

TABLE OF ACHIEVED RESULTS

<u>Title and reference number of the work package (WP)</u>	PREPARATION: Skills 4.0 Analysis and Design of Teaching and Learning material (WP1)
<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	<ul style="list-style-type: none"> • The assigned tasks start and finish on time • Reporting documents will be ready by the deadline with the proper content • The number and the quality of the references • The number of SME's involved in the survey per country • A new Skills model is proposed and validated • The number of modules defined per domain • A syllabus is defined for each module • A learning strategy is defined per domain • The pilots are defined per domain • The sessions for the training of the trainers are scheduled • The sessions for the training of the students are scheduled • Number of potential trainers trained • Number of potential students trained

Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
T1.1- 1	Literature Review of Industry4.0	15/11/2018	31/07/2019		The objective of this task is to highlight the role and importance of skills and competencies in Industry 4.0 and the requirement of new skills and programs in HEI's curricula in developed and developing countries.	<ul style="list-style-type: none"> - The deliverable D1.1 finished on time - The number of literatures referenced: 67 - The quality of the literature referenced is "High" which can be justified by the following aspects:
T1.1- 2	Literature review: Definition of Industry 4.0	15/11/2018	31/07/2019		The D1.1 Deliverable describes the analysis of the skills and knowledge requirements. It also analyses the current	

					teaching and learning methods in the area of Industry 4.0 and compares the evolution of skills to Skills4.0	<ul style="list-style-type: none"> • High relevance between the subject of the literature and project topic. • 92% of the referenced articles have been published in recent years (between 2016 and 2020) • The referenced articles are peer-reviewed • The referenced articles have been selected from tier-1 and tier-2 conferences and journals. • The referenced articles are taken from well-reputed research databases include SCOPUS, ACM, IEEE, Google Scholar • The mean value of total citations of literature referenced is: 78% - The number of curricula and programs studied: 26 - Number of teaching/learning methods analyzed for the four domains: 14 - Number of Asian/European teaching/learning methods analyzed for the four domains: 19 - “High” quality study of knowledge and skill requirements - A comparative study was completed successfully for deeper understanding the evolution skills 4.0
T1.1- 3	Literature review: Analysis of existing concepts & models	15/11/2018	31/07/2019		Analysis of the existing skills concepts and models	
T1.1- 4	Analyze of the current teaching and learning methods in Asia (per country & by domain)	15/11/2018	31/07/2019		Analysis of the existing teaching and learning methods	

						- A “high” quality analysis has been completed successfully and recommendations are proposed
T1.2 - 1	Identify the skills required by Industry4.0	15/11/2018	31/07/2019	Asia	Identify the skills required by Industry 4.0 by conducting surveys and in-depth interviews with industries, and companies in the project partner countries, organizing workshops with companies, and analyzing relevant reports from European and international research projects.	- The questionnaire has been developed and validated successfully in collaboration between industry and academic partners. - The number of SMEs surveyed in “China” is: 95 - The number of SMEs surveyed in “Malaysia” is: 100 - The number of SMEs surveyed in “Thailand” is: 100
T1.2 - 2	Define the maturity model and the structure of the questionnaire (framework)	15/12/2018	15/03/2019		Design the maturity model and the questionnaire.	- The number of replies returned by Chinese companies is: 87 - Number of small companies surveyed: 5 - Number of medium and big size companies surveyed: 82
T1.2 - 3	Define the questions & validation of the questionnaire	15/05/2019	15/03/2019		Validation of the questionnaire.	- The number of replies returned by Malaysia companies is 86 - Number of small companies interviewed: 19 - Number of medium and big size companies interviewed 68
T1.2 - 4	Deploy the questionnaire in Asia	15/02/2019	15/05/2019		Deploy the questionnaire	- The number of replies returned by Thailand companies is 92 - Number of small companies interviewed 23 - Number of medium and big size companies interviewed 69
T1.2 - 5	Summarize the survey	15/04/2019	31/07/2019		Analyze and synthesize the survey	

						<ul style="list-style-type: none"> - Number of workshops organized in “Chiang Mai” (2) - Number of workshops organized in “Chengdu” (1) - Number of relevant reports studied/investigated (20 questions for the survey) - Maturity model was defined successfully in collaboration between the industry and academic partners - “High” quality analysis is completed successfully - Number and quality of the recommendations based on this analysis (6 factors were analyzed to better understand the benefits of Industry 4.0 in Asian industrial enterprises based on Structural Equation Modeling)
T1.3 - 1	Analyze the gap by overlapping the skills4.0 with the existing skills in HEIs.	15/05/2019	29/02/2020		<p>Two main objectives of this task:</p> <ul style="list-style-type: none"> - Analyze the gap between the skills acquired in training in HEIs and the skills required by Industry4.0(defined in the T1.2). - Develop a new model of Skills4.0 in-line with the needs of the market (emerging skills; disparate skills, shift skills...). <p>The D1.2 Deliverable produced by M6 analyses the gap by overlapping the skills 4.0 with the existing skills in HEIs. This analysis allows the development of an emerging model for skills 4.0</p>	<ul style="list-style-type: none"> - A “High” quality gap analysis is completed successfully - 35 Topics offered by HEIs Asian curricula that correspond to Industry 4.0 required skills are studied: <ul style="list-style-type: none"> - 6 are vital for companies - 9 are of very high importance for companies - 8 are of high importance for companies

					(emerging skills; disparate skills, shift skills...).	
T1.3 - 2	Analyze the gap by overlapping the skills4.0 with the existing skills in HEIs.	15/05/2019	15/07/2019		The detailed gap analysis	<ul style="list-style-type: none"> - 4 are not very important for companies - 7 are not important for companies - 1 has not yet been considered by companies
T1.3 - 3	Develop an emerging model: Structure & fundamental	15/07/2019	15/10/2019		The design of the Skill emerging model	Curricula coverage according to the importance of the topics for companies:
T1.3 - 4	Develop an emerging model: Emerging Model first draft	15/10/2019	15/01/2020		The development of the Skill emerging model	<ul style="list-style-type: none"> - On 6 which are vital, 4 are covered - On 9 which are of very high importance, 3 are covered - On 8 which are of high importance, 3 are covered - On 4 which are not very important, 1 is covered - On the 8 last (not important, not yet been considered) 1 is covered
T1.3 - 5	Develop an emerging model: Refinement of Skill Model 4.0	15/01/2020	29/02/2020		Validation and refinement of the Skill 4.0 model	<ul style="list-style-type: none"> • A “High” quality new skill model is developed. • The new skill model allows to quantify and qualify knowledge transference based on KPIs associated with the maturity in 4 Shyfte domains. • Number of publications: 4 • This new skill model will be implemented & validated in WP2
T1.4 - 1	Develop the Skills 4.0 learning framework - Identify the relationship	15/05/2019	29/02/2020		Develop the teaching and learning framework, related to the four domains, to minimize the skills gap according to HEIs	<ul style="list-style-type: none"> • The relationship between the skills and the Shyfte four domains is defined

	between the skill4.0 and the Shyfte 4 domains				and Industry 4.0 requirements (defined in task T1.3). The D1.3 Deliverable, based on the report D1.2, proposes skills 4.0 learning & teaching framework to minimize the main skills gap, identifying the relationship between the skills and the Shyfte four domains	<ul style="list-style-type: none"> • The “required” skill set is identified • The number of skills set per domain are: <ul style="list-style-type: none"> - Industrial Engineering Management: 7 - Software Engineering and Big Data Analytics: 4 - Wireless and Networks Analytics: 5 - Artificial Intelligence: 3 • The “required” maturity levels of the trainees are identified • The number of modules defined per domain: <ul style="list-style-type: none"> - 22 modules syllabus defined for IE domain - 7 modules syllabus defined for Business Mgt domain - 18 modules syllabus defined for SE& Bigdata domain - 17 modules syllabus defined for Wireless domain - 15 modules syllabus defined for AI domain • An efficient learning framework was defined • The module’s syllabus is defined <ul style="list-style-type: none"> - 9 modules syllabus defined for IE domain - 7 modules syllabus defined for Business Mgt domain - 5 modules syllabus defined for SE& Bigdata domain
T1.4 - 2	Develop the Skills 4.0 learning framework	15/05/2019	15/12/2019		Design and definition of the Skills 4.0 Learning Framework	
T1.4 - 3	Identify the relationship between the skill4.0 and the Shyfte 4 domains	15/12/2019	20/02/2019		Identification of the required Skill sets per domain.	

						<ul style="list-style-type: none"> - 6 modules syllabus defined for Wireless domain - 13 modules syllabus defined for AI domain
T1.5 - 1	Design teaching programs and learning materials for the 4 domains.	15/05/2019	30/06/2020		<ul style="list-style-type: none"> - Identify the content and main component in response to the above-mentioned areas through coordination between universities and companies. - Design and develop teaching and learning strategies according to WP2 pilots. <p>The D1.4 Deliverable concerns the teaching and learning strategies for deploying the four pilots of the WP2.</p>	<ul style="list-style-type: none"> • The learning strategy per domain is defined • The pilots per domain are defined: <ul style="list-style-type: none"> - 16 detailed syllabus is defined for domain 1 - 5 detailed syllabus is defined for domain 2 - 6 detailed syllabus is defined for domain 3 - 13 detailed syllabus is defined for domain 4 • The sessions for the Training of the Trainers ToT are scheduled: <ul style="list-style-type: none"> - 14 ToT sessions scheduled for domain 1 - 4 ToT sessions scheduled for domain 2 - 6 ToT sessions scheduled for domain 3 - 6 ToT sessions scheduled for domain 4 • The sessions for the Training of the Students ToS are scheduled: <ul style="list-style-type: none"> - 14 ToS sessions scheduled for domain 1 - 4 ToS sessions scheduled for domain 2 - 6 ToS sessions scheduled for domain 3

						<ul style="list-style-type: none"> - 10 ToS sessions scheduled for domain 4 • The number of potential trainers projected: <ul style="list-style-type: none"> - 12 trainers identified for domain 1 - 5 trainers identified for domain 2 - 6 trainers identified for domain 3 - 10 trainers identified for domain 4 • The number of potential students projected: <ul style="list-style-type: none"> - 100 to 120 students trained from CMU & KU (domain1) - 100 to 120 students trained from CDU& CUIT (domain2) - 40 to 50 students trained from UPM& UTM (domain3) - 40 to 50 students trained from UTM& UPM (domain4) • Total number of potential students projected: up to 300 • Number of publications in conferenced: 10
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Changes that have occurred in this result since the previous approved report:

No changes occurred on this work package since the original proposal and the previous approved report.

TABLE OF ACHIEVED RESULTS

<u>Title and reference number of the work package (WP)</u>	DEVELOPMENT: implementation of Shyfte4.0 framework - Learning and training (WP2)
<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	<ul style="list-style-type: none"> • Number of modules developed • Number of potential trainers • Number of trainers trained • Number of potential students • Number of students trained • Pilots' implementation (number of learning sessions, modules...) • Quantity and quality of self- assessment documents • Number of Skills 4.0 Learning center implemented

Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
T2.1	Pilot in Domain 1- Industrial engineering and management	15/09/2019	15/07/2021	Thailand	The task T2.1 describes the implementation of a first pilot project in Thailand to improve the quality of "Industrial Engineering and Management" skills.	
T2.1-1	Learning materials development	28/10/2019	01/11/2019	China	Meeting in Chengdu: modules definition (syllabus), use cases, equipment used, trainers' identification...	<ul style="list-style-type: none"> • 22 modules have been identified for the Industrial Eng. domain (based on the skills set and level of the trainees) • 7 modules have been identified for the Business Mgt domain • 9 modules detailed syllabus have been defined for IE domain • 7 modules detailed syllabus have been defined for Business Mgt domain

T2.1-2	Learning materials development	09/12/2019	13/12/2019	Benevento	Meeting in Benevento: modules content validation. Discussion with local experts in Industrial Engineering and Management	<ul style="list-style-type: none"> • Validation of 6 main modules detailed for IE domain • Validation of 5 main modules detailed for Business Mgt domain
T2.1-3	Learning materials development	03/02/2020	07/02/2020	Lyon	Meeting in Lyon: learning materials development strategy & Training of the trainers planning	<ul style="list-style-type: none"> • 16 contributors to the development of learning materials identified • 12 Module trainers identified • 1 internal reviewer identified per module • 1 external reviewer identified per module and per university partner • 14 Training of the Trainers sessions scheduled • 14 Training of Students sessions scheduled
T2.1-0	Learning Material development	01/10/2019	31/12/2020		Skill set and modules developed: theoretical part, industrial use cases, learning method, data sets and equipment used...	<ul style="list-style-type: none"> • 6 new modules are developed for Industrial Engineering • 5 new modules are developed for business management
T2.1-1	Validation by the group of experts	31/12/2020	31/01/2020		The module validation process (by the Advisory Board and Academic experts)	<ul style="list-style-type: none"> • 11 modules reviewed by Internal and External experts
T2.1-4	Training of the Trainers sessions	01/07/2021	28/02/2022	Bangkok	Training of the Trainers at KU (Bangkok)	<ul style="list-style-type: none"> • 9 training sessions of the trainers from July 2021 to February 2022 • 62 trainers trained from KU • 4 staffs from partner trained • 6 quality evaluation questionnaires filled per modules
T2.1-4	Training of the Trainers sessions	01/07/2021	31/08/2021	Chiang Mai	Training of Trainers at CMU (Chiang Mai)	<ul style="list-style-type: none"> • 7 training sessions of the trainers from July 2021 to August 2021 • 49 trainers trained from CMU • 4 staff per partner trained

						<ul style="list-style-type: none"> • 10 quality evaluation questionnaires filled per modules
T2.1- 3	Learning materials assessment & update	01/04/2021	30/04/2021	Chiang Mai and Bangkok	Analysis of the quality questionnaire and assessment of the learning materials	<ul style="list-style-type: none"> • Having analysis of the training quality questionnaire • 1 improvement plan per module is defined • All the modules are updated
T2.1- 4	Student's maturity level assessment	01/05/2021	31/05/2021		Evaluation of the skills maturity students' level	<ul style="list-style-type: none"> • The maturity level is defined for each module
T2.1-5	Training of the Students	01/01/2022	04/08/2022	Bangkok/ Chiang Mai	Training of the students in CMU and KU: <ul style="list-style-type: none"> • 94 students in CMU • 43 students in KU 	<ul style="list-style-type: none"> • 137 students trained from CMU and KU – from January 2022 to August 2022 • 60% of the students fill the quality evaluation questionnaire • 93.45% of the students are globally satisfied
T2.1- 6	Learning materials assessment & update				Analysis of the quality questionnaire and assessment of the learning materials	<ul style="list-style-type: none"> • Having analysis of the training quality questionnaire • 1 improvement plan per module is defined • All the modules are updated
T2.1- 7	Training of Companies	01/07/2021	31/08/2021		Organize training for companies and evaluate the interest and quality of the training	<ul style="list-style-type: none"> • 5 persons from five private companies trained by KU • 10 persons form private companies trained by CMU • A quality evaluation questionnaire is filled • Analysis of the quality questionnaire is done
T2.2	Pilot in domain2 - Software Engineering and big data analysis	15/09/2019	15/07/2021	China	The T2.2 Task describes the implementation of a second pilot project in China to improve the “Software Engineering and big data analysis” skills.	

T2.2-1	Learning materials development	28/10/2019	01/11/2019	China	Meeting in Chengdu: modules definition (syllabus), use cases, equipment used, trainers' identification...	<ul style="list-style-type: none"> • 18 modules have been identified for the Software Eng. and Big data domain • 5 modules detailed syllabus have been defined for SE&BD domain
T2.2-2	Learning materials development	09/12/2019	13/12/2019	Benevento	Meeting in Benevento: modules content validation. Discussion with local experts in Software Engineering and Big data analysis	<ul style="list-style-type: none"> • Validation of 5 main modules detailed for SE&BD
T2.2-3	Learning materials development	03/02/2020	07/02/2020	Lyon	Meeting in Lyon: learning materials development strategy & Training of the trainers planning	<ul style="list-style-type: none"> • 5 contributors to the development of learning materials identified • 5 Module trainers identified • 1 internal reviewer identified per module • 1 external reviewer identified per module and per university partner • 4 Training of the Trainers sessions scheduled • 4 Training of Students sessions scheduled
T2.2- 0	Learning Material development	01/10/2019	01/09/2020	China	Skill set and modules developed: theoretical part, industrial use cases, learning method, data sets and equipment used...	<ul style="list-style-type: none"> • 5 Modules are developed for SE & bigdata analysis
T2.2- 1	Validation by the group of expert	01/09/2020	01/10/2020	All	The module validation process (by the Advisory Board and Academic experts)	<ul style="list-style-type: none"> • 5 modules reviewed by Internal and External experts
T2.2- 2	Training of the Trainer's sessions	01/06/2021	26/02/2022	China	Training of the trainers in CDU and CUIT	<ul style="list-style-type: none"> • 7 training sessions in CDU and CUIT from June 2021 to February 2022 • 31 trainers trained from CDU and from CUIT • 1 staff per partner trained • 6 quality evaluation questionnaires filled per module
T2.2- 3	Learning materials assessment & update			China	Analysis of the quality questionnaire and assessment of the learning materials	<ul style="list-style-type: none"> • Analysis of the training quality questionnaire

						<ul style="list-style-type: none"> • 1 improvement plan per module is defined • 5 the modules are updated
T2.2-5	Training of the Students	April 2022	May 2022	Chengdu	Training of the students in CDU and CUIT	<ul style="list-style-type: none"> • 5 training sessions of the students from April 2022 to May 2022 • 22 students trained (CDU) • 120 students trained (CUIT) • 92% of the students filled the quality evaluation questionnaire • 91% of the students are globally satisfied
T2.3- 6	Learning materials assessment & update			Chengdu	Analysis of the quality questionnaire and assessment of the learning materials	<ul style="list-style-type: none"> • Analysis of the training quality questionnaire • 1 overall improvement plan per module is defined • Pilot in Domain 2 updated 5 modules based on these feedbacks
T2.2- 7	Training of Companies			China	Organize training for companies and evaluate the interest and quality of the training.	<ul style="list-style-type: none"> • 5 persons from one or different companies trained • A quality evaluation questionnaire is filled • Analysis of the quality questionnaire is done
T2.3	Pilot in domain3 Wireless networks analytics	15/09/2019	15/07/2021	Malaysia (UPM)	The T2.3 Task describes the implementation of the third pilot project in Malaysia to improve the “Wireless Networks Analytics” skills	
T2.3-1	Learning materials development	28/10/2019	01/11/2019	China	Meeting in Chengdu: modules definition (syllabus), use cases, equipment used, trainers’ identification...	<ul style="list-style-type: none"> • 17 modules have been identified for the Wireless domain • 6 modules are identified as the most requested skillsets by local SMEs based on the survey

T2.3-2	Learning materials development	09/12/2019	13/12/2019	Benevento	Meeting in Benevento: modules content validation. Discussion with local experts in Wireless networks analytics	<ul style="list-style-type: none"> • Validation of 6 main modules detailed for Wireless domain
T2.3- 0	Learning Material development	01/10/2019	15/10/2020	Malaysia	Skill set and modules developed: theoretical part, industrial use cases, learning method, data sets and equipment used...	<ul style="list-style-type: none"> • 7 Modules are developed for Wireless Network domain
T2.3-3	Learning materials development	03/02/2020	07/02/2020	Lyon	Meeting in Lyon: learning materials development strategy & Training of the trainers planning	<ul style="list-style-type: none"> • 7 Module trainers identified • 1 internal reviewer identified per module • 1 external reviewer identified per module and per university partner • 6 Training of the Trainers sessions scheduled • 6 Training of Students sessions scheduled
T2.3- 1	Validation by the group of experts	15/10/2020	15/11/2020	Malaysia	The module validation process (by the Advisory Board and Academic experts)	<ul style="list-style-type: none"> • 7 modules reviewed by Internal & External experts
T2.3-4	Training of the Trainers	July 2021	April 2022	UPM	Training of the Trainers in UPM	<ul style="list-style-type: none"> • 7 training sessions for the trainers in UPM from July 2021 and April 2022 • 56 trainers trained in UPM: <ul style="list-style-type: none"> - 51 academics - 5 from industry • 1 staff trained from CMU, UTM and KU • 31 quality evaluation questionnaires filled up • 55% (31 out of 56 trainers responded) • Analysis of the training quality questionnaire • 1 overall improvement plan proposed. • The 7 modules are updated

T2.3- 4	Student's maturity level assessment	01/03/2021	31/03/2021	Malaysia	Evaluation of the skills maturity students' level	<ul style="list-style-type: none"> The maturity level is defined for each category of students
T2.3-5	Training of the Students	01/06/2022	30/06/2022	UPM	Training of the Students in UPM	<ul style="list-style-type: none"> 5 training sessions of the students in June 2022 69 students trained (UPM) 72% of the trainees fill the quality evaluation questionnaire (50 out of 69 students responded) 92,5% of the students are globally satisfied 70% of the respondents highlighted that IoT and big data analytics are the most required skills in Wireless and Networks Analytics, based on surveys for the SMEs in Malaysia
T2.3- 6	Learning materials assessment & update			Malaysia	Analysis of the quality questionnaire and assessment of the learning materials	<ul style="list-style-type: none"> Analysis of the training quality questionnaire 1 overall improvement plan per module is defined Pilot in Domain 3 developed 17 modules based on this feedback (7 new modules are chosen for the ToT and ToS)
T2.3- 7	Training of Companies	01/07/2021	30/04/2022	Malaysia	Organize training for companies and evaluate the interest and quality of the training.	<ul style="list-style-type: none"> 5 persons from (2 MCMC, 2 Vectolabs and 1 MIMOS) are trained Certificate of Attendance have been given to all trainers They suggested for face-to-face Training instead of online. For ToS, the second part (i.e. hands-on) were conducted in-person.

T2.4	Pilot in Domain4 - Artificial Intelligence.	15/09/2019	15/07/2021	Malaysia (UTM)	The T2.4 Task describes the implementation of a fourth pilot project in Malaysia to improve the “Artificial Intelligence” skills.	
T2.4-1	Learning materials development	28/10/2019	01/11/2019	China	Meeting in Chengdu: modules definition (syllabus), use cases, equipment used, trainers’ identification...	<ul style="list-style-type: none"> • 13 modules have been identified for the AI domain • 13 modules detailed syllabus have been defined for AI domain
T2.4-2	Learning materials development	09/12/2019	13/12/2019	Benevento	Meeting in Benevento: modules content validation. Discussion with local experts in Artificial Intelligence	<ul style="list-style-type: none"> • Validation of 5 main modules detailed for AI domain
T2.4-3	Learning materials development	03/02/2020	07/02/2020	Lyon	Meeting in Lyon: learning materials development strategy & Training of the trainers planning	<ul style="list-style-type: none"> • 9 contributors to the development of learning materials identified • 10 Module trainers identified • 1 internal reviewer identified per module • 1 external reviewer identified per module and per university partner • 2 Training of the Trainers sessions scheduled • 5 Training of Students sessions scheduled
T2.4- 0	Learning Material development	01/10/2019	15/10/2020	Malaysia	Skill set and modules developed: theoretical part, industrial use cases, learning method, data sets and equipment used...	<ul style="list-style-type: none"> • 12 Modules are developed for Artificial Intelligence domain
T2.4- 1	Validation by the group of expert	15/10/2020	15/11/2020	Malaysia	The module validation process (by the Advisory Board and Academic experts)	<ul style="list-style-type: none"> • 12 modules reviewed by Internal and External experts
T2.4- 2	Training of the Trainer's sessions	01/07/2021	28/02/2022	Malaysia	Training of the trainers in UTM	<ul style="list-style-type: none"> • 6 training sessions in UTM in July 2021 and February 2022 • 53 trainers trained (40 from UTM - UPM-9, CMU-3, KU-1) • 31 quality evaluation questionnaires filled per module

T2.4- 3	Learning materials assessment & update			Malaysia	Analysis of the quality questionnaire and assessment of the learning materials	<ul style="list-style-type: none"> • Analysis of the training quality questionnaire • 1 improvement plan per module is defined • All the modules are updated
T2.4- 4	Student's maturity level assessment	01/06/2021	31/06/2021	Malaysia	Evaluation of the skills maturity students' level	<ul style="list-style-type: none"> • At least 3 evaluation assessment developed per module
T2.4- 5	Training of the student's sessions	01/06/2022	30/08/2022	Malaysia	Training of the students in UPM and UTM	<ul style="list-style-type: none"> • 6 training sessions for students in UTM from June to August 2022 • 50 students trained (UTM) • 73% of the students filled the quality evaluation questionnaire • 95% of the students are globally satisfied
T2.4- 6	Learning materials assessment & update			Malaysia	Analysis of the quality questionnaire and assessment of the learning materials	<ul style="list-style-type: none"> • Analysis of the training quality questionnaire • 1 improvement plan per module is defined • All the modules are updated
T2.4- 7	Training of Companies	01/07/2021	28/02/2022	Malaysia	Organize training for companies and evaluate the interest and quality of the training.	<ul style="list-style-type: none"> • 3 persons from different companies trained • A quality evaluation questionnaire is filled • Analysis of the quality questionnaire is done
T2.5 - 1	Develop Skills 4.0 based Training and Learning Center of Excellence	15/05/2020	14/11/2020	PC	The objective of the T2.5 Task is to define the protocol of operation and internal articulation of the Learning Center of Excellence, define the center's laboratory operation, define the diffusion and dissemination system and the internal evaluation system of the center's operation.	<ul style="list-style-type: none"> - the architecture of the 4 learning centers is defined - the functionalities and main services are described (identification, selection, registration, evaluation...). - the interactions between the global website and the local ones are identified

						- A dissemination strategy is proposed
T2.5 - 2	Develop Skills 4.0 based Training and Learning Center of Excellence	15/05/2020	14/06/2021	PC	The objective of the T2.6 task is to report the Lab set-up for applications developments and devices use and testing in prototypes. A methodology for technological innovations related to Industry 4.0 creation and testing will be presented. Guidelines to help teachers and students to use and create technological applications in an innovative way in teaching is also introduced.	- 4 Skills 4.0 learning center implemented (one per Pilot) - A methodology for creation and testing is defined for the Learning centers - A quality evaluation questionnaire is defined for the learning centers - 1 guideline for teachers is defined (one per domain) - 1 guideline for students is defined (one per domain)
T2.5 – 3	Develop Skills 4.0 based Training and Learning Center of Excellence	15/05/2020	14/06/2021	PC	The objective of the T2.7 task is to report the methodology for the technical and business evaluation of innovative technological solutions that can be presented by the professors or students of the university.	- 1 Knowledge-based framework is defined for each learning center - 1 methodology for technical and business evaluation is defined for the 4 Learning centers

Changes that have occurred in this result since the previous approved report:

The main changes that have taken place relate to delays in:

- the implementation of the training of the trainers (ToT) *from June 2021 to February 2022 (instead March 2020 to January 2021)*
- the implementation of the training of the students (ToS) *from January 2022 to August 2022 (instead January 2021 to July 2021)*
- the development of the Learning Centers

Due to the Covid-19 pandemic, we were obliged to conduct the first part of the ToT sessions remotely. We asked for a 10-month extension of the project to be able to do a second part of the ToT sessions in face-to-face, as well as the students' training sessions.

The development of the Learning Centers was also delayed because we were not able to evaluate and validate the learning materials in time, so we had to postpone the development and validation phase of the Learning Centers. *from January 2022 to August 2022 (instead January 2021 to July 2021)*

TABLE OF ACHIEVED RESULTS

<u>Title and reference number of the work package (WP)</u>	QUALITY PLAN (WP3)
<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	<ul style="list-style-type: none"> • Handbook • Number of trainers trained on Quality Management System • Number of trainers certified • Number of trainers trained • Quality audits of the trainers/teachers and students • Number of Quality Audits carried out per Learning Center • Number of SME's involved & surveyed • % of SME's satisfied by the Learning Centers services (per domain, per country) • % of SMEs that would recommend Learning Centers • To compare and analyze the job market before and after deploying proposed learning and teaching strategies in partner countries (<i>medium-term indicator</i>)

Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
T3.1	Strategic Quality Plan	15/12/18	15/11/2019	UNS	The objective of this first task is to define a strategic Quality Plan for to the learning programs and trainers' qualification. To ensure the adequate and accurate monitoring of the project preparation and development with high standard quality plan.	- The deliverable D3.1 was completed on time
T3.1-1	Validation of the learning program by the companies (advisory board)	15/12/18	14/10/2019		The module validation process by the Advisory Board and Industrial experts	- 1 evaluation quality questionnaire for the learning material defined - Number of experts per domain identified: 1 internal & 1 external per module - Quality indicators are defined

						- 4 impact indicators to establish a correlation between the domains (Π_{SMP} , Π_{AMS} , Π_{QS} , Π_{IQA})
T3.1-2	Validation of the learning program by the academics	15/12/18	14/10/2019	CUIT	The module validation process by the academic experts (1 expert per HEIs partner)	- Number of academic experts per domain: 1 internal & 1 external per module - 2 Productivity indicators (PI_m , PI_e) to assess the teacher's responsibility in learning students. - 2 Level indicators (LI_{pk} , LI_{st}) to evaluate the learning of the topics. - 2 Level indicators (LI_a , LI_e) to evaluate the teacher.
T3.1-3	Define an evaluation questionnaire for the trainers	15/12/18	14/10/2019	UNL	Design and develop a quality questionnaire for the trainers. The questionnaire for the trainers and the KPI's are defined in the deliverable D3.1	- 10 questions related to the program, lessons and teaching examined by internal and external trainers - 5 questions related to the curricula examined by internal and external trainers - 1 Effectiveness Indicator (EI) to evaluate the training commitment undertaken by the organization towards students, with respect to the teaching actually provided. - 1 Load indicator (I_o) to evaluate the actual work assigned. - 1 Compliance indicator (I_c) to assess the proportionality of the teaching material to the study topic. - 1 Efficiency Indicators (EfI) to evaluate the teacher's ability to arouse interest in students for the

						different domains examined ($E_f I_{SMP}$, $E_f I_{AMS}$, $E_f I_{QS}$, $E_f I_{IQA}$)
T3.1-4	Define an evaluation questionnaire for the students	15/12/18	14/10/2019	UPM	Design and develop a quality questionnaire for the students. The questionnaire for the students is defined in the deliverable D3.1	- Number of potential students filling the quality evaluation questionnaire: 70% - 80% of the students are globally satisfied
T3.2	Define a Training Quality Plan	15/11/2019	15/11/2021	UNL	The objectives of this task are to train the trainers in the Partners Countries to the basic of Quality Management Systems according to ISO 9001, and to propose an operative formation of the Quality Managers (QM) for quality audits of the Learning Processes. This task will focus on the formation quality plan with the relative quality indicators. The 4 Pilots implementation will integrate the TQP in the learning programs.	- The QMS learning material is defined - A Training quality plan is proposed per Learning centers (4)
T3.2-1	Implement quality audits to analyze and evaluate the transfer of skills 4.0 and measuring the impact of these skills in SME	15/11/2019	15/11/2021	UNL	Implement the Quality Management System based on ISO 9001, as a system integrated in Shyfte Learning Center of Excellence platform.	- Number of training quality audits scheduled per Learning Centers: 37 - Number of potential quality managers per Learning Centers: <ul style="list-style-type: none"> • 4 in domain 1; • 2 in domain 2; • 3 in domain 3 • 3 in domain 4
Activity N°	Activity Title	Start date	End date	Place	Description of the activity to be carried out	Specific and measurable indicators of progress
T3.2	Define a Formation Quality Plan	15/11/2019	15/11/2021	UNL	The objectives of this task are to train the trainers in the Partners Countries to the basic of Quality Management Systems according to ISO 9001, and to propose an operative formation of the Quality Managers (QM) for quality audits of the Learning Processes. The 4 Pilots	- The QMS learning material is defined - A Training Quality Plan is proposed per domain - Number of indicators defined in the TQP per domain (Pilot): 14

					implementation will integrate the FQP in the learning programs.	
T3.2-1	Formation Quality Plan Implementation			PCs	Organize the Train of the Trainers session on QMS ISO 9001 in the Partners Countries - Quality Managers (QM) for quality audits of the Learning Processes.	- 12 trainers trained on QMS - Number of trainers satisfied by the QMS training (80%)
T3.2-1	Implement quality audits to analyze and evaluate the transfer of skills 4.0			UNL	Implement the ISO 9001 QMS, as a system integrated in Shyfte Learning Center of Excellence platform.	- The QMS is integrated in the Learning Materials - Number of trainers training quality audits scheduled: 3 - 30 potential trainers to be certified
T3.3-1	Quality audits	15/01/2022	15/07/2022	PCs	This task concerns the audits of the learning programs, which will allow the partners countries to analyze and evaluate the skills 4.0 transfer to the trainers and the students.	- 22 questions to evaluate the training - 5 specific questions per domain (Pilot) - 4 specific questions for the trainers - 14 indicators of Skills 4.0 transfer - 12 quality managers trained on QMS audit
T3.3-2	Quality audits implementation	15/01/2022	15/07/2022	PCs	Implementation of the Learning programs audits	- Number of audits per domain: 3 - Number of non- conformities: NA (the audits did not reveal any real non-conformity) - 12 Trainers on QMS Audit
T3.3-3	Quality audits analysis	15/01/2022	15/09/2022	PCs	Evaluation of the Impact indicators will allow the dissemination of the results with dedicated events in the Partners Countries	- Quality indicators analysis is completed (report) - % of the trainees are globally satisfied: • Pilot 1: 137 Students trained, 93.45% of the respondents are globally satisfied

						<ul style="list-style-type: none"> • Pilot 2: 142 students trained, 91% of the respondents are globally satisfied • Pilot 3: 69 students trained, 92,6% of the respondents are globally satisfied • Pilot 4: 50 students trained, 95% of the students are globally satisfied
T3.3-4	Quality audits assessment	15/01/2021	15/07/2022	PCs	Assessment of the QMS system and continuous Improvement	<ul style="list-style-type: none"> - 1 Action plan for improvement is put in place per module - 1 improvement plan implemented per module
T3.3-5	Quality audits development	15/01/2021	15/07/2022	PCs	A campaign of audits, in a set of SMEs of the Partners Countries with impact indicators, will be conducted.	<ul style="list-style-type: none"> - Number of SME's involved: 13 - Number of companies salaries audited: 7 trainees from companies filled the quality questionnaires
T3.4-1	Sustainability assurance plan design	15/01/2021	15/07/2022	PCs	<p>The sustainability assurance plan will be designed with all the HEIs partners and SMEs.</p> <p>The quality questionnaires for the trainers and the trainees are defined in the deliverable D3.2 The questionnaire for the SME's audit is define in the deliverable D3.3</p>	<ul style="list-style-type: none"> - The sustainable assurance plan is completed - Number of SMEs consulted: 13 - The questionnaires have been developed and validated successfully: <ul style="list-style-type: none"> • 6 questions for the SMEs to evaluate the learning centers • 22 questions to evaluate the training (content & delivery) • 5 specific questions per domain (Pilot) • 4 specific questions for the trainers

T3.4-2	Sustainability assurance plan implementation	15/07/2020	15/07/2022	PCs	The training leaders will assess the indicators through a dedicated surveys in a set of SMEs of the Partners Countries.	<ul style="list-style-type: none"> - Number of SMEs surveyed in Partners Countries: 28 - Number of replies returned by Chinese companies: 5 - Number of replies returned by Malaysia companies: 8 - Number of replies returned by Thailand companies: 15
T3.4-3	Sustainability assurance plan analysis & development	15/07/2020	15/07/2022	PCs	This sustainability plan will be developed towards the designated HEIs of the Partners Countries to ensure the continuation of this key activity beyond the end of the project.	<ul style="list-style-type: none"> - Number of companies globally satisfied by the Learning materials (per domain, per country): 82% - Number of companies globally satisfied by the Learning Centers services (per domain, per country): 82% - Number of SMEs that would recommend learning centers (per domain, per countries): 84%

Changes that have occurred in this result since the previous approved report:

As we saw in the WP2, due to the Covid-19 pandemic, we asked for a 10-month extension of the project to be able to finalize the ToT sessions in face-to-face, as well as the students' training sessions. The development and validation of the Learning Centers was also delayed, from January 2022 to August 2022 (instead January 2021 to July 2021).

Because of that, some tasks of the WP3 were also delayed:

- Delay in the training of the trainers on Quality Management Systems and Audits
- Delay in the quality audit of the Learning Centers
- We have not been able to do a real quality audit of the Learning Centers because of the delays in their development, but we have prepared all the elements (indicators, evaluation forms, procedures...) so that these Learning Centers can be certified quality (ISO 9001) after some time of use by the users (students and companies).

TABLE OF ACHIEVED RESULTS

<u>Title and reference number of the work package (WP)</u>	DISSEMINATION & EXPLOITATION (WP4)
<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	<ul style="list-style-type: none"> • Number of contacts based on the dissemination of the project • Number of scientific and technical publications • Number of publications and EU reports on Industry4.0's challenges • Number of events/activities per partner in the map • Number of Enterprise networks & professional associations involved

Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
T4.1-1	Dissemination and exploitation strategy	15/11/2018	14/02/2019	Italy	The objective of this task is to create the strategic plan for the diffusion and dissemination of the outputs of the project. Deliverable D4.1 – Strategic plan for diffusion and dissemination, includes the strategic plan for the diffusion and dissemination of the project and its results.	<ul style="list-style-type: none"> - The deliverable D4.1 is completed on time - Number of planned dissemination and exploitation activities is 30.
T4.1-2	Dissemination and exploitation strategy - visibility	15/11/2018	30/11/2020	All	Visibility: identify a public/private entity where to make a presentation of the project.	<ul style="list-style-type: none"> - Number of entities where the project was presented: - UPM: 36 and UTM 85; - The number of SMEs surveyed in “China” is: 95 - The number of SMEs surveyed in “Malaysia” is: 100

						<ul style="list-style-type: none"> - The number of SMEs surveyed in “Thailand” is: 100 - The number of replies returned by Chinese companies is: 87 - The number of replies returned by Malaysia companies is 86 - The number of replies returned by Thailand companies is 92
T4.1-3	Make a visibility/ dissemination map with locations and dates	01/01/2019	14/09/2022		Visibility/dissemination: identify with all partners a list of conferences, seminars, workshops for dissemination purposes.	<ul style="list-style-type: none"> - Number of events/activities per partner in the Map <ul style="list-style-type: none"> • France: 5 • Italy: 4 • Portugal: 3 • Thailand: 7 • China: 7 • Malaysia: 9 - Number of conferences is 20 - Number of formal and informal meeting is 54
T4.2-1	Awareness dissemination and acceptance of emergent skills	15/03/2019	14/09/2022		The objective of this task is to create awareness in the university community and stakeholder for the acceptance of the industry 4.0 concepts and emerging skills 4.0. The aim is to launch awareness campaigns on current training programs and encourage the creation of similar initiatives in other HEIs in Asia and EU.	<ul style="list-style-type: none"> - Number of entities where the project was spread: <ul style="list-style-type: none"> • Domain 1: 22 entities in Thailand • Domain 2: 12 entities in China • Domain 3: 11 entities in Malaysia • Domain 4: 8 entities in Malaysia - Number of external universities identified to disseminate the project <ul style="list-style-type: none"> • Domain 1: 18 universities in Thailand • Domain 2: 6 universities in China • Domain 3: 7 universities in Malaysia

						<ul style="list-style-type: none"> • Domain 4: 6 universities in Malaysia - Number of external industries identified to disseminate the project: <ul style="list-style-type: none"> • ToT sessions: 9 • Seminars & Workshops: 20 • Industrial visits: 4 - Number of Shyfte proposed activities in universities: 5 seminars & exhibitions - Number of Shyfte proposed activities in industry: <ul style="list-style-type: none"> • 10 industrial workshops • Number of events where the project was spread: <ul style="list-style-type: none"> • 1 Keynote speaker in Int. conference • 1 Special session in Int. conference • 5 academic seminars - Number of conferences, formal, informal meetings...: <ul style="list-style-type: none"> • 20 international conferences • 10 physical Plenary or PMB meetings • 44 virtual Plenary or PMB meetings
T4.2-2	Awareness dissemination and acceptance of emergent skills presentation	15/03/2019	14/09/2022	All	Presentation of the idea of a possible COST (European Cooperation in Science and Technology) proposal aligned with the dissemination of the Centers of Excellence.	<ul style="list-style-type: none"> - Number of awareness dissemination events: 47 - Number of partners involved: 37 other universities involved in the partners countries - Number of external entities involved: 33

					Development of a COST (European Cooperation in Science and Technology) proposal aligned with the dissemination of the Centers of Excellence; developed in the context of T2.5 task.	<ul style="list-style-type: none"> - Number of Shyfte seminars & workshop: 20 - Number of partners: more than 60 external partners involved - COST proposal acceptance: Collaboration with 3 EU projects: (1) Erasmus+ Enhance, (2) Erasmus+ ETAT, and H2020 SME 4.0 - Number of initiatives argue to the COST: 3 seminars
T4.3-1	Exploitation and Dissemination for action	15/03/2019	14/09/2022		<p>The purpose of this task is to bring the academic community closer to the industrial sector. As well as to define how best to exploit the skills framework and training programs developed within the framework of this project. Continuous dissemination of project achievements through other Asian and European HEIs will be carried out in order to reach a maximum of potential users. One of the main actions will be the creation, updating and management of the project website and social media profiles.</p> <p>Deliverable D4.2 – Project Website, documents the creation, updating and</p>	<ul style="list-style-type: none"> - The deliverable D4.2 is completed on time - The deliverable D4.3 is completed on time - Number of leaflets: 6 - Number of Posters: 6 - Banners and bunting: 6 - The deliverable D4.4 is completed on time - Number of formal meetings 10 - Number of project virtual meetings: 44 - Number of workshops is 10 - Number of seminars is 5 <p><u>Events</u></p> <ul style="list-style-type: none"> - Number of events organized: 30 seminars, workshops, visits, meetings... - Number of events (conference, seminars, workshops...) in which

					<p>management of the project website and social media profiles.</p> <p>Deliverable D4.3 – Publicity document, reports about leaflets, press releases, etc; and participation in social networks.</p> <p>Deliverable D4.4 – Formal and informal meetings, conferences, days, etc. documents specifically about: formal and informal meetings, international conferences, i.e. keynote speakers and papers; workshops and seminars; additionally it presents the scientific development team.</p>	<p>Shyfte partners participate: more than 80 events (conferences, seminars...)</p> <p>Social Networks indicators</p> <ul style="list-style-type: none"> - Social networks number of follows: 106 followers on Facebook - Social networks number of likes: 98 likes on Facebook - Cluster of blogs indicators: NA (a technical problem did not allow us to measure the nb of visitors on the website since the beginning of the project). - Number of visitors: idem - Number of topics: around 18 topics covered - Number of posts: 35 posts published <p>Promotional videos and Medias</p> <ul style="list-style-type: none"> - 1 teaser to promote the shyfte center of excellence (4 learning centers) - 1 teaser per domain - 13 publications on Shyfte in institutional websites - 9 articles in medias (journal online and magazines, research exposition, news portals...¶) - 5 promotional videos (Youtube) - 19 participations in seminars, workshops, exhibitions, fairs...¶ (online / face-to-face)
T4.3-3	Website development	14/11/2018	15/03/2019	ULL / UNL / CDU	Development of a website, with requirements proposed by all partners.	- 1 main website for the project implemented

T4.3-4	Website extension	15/03/2019	14/09/2022	ULL UNL CDU	<p>Update current official website of SHYFTE. In the “Pilots” menu, four pilot’s menu items will be linked to the local pilot. Each pilot will provide a website to disseminate their excellent centre.</p> <p>In the website it is promoted a cluster of blogs. The blog function will be provided in each pilot, the skill sets which can be provided by each pilot will be listed in blog cluster.</p>	<p><u>Website indicators</u></p> <ul style="list-style-type: none"> - Number of website visitors: NA (a technical problem did not allow us to measure the nb of visitors since the beginning of the project). - Average time on page: NA (a technical problem did not allow us to measure the nb of visitors since the beginning of the project). <p><u>Cluster of blogs indicators</u></p> <ul style="list-style-type: none"> - Cluster of blogs indicators: NA (a technical problem did not allow us to measure the nb of visitors on the website since the beginning of the project). - Number of visitors: idem - Number of topics: around 18 topics covered - Number of posts: 35 posts published
T4.4	Scientific and technical dissemination	15/03/2019	14/09/2022		<p>The objective of this task is to achieve the greatest possible scientific dissemination. Technical and Scientific dissemination will be affected through international scientific journals, international conferences, workshops, etc. Deliverable D4.7 document reports scientific dissemination. Participation</p>	<ul style="list-style-type: none"> - The deliverable D4.7 is completed - Number of papers in scientific conferences (per domain): <ul style="list-style-type: none"> • Domain 1: 4 conferences • Domain 2: 5 conferences • Domain 3: 4 conferences • Domain 4: 4 conferences - Number of publications in international scientific journals (per domain) <ul style="list-style-type: none"> • Domain 1: 2 journals • Domain 2: 3 journals

					in indexed journals. Book publishing. Participation in national and international congress.	<ul style="list-style-type: none"> • Domain 3: 1 journal • Domain 4: 2 journals - Number of workshops & seminars organized: 15
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Changes that have occurred in this result since the previous approved report:

The tasks of WP4 concerning the dissemination and exploitation of the results went globally well, we were able to reach most of the objectives we had set ourselves.

- We have not been able to go as far as desired in the constitution of COST, but the collaboration with 3 other European projects will allow us to share some of our results and to consider future collaborations on the theme of Industry 4.0
- We also did not sufficiently disseminate our results on social networks, due to delays in the development of the Learning Centers (LC) and the training sessions, but we made sure that communication would continue after the end of the project so that the partner universities could sustain the use of the LCs, especially with companies. For that we developed Teasers for the LC and for each Pilot and we created a Youtube channel to disseminate the outcomes of the project.

TABLE OF ACHIEVED RESULTS

<u>Title and reference number of the work package (WP)</u>	MANAGEMENT: Project Management (WP5)
<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	<ul style="list-style-type: none"> • The assigned tasks start and finish on time • The project Handbook is defined and validated • The Quality Assurance Plan is defined and validated • The project meetings are scheduled • The minutes of the meetings are done and validated • The Quality Plan is defined • The periodic reports are done on time • The final report is ready on time

Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
T5.1 - 0	Project Management Coordination and Reporting	15/11/2018	14/09/2022	All	The objective of this task is to monitor the progress of the project: 1 PMB meeting per month or every 2 months (physical or virtual).	- 10 physical meetings (plenary and PMB) - 44 virtual meetings (plenary and PMB)
T5.1 - 1	Quality, Risk and Innovation Management	15/11/2018	15/03/2019	All	The D5.1 Deliverable: The project handbook defines and specifies the appropriate mechanisms and processes to be established in order to maintain a certain quality level in the whole project.	- The Handbook was finished on time (March 2019)
T5.1 - 2	Verify the progress of work according to the project time schedule,	15/11/2018	14/09/2022	All	At each project meeting we check the progress of each Work package and Tasks.	Progress of work: - All tasks are followed and finished on time (taking into

	monitor resource usage, budget allocation.				<p>The kickoff meeting was organized in January 2019 (from 21/01/2019 to 25/01/2019), the first tasks of the project have been postponed by two months because of that. A first version of all the deliverables have been finalized on time.</p> <p>At each physical/virtual project meeting (every month) the PMB and WP Leader monitor the resource usage and the budget allocation.</p>	<p>account the extension of 10 months)</p> <p>Resource usage and Budget allocation:</p> <ul style="list-style-type: none"> - Timesheets were filled every month (per person and per category) - The financial statement was updated after each physical meeting - Travel receipts and expenses were collected after each physical meeting
T5.1 - 2	Manage conflicts by application of the foreseen procedures	15/11/2018	14/09/2022	All	Define quality procedures to manage conflicts between the project partners	<ul style="list-style-type: none"> - Quality procedures are defined in the handbook - Quality procedures are applied - 1 conflict identified and solved
T5.1 - 3	Development of management progress reports	15/11/2018	14/07/2020	All	D5.3 Deliverable: An intermediate report is provided comprising a description of the main results, potential impact and main dissemination activities. This report includes the differences between the work expected to be carried out and that actually done.	<ul style="list-style-type: none"> - A period of 2 months has been granted to fill the mid-term progress report due to Covid-19. - The progress report is complete and finished on time - The financial statement was filled and controlled on time → July 2020 - 9 deliverables are validated - The financial statement is ok

T5.1 - 4	Project Management Coordination and Reporting	15/11/2018	14/09/2022	All	D5.2 deliverable: The final report will be provided including a final publishable summary report comprising a description of the main results, potential impact and main dissemination activities	<ul style="list-style-type: none"> - The final report is well prepared and delivered on time → November 2022 - 24 deliverables are validated and delivered on time → November 2022 - The final financial statement is validated and delivered on time → November 2022
T5.2 - 1	Quality, Risk and Innovation Management: Quality control procedures	15/11/2018	14/09/2022	All	A section concerns the Quality Control procedures for producing project management, deliverables and document standards and templates is introduced in the handbook.	<ul style="list-style-type: none"> - 126 Quality Assurance Indicators are measured: <ul style="list-style-type: none"> . WP1: 28 indicators . WP2: 32 indicators . WP3: 23 indicators . WP4: 32 indicators . WP5: 11 indicators - The Quality Assurance Matrix is followed: <ul style="list-style-type: none"> . Project schedule management plan is adhered to. - An External and Internal Quality Evaluation system is defined: <ul style="list-style-type: none"> . 14 PMB reports . 113 travel reports . 125 timesheets produced (per month, per person ...) . 24 deliverables were delivered on time

T5.2 - 3	Quality, Risk and Innovation Management: Innovation monitoring	15/11/2018	14/09/2022	All	The monitoring of the innovation being developed through the project is described and the resolution of any issues and conflicts related to this.	The monitoring of the innovation developed is done regularly: - 4 Learning centers are developed (one per Pilot) - 20 publications in international conferences - 7 international journal published and 2 submitted
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Changes that have occurred in this result since the previous approved report:

The project proceeded in good conditions, the collaboration was perfect between the partners, each one having carried out the tasks and the coordination for which it was responsible. All tasks have been completed on time overall (considering the 10 months extension of the project).
The international pandemic did not allow us to continue in the same way the work initiated during the first part of the project (from Nov. 2018 to Jan. 2020). Physical meetings were no longer possible, which impacted and modified the way of managing the project (WP5), the organization of training sessions (WP2), the organization of dissemination events (WP4) ...

- 7 physical meetings (out of 17) were cancelled due to the Covid-19 crisis.
- A period of 2 months has been granted to fill the mid-term progress report due to Covid-19.
- An extension of 10 months of the project was accepted by the EACEA, the new official end date of the project was 14 September 2022
- One of the partner's, the company Cognitus, contributed to all the WPs and tasks assigned to it. The collaboration was fruitful because of Cognitus' expertise in computer technologies, and in particular, artificial intelligence, deep learning, machine learning, big data... This was a bit more difficult during the containment period related to the Covid-19 crisis. Cognitus continued to work and collaborate with the project members. But the company was affected by the health crisis and was forced to stop its activity in the project in July 2021 and could not continue to collaborate during the 10-month extension period of the project. We informed our PO about the situation, and we explained that the absence of this partner during the end of the project would not have an impact on the efficiency of the project.