel of communication to support professional development and lifelong learning of the staff of academic institutes at the tertiary level as well as technical training for industry.*
- *SO6 Setup of training network among the members of partner universities and of associated partners around the Innovative Teaching and Learning Center for Thailand Sustainable Smart Industry to ensure the sustainability of the project results and to be in line with European policy and practice in Thailand.*

Project outputs and outcomes:

[01 ReCap Project proposal 2020](#)

WP1 – Non-university capacity assessment

- A capacity assessment execution plan
 - A capacity assessment form
 - An assessment report on non-university capacity including recommendations on emphasis areas for the Industry 4.0 competence
- *Workload 8 %, Budget 2.8 % (27,970 eur)*



WP2 – Sustainable Development of Industry 4.0 Competence Development Training Program

- Approval of an Industry 4.0 Competence Development Training Program by PEC by M7
 - 10 modules complete with innovative training materials are ready by M9
 - A capacity training assessment form is approved by WP2 members by M3
 - Completion of training sessions for the 12 Thai trainers by M29
 - Completion of coaching sessions for the 12 Thai trainers by M30
 - An assessment report by M31
- *Workload 19 %*,

WP3 – Capacity Training for Non-University Sector at Tertiary Level in Thailand

- A capacity training execution plan
 - 60 trained teaching staff from non-university sector at tertiary level
 - An assessment report on trained teaching staff from non-university sector at tertiary level
- *Workload 28 %*,

Budget for WP 2 and WP 3 is together 53.8 % 532,401 eur)

WP4 – Quality Control and Monitoring

- A quality control and monitoring system
 - Internal quality control and monitoring
 - External quality control and monitoring
 - External financial audit
- *Workload 14 %, Budget 15.5 % (153,826 eur)*

WP5 – Dissemination and Exploitation of Project Results

- A Dissemination, Exploitation and Sustainable plan (DESP)
 - A project website,
 - A list of registered trainees from the non-university sector at tertiary level in Thailand
 - Dissemination materials (e.g., brochures, flyers, newsletters),
 - Publications in professional journals, newspapers, magazines, brochures and social media,
 - A list of the members of the Innovative Teaching and Learning Center for Thailand Sustainable Smart Industry
 - Dissemination events,
 - A dissemination-sustainability conference
- *Workload 17 %, Budget 14.7 % (145,329 eur)*

WP6 – Project Management

- Project management and communication plan (PMCP)
 - Kick-off and regular consortium meetings
Documents on daily project administration and coordination
 - Midterm progress and final reports for the project
- *Workload 14 %, Budget 13.2 % (130,362 eur)*



Project budget:

[01 ReCap Project proposal 2020.pdf](#)

Budget requested in the project proposal

Staff costs: 394,648 eur
 Travel costs: 271,480 eur
 Costs of stay: 245,760 eur
 Equipment costs: 43,000
 Subcontracting costs: 35,000 eur
 Total budget: 989,888 eur

Budget awarded by the European Commission:

Staff costs: 394,648 eur
 Travel costs: 271,480 eur
 Costs of stay: 245,760 eur
 Equipment costs: 43,000
 Subcontracting costs: 35,000 eur
 Total budget: 989,888 eur

Partners in-kind contributions 10,520 eur (calculated from 10 days of teaching staff for all partners.)

Allocation of staff costs:

Teaching staff: 62.65%
 Technical staff: 15.73%
 Managers: 15.62%
 Administrative staff: 6%

Allocation of costs per partners:

P1 - AIT	21.45 %
P2 - KMUTNB	8.42 %
P3 - KKU	11.78 %
P4 - MU	8.54%
P5 - PSU	9.28 %
P6 - MIC	19.39 %
P7 - UPB	9.42 %
P8 - UMinho	11.72 %

Implementation dates:

15.11.2020.-14.11.2023.



2.2. Audit objectives

The objective of this audit process was to review and evaluate the actual status of the project implementation. That included establishing what is the level of compliance of reported results with the criteria that were set for the project to be successful, verifying the content of the project documents and QCM reports, as well as identifying the possibilities of improvements, both of the project implementation and of the project management and to recommend which project realization aspects could be either further developed or improved.

To achieve the set main objective, several partial objectives were set:

- evaluation of the quality of the project management process,
- evaluation of the planned activities implementation,
- evaluation of the workload distribution across the work packages and activities actually undertaken,
- estimate of compliance of the reported project outputs and outcomes with the planned ones,
- review of efficiency and quality of project documentation,
- evaluation of efficiency of the applied project management tools and
- assessment of the validity and sustainability of the project results: outcomes of the further tasks.

The objective of this audit was neither evaluation of the project implementation compliance with the legal regulations of the European Commission program Erasmus+, nor the control of the financial matters (efficiency or correctness of spending the awarded resources).

Representatives of the audited project

The project is represented by the Project Coordinator, Professor Pisut Koomsap of AIT, The Project Management Team (PMT), consisting of The Project Executive Committee (PEC) and the Project Administrative Team (AM). Members of the PEC are representatives of all the partner universities – Partner Leaders (PL) – (Table 1) and the Administrative members are the Work-Packages Leaders and Co-leaders (Table 2). The quality control of the project realization is conducted by the Quality Control and Monitoring Board (QCMB), which also has representatives of all the partner universities (Table 3).

[02 PCM Plan.pdf](#)

Table 1. Project Executive Committee members

Partner	Member	E-mail
P1: Asian Institute of Technology (AIT)	Pisut Koomsap	pisut@ait.asia
P2: King Mongkut's University of Technology North Bangkok (KMUTNB)	Athakorn Kengpol	athakorn.kengpol@gmail.com
P3: Khon Kaen University (KKU)	Kanchana Sethanan	ksethanan@gmail.com
P4: Mahidol University (MU)	Eakkachai Warinsiruck	Warinsiruk@yahoo.com
P5: Prince of Songkla University (PSU)	Thanate Ratanawiliai	thanate.r@psu.ac.th
P6: Mary Immaculate College (MIC)	Cathal de Paor	cathal.depaor@mic.ul.ie
P7: Politehnica University of Bucharest (UPB)	Manuela Dijmarescu	manuela.dijmarescu@upb.ro
P8: University of Minho (UMinho)	Rui M Lima	rml@dps.uminho.pt


[02 PCM Plan.pdf](#)
Table 2. Project Administrative Team members

WP	Role	Name	Partner	E-mail
1	WP-L ²	Rui M. Lima	UMinho	rml@dps.uminho.pt
	Co-WP-L ³	Athakorn Kengpol	KMUTNB	athakorn.kengpol@gmail.com
2	WP-L	Pisut Koomsap	AIT	pisut@ait.asia
	Co-WP-L	Cathal de Paor	MIC	cathal.depaor@mic.ul.ie
3	WP-L	Thanate Ratanawilai	PSU	thanate.r@psu.ac.th
	Co-WP-L	Kanchana Sethanan	KKU	ksethanan@gmail.com
4	WP-L	Andrei Szuder	UPB	szuder@yahoo.com
	Co-WP-L	Danaipong Chetchotsak	KKU	cdanai@kku.ac.th
5	WP-L	Tuangyot Supeekit	MU	tuangyot.sup@mahidol.edu
	Co-WP-L	Pisut Koomsap	AIT	pisut@ait.asia
6	PC	Pisut Koomsap	AIT	pisut@ait.asia

¹ PC – Project Coordinator; ² WP-L – Work Package Leader; ³ Co-WP-L – Co-Work Package Leader

[03 QCM Plan.pdf](#)
Table 3. Quality Control and Monitoring Board members

#	Partner	Name	Role	E-mail
1	UPB	Andrei Szuder	Chair	szuder@yahoo.com
2	KKU	Danaipong Chetchotsak	Co-chair	cdanai@kku.ac.th
3	AIT	Huynh Trung Luong	Member	luong@ait.asia
4	KMUTNB	Warapoj Meethom	Member	tuktuk0178@gmail.com
5	MU	Thananya Wasusri	Member	thananya.was@mahidol.edu
6	MIC	Margaret Murphy	Member	margaret.murphy@mic.ul.ie
7	PSU	Suriya Jirasatitsin	Member	suriya.j@psu.ac.th
8	UMinho	Rui Sousa	Member	rms@dps.uminho.pt



2.3. List of the checked documentation

1. Project proposal [01 ReCap Project proposal 2020.pdf](#)
 2. Project Management and Communication Plan [02 PCM Plan.pdf](#)
 3. Quality Control and management plan [03 QCM Plan.pdf](#)
 4. Work package Quarterly reports [11 ReCap 4.0 Quarterly Report-06-June 22.pdf](#)
 5. Reports on individual Work Packages, Tasks and Outputs
 6. Meetings' minutes (PEC, QCM Board and Training sessions)
 7. Document templates
 8. Courses' syllabi
 9. Courses' teaching materials
 10. Video clips
 11. List of held training seminars
 12. Templates for various reports
 13. Questionnaire's answers of the Project coordinator
 14. Questionnaires' answers of the PEC members
 15. Questionnaires' answers of the QCMB members
 16. Questionnaires' answers of the team members
- etc ...**



2.4. Audit process overview

Audit process was performed in two phases.

The first phase assumed that auditor reviewed the available documentation on the project implementation.

The auditor prepared the questionnaires for all the categories of the project team members, which were distributed to them, then analyzed the obtained answers, which served as a basis for interviews in the second phase.

That phase included daily contacts with project coordinator, professor Pisut Koomsap, Dr. Danaipong Chetchotsak, WP4 co-leader, and Miss. Duangthida Hussadintorn Na Ayutthaya, project administrator. They were supplying all the necessary information that auditor requested and/or could not find in available documentation.

Auditor is expressing gratitude for all the help that they provided.

The second phase was the five-day on-site interviews with the project team members at Asian Institute of Technology and visit to project realization sites in Bangkok and Salaya, Thailand.

That phase was realized according to mutually agreed audit plan during the period from 06.06.2022. to 10.06.2022.

Audit plan:

Audit plan (Table 4) was agreed in mutual communication between the Project Coordinator and PEC with the auditor.

Table 4. Audit plan

Day/date	Audit session – interview with	
1. 06.06.2022.	09:00	Project Coordinator
	15:00	PEC members
2. 07.06.2022.	09:00	Administrative and technical staff
	15:00	WP1 and WP2 leaders and team members
3. 08.06.2022.	09:00	Associate partners
	15:00	WP3 and WP5 leaders and team members
4. 09.06.2022.	09:00	QCMB members
	15:00	Concluding meeting with project Coordinator
5. 10.06.2022.	Visit to Mahidol University	

Table 5 lists the project representatives and team members that were participating in interviews in the audit second phase.

Project coordinator, professor Pisut Koomsap, Dr. Danaipong Chetchotsak and Miss. Duangthida Hussadintorn Na Ayutthaya were present at all the audit sessions.

Here should be noted that no project team members from European partners were present in person, as well as some of the members from the Thailand universities that are distant from AIT. Dr. Danaipong Chetchotsak from KKU and professor Athakorn Kengpol from KMUTNB were present in person at several sessions. They all participated in the audit process via teleconferencing. This did not produce any problems in communications. This was caused mainly due to strict anti-Covid-19 restrictive measures in Thailand and it also saved money that would be spent for the travel costs and costs of stay for the team members' few hours presence in Bangkok.


Table 5. Project team members present in person during the audit

#	Team member	Partner	Function in the project
1	Pisut Koomsap	AIT	Project coordinator, WP2 Leader, WP5 Co-leader, WP6 leader
2	Athakorn Kengpol	KMUTNB	PEC member, WP1 Co-leader
3	Kanchana Sethanan	KKU	PEC member, WP3 Co-leader
4	Eakkachai Warinsiriruck	MU	PEC member
5	Thanate Ratanawiliai	PSU	PEC member, WP3 leader
6	Cathal de Paor	MIC	PEC member, WP2 Co-leader
7	Manuela Dijmarescu	UPB	PEC member
8	Rui M Lima	UMinho	PEC member, WP 1 leader
9	Andrei Szuder	UPB	QCMB member, WP4 leader
10	Danaipong Chetchotsak	KKU	QCMB member, WP4 Co-leader
11	Huynh Trung Luong	AIT	QCMB member
12	Warapoj Meethom	KMUTNB	QCMB member
13	Thananya Wasusri	MU	QCMB member
14	Margaret Murphy	MIC	QCMB member
15	Suriya Jirasatitsin	PSU	QCMB member
16	Rui Sousa	UMinho	QCMB member
17	Tuangyot Supeekit	MU	WP5 Leader
18	Christiano Jesus	UMinho	WP1, WP5 team member
19	Diana Mesquita	UMinho	WP1, WP2 team member
20	Lino Costa	UMinho	WP1 team member
21	Gabriela Parvu	UPB	WP1 team member
22	Bogdan Abaza	UPB	WP2 team member
24	Wanida Rattanamanee	PSU	WP1 team member
25	Duangthida Hussadintorn Na Ayutthaya	AIT	Project administrator



3. Audit findings

Prior to reporting and commenting on results of the project, as seen by the auditor, there is a point to be made that could have affected the project realization.

In the project proposal, the proposed project consortium consisted of the following partners: from Thailand - Asian Institute of Technology (AIT), Chiang Mai University (CMU), Mahidol University (MU) and Prince of Songkla University (PSU) and from European countries - Mary Immaculate College (MIC), Ireland, Politehnica University of Bucharest (UPB), Romania and University of Minho (UMInho), Portugal.

After the project was selected for funding by the Erasmus+ program, the Chiang Mai University informed the project coordinating institution - Asian Institute of Technology that they cannot participate in the project realization, due to the fact that their staff are being engaged in other projects and “would not be able to fulfill the obligations within ReCap 4.0”.

The project Coordinator approached King Mongkut's University of Technology North Bangkok (KMUTNB) and invited them to step in as the project partner so that the project can be realized, which the KMUTNB accepted and joined the project consortium, taking all the responsibilities and tasks previously assigned to CMU (in the project proposal).

The King Mongkut's University of Technology North Bangkok was already participating in the previous Erasmus plus project (MSIE 4.0) and was thus “ideal” substitution. The only “condition” that the AIT requested from the KMUTNB to join the project realization, was that they engage the younger staff members in the project realization, which was accepted and realized by KMUTNB.

The auditor is convinced that this change was adequate and did not affect the project realization in the sense of delays or not fulfilling the assigned tasks. The auditor was also in position (during the interviews) to verify that the “condition” for KMUTNB engaging the young staff members in the project realization was completely followed.

All the relevant documents on the partner change are enclosed.

[04 Partner change documents.PDF](#)

3.1. Findings based on the reviewed project documentation

Project realization was executed according to the **Adjusted Work Plan**, which is the substitute for the **Initial Work Plan** from the project proposal – QCM Plan – pages 26-33. [03 QCM Plan.pdf](#)

The changes in the work plan were inevitable due to delays caused by the COVID-19 pandemic. The whole project realization was postponed, started with a delay of two and a half months, instead of predicted starting date 15.11.2020., the realization started on 01.02.2021.

[05 Workplan\(s\).pdf](#)

3.1.1. Project progress management

Based on review of the presented and downloaded documentation, obtained from the project team and the project web-site, as well as on answers to corresponding questionnaires - by the Project Coordinator, members of the Project Executive Committee (PEC), members of the Quality Control and Monitoring Board (QCMB) and the Team member- it was established that there were adequate procedures for all the aspects of the project realization. Those include the project management, quality control and monitoring, budget management, risk management, tasks and results (outputs and deliverables) management, introducing changes and producing and keeping the project documentation.

The relevant documentation for this section of the audit report includes the following documents:

- The project proposal [01 ReCap Project proposal 2020.pdf](#)
- The Project Management and Communication Plan [02 PCM Plan.pdf](#)
- The Project Quality Control and Monitoring Plan [03 QCM Plan.pdf](#)
- The Work package quarterly report(s) [11 ReCap 4.0 Quarterly Report-06-June 22.pdf](#)

as well some other documents.

The project management structure is presented in Figure 1. [02 PCM Plan.pdf](#)

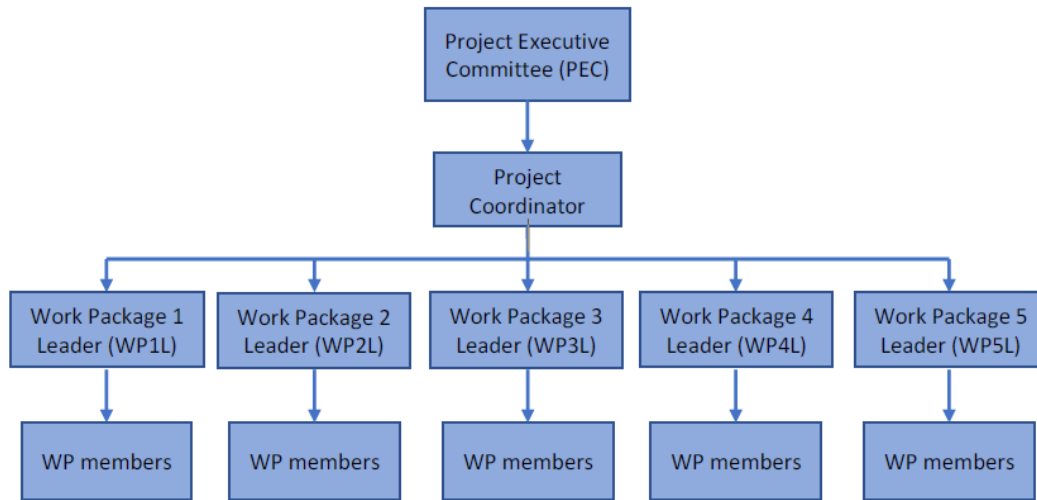


Figure 1. The project management structure

The project management is executed by the **Project Management team** that consists of **Executive Committee (PEC)** members of which are representatives of all the participating universities and is led (chaired) by the **Project Coordinator**, Professor Pisut Koomsap from Asian Institute of Technology (AIT) in Pathum Thani and of the **Project Administrative Team**.

[01 ReCap Project proposal 2020.pdf](#)

The Project Coordinator, as well as members of the PEC and QCM Board, were appointed by their respective institutions (universities). Each member of these bodies is aware of his/her responsibilities, tasks, competencies, as well as their extents.

That was confirmed to the auditor through their answers on the corresponding questions in the sent questionnaires and verified in direct conversations during the interviews during the second phase of the auditing process.

Roles and responsibilities of all the project managing bodies, Work Package Leaders and team members were strictly defined in the Project Management and Communication Plan. [02 PCM Plan.pdf](#)

The Project Executive Committee (PEC) is the highest and ultimate decision-making board and its main task is project governance. This body is composed of one representative from each project partner (i.e. Partner Leader – PL). The PEC monitors and assesses the actual progress of the project implementation and decides if amendments were necessary.

The Project Coordinator (PC) is responsible for coordination of activities in compliance with the contract with the EU-Commission and interacts with the EACEA and third parties in relation to the project. The PC has total responsibility for the overall project and its successful completion.

Work Package Leaders (WPL) and **Work Package Co-leaders (WPCo-L)** are responsible for the proper execution of the WP activities on time and of delivery of the WP outputs, as defined in the project proposal. The WPLs and WPCo-Ls are working closely with the PC and other WPLs.



Project members have responsibility for executing the project activities. They assist the PC and WP Leaders in completing the project, within established schedule and budget constraints.

Project Administrative Team is executing the technical and administrative activities and it consists of administrative staff members from the contracting partner - AIT.

List of the PEC and Administrative members is given in Tables 1 and 2, respectively, in the Introduction.

Project Operations Management Flow is defined in such a way that the project is managed at three levels:

- operation (WP1, WP2, WP3 and WP5)
- monitoring and control (WP4) and
- management (WP6).

All the operational tasks are initiated by the Work Package Leaders (WPLs) who allocate the tasks to the task members nominated by the partner leaders (PLs). The WPLs are responsible for updating the PC on the status of ongoing tasks on a quarterly basis (by the 21st of the last month of a quarter). For each completed task, the responsible WPL submits a deliverable to his/her representative in the QCMB for the initial evaluation. The deliverable is then sent to QCMB for endorsement. It is then submitted to PEC via the PC for the final approval. In the case that the deliverable gets rejected at any stage, the WPL is informed immediately. According to the quarterly reports from the WPLs, the PC is submitting the progress report to PEC and informs the QCMB. For the WP4 tasks (quality control and monitoring), the chair of the QCMB initiates all the tasks. With the endorsement of QCMB, the chair submits the deliverables to PEC via the PC for the final approval. Appointments of external audits require the PEC approvals, as well. For the WP6 tasks (project management), the PC submits the progress reports to PEC directly for approval and informs the QCMB.

Work Package Quarterly Reports (WQR) are available at the project web-site.

<https://sites.google.com/ait.asia/resource-for-recap-4-0/home>

[06 ReCap 4.0 Quarterly Report-01-April 21.pdf](#)

[07 ReCap 4.0 Quarterly Report-02-July 21 .pdf](#)

[08 ReCap 4.0 Quarterly Report-03-October 21 .pdf](#)

[09 ReCap 4.0 Quarterly Report-04-January 22 .pdf](#)

[10 ReCap 4.0 Quarterly Report-05-March 22.pdf](#)

[11 ReCap 4.0 Quarterly Report-06-June 22.pdf](#)

Auditor was informed that communication within the project managing bodies, between them and with other team members, was going on without major problems. However, the channels for communications were online meetings, teleconferences, E-mail, written messages and the project website, while the face-to-face meetings, due to the COVID-19 pandemic, were limited to the AIT team members only and PC's visits to other Thailand partners and trainings' sites.

In the other types of communications, which are concerned with assigning tasks to team members and their executing their assignments, as well as feedback from them, there were no major problems.

The Project Executive Committee was meeting regularly, according to the Workplan presented in the project proposal. In addition, besides those scheduled meetings, the members of the PEC were communicating with each other if there was a need for that, however, only by teleconferencing and/or e-mail. [02 PMC Plan.pdf](#)

The project management was executed according to adopted procedures in accordance with the adopted Project Management and Communication Plan.



3.1.2. Project progress quality control and monitoring

Project progress was monitored by the Quality Control and Monitoring Board according to the QCM plan.

[02 PCM Plan.pdf](#)

The QCM Board consists of representatives of all the partner universities and is chaired by Professor Andrei Szuder of University Politehnica of Bucharest (UPB) and co-chaired by Dr. Danaipong Chetchotsak of Khon Kaen University (KKU).

The QCM Board has held regular meetings according to the project proposal and the QCM plan and was preparing the Minutes and Reports on those meetings accordingly.

Table 2 in the QCMP presents the quality assurance of the deliverables – QCM Plan – pages 9-13. For each task are defined deliverables, type of documents to be created, target groups and task leader responsible within the work package.

“The quality control of the deliverables is crucial to success of the project, verifying that the objectives are achieved. In the process for the deliverable review, the quality control, the responsibilities and the tools to proceed with it are explained in a dedicated procedure, Deliverables Quality Control Procedure (DQCP)”.

The deliverable’s output, production process and quality control are defined in detail.

QCMP also contains description of assessment and monitoring of the work packages activities and results (QCM Plan – pages 15-16).

The internal quality of the project processes and quality assessment was performed through the self-evaluation by project partners using the Project Quality Assessment Template PQAT – ANNEX 8 of the QCM Plan. The project team members participating in certain events (PEC meetings, QCMB meetings, etc.) have to respond to the PQA questions. The results of the PQA questionnaires for each event are then consolidated and sent to QCMB and PC.

The evaluation of the project activity is organized by a person responsible for that activity and completed by those who would participate and/or benefit from the activities. That is done by answering to specific questions according to specific evaluations forms (questionnaires) and procedures.

Evaluation of the events within the project WP’s is performed using the Event Evaluation Template (EET) – ANNEX 9 of the QCM Plan, according to the Event Evaluation Procedure (EEPR) – ANNEX 10 of the QCM Plan.

The training activities evaluation is performed using the Training Evaluation Template (TET) – ANNEX 11 of the QCM Plan, according to the Training Evaluation Procedure (TEPR) – ANNEX 12 of the QCM Plan.

The project website and its content quality were evaluated with the Website Evaluation Template (WET) – ANNEX 13 of the QCM Plan.

The QCMB Chair then produces a Quality Control and Monitoring Board Report (QCMBR) – ANNEX 14 of the QCM Plan (twice a year before the two annual PEC and QCMB meetings). This report should reflect all the aspects of the QCM of the project and should be based on the documents collected, including the Project Quality Assessment Reports and consolidated answers from project stakeholders and should reflect the views of the consortium and the beneficiaries of the project results on its quality.

The QCMBR is then sent to the PC for approval.

The PC then submits the QCMBR to the project Executive Committee (PEC) who is responsible for the final approval within the project.

Once approved by the PEC, the QCMBR is considered to have been adopted.

List of the quality control procedure templates is given in Table 6 (QCM Plan – Tables 3 and 4 – pages 20-21).

[03 QCM Plan.pdf](#)

All the QCM documents were at auditor's disposal. Based on those documents, as well as answers of the QCM Board members to questionnaires, it could be concluded that the project progress, its management and quality of those actions, were monitored constantly according to established plan and procedures.


Table 6. Quality control procedure templates

Document		Abbreviation	Annex
#	Quality Control and Monitoring Plan	QCMP	
1	Project Form Template	FT	ANNEX 1
2	Deliverable Template	DT	ANNEX 2
3	Deliverable Evaluation Template	DET	ANNEX 3
4	Deliverable Consolidated Evaluation Template	DCET	ANNEX 4
5	Deliverable Quality Evaluation Procedure	DQEPR	ANNEX 5
6	Work Package Quarterly Report	WQR	ANNEX 6
7	Quality Control and Monitoring Report	QCMR	ANNEX 7
8	Project Quality Assessment Template	PQAT	ANNEX 8

3.1.3. Project results and outputs and project risk management

The project tasks and outputs creating and executing were monitored throughout the complete process. Table in the linked QCM Report gives an overview of the realized tasks and their outputs.

[14 Consolidated QCM Report 14.02.2022.pdf](#)

[15 Consolidated QCM Report 20.06.2022 2022.pdf](#)

[16 ReCap 4.0 Training Status Report.pdf](#)

[17 ReCap 4.0 Status of the Competence Development Training Program.pdf](#)

From the presented report and the two status reports, auditor could get a clear picture of the project results. The WP 1 is completely finished, the WP4, WP5 and WP 6 are ongoing, which is normal considering their nature (quality control, dissemination and exploitation of the project results and the project management, respectively). The problem are delays in realization of WP2 and WP3. The WP2 was supposed to be finished already and WP3 was supposed to be well on the way. The biggest cause for this situation is the negative influence of the COVID-19 pandemic. Many of the tasks had to be postponed, sometimes indefinitely, since the team members did not know when the health authorities' restrictions would be alleviated or lifted. The project team members were trying to switch to completely online realization of the project activities. For certain activities that was possible, like for the meetings and some seminars. However, for the trainings that was not quite possible, so they were delayed, for several reasons. The potential candidates had to apply online only, as well, to be informed when and how the trainings were going to be held and finally to attend the trainings. On the other hand, the project team members had to scout for the candidates for the trainees, which was difficult to perform online only, since all the travelling was strictly restricted. Then, one should also take into account that some trainers and trainees were infected by the corona virus, so they were probably not able to perform their activities (lecturing or being lectured to).

However, though the project team members did their best to conduct their planned activities, some delays are also partially their fault. Some of the EU project partners did not take their duties in the project completely seriously, some did not even realize what their concrete tasks were, which someone might be expecting from the "less experienced" Thailand partners' team members.

All these auditor's impressions and remarks were clearly put forward to all the project team members that participated in the audit interviews. They took those remarks seriously and stated that they would try their best to make-up the lost time, i.e. to eliminate the delays, so that the project would be completed as planned, in time and with the required quality level in all the aspects.



The project risks were defined in the Project Proposal, for each Work Package, activity and outcome. **Project risk is defined as an event or a condition that has a potential to affect the achievement of the project negatively.** All events, conditions and conflicts that had a potential to delay the delivery of deliverables, or to lower the quality of those deliverables, were considered as the project risks.

The risk management procedure was defined and the risks for all the aspects of the project realization were monitored by the **Risk Management Committee (RMC)**, which is composed of all the WP Leaders and Co-WP Leaders and is chaired by the Project Coordinator (PC).

All the RMC members were asked to consult with their Work Package team members to perform the risk assessment on an annual basis. The risk eliminating procedure consists of the risk identification, risk assessment (according to the risk assessment form) and response planning. Table 7 presents the Risk Assessment Form (Table 13, page 47 of the PMC Plan). The risk assessment form is available on the internal project website within the WP6. [02_PCM Plan.pdf](#)

Table 7. The risk assessment form

Risk No.	Descriptions	WP	Risk Assessment			Mitigation Measures	Risk Owner
			Likelihood	Impact	Level		

The likelihood of risks occurring was categorized into three levels, as the most likely – with probability of occurrence greater than 70%, likely – with probability of occurrence between 30% and 70 % and unlikely – with probability of occurrence below 30 %.

The impact that risk could impose on the project realization was categorized into three levels, as well, as: high – where the risk has the potential to greatly impact certain project aspect, medium where the impact could be mild and low where the impact to certain project aspect would relatively little.

According to likelihood and impact, the risk level is determined from the risk assessment matrix given in Table 8 (Table 14 in PCM Plan).

Priority in resolving the critical situations is given to the critical and significant risks. [02_PCM Plan.pdf](#)

Table 8. The risk assessment matrix

Likelihood	Impact		
	Low	Medium	High
Unlikely	Mild	Mild	Moderate
Likely	Mild	Moderate	Significant
Most Likely	Moderate	Significant	Critical

Thus, the risk managing procedure was defined in detail, what made possible for all the potential risks to be dealt with and/or eliminated in time, so that they should not cause any of the possible negative impacts on the project realization (delaying and/or reducing the project outcomes (benefits), reducing the quality of project outputs, extending the project activities' timeframes or increasing any type of costs in project realization).

The risks that appeared due to the COVID-19 pandemic could not have been predicted in the project proposal in 2019. However, they were dealt with by the project team, according to regulations prescribed by the health authorities of the project consortium members respective countries. For example, for trainings held in Thailand all the trainees and trainers had to produce the negative COVID-19 test to be able to participate.



Auditor found several statements of potential risks in the Logical Framework Matrix (LFM) to be a bit strange (page 21 of proposal) and that, by auditor's opinion and due to experience in projects' evaluation and management, should not have been supposed at all. [01 ReCap Project proposal 2020.pdf](#)

Those are:

- *Loss of interest from the project partners*
- *Loss of interest from the non-university sector at the tertiary level in Thailand*
- *Loss of interest from the staff of the non-university sector at the tertiary level in Thailand*
- *Insufficient quality of the trainers.*

Unfortunately, those predictions turned out to be quite right. Due to COVID-19 pandemic, as well as its prolonged duration and the restrictive measures to prevent its further spreading, some people simply lost interest in many things, among them their work and usual duties, considering as the most important to concentrate on remaining healthy and keeping their own lives.

With the pandemic slowing down and situation returning back to almost normal, the interest for the project realization was again becoming important to some of them.

The other type of supposed risk – insufficient quality of trainers – should not appear in the project proposal. However, there is no guarantee that the selected trainers are always quite up to the tasks, which were assigned to them. There were a few occasions that some trainers were delivering the courses at too high a level, without taking into consideration that the trainees did not have the prerequisite knowledge to be able to follow the lecturing. Not all the trainees were the PhD students, as one of the PEC members said at the interview. On the contrary, some of the course materials were prepared at too a lenient level. Both types of problems were resolved by the Project Management Team. This is explained in more details in Sections 3.3.1 and 3.3.3.

3.1.4. Project communications management

Internal Communications

The communication within the project consortium members was planned to have the following channels:

- Person-to-person communication
- Meetings
- Electronic Channels
- Written Messages and
- Project Website.

However, due to known limitations caused by the COVID-19 pandemic, person-to-person communications were practically non-existing, except for the Thailand partners and mainly for the AIT team. All the other communications were held online, including the meetings and coaching sessions. On the other hand, all the trainings were delivered in the in-person mode, which is commendable.

The two project web sites were created at the beginning of the project realization:

- official project website (<http://recap4.ait.ac.th/>) for public and
- internal project website (<https://sites.google.com/ait.asia/resource-for-recap-4-0/home>) to facilitate the project management, the exchange of project documentation and for dissemination and exploitation of the project results.

Those web sites provide a structured central document repository for meeting minutes and presentations, deliverable drafts, dissemination material drafts, project-internal documentation and other relevant information, including links to relevant articles, blogs and papers.

The web sites are maintained by the project coordinating partner (AIT) with the consultation with P4 (Mahidol University) who is the WP leader for project results dissemination and exploitation and with provision of materials from all other partners.



For accessing the internal project website, the partner leaders inform the Project Coordinator which of their team members should be included in the list of the members who are granted the access.

The Facebook page and the YouTube channel for the project were created, as well as the virtual exhibition of the project.

<https://www.facebook.com/ReCap4Thailand/?ti=as>

https://www.youtube.com/watch?v=RFB0u2V-u4U&ab_channel=DepartamentTCM

<https://spatial.io/s/ReCap-4-0-62a58e5756c7600001ef7147?share=4273334245594309615>

External communications

External communications of the Project Management team with the European Commission is the responsibility of the PC. That communication takes place mainly by e-mail and telephone conversations (planned face-to-face discussions if needed, as supposed by the QCM Plan were not necessary, yet).

The Project Coordinator had to approach the EACEA for approval of the partner change, after the CMU had to leave the project realization, as explained at the beginning of Section 3 of this Audit Report.

3.1.5. Project Dissemination, Exploitation and Sustainability Management

Dissemination and Exploitation of the project results was done according to the Dissemination, Exploitation and Sustainability Plan (DES).

[13 ReCap DES Plan.pdf](#)

The leader of the Work Package 5 is Mahidol University (MU) and Asian Institute of Technology (AIT) is co-leader. The ReCap4.0 management structure includes the position of WP5 leader filled by Dr. Tuangyot Supeekit. The roles of individual project partners and their representatives are shown in Table 9.

Table 9. Partnership and Roles in Project Dissemination, Exploitation and Sustainability Management

#	Project Partner	Role	Person in-charge	E-mail
1	Asian Institute of Technology (AIT)	Co-leader	Pisut Koomsap	pisut@ait.asia
2	Khon Kaen University (KKU)	Member	Thitipong Jamrus	thitja@kku.ac.th
3	King Mongkut's University of Technology North Bangkok (KMUTNB)	Member	Athakorn Kengpol	athakorn.kengpol@gmail.com
4	Mary Immaculate College (MIC)	Member	Cathal de Paor	cathal.depaor@mic.ul.ie
5	Mahidol University (MU)	Leader	Tuangyot Supeekit	tuangyot.sup@mahidol.edu
6	Prince of Songkla University	Member	Wanida Rattanamanee	wanida.r@psu.ac.th
7	University of Minho (UMinho)	Member	Cristiano de Jesus	cristiano.jesus@gmail.com
8	University Politehnica of Bucharest (UPB)	Member	Manuela-Roxana Dijmarescu	manuela.dijmarescu@upb.ro

The dissemination exploitation and sustainability activities are divided in three stages, each having different purposes:

- Initial stage – the first year – the DES activities were arranged with a focus on raising awareness of the project and informing the prospective audience about the ReCap4.0 project and upcoming activities;
- Middle stage – the second year – the DES activities were planned with the purpose of informing audience about the past activities, as well as about the upcoming activities and progress of each work package and intermediate results of the project;
- Final stage – the third year – the DES activities in the final stage will be focused on informing about the progress of each work package and results obtained from the project, as well as on planning to maintain the results of the project, i.e. to ensure its/their sustainability.

The DES strategy is defined in the following way

“Dissemination strategy of the ReCap4.0 project consists of the following core components:

- **Objectives of dissemination:** identify the project dissemination objectives;
- **Target groups:** identify crucial target groups and bodies that are interested in the project;
- **Key messages:** identify core project messages for specific target groups;
- **Dissemination levels:** identify dissemination levels, tools and activities;
- **Dissemination methods:** identify dissemination methods, tools and channels;
- **Dissemination time plan:** identify a plan of dissemination activities”.

[13_ReCap_DES Plan.pdf](#)

The partnership approaches towards dissemination and exploitation of results are focused on: a clear focus on user needs, shared responsibility across all partners, a continuing process and life after the end of the project.

Objectives of the dissemination activities are defined, as well as main focal points of the project results dissemination and the target groups.

The database with target groups was developed by the project’s partnership, which is used for dissemination and sustainability activities such as sending e-newsletters, invitation to project’s trainings and events, etc. Each Thailand partner should contribute to the database with at least 3 trainers, 15 non-university teaching staff and 10 representatives of industrial partners.

The dissemination levels are defined for different activities, i.e. which activity’s results should be disseminated at the institution, local or international level.

The dissemination methods, tools and channels are also defined. Figure 2 shows the project Logo that appears on all the documents and the dissemination tools.



Figure 2. ReCap4.0 Project Logo

Dissemination activities include creating: a project website, public seminars for project promotion, posters with the ReCap4.0 project information and training program, leaflet with similar format and content with the poster, short presentation video on the ReCap4.0 project, e-newsletters, leaflets with information about the activities, training courses, coaching activities, publications in professional journals, newspapers, magazines, brochures and social media, establishing training network among project partners and associated partners, project final conference, dissemination booklet with all the project results and organizing the final dissemination-sustainability conference.



3.1.6. Project changes and project documentation management

During the project realization some changes had to be done, due to various reasons. Changes were possible to be proposed by the Project Coordinator, PEC and QCMB members or by the regular team members. Changes proposed by the project (managing) bodies were first discussed at their meetings and then adopted either by consensus or by majority; the former practically being a rule. Changes proposed by the team members were submitted either to the Team leader (of the particular Partner) or to the Work Package Leader and then either accepted/rejected or forwarded to the proper managing body (PC, PEC, QCMB), depending on the nature of the proposed change, for the further decision.

For example, there was a switch of roles between two representatives from the Mary Immaculate College, Cathal de Paor and Margaret Murphy, who were originally members of the QCMB and PEC, respectively. However, they felt that they would better contribute to the project realization if they switched their respective roles, so now Cathal de Paor is representative of the MIC in the PEC, while Margaret Murphy is a member of the QCMB. This change/switch was approved by the Project Coordinator and the PEC.

The project documentation contains all the details on the project realization thus far. It includes various documents regarding all the aspect of the project realization.

The project management developed coding of all the documents. There are three types of documents: plan, form and document. [02_PCM Plan.pdf](#)

The coding is done according to six work packages:

G – documents for the WP1: Non-university capacity assessment

C - documents for the WP2 and WP3: Development and Activities of Competence Development Training Program

Q – documents for the WP4: Quality Control and Monitoring

D – documents for the WP5: Dissemination and Exploitation of Project Results

M – documents for the WP6: Project Management

- For the **project plan**, the code is **XXXP-VY**.

XXX is three initial capital letters of the plan, **P** for the plan and **VY** is for the version of the document.

For example: **QCMP-V1** is a Quality Control and Monitoring Plan version 1.

- For the **project form**, the code is **AF-XXX-VY**.

A is for the WP code, **F** is for the form, **XXX** are the three initial capital letters of a form and **VY** is for the version of the document.

For example: **QFT-V1** is the quality form template version 1 and **WMR-1** is the Work Package Monthly Report version 1.

- For the **project document**, the code is **AD-XXX-VY**.

A is for the WP code, **D** is for the document and **XXX** are the three initial capital letters of a document and **VY** is for the version of the document.

For example: **MD-PMR-V1** is the first PEC meeting minutes report.

The project documentation is very voluminous, it is almost impossible to actually count all the documents that were created up to the conclusion of this report. However, ALL the pieces of the project documentation are well kept in several ways and places. The Project Coordinator keeps all the project documents and soft copies of all the partner documents both in his personal server and computer and on the project website. Hardcopies are kept in his office. Members of the PEC and QCMB also keep all the records of their activities, reports, meeting minutes, etc. Some individual team members also keep their own records and documentation.

All the project official documents are available for inspection to any team member, without any restrictions, as well as to authorities of the partner universities.



3.1.7. Project Financial Management

The project budget handling was not within the scope of this auditing process. All the details on the project financial management procedures, including the general provisions, financial reporting, exchange rates, staff costs, travel costs and costs of stay, equipment costs, reimbursement procedures and budget transfer procedures, are described in detail in the Project Management and Communication Plan, Section 5, pages 36 to 44. Figure 3 on page 43 presents the Project Reimbursement Procedure and Figure 4 on page 44 presents the Budget Transfer Procedure.

[02_PCM Plan.pdf](#)

It should be emphasized here that in the Logical Framework Matrix of the project proposal as one of the risks (for WP 6 – the project Management) was listed “Unfamiliarity to the EU financial rules and regulations can demotivate consortium members”. This appeared due to the Project Coordinator’s experience in managing the previous Project of the Erasmus Plus program (MSIE 4.0), where the project members from the Thailand universities were not familiar with the said “EU financial rules and regulations”, what caused some delays in submitting the financial reports. To prevent that in realization of this project, a few instructional “seminars” were held for all the partners’ project team members and the detailed Guidelines were prepared.

3.2. Findings based on answers to questionnaires sent to all categories of the project team members

In order to prepare the audit interviews, auditor prepared questionnaires for all the categories of the project participants: the PC and the PEC members, the QCMB members and for the team members.

[18 Questionnaires forms.pdf](#)

The questionnaires were sent by e-mail to Dr. Danaipong Chetchotsak, who then distributed them to team members and collected answers.

Answers were obtained from the PC and all of the PEC members (7) and QCMB members (8), as well as 24 answers from 19 team members. The “discrepancy” here appears since some of the team members are involved in activities in two or even three Work Packages, so they considered as appropriate to provide multiple answers.

Questionnaires were intended to be anonymous (except for the PC), however almost all the team members did “personalize” their answers.

The questionnaires for the PC and the PEC members contained questions regarding all the phases of the project, from the origin stage, through the design and planning stage, to the implementation stage and the project mid-term evaluation stage. The questionnaires for the QCMB members and the team members covered less issues.

Based on the answers obtained from the team members, the auditor was able to pinpoint important issues that should have been addressed in discussions during the auditing interviews.

The following is the analysis of answers obtained. It contains auditor’s general remarks on answers obtained on each posed question and some of illustrative answers by the team members.

3.2.1. Analysis of answers obtained from the project coordinator

Some answers were not commented since they were simple “yes or no” or did not require any further elaboration by the auditor.

A: denotes the auditor’s remarks.



Project origin stage	
1	<p>Was there an analysis carried out of the existing Engineering and technology programs in the non-university sector at the Tertiary level in Thailand related to Sustainable Smart Industry 4.0? Which problems were identified to be solved with the project realization?</p> <p>We did make the analysis prior to the proposal development.</p> <p>While the country is moving forward aggressively for Thailand 4.0 and the government is financing several projects and several organizations, engineering, and technology programs in the non-university sector at the tertiary education level in Thailand do not benefit much from this campaign. They are not a key mechanism for the government to drive Thailand 4.0. The priority on most of the education-related activities has been for national universities for research excellence and for secondary vocational-technical schools to produce technical staff to support the growth of the industry especially the five government identified industry clusters. These vocational schools also received additional support from the industry. The non-university sector at the tertiary education level in Thailand is experiencing a challenging period. They are new universities that have been promoted from teacher colleges and vocational-technical colleges during the last decade to support the economic growth of the country. The former vocational-technical colleges with their technical expertise can continue producing technical staff and training the students of secondary vocational-technical schools. The former teacher colleges that have become local universities seem to be in a more difficult situation because their expertise and familiarity are not in engineering and technology.</p> <p>For their presence to benefit their local communities, several actions are needed to support the engineering and technology programs in the non-university sector. First and foremost, a capacity building, which will be the focus of this project will be required. Their teaching staff needs to be equipped with Industry 4.0 knowledge. They will also need to know more about modern education that puts the learner at the center and actively involve them in their learning with innovative teaching and learning methods to help build their competence. For them to be able to build their student's competence, the teaching staff themselves also need to go through a similar process to experience and understand clearly. Erasmus+ joint projects will make it possible for us to bring in EU experts from the project partner universities to share the EU best practice, to help develop an Industry 4.0 competence development training program, and to help train the teaching staff with up-to-date knowledge and modern education.</p> <p>A: This is the best explained core motivation for this project to be proposed. Nothing to be added or taken away.</p>
2	<p>Is there any document prepared as a result of such an analysis?</p> <p>No. The analysis was made according to public news, personal knowledge, observations and discussion with target group. The results were used for developing the proposal.</p>
3	<p>Is this project a continuation of another project(s)?</p> <p>Yes. It can be considered as the dissemination of MSIE 4.0 project.</p>
4	<p>Is it expected that another project will follow and therefore it is conditioned by this project success?</p> <p>We have not yet planned for the next project but I expect the continuation of the activities and outcomes of the project via a center to be established before the project ends.</p>
5	<p>How were the Project Coordinator and Project Executive Committee members appointed/ selected? Based on which criteria?</p> <p>PEC members are the partner leaders. Most of them were involved in the previous project who helped form the proposal from day one. A couple of them were assigned by the partners after the project was selected for funding.</p>



Project design stage		
6	Who and how approved the project objectives?	The PC discussed with the MSIE 4.0 leader who looked after dissemination activities (WP5) about the potential of the objective of ReCap 4.0 before approached all partner leaders to check interest and invite them.
7	Who set up the organizational structure of the project?	The partner leaders, agreed to use the same structure of the MSIE 4.0 project.
8	How were the risks defined/analyzed at that stage?	They were identified during the proposal preparation. The PC visualized the whole chains of activities and identified potential causes of failures of all activities.
9	Were the responsibilities and competencies of the project team members at that stage determined?	Yes.
	The clear objective led to the selection of partners. Based on their expertise related to the planned activities, initial responsibilities were assigned as WP leaders and co-leaders. Budgets were allocated accordingly. A: Obviously, the partner leaders were selected adequately, according to the planned activities within the project realization.	
10	Did individual team members know their competencies and responsibilities at that stage?	All partner leaders were informed about the objective and their roles. Some partner leaders consulted with their team members prior to accepting the roles.
	A: Consulting the potential team members prior to engaging them in the project realization and explaining the potential tasks was of the utmost importance so that the team members would know what is expected from them and if they were capable to answer to those requests. This was a smart approach, which should result in no team member to give up in the middle of some activity.	
Project planning stage		
11	Was there a defined and approved detailed plan of the extent of the project?	Yes. We had an online first meeting for all WP leaders to present their plan to the members at large. Prior to the meeting, all WP leaders were asked to go over their plan and make adjustment as necessary to fit with the COVID-19 situation.
12	Were there project work packages, outputs, deliverables and products defined in detail?	Yes. All WPs and deliverables were identified since the proposal preparation. All partner leaders had access to google document to participate in writing, observe progress and review.
13	Was the risk register defined/updated?	The initial risks were identified during the proposal preparation. Risks were assessed also once the project started. However, the long presence of the COVID-19 is beyond our expectation. Adjustment has been made along the way to fit with the situation that continuously change up until today.
	A: The last remark explains how the unfortunately changed situation forced the project team to adjust to project realization in the pandemic conditions.	



14	Did the composition of the project team change with respect to the previous stages? If yes, who was replaced and why?	<p>Yes. One partner decided to leave the project right after knowing the selection result. KMUTNB was invited to replace CMU. CMU was a strategic partner for the Northern region. After the departure of CMU, we did try to find another university in the North, but we were not certain about their commitment. We then decided to approach KMUTNB, the former partner. We did not select KMUTNB from the beginning because of the location and their members in the project are at senior level. We looked for young lectures to help execute training activities. <u>As a result, we had a specific request to the KMUTNB's team leader to bring in young lecturers to the project to help us complete the mission.</u> The leader has supported fully on this request.</p> <p>A: This request was very important, since the younger lecturers – potential team members would be a sort of guarantee for the project results sustainability after the project realization is completed.</p>
15	Did all the members of the project team know the project updated plan at any given moment?	We have published quarterly reports in Member Space (internal website) to update the progress to all members. We have also published activities on the project Facebook.
16	How were the project key activities defined?	According to the main objectives.
17	How were the length of activities and the overall length of the project duration estimated?	According to the scope of the activities and the numbers of parties to be involved in the activities (i.e., WP leaders, WP members, target group)
18	How was the project budget put together and by who? Where there any problems in putting the budget together?	<p>Budgets was allocated according to the activities. Partner leaders were informed about budget allocation for all activities. After tasks assigned, the PC was the one who put together the budgets and informed the estimated amounts for all partners.</p> <p>There was no issue on the budget allocation as far as I know.</p> <p>A: The budget was allocated to partners, as well as work packages and categories of the team members, according to Erasmus Plus program recommendations, i.e. rules and regulations. Budget allocation to partners was set according to their assigned and it was well balanced.</p>
19	Did individual persons know which activities they were responsible for?	It depends upon the internal communication within each partner teams.
20	Is the documentation from the project plan stage available?	Yes. The presentations were put on the Member Space immediately. The official PMCP was uploaded on the Member Space once it was officially approved by PEC.
Project implementation stage		
21	Were/are the project team members communicating without any major problems?	<p>Since most of the communications were online, problems can be expected.</p> <p>Furthermore, our focuses could be easily distracted by the situations the members deal about COVID-19 which were different from place to place.</p>
22	Did the Project Executive Committee meetings take place in accordance with the adopted rules and plan?	<p>We had been able to organize a couple PEC online meetings. We have not been able to organize onsite meeting. The communication on the progress is via the quarterly reports.</p>



	<p>The priority has been given to trainings. When the situations were safe to conduct trainings, we decided to do them first.</p> <p>A: This kind of “reorganizing” priorities was a good choice. Since the trainings (WP 2 and 3) are the core activities of the project, it is quite natural to be given priority in realization.</p>	
23	Did the project team meetings take place in accordance with the adopted rules and plan?	The WP leaders had an authority to call their meeting to move the project forward. WP1, WP2 and WP5 had their WP online meetings. Meetings between WPs were organized as well.
24	Did the composition of the project team change with respect to the previous stages? If yes, who was replaced and why? Please, elaborate.	No. All changes were made before we started the project.
25	Was the quality and quantity of achieved outputs monitored? How? Please, elaborate.	Yes. All WP leaders were asked to submit their quarterly reports every quarter.
26	Do you know what do you can make decisions about?	Yes
27	Do you know what is the task of each of the project team members?	Yes
28	Do the members of the Project Executive Committee know what are their tasks and competencies?	I think they know.
29	How does the project risk management take place?	In the quarterly report form, there is a section on risk management. All WP leaders and co-leaders can report them. The PC has also assessed the progress and contacted the WP leaders as in the case of WP4.
30	How do you monitor risks? How do you work with identified risks?	
	<p>Aware of deadline, COVID-19 situations, progress reported by the WP leaders and involvement in some activities.</p> <p>A: This shows that the project team was working hard to make up the time lost due to pandemic.</p>	
31	How and to whom do you communicate of the potential risk development?	The responsible WP leaders and/or co-leaders
32	Which measures have been taken based on the risk register, or as a part of the project risk management?	We assessed the level of threat and created potential solutions. Executed it if necessary.
33	How was the project budget monitored and reported (changes, drawing down of the budget)?	
	<p>All partner leaders were informed regular submission of financial reports. However, we have been unsuccessful on tracking the financial status so far because of late submission, no submission or incorrect and incomplete submission.</p> <p>A: This answer shows that putting the “unfamiliarity with EU financial rules and regulations” as a possible risk in the LFM in the project proposal was justified, as well as that it was not the only cause of delays. The COVID-19 created situation bears the blame, as well.</p>	



34	<p>Were there any problems recorded related to compliance with contractual obligations? If yes, what are they? Were those problems eliminated and how? If not, why? Please, elaborate.</p>	<p>So far there is no obvious problem. There has been delay of task deliveries which for the benefit of the doubt cause by the COVID-19 situation.</p>
35	<p>What project records do you keep? How are those records kept – in which form? Is the data being updated and how often?</p>	<p>Data, information and unofficial reports are kept on the Google platform. Official documents are posted on the project website and Member Space. For some documents, they have been posted only on the Member Space for publication purpose.</p>
36	<p>Who has access to the project records and to whom do you pass information on the project management/realization development?</p>	<p>All members have accessed. For some documents, they can edit but for some they can only view.</p>
37	<p>Who makes the decision to move/not to move the project into the next stage?</p>	<p>WP leaders and co-leaders in consultation with PEC.</p>
38	<p>Is the documentation from this stage of the project management available?</p>	<p>Yes</p>
<p>Project mid-term evaluation stage</p>		
39	<p>Were all the outputs, planned to be realized thus far, implemented, in what amount and quality? If not, why? Please, elaborate.</p>	<p>Yes. but not at full capacity. Some of activities, especially training, have been delayed due to travel and gathering prohibition during the pandemic.</p> <p>A: This is the point where the COVID-19 caused the biggest problems. No travel was possible, thus no meetings of larger number of people. All the meetings and majority of trainings had to be done online. That inevitably has led to delays in realization.</p>
	<p>Which parameters of the defined project objectives (to be achieved thus far) were met/ were not met? If not, why? Please, elaborate.</p>	
40	<p>WP1 has already been completed despite the delay.</p> <p>For WP 2, four out of five training modules developed by Thai have been completed, checked by QCMB and officially approved by PEC.</p> <p>One out of five training modules developed by EU partner has been completed. It will be soon checked by QCMB.</p> <p>Twelve Thai trainers have already been trained on three modules out of seven modules.</p> <p>For WP3, three modules have been offered to target groups in two regions.</p> <p>For WP4, QCMP has been officially approved by PEC. QCMB has reviewed documents on a regular basis. An external project evaluator has been appointed. Auditing process is ongoing.</p> <p>For WP5, DESP has been officially approved by PEC. The first E-newsletter were published. The second issue is expected in May. The project has been promoted to the target group at several occasions. More than one hundred faculty members from the target group initially registered to the training program. Project website, Facebook, and YouTube channel have been launched. International conference has been secured for promoting the visibility and outcomes of the project.</p> <p>A: This is a complete and detailed answer. No comment needed on its sincerity.</p>	



41	Were all the products, planned to be realized thus far, implemented? If not, why? Please, elaborate.	Yes. A few modules of the training program have already been offered to the target groups.
42	Did you propose any recommendations for improving the organization of work? No. The concern is more on the execution. The availability of the trainers and trainees at the same time is a big concern. All trainers have been asked to be ready and be flexible with their schedules. A: This shows how the unexpected situation was tried to be remedied. "All trainers have been asked to be ready and be flexible".	
43	Which measures to improve the project organization you proposed/ implemented? Please, elaborate.	All members need to understand roles and responsibilities and work collaboratively to achieve the project objectives.
44	How were the realized project outputs promoted? Please, elaborate.	We have promoted the outputs in various channels, including social media, email, onsite visit, and presentation at the national and international events.
45	Were the realized project outputs properly promoted to stakeholders? At which stakeholders was the promotion aimed? Please, elaborate.	Yes. We introduced the project to the council of the deans of the faculty of Industrial Technology, Rajabhat Universities. We have visited some of the Rajabhat Universities to introduce the project to the faculty members.
46	Do you consider that the project is a success <i>thus far</i> , i.e. are the project objectives met within the planned deadline(s) using the planned funds? Are all the predicted indicators and outputs (thus far) met? Please, elaborate. Yes. Our target group has expressed their appreciation. Their enthusiastic during the training as well as online coaching are other indicators. For the consortium, we have tried to move the project forward during this unpredictable challenging period. However, there are many factors that we have had no control over. We have been able to only be ready and flexible to adapt to changes. A: Very detailed and honest answer. The project team did their best to cope with the "unpredicted situation".	
47	Is the documentation from this stage of the project management available?	Yes. All WP leaders have submitted their WP quarterly report on time. Our project quarterly report is up to date and in the submission form.
48	<i>Is there anything you would like to add?</i> We do not use the pandemic as a scapegoat. However, it is no doubt that some of us, both our team members and target group, might have lost interests. They may have been in undesirable situations and may lose focus at some points. We have tried to understand everyone as much as possible, keep our heads up and move the project forward. A: The term "scapegoat" is even more appropriate than "excuse". The project team were trying not to blame all the problems on the scapegoat – COVID or use it as an excuse for not fulfilling their tasks.	



The auditor's impression is that the Project Coordinator is managing the project properly, especially considering the circumstances caused by the COVID-19 pandemic, which practically eliminated person-to-person contacts and even forced some of the trainings and seminars to be held exclusively online. However, there were some points in his answers that auditor felt needed further explanation, which was then clarified in the interview in the second phase of the auditing process.

3.2.2. Analysis of answers obtained from the Project Executive Committee (PEC) members

In the following three analyses of the team members' answers, the auditor's comments are given for all the answers, with some illustrative answers presented, as well.

Project origin stage		
	Question	Auditor's comments
1	Was there an analysis carried out of the existing Engineering and technology programs in the non-university sector at the Tertiary level in Thailand related to Sustainable Smart Industry 4.0? Which problems were identified to be solved with the project realization?	All the PEC members answered that they are aware that this kind of analysis was performed <i>ex-ante</i> the project proposal. Some of them participated in this analysis.
2	Is there any document prepared as a result of such an analysis?	This is an interesting point since majority of the PEC members consider the Capacity Assessment Report as the document prepared according to this analysis. That is not completely wrong, however, the deliverable DEV 1.3. was not prepared in the project origin (planning) phase, but during the project realization.
3	How were the Project Coordinator and Project Executive Committee members appointed/ selected? Based on which criteria?	The PEC members were appointed by their respective institutions and they are the leaders of the project realization at that partner (PL).
Project design stage		
4	Who and how approved the project objectives?	The PC and the potential PEC members.
5	Who set up the organizational structure of the project?	The PC and the potential PEC members.
6	How were the risks defined/analyzed at that stage?	According to eventual risks that usually appear in realization of this type of projects.
7	Were the responsibilities and competencies of the project team members at that stage determined?	All the PEC members agree that the team members competencies were defined.
8	Did individual team members know their competencies and responsibilities at that stage?	All the PEC members said that they knew what their responsibilities within the project realization are.
Project planning stage		
9	Was there a defined and approved detailed plan of the extent of the project?	All the PEC members agree that the plan was defined in details.

10	Were there project work packages, outputs, deliverables and products defined in detail?	The same here, all the PEC members agree.
11	Was the risk register updated?	They considered that the risk register was updated.
12	Did the composition of the project team change with respect to the previous stages? If yes, who was replaced and why?	All the PEC members were aware of the consortium change and the CMU being substituted by the KMUTNB.
13	Did all the members of the project team know the updated plan at any given moment?	All the PEC members said that they are aware of the Adjusted work plan, which was changed due to COVID-19 pandemic.
14	How were the project key activities defined?	PEC members consider that the key actions were defined based on the project planned outcomes.
15	How were the length of activities and the overall length of the project duration estimated?	The same applies here.
16	How was the project budget put together and by who? Where there any problems in putting the budget together?	They consider that the project was proposed by the PC with consulting all the project partners.
17	Did individual persons know which activities they were responsible for?	The PEC members knew of their tasks, not of all the other team members in detail.
18	Is the documentation from the project plan stage available?	They consider that it is.
Project implementation stage		
19	Do you know what are your tasks and competencies as the PEC member?	The PEC members stated that they know what their tasks and responsibilities were.
20	Were/are the project team members communicating without any major problems?	They did not refer to any problems in mutual communications, though it was limited to online contacts only.
21	Did the Project Executive Committee meetings take place in accordance with the adopted rules and plan?	The meetings took place regularly, again online only.
22	Did the project team meetings take place in accordance with the adopted rules and plan?	The meetings took place regularly, again online only.
23	Did the composition of the project team change with respect to the previous stages? If yes, who was replaced and why? Please, elaborate.	They were not aware of any new changes in the project consortium.
24	Was the quality and quantity of achieved outputs monitored? How? Please, elaborate.	The PEC members consider that besides the QCMB all the team members are responsible for the quality of the project realization, as well.
25	Do you know what is the task of each of the project team members?	The PEC members know their own tasks and about tasks of the team members for the respective WPs in realization of which they are involved.
26	How does the risk management take place?	By the Risk Management Committee.



27	How do you monitor risks? How do you work with identified risks?	The PEC members keep observing the actual outcomes, current situations affecting the project success.
28	How and to whom do you communicate of the potential risk development?	To the PC.
29	Which measures have been taken in the project, based on the risk register, or as a part of the project risk management?	Some rescheduling of the training of the trainers' activity in accordance with the restrictions due to the COVID-19 pandemic.
30	How was the project budget monitored and reported (changes, drawing down of the budget)?	By the PC.
31	Were there any problems recorded related to compliance with contractual obligations? If yes, what are they? Were those problems eliminated and how? If not, why? Please, elaborate.	All the PEC members agree that there were no problems related to compliance with the contractual obligations.
32	What project records do you keep? How are those records kept – in which form? Is the data being updated and how often?	The PEC members keep the records related to PEC activities, as well as to their individual involvements in WPs realization.
33	Who has access to the project records and to whom do you pass information on the project management/realization development?	To the PC and WP Leaders.
34	Who makes the decision to move/not to move the project into the next stage?	The PEC with PC.
35	Is the documentation from this stage of the project management available?	All the PEC members consider that all the documents are available.
<i>Project mid-term evaluation stage</i>		
36	Were all the outputs, planned to be realized thus far, implemented, in what amount and quality? If not, why? Please, elaborate.	The PEC members consider that delays in some activities' realization do exist and that they will be compensated, so that the project can be realized as planned.
37	Which parameters of the defined project objectives (to be achieved thus far) were met/ were not met?	They consider that most of the activities were achieved/realized.
38	Were all the products, planned to be realized thus far, implemented? If not, why? Please, elaborate.	The PEC members are aware of the certain delays, but consider as the most important that the trainings have started.
39	Did the PEC propose any recommendations for improving the organization of work?	Some of the PEC members did propose changes in some trainings' schedules.



40	Which measures to improve the project organization were proposed/ implemented? Please, elaborate.	Some PEC members tried to perform the activities as planned, as well as to communicate with all the stakeholders continuously in order to inform them what the next activities should be performed.
41	How were the realized project outputs promoted? Please, elaborate.	Through the project web-site, Facebook, YT channel, promotion seminars.
42	Were the realized project outputs properly promoted to stakeholders? At which stakeholders was the promotion aimed? Please, elaborate.	The PEC members consider that the outputs were promoted to the trainees and target groups from the non-university sector.
43	Do you consider that the project is a success <i>thus far</i> , i.e. are the project objectives met within the planned deadline(s) using the planned funds? Are all the predicted indicators and outputs (thus far) met? Please, elaborate.	All the PEC members claimed that they tried to manage and do the activities as planned despite the COVID-19 has been epidemic.
44	Is the documentation from this stage of the project management available?	The PEC members said that the documentation was available.
45	<i>Is there anything you would like to add?</i>	Majority of the PEC members did not have anything else to add to their answers. One member expressed gratitude to EU for financially supporting the ReCap 4.0 project.

3.2.3. Analysis of answers obtained from the Quality Control and Monitoring Board (QCMB) members

Project implementation stage		
	Question	Auditor's comments
1	Do you know what the task of each of the QCMB members is?	Mainly all the members answered that they know what their own tasks are.
2	Was the communication within the QCMB without any major problems?	All the QCMB members answered that there were no problems in the mutual communications. There was one slightly puzzling answer that was actually caused by the misleading English term using (interpretation instead of translation), which was explained to auditor during the interview.
3	Was the communication of the QCMB with the Project Coordinator without any major problems?	All the members agree that they had no problem in communicating with the PC though some considered that as unnecessary.
4	Was the communication of the QCMB with the Project Executive Committee without any major problems?	Same as above. No problems in communicating with the PEC members.
5	Was the communication of the QCMB with the project team members without any major problems?	Same as above. They consider that the communication with the team members "runs smoothly".



6	<p>Did the QCMB meetings take place in accordance with the adopted rules and plan? If not, why? Please, elaborate.</p>	<p>The meetings took place as planned, with some changes in dates due to pandemic. Of course, all the meetings were held online.</p>
7	<p>Did the project team meetings take place in accordance with the adopted rules and plan? If not, why? Please, elaborate.</p>	<p>The planned meetings were held, some members pointed that they had additional meetings if they found it to be necessary.</p>
8	<p>Do you know what the task of each project team member is?</p>	<p>This question was misunderstood by almost all the QCMB members. It was not asked if they knew the task of each individual team member, but as the team members in general and in their respective WPs.</p>
9	<p>How does the QCMB evaluate and approve changes in the project plan and realization?</p>	<p>Changes were evaluated and approved by the procedures defined in PCM plan and QCM plan.</p>
10	<p>Does the QCMB monitor the PEC actions? Are there regular communications /discussions /exchange of reports?</p>	<p>This question was also slightly misunderstood, since the point is not in controlling the PEC actions, the QCMB does not have that authority. The focal point was on regular exchange of information and help between the two teams each other if necessary.</p>
11	<p>Who monitors the risks? To whom are the reports sent?</p>	<p>To the Risk Managing Committee.</p>
12	<p>How does the risk management take place?</p>	<p>According to the risk plan, by the Risk Managing Committee.</p>
13	<p>When, how and to whom do the QCMB members communicate any risk development?</p>	<p>QCMB members inform the QCMB chair or Co-Chair about the risks, as well as the project team members from their own institutions.</p>
14	<p>Which measures have been taken in the project to eliminate effect of risks for the quality of the project realization, outcomes/products?</p>	<p>The measures were mainly aimed at preventing the risk that the results of the project and mainly deliverables, such as courses, would be of poor quality. QCMB use the questionnaires with satisfaction scores from the trainees.</p>
15	<p>Was the quality and quantity of the achieved outputs monitored?</p>	<p>All QCMB members agree that the quality and quantity of outputs was dully monitored.</p>
16	<p>Which measures have been taken by the QCMB to assure the quality of the project outcomes /products?</p>	<p>QCMB monitors the quality of the outcomes and deliverables according to the Quality Control and Monitoring Plan - (QCMP) by utilizing procedures, templates as reports, analyses, surveys, questionnaires, checklists and QCM visits.</p>
17	<p>What project records does the QCMB keep? In which form are those records kept?</p>	<p>All the documents are available on the Google drive at the address https://drive.google.com/drive/folders/1b5CG9-bN4EwNUPHkPcrOCgNNkVuRfJy?usp=sharing in the WP4 section.</p>



18	Who has access to the QCMB records? To whom are the information/reports on the current quality development of the project management/realization passed?	PC, PEC and WP Leaders and QCMB members have access to all the documents. The reports on the current quality development of the project management are sent to PC.
Project mid-term evaluation stage		
19	Were all the tasks, planned to be realized thus far, implemented at a standard level of quality? If not, why? Please, elaborate.	Yes, the tasks, planned to be realized were realized, but there has been a slight delay due to Covid-19. So, the plan was reviewed and adapted to the actual situation.
20	Which measures to improve the project organization were implemented? Were those measures implemented at a standard level of quality? If not, why? Please, elaborate	The measures to improve the project organization were taken by the PEC and PC and were in accordance with the measures provided by the QCM Plan and the PCM Plan.
21	Were all the outputs/products, planned to be realized thus far, executed at a standard level of quality? If not, why? Please, elaborate.	Yes. All the QCMB members pointed to an issue with a training event that obtained the low feedback from the trainees. QCMB reported this situation to the PC and PEC to take remedial action to respect the standard level of quality. Auditor demanded all the details about this case.
22	Do you consider, from the quality aspect, that the project <i>thus far</i> is a success? Are the project objectives met at a standard level of quality? Please, elaborate.	The QCMB members feel that the project has so far complied with all the requirements set out in the project proposal. They also consider that evaluation of the project products and monitoring of the activities realized out within the WP's were carried out properly and that care was taken to ensure that the dissemination was effective and that the project would have a significant positive impact in Thailand.
23	Is the documentation on the quality control and monitoring in this stage available?	Yes. All the documents are available on the Google drive at the address https://drive.google.com/drive/folders/1b5CG9-bN4EwNUPHkPcrOCgNNkVuRfJy?usp=sharing in the WP4 section.
24	Is that documentation at the standard level of quality?	All the QCMB members agree that all the procedures and tools used by QCMB are of the required level of quality.
25	<i>Is there anything you would like to add?</i>	The QCMB members did not have anything else to add to their answers, except for one member who emphasized that he considers that his job within the QCMB is important. Auditor agrees with that opinion.


3.2.4. Analysis of answers obtained from the team members

<i>Project design stage</i>		
	Questions	Auditor's remarks and some answers
1	Did you have/know your competencies and responsibilities at that stage?	Almost all the team members were also included in this stage and they knew their tasks then, with exception of one member from UPB, whose sole responsibility was related to WP 4.
<i>Project planning stage</i>		
2	Did you have/know which activities you were responsible for at that stage?	Almost all the team members were also included in this stage and they knew their tasks then, with exception of one member from UPB, whose sole responsibility was related to WP 4.
<i>Project implementation stage</i>		
3	How often did the project team meetings take place?	All the team members were participating in all the meetings related to their WPs, the planned and scheduled meetings, as well as the meetings that were organized due to some event that was not planned – i.e. if some of the team members felt that his/her team should meet to consider some problem in more detail or to consult with them. An illustrative answer: <i>“Not often, but every task or activity has been cleared and understood since starting of the project. We often communicate via e-mail and there is not obstacle to discuss or propose anything.”</i>
4	How many meetings were held and at how many you were present? Please, elaborate.	Here the answers varied from “No meetings related to my WP”, through one meeting a month, to several meetings a month, or even meetings every week.
5	Do you regularly communicate the actual status of project activities and individual outputs to the project manager? How? Do you prepare reports? Please elaborate.	All the team members were unanimous here, saying that they do communicate with the project management team, starting from their respective WP leaders, the partner leaders or even the PC, if they considered it necessary. An illustrative answer: <i>“Yes, by meeting on Zoom. During the additional WP-co-leading meetings. Also, contributions to quarterly reports.”</i>
6	If it was necessary to make project changes, do you know about the related processes?	All the team members are aware of the process for proposing changes for the project realization.
7	Were you able to propose any changes? Were they accepted/rejected? Please elaborate.	Here the answers varied, from “Yes, I proposed changes and they were accepted”, to “I did not propose any changes”. An interesting example was volunteered by the team member from UPB, who even sent their changes proposal to auditor and explained what she proposed to be changed in a certain procedure and that those propositions were accepted. Auditor is very grateful to that team member for providing such a deep insight in her activities.



8	<p>Were you able to monitor the results of the project realization up to now and their qualitative characteristics?</p>	<p>Almost all the team members have answered that they were/are able to monitor the project realization, regardless if it concerned their WP activities, or the trainings preparations and executions, or other activities. An illustrative answer on concrete tasks: <i>"Yes, in the evaluations of trainers participating in WP2 training which I provided".</i> There was one rather interesting answer, as well: <i>"I think so."</i></p>
<p>Project mid-term evaluation stage</p>		
9	<p>Are you satisfied with your role in the project realization? Please elaborate.</p>	<p>Absolutely all the team members were satisfied with their role in the project. Here the answer in the PC's questionnaire that the partner leaders introduced and explained the future tasks to potential team members was verified and turned out as the proof of the good planning of the project realization. Some illustrative answers: <i>"Yes. I believe that my current role is consistent with initial expectations relating to this project".</i> <i>"Yes, my competences and background in the topic of Industry 4.0 have contributed to the team's work."</i></p>
10	<p>Are the tasks assigned to you adequate with respect to your qualifications?</p>	<p>All the team members were satisfied with the tasks they were assigned to them. The team members mainly found that their tasks correspond to their level of knowledge on the project subject and level of educations. One answer should be emphasized here: <i>"I am happy to work on this project because it helps me to improve myself".</i></p>
11	<p>Do you think that you could execute some other tasks better? If yes, which one(s)? Please elaborate.</p>	<p>Almost all the team members were unanimous that they are OK with the given tasks. The example of roles exchange between the two MIC team members (from PEC to QCMB and vice versa) is an example that each team member "can find themselves in the adequate role". An illustrative answer: <i>"I understand that all of us could develop other work if provoked and if there was a need, but the team is well articulated and everyone is motivated".</i></p>



12	<p>What is your general opinion on the project realization so far? Please elaborate.</p>	<p>Here all the team members were unanimous that they consider the project realization to be a success taking into account the circumstances caused by the COVID-19 pandemic.</p> <p>Here is an answer of the team member from the Mahidol University, involved in realization of 3 WPs: <i>“Finding participants to answer the questionnaire and giving an interview were not easy especially during the Covid-19 pandemics, but we could do it by the collaboration of our team”</i>.</p> <p>And yet another illustrative answer on the way the team members were dealing with unpredictable situation in the project realization: <i>“I think the project has been well managed and well delivered thus far. Trainers and trainees are enthusiastic about training delivered. I agree that it has been some delays”</i>.</p>
13	<p>Any suggestions on what do you think that should/could be improved/changed in the project tasks/outputs? Please elaborate.</p>	<p>Some of the team members had no suggestions for any changes or improvements of the project activities, yet one had a clear message to all the team members: <i>“TEAMWORK. I understand that this project is considered as additional works for some. However, everyone should be involved with commitments and responsibilities. Keep things in professional ways.”</i></p>
14	<p><i>Is there anything you would like to add?</i></p>	<p>Usually this cell remains empty, the team members assume that they said enough answering the “mandatory” questions.</p> <p>However, there were a few answers here as well. <i>“We are open for any constructive developments”</i>.</p> <p><i>“I feel that the Project Director has demonstrated the commendable vision, commitment and focus”</i>.</p>

From all the answers to questionnaires from the PEC, QCMB and team members, auditor concluded that they are all quite sure that the project is on the right track and would be beneficial for the target group – the non-university sector tertiary level in Thailand – The Rajabhat universities, despite the delays and difficulties. The team members provided sincere answers. Some of the answers prompted the auditor to require further explanations, which was done during the auditing interviews.

3.3. Findings based on the audit interviews and a site visit

3.3.1. Interview with the Project Coordinator (PC)

The first part of interview consisted of going through some of his answers to the questionnaire.

Q.1. A. “The priority on most of the education-related activities has been for national universities for research excellence and for secondary vocational-technical schools to produce technical staff to support the growth of the industry especially the five government identified industry clusters”.

Auditor was interested which are the five prioritized industries in Thailand. The PC said that those include robots, food, tourism, medicine and manufacturing.



Q.33. “However, we have been unsuccessful on tracking the financial status so far because of late submission, no submission or incorrect and incomplete submission”.

Auditor wanted to know why were they “unable” to track the financial status so far? The answer coincided with the risk mentioned in the LFM that some of the Thailand partners’ team members are not familiar with the EU financial rules and regulations. It should be emphasized that the project managing team produce very detailed guidelines for the Thailand team members how to prepare any financial documents.

Q.36. “All members have accessed. For some documents, they can edit but for some they can only view.”

Auditor was concerned about privacy of data, if all the project team members have access to all the data. The PC explained that all the personal information is kept personal (e.g. financial data on various payments).

Q.40. The part concerned with the project results.

Auditor asked why the WP2 is not yet completed. The PC answered that some of the modules are completed, however, Modules 4, 6 and 8 are under revision.

Auditor wanted to know when and where is the final project conference (for dissemination of the project results) going to be held. The PC answered that it would be held in Thailand, probably by the end of July 2023.

Q.48. Auditor wanted an explanation why did “some team members lose interest” for conducting the project activities assigned to them. The PC’s explanation was that the probable cause is situation created by the COVID-19 pandemic and severe health authorities’ restrictions on “normal life”.

The second part of the interview was devoted to considering the problems that auditor spotted while reviewing the project documentation and in some answers to questionnaires by the other team members.

There were two main points: the delay in the project realization, especially WP2 (which automatically causes delay for the WP3 as its continuation) and the case of the training that received the “poor feedback” from trainers as several PEC and QCMB members mentioned in their answers.

The PC explained that the delay in realization of the WP2 was caused by the fact that European partners are late in completion of the training modules. There are ten modules, five to be developed by the Thailand partners and five to be developed by the European partners. From the five Thai modules four are officially completed, while from the five EU modules only one is completed and still unofficially.

For the delay of the WP3 the part of the cause is not completed WP2. The other part lies in difficulties in organizing the training for the target group, despite their well accepting the project and willingness to attend the trainings. The WP3 team is trying to avoid overloading the trainees. The availability of the trainees had to be checked before scheduling the training. Though the training is opened at ReCap 4.0 training centers all over the country, traveling remains challenging for many potential trainees. However, some trainees were even willing to travel a few hours on their budgets to attend. This is a very good indicator of how they appreciate the project.

That “problem” could be solved by extending this project – creating its follow-up to cover the whole spectrum of the Rajabhat universities.

Regarding the poor feedback, the auditor’s suggestion was to try to first, prior to training, perform some sort of test of the potential trainees to find out what are their background and knowledge and, if necessary, organize a preparatory seminar, for one day (or half-a-day) to raise their knowledge to the level that they would be able to follow the training materials fully and easily.

The PC said that this case is already “going through the routine”, meaning that the report is submitted to QCMB, that they are taking action to remedy the situation, which will be approved by the PEC and then executed.

The auditor was informed that trainees are not obliged to pass any test after the completion of the training, but they do receive a certificate that they attended the particular training.



At the end of the final – concluding auditing session with the Project Coordinator, auditor asked the PC to give his thoughts on performance of the project partners. Here are some of his remarks:

“King Mongkut's University of technology North Bangkok (KMUTNB) – P2, has contributed regularly to the progress of the project. Besides supporting the project's progress in general, KMUTNB co-led WP1 on non-university capacity assessment, especially on Task 1.3 of conducting the survey, and successfully delivered the results. Despite the delay on the subsequent task, WP1 has been completed. In addition, their three Thai trainers are participating in the Train the Trainer Program regularly.

“Khon Kaen University (KKU) – P3, has contributed regularly to the progress of the project. Besides supporting the project's progress, KKU is responsible for developing and giving training on Applications of Optimization and Technology in Value Chain. They have already developed the module and offered it to the target groups in the Central (also including the Eastern) and Southern Thai regions. The trainer is offering coaching sessions for these two regions. The training for the northern region is being scheduled for July. The exact dates need to be confirmed with the trainees. The training on this module for the Northeastern region is expected to be by the end of September. In addition, their three Thai trainers are participating in the Train the Trainer Program regularly. KKU is also active in quality monitoring and control of the project as a co-leader. Since the person assigned to this role is new to the Erasmus+ project, he has not yet fully understood his role and responsibility but has made good progress.

Mahidol University (MU) – P4, a new partner, has contributed regularly to the project's progress. Their three Thai trainers are participating in the Train the Trainer Program regularly. Besides supporting the project's progress in general, MU leads WP5 to disseminate and exploit the project results. Despite the pandemic, the WP5 leader has been able to maneuver the activities to a certain extent to promote the visibility of the project. MU has also hosted three training sessions for the central region.

Prince of Songkla University (PSU) – P5, has contributed regularly to the progress of the project. Their three Thai trainers are participating in the Train the Trainer Program regularly. Besides supporting the project's progress in general, PSU leads WP3 in managing training activities for the target trainees from the non-university sector. Due to the pandemic, it has been challenging to plan activities during the project's first one and a half years. However, as the leader of the WP, PSU should be more active to ensure a high number of participants in all training sessions scheduled. The numbers of the southern region's primary and secondary target groups have been much lower than expected.

Mary Immaculate College (MIC) – P6, also a new EU partner, has contributed regularly to the project's progress. Besides supporting the progress of the project in general, MIC, as the co-leader of WP2, has played a significant role in developing the Industry 4.0 Competence Development Training Program. MIC is responsible for developing and giving training to Thai trainers on Innovative Teaching and Learning Methods and Coaching and Mentoring. They have already offered the training for the first module. They are coaching the Thai trainers on the module. They are preparing to host coaching sessions and PEC meetings between June 27, 2022, and July 1, 2022. In addition, they have already developed the second module and are preparing training materials. They plan to offer the second module to the Thai trainers in September.

Politehnica University of Bucharest (UPB) – P7, leads quality monitoring and control of the project, like the previous MSIE 4.0 project. The person assigned to take this leading role, however, is different. It was an unexpected challenge at the beginning of the project to set a QC system for the project, although the previous system had been adopted. UPB is also responsible for developing and training the Thai trainers on Digital Manufacturing. The development of the module has taken much longer than expected. The contents the development team has designed were too much to cover within limited training time. Their understanding of the mission of the project and the needs of the target groups is limited. As a result, the direction of the module still needs to be fine-tuned. UPB assigned a new young enthusiastic member to lead their team, however, her unfamiliarity with Erasmus Plus' rules and regulations has created concerns.



University of Minho (UMinho) – P8, leads WP1 on the assessment to understand the status of the target group, like in the previous MSIE 4.0 project. WP1 is completed successfully. Another vital role of UMinho is developing and training the Thai trainers on Project-based and Problem-Based Learning and Industrial Management in Industry 4.0 Era. The development of these modules has taken much longer than expected. We have a high expectation of receiving up-to-date knowledge from EU members. We all place a great value on the knowledge that our EU members bring to the table. They should be far superior to anything our Thai teams could provide.

Tasks have been allocated according to the competence of the partners. However, it is possible that the members of all partners may have faced personal challenges during the pandemic, causing them to lose focus or give priority to their other commitments”.

Project Coordinator of course, did not comment on his own institution, the Asian Institute of Technology, (AIT) – P1 – the coordinating partner. Auditor’s opinion is that AIT is also regularly contributing to the project’s progress. All the interviewed project team members agreed on this conclusion, as well.

3.3.2. Interview with the Project Executive Committee (PEC) members

All the PEC members were present at the interview. Auditor asked about points that were not completely clear from their answers, as well as some from the review of documentation.

The PEC member from KMUTNB also explained that some team members were replaced based on better competency and readiness to work on the project. He additionally emphasized that all the decisions in his team were brought by consensus of the team members. His answer on Q.37 was very indicative: “We can achieve what we expected in time”, his explanation was that he hoped that the lost time can be made up.

The PEC member from MU was asked what was meant with “direct letter and direct calling” in answer to Q41. He explained that this was referred to direct e-mail person-to-person and not communicating via the project web-site.

The PEC member from MIC explained (for Q.29) that they did travel to Thailand and delivered one training for 15 hours and were about to deliver coaching for the two modules.

The PEC member from UMinho gave the detailed answer on all the meetings that they held (Q.22): “Due to the COVID pandemic, there were no face-to-face meetings and therefore these types of meetings were fewer than planned. Overall, we may have had the same number of meetings as planned but were online. We had one general meeting and two leaders’ meetings. Additionally, we had one WP1 general meeting and all partners had meetings with their teams along with the project execution”.

The PEC member from UPB explained that they had to perform some modification in the team: “By comparison to the original UPB team that was envisioned for this project as outlined in the project proposal, there were certain modifications. These modifications were caused primarily by the unavailability of some individuals due to overlapping responsibilities or specific exigent circumstances”. At the interview she explained that the “exigent” circumstances she meant the situation caused by the COVID-19 pandemic. Her answer to Q.43. shows that the team members for this project were properly selected, since her enthusiasm is impressive: “Yes, I believe that the project has been successful thus far and it is my sincere impression that the project will manage to achieve its objectives and further strengthen institutional and personal ties between participants as well as deliver on the proposed goals to the benefit of the primary target groups”.

3.3.3. Interview with the Quality Control and Monitoring Committee Board (QCMB) members

All the QCMB members were present at the interviews. Auditor asked about points that were not completely clear from their answers, as well as some from the review of documentation.



Almost all the QCMB members pointed (Q.21.) at the problem with the training that received the unsatisfactory feedback from trainees. As explained by the PC that is “in the process” of solving the situation.

The QCMB member from KKU actually gave the complete procedure how a problem like this is dealt with (his answer for Q.12): *“If QCMB members have detected a risk, he or she can notify or make some comments in the review report. The QCMB Chair or Co-Chair will report the risk to PC. For example, QCMB Co-Chair along with some of the members have prepared the training evaluation report and found that there was a risk occurred, i.e., one of the training events has received unsatisfactory feedback from the trainees. QCMB Co-Chair had to notify this the PC and PEC about this incident. Now it is in the process of preparing the report”.*

The QCMB member from MIC emphasized that for improving the project organization some “clearer explanations” were used (answer to Q.20). During the interview she explained that some of the procedures and instructions needed some corrections, to be properly applied.

The QCMB member from UMinho emphasized that in his WP in addition to the planned meetings, other meetings were held whenever necessary (to deal with decisions/actions, mainly related to deliverables). He also explained that some activities had to be rescheduled due to COVID-19 pandemic.

The QCMB chair gave several explanations on his answer to different questions, e.g. for Q.6 - If there are different opinions on the deliverable evaluation, the Chair or the Co-chair organize a meeting to resolve the issues.

The auditor wanted to know what kind of QCMB visits took place, if any and how would they be organized, since no such visits were predicted in the QCM Plan? This was caused by QCMB chair mentioning QCM visits as one of the ways to control the project realization quality (answer to Q.16). There were no such visits yet (obviously due to pandemic), but if they were to be organized, that would mean some major changes in the already approved QCM plan.

The full explanation of the training quality evaluation is presented in report “WP4 - Quality Control and Monitoring Training Evaluation Results vol. 1” with complete details on training number 7 where the feedback from trainees was unsatisfactory (average grade below, on a scale 1-5).

[19 QCM Training evaluation results.pdf](#)

[20 ReCap 4.0 Status of the Training Report 10.07.2022.pdf](#)

[21 Training Evaluations.PDF](#)

3.3.4. Interview with the team members

Total of 18 team members were present at the interviews. Auditor asked about points that were not completely clear from their answers, as well as about their general impressions on their own roles in the project realization and about the project as a whole. Since some of the team members were participating in realization of 2 or even 3 WPs, some provided multiple sets of answers to the same questionnaire and even were present at different interviews, concerning the all the WP’s in realization of which they participated. Some of the most illustrative or interesting answers are presented in section 3.2.4.

All the team members were satisfied with their roles and assigned tasks. They all cited the difficulties due to pandemic, but were not trying to make that as an excuse.

They all also emphasized that they had numerous meetings regarding the project realization, frequently more than it was planned. It seems that they all adopted the reasoning that the problems are better solved when presented to the whole team, get opinion and advise from colleagues. The only exception from this behavior was one team member from UPB, since her tasks were not started yet and she did not have any meetings related to it (WP 3 – training and coaching).

Proposing of changes was done according to the procedure defined in the PCM plan, however, here they also used the team work to define the proposal for changes prior to submitting it to the WP leader and/or the PCM.



The best illustration of the project team members opinions on the project realization is probably this answer to Q.12. of one of the team members: *“I am impressed with how the project dedicated to enhance the community. Huge effort! It is a very delightful moment when many of our trainees expressed that they obtained practical experiences, they could understand the learnt lesson easily during the class hours and they knew how they can improve their teaching practice, as well as enhance lessons for their classes. Some instructors saw chances to apply learnt tools and techniques to enhance their own research and their advises to industry and local communities”.*

3.3.5. Interview with the project Associated Partners

Auditor had two meetings with representatives of the project Associated partners, via ZOOM.

1. Assistant Professor Suphawut Paka, Dean of Industrial Technology Faculty of Lampang Rajabhat University.

Professor Paka expressed hope that the project would have the good impact on his faculty and university. They were the first time participating in a project of this type and he said that many people are enjoying working on this project. The first training of the Thai trainers at this university was held in May 2022. He considers that the project will bring benefit to his school in the curriculum development.

The Rector of the Lampang Rajabhat University provides the strong support to their participation in the project realization. They are also promoting the project to other North Thailand universities and they were expecting a visit from another North Thailand university who expressed interest to join the project. Professor Paka also emphasized that they already started to implement the knowledge that trainees gained during the trainings.

2. Assistant Professor Sinatra Koslanant, Industrial Technology Faculty, Rambhai Barni Rajabhat University

Rambhai Barni is a small university in east Thailand. The trainees learned how to communicate and obtained a lot of other useful skills. For instance, they did not know all the different ways and types of communications. It is important for them to develop and to share the knowledge on product design to local companies. They come for the “fruit capital” of Thailand, which produces more than 10 000 tons of fruit. They meet once a month with the project participants. At their training two modules were offered – on communication skills and the product design.

Professor Sinatra Koslanant considers that the project was very useful for this university, thus far. The next step would be to include the gained knowledge to improve the faculty curriculum and to use it to help the local community to create the new center for tourism, to improve the existing products’ designs and to make the new ones.

3.3.6. Visit to Faculty of Engineering, Mahidol University

Auditor had also a chance to make a short visit to Department of Industrial Engineering at Faculty of Engineering of Mahidol University.

The following representatives of the project realization were present:

Dr. Eakkachai Warinsiriruk, Industrial Engineering Department Head
 Asst. Prof. Dr. Tuangyot Supeekit
 Assoc. Prof. Dr. Thananya Wasusri
 Mr. Gunn Kanatarntip
 Dr. Noppakorn Phuraya

The meeting was held in the classroom/command room for the project online training, where the new equipment that they received within the project realization, was installed.



Mahidol University is the only “new” Thai partner in this project, meaning that they did not participate in the MSIE 4.0 project, that was realized by AIT as the coordinating institution, which was the preceding to the ReCap 4.0 project. However, they did fit into the consortium very well. Mahidol University is the leading partner for the WP5 (Dissemination, Exploitation and Sustainability of the project results). They received new equipment aimed for the project realization.

The project/faculty representatives were presenting the role of their faculty and university in the project and expressed the hope that their contribution will help to successful project realization and completion.

The auditor was also able to see the impressive robotics laboratory, the machining workshop.

Auditor was impressed with the presented facilities, as well as by enthusiasm of the project team members of this partner.



4. Audit conclusions and recommendations

This is the audit report on the mid-term evaluation on the ReCap 4.0 project implementation and it covers the period from 01.02.20221. to 15.05.2022. Since the auditor was in the contact with the Project Management Team (PMT) also after the audit session in Thailand, for the purpose of preparing this report, the data were available on the project results until 10.07.2022 and are also included in this report. The help from the PMT is greatly appreciated.

Based on reviewing the documentation presented by the (PMT), audit interviews with all the categories of the project team members, as well as based on visits to project realization sites, the auditor was able to draw the following conclusions, related to timing, project management and quality control and dissemination and exploitation of the project results activities.

This evaluation did not include evaluation of the project implementation compliance with the legal regulations of the European Commission program Erasmus+, nor the control of the financial matters related to the project realization.

Audit objectives, related to interviews with project management and the team members, as well as to on-site visit to project realization sites, were met in accordance with the mutually agreed audit plan.

The Project Consortium consists of 8 partners, five Thailand universities: Asian Institute of Technology (AIT) as the coordinating institution, King Mongkut's University of Technology North Bangkok (KMUTNB), Khon Kaen University (KKU), Mahidol University (MU), Prince of Songkla University (PSU) and three EU universities: Mary Immaculate College (MIC) from Ireland, University Politehnica of Bucharest (UPB) from Romania and University of Minho (UMinho) from Portugal.*

****Originally (in the project proposal) Partner #2 was the Chiang Mai University (Muang District, Chiang Mai, Thailand), which withdrew from the project after it was approved and was replaced by the King Mongkut's University of Technology North Bangkok (Bangkok). All the EACEA procedures for this substitution were followed and the substitution was approved; all the documentation on this is available.***

The Project coordinator is Dr. Pisut Koomsap, Associate professor from Asian Institute of Technology (AIT)

The project is realized through the following six Work Packages: WP1 – Non-university capacity assessment, WP2 – Sustainable Development of Industry 4.0 Competence Development Training Program, WP3 – Capacity Training for Non-University Sector at Tertiary Level in Thailand, WP4 – Quality Control and Monitoring, WP5 – Dissemination, Exploitation and Sustainability of Project Results and WP6 – Project Management.

The Workload distribution between the Work Packages and activities is well balanced (WP1 – 8 %, WP2 – 19 %, WP3 – 28 %, WP4 – 14 %, WP5 – 17 % and WP6 – 14 %).

The same goes for the work load distribution between the staff categories (Teachers/trainers – 57 %, Technical – staff 22 %, Administrative staff – 11 % and Management staff – 10 %).

The budget is also evenly distributed between partners, according to the tasks that were assigned to them.

The budget distribution to Work Packages is also commendable, since the largest amount is allocated to the two most important Work Packages – WP2 and WP3.

The original Workplan from the project proposal had to be adjusted due to the unpredictable circumstance (COVID-19 pandemic), thus the project realization started only on 01.02.2021., which caused the initial delay of two and a half months, what inevitably caused delays in the project implementation – tasks and activities execution. Some further small adjustments would also be inevitable for such a voluminous and complex project. It should be also emphasized that the target group of the project realization – the non-university sector at the tertiary level of education – consisting of the Rajabhat universities – is spread over the whole territory Thailand. So, only traveling of trainers and trainees to the training sites requires long journeys, which can also contribute to delays.



This project is a “natural” continuation of the project MSIE 4.0, also of the Erasmus Plus programme, so its results are used for creating curricula and teaching materials for the training programs of WP2 and WP3 of this ReCap 4.0 project.

The project management is executed by the Project management team (PMT) according to procedures adopted in the Project Management and Communication Plan (PMCP). The PMT consists of the Project Executive Committee (PEC) whose members are the Partner Leaders (PL) – representatives of the project consortium members, as well as of the Administrative Members. The PMT is chaired by the Project Coordinator, professor Pisut Koomsap (from AIT),

The project quality control is executed by the Quality Control and Management Board (QCMB), chaired by Professor Andrei Szuder (from UPB), according to procedures adopted in the Quality Control and Management Plan (QCMP).

The risks to project realization are dealt with by the Risk Management Committee, according to procedure adopted in the Risk Management Plan (RMC). The RMC consists of the Partners’ Leaders (PL) and is chaired by the Project Coordinator, professor Pisut Koomsap (from AIT).

The project results dissemination, exploitation and sustainability are executed by the Dissemination, Exploitation and Sustainability Committee, chaired by Dr. Tuangyot Supeekit (from MU) according to the Dissemination, Exploitation and Sustainability Plan (DESP).

Despite the efforts of the project management and team members, realization of the Work Packages 2 and 3 is delayed. The main reason is, of course, the COVID-19 pandemic, though the team members also bear partial responsibility for this situation. As already explained here, related to the Workplan adjustment, the project implementation started with two and a half months delay. The health authorities in Thailand imposed restrictions that were/are extremely strict, thus practically no travel was allowed for more than a year since the project realization started. All the communications and seminars – promotional or related to trainings, as well as some trainings, had to be held online only. That was another source for delays. It should also be mentioned that the EU partners were prevented to travel to Thailand until the beginning of 2022.

There was another problem that should be mentioned – a single seminar received “unsatisfactory” grading from trainees, as pointed by some QCMB members. The problem was that at that particular training there were two groups of trainees with different backgrounds and prior knowledge on the subject of training. Training is open to faculty members who has interest in a particular topic. Those with background come to upskill, the others, with no background, come to reskill. Thus, part of the trainees was not able to follow the lecturing and was not satisfied. Solving of this problem is ongoing and it is dealt with by the adopted risk management procedures.

The auditor's conclusion is that the Project Coordinator, professor Pisut Koomsap, is running this project very well, with extreme responsibility and paying attention to all the details, as well as the project as a whole. He was also praised by the team members present at audit interviews, as well in their answers to questionnaires, for his commitment to this project. The whole Project Management Team deserves the praise, as well and so do the other team members for devoting their time and efforts to realization of this project in extraordinary circumstances, we all suffer from.

The conclusion of the auditor is that the QCMB is doing a great job in keeping the execution of all the activities, as well as of all the outcomes and deliverables, at the required level of quality. The controlling of the project realization and results quality is the most responsible task.

The DES Committee is successfully fulfilling their tasks in the project and its results promotion and dissemination. The project web-site is created, as well as the Facebook page and the YouTube Channel.

Auditor is compelled to emphasize that all the team members, were more than willing to help in preparing this evaluation, starting from providing the auditor with all the required and available documents, organizing the audit interviews, informing of any changes and all the problems were dealt with without hesitation and with commendable responsibility.



It is extremely important to emphasize that all the team members contacted, either through questionnaires or interviews, provided their answers sincerely and honestly without hesitation. So, the auditor was in a position to get a real picture of the status of the project realization, the team members attitudes and responsibilities. Thus, this report presents the real situation of the project implementation, without any embellishment and/or misrepresentation.

It is also important to point out that no team member was using the COVID-19 pandemic as an excuse for problems in realizing his/her own tasks within the project. The pandemic was blamed for lack of person-to-person communications and restrictions on traveling.

Auditor is free to suggest some actions that should help for more efficient project realization, as well as to secure the project's completion in time and sustainability of its results.

What concerns the problem of the project realization delays, the project team members have to work hard to make-up for the lost time. Auditor is aware that this is just a usual phrase, but it absolutely applies here. Another advise is try not to invent the new procedures that were not planned, do not ask for "special" reports for the WP leader only, when it is not necessary, no event should be organized that is "out of scope" of the usual accepted procedures (like the QCM visits). There is simply no time for any "creative" behavior, the project tasks and duties are quite enough burden and all the new added (unnecessary) activities would just increase the delay.

Auditor suggested to the Project Coordinator and the PEC members to reorganize and possibly reschedule activities of WP2 and WP3 so that they would be executed in parallel, namely to run simultaneously. This means that as soon as the certain module from WP2 is finished its pandan of WP3 should start. There is no need to wait for the WP2 to be completed as a whole to start executing the WP3 activities.

What concerns the problem with trainees of different backgrounds and insufficient prerequisite knowledge, the solution should be in two parts. First, there should be some kind of testing, probably through an adequately prepared questionnaire, to find out what is the potential trainees' knowledge on the course subject. The second part would be in organizing short preparatory seminars for the candidates that do not possess the adequate level of knowledge, which would allow them to follow the course without any problems.

Another point is that trainers have to be aware of the knowledge level of the trainees. They cannot lecture on the level that is too high for trainees to comprehend the matter, while the course materials' level must be adequate. There was one case that the proposed course material was too long and too expert, while in the other case the course material was at the level of Wikipedia collected articles. Neither is allowed and the trainers must behave responsibly.

Some of the planned activities should be moved forward in time, so that they should be completed at least a month or two before the final project conference (like creation of the Innovative Teaching and Learning Center), while the conference itself should not be in the last month of the project implementation, as well. There should be enough time left for each of those events for processing and approving the respective report, since the procedure includes several steps and lasts at least a month.

Auditor is grateful to the ReCap 4.0 team members for all the help they provided that was necessary to evaluate the project implementation and to prepare this report. The special thanks are offered to Project Coordinator Professor Pisut Koomsap, to Dr. Danaipong Chetchotsak and to Ms. Duangthida Hussadintorn Na Ayutthaya.

Ružica Nikolić

Auditor

Professor Ružica Nikolić, PhD

**In Žilina,
09.08.2022.**