



EUROPEAN COMMISSION

Directorate General for Communications Networks, Content and Technology

Inclusion, Skills and Youth



ANNEX 1 (part A)

Innovation action

NUMBER — 688520 — TeSLA

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1.1. The project summary

Project Number ¹	688520	Project Acronym ²	TeSLA
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One form per project

General information

Project title ³	An Adaptive Trust-based e-assessment System for Learning
Starting date ⁴	01/01/2016
Duration in months ⁵	36
Call (part) identifier ⁶	H2020-ICT-2015
Topic	ICT-20-2015 Technologies for better human learning and teaching
Fixed EC Keywords	Technology-enhanced learning
Free keywords	e-assessment system, innovative technology, enhanced educational processes, online and blended learning environments, security, privacy, authentication , authorship, reliability, adaptive, scalable.

Abstract ⁷

Although online education is a paramount pillar of formal, non-formal and informal learning, institutions may still be reluctant to wager for a fully online educational model. As such, there is still a reliance on face-to-face assessment, since online alternatives do not have the deserved expected social recognition and reliability. Thus, the creation of an e-assessment system that will be able to provide effective proof of student identity, authorship within the integration of selected technologies in current learning activities in a scalable and cost efficient manner would be very advantageous. The TeSLA project provides to educational institutions, an adaptive trust e-assessment system for assuring e-assessment processes in online and blended environments. It will support both continuous and final assessment to improve the trust level across students, teachers and institutions. The system will be developed taking into account quality assurance agencies in education, privacy and ethical issues and educational and technological requirements throughout Europe. It will follow the interoperability standards for integration into different learning environment systems providing a scalable and adaptive solution. The TeSLA system will be developed to reduce the current restrictions of time and physical space in teaching and learning, which opens up new opportunities for learners with physical or mental disabilities as well as respecting social and cultural differences. Given the innovative action of the project, the current gap in e-assessment and the growing number of institutions interested in offering online education, the project will conduct large scale pilots to evaluate and assure the reliability of the TeSLA system. By the nature of the product, dissemination will be performed across schools, higher education institutions and vocational training centres. A free version will be distributed, although a commercial-premium version will be launched on the market.

1.2. List of Beneficiaries

Project Number ¹	688520	Project Acronym ²	TeSLA
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List of Beneficiaries

No	Name	Short name	Country	Project entry month ⁸	Project exit month
1	FUNDACIO PER A LA UNIVERSITAT OBERTA DE CATALUNYA	UOC	Spain	1	36
2	EUROPEAN ASSOCIATION FOR QUALITY ASSURANCE IN HIGHER EDUCATION AISBL	ENQA	Belgium	1	36
3	UNIVERSITE DE NAMUR ASBL	UNamur	Belgium	1	36
4	AGENCIA PER A LA QUALITAT DEL SISTEMA UNIVERSITARI DE CATALUNYA	AQU CATALUNYA	Spain	1	36
5	LPLUS GMBH	LPLUS GmbH	Germany	1	36
6	OPEN UNIVERSITEIT NEDERLAND	OUNL	Netherlands	1	36
7	SOFIISKI UNIVERSITET SVETI KLIMENT OHRIDSKI	SU	Bulgaria	1	36
8	THE OPEN UNIVERSITY	OU	United Kingdom	1	36
9	PROTOS SISTEMAS DE INFORMACION S.L.	protOS	Spain	1	36
10	Institut Mines-Telecom	IMT	France	1	36
11	IMPERIAL COLLEGE OF SCIENCE TECHNOLOGY AND MEDICINE	Imperial	United Kingdom	1	36
12	TECHNICAL UNIVERSITY OF SOFIA	TUS	Bulgaria	1	36
13	ANADOLU UNIVERSITY	AU	Turkey	1	36
14	JYVASKYLAN YLIOPISTO	JYU	Finland	1	36
15	EUROPEAN QUALITY ASSURANCE NETWORK FOR INFORMATICS EDUCATION EV	EQANIE	Germany	1	36
16	INSTITUTO NACIONAL DE ASTROFISICA OPTICA Y ELECTRONICA	INAOE	Mexico	1	36
17	FONDATION DE L'INSTITUT DE RECHERCHE IDIAP	IDIAP	Switzerland	1	36
18	WFSW SA	Watchful	Portugal	1	36

1.3. Workplan Tables - Detailed implementation

1.3.1. WT1 List of work packages

WP Number ⁹	WP Title	Lead beneficiary ¹⁰	Person-months ¹¹	Start month ¹²	End month ¹³
WP1	Project Management	1 - UOC	96.00	1	36
WP2	Requirements and modeling of the educational framework	1 - UOC	56.00	1	8
WP3	Data privacy and ethics	3 - UNamur	43.00	1	33
WP4	Quality assurance in online higher education	4 - AQU CATALUNYA	80.00	1	36
WP5	Design and implementation of trusted assessment mechanisms	5 - LPLUS GmbH	208.00	1	24
WP6	Integration of the framework in learning environments	18 - Watchful	134.00	1	36
WP7	Design and development of pilots	7 - SU	161.00	1	32
WP8	Pilots evaluation	8 - OU	96.00	1	36
WP9	Communication, Dissemination, Liaisons and Exploitation	9 - protOS	125.00	1	36
Total			999.00		

1.3.2. WT2 list of deliverables

Deliverable Number ¹⁴	Deliverable Title	WP number ⁹	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D1.1	Quality assurance and risk management plan	WP1	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	3
D1.2	Intermediate Project Report	WP1	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	18
D1.3	Final Project Report	WP1	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	36
D1.4	Periodic interim management report	WP1	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	6
D1.5	Periodic interim management report 2	WP1	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	12
D1.6	Periodic interim management report 3	WP1	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	24
D1.7	Periodic interim management report 4	WP1	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	30
D1.8	Data and IPR Management Plan	WP1	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	6

Deliverable Number ¹⁴	Deliverable Title	WP number ⁹	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D1.9	Data and IPR Management initial report	WP1	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	24
D1.10	Data and IPR Management final report	WP1	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	36
D2.1	Report with the state of the art	WP2	6 - OUNL	Report	Public	2
D2.2	Conceptual map with interconnections represented	WP2	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	2
D2.3	Recommendations for User Experience definition	WP2	6 - OUNL	Report	Confidential, only for members of the consortium (including the Commission Services)	3
D2.4	Guidelines (or recommendations) of adaptive approaches for learners experience (didactical guideline)	WP2	7 - SU	Report	Confidential, only for members of the consortium (including the Commission Services)	3
D2.5	Report describing the teaching and learning process (including educational special needs)	WP2	14 - JYU	Report	Confidential, only for members of the consortium (including the Commission Services)	5
D2.6	Report with a set of e-assessment models	WP2	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	4
D2.7	Summarizing Table with e-assessment models for each partner	WP2	13 - AU	Report	Confidential, only for members of the consortium (including the	8

Deliverable Number ¹⁴	Deliverable Title	WP number ⁹	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
					Commission Services)	
D2.8	Report with detailed functional requirements from an educational point of view	WP2	12 - TUS	Report	Confidential, only for members of the consortium (including the Commission Services)	5
D3.1	State of the Art	WP3	3 - UNamur	Report	Public	2
D3.2	Data privacy considerations for information managed in the TeSLA project	WP3	3 - UNamur	Report	Confidential, only for members of the consortium (including the Commission Services)	4
D3.3	Legal and ethical framework	WP3	3 - UNamur	Report	Confidential, only for members of the consortium (including the Commission Services)	15
D3.4	Legal and ethical framework 2	WP3	3 - UNamur	Report	Confidential, only for members of the consortium (including the Commission Services)	32
D3.5	Special issues on specific aspect of the exam/evaluation	WP3	3 - UNamur	Report	Confidential, only for members of the consortium (including the Commission Services)	9
D3.6	FAQ and roadmap	WP3	3 - UNamur	Report	Confidential, only for members of the consortium (including the Commission Services)	9
D3.7	FAQ and roadmap 2	WP3	3 - UNamur	Report	Confidential, only for members of the consortium (including the Commission Services)	12
D3.8	FAQ and roadmap 3	WP3	3 - UNamur	Report	Confidential, only for members of the consortium (including the	24

Deliverable Number ¹⁴	Deliverable Title	WP number ⁹	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
					Commission Services)	
D3.9	FAQ and roadmap 4	WP3	3 - UNamur	Report	Confidential, only for members of the consortium (including the Commission Services)	33
D3.10	Final Report from Advisory Group	WP3	3 - UNamur	Report	Public	33
D3.11	Infomed consent	WP3	3 - UNamur	Report	Confidential, only for members of the consortium (including the Commission Services)	9
D3.12	Copies of ethical approvals	WP3	3 - UNamur	Report	Confidential, only for members of the consortium (including the Commission Services)	9
D4.1	Report on the analysis of the ESG from the online teaching and learning perspective.	WP4	2 - ENQA	Report	Public	2
D4.2	Definition of the quality indicators to continue the development of the pilots	WP4	15 - EQANIE	Report	Public	4
D4.3	Pilots Quality indicators	WP4	4 - AQU CATALUNYA	Report	Confidential, only for members of the consortium (including the Commission Services)	6
D4.4	Metaevaluation report of the draft e-assessment framework in light of pilots 1	WP4	4 - AQU CATALUNYA	Report	Confidential, only for members of the consortium (including the Commission Services)	18
D4.5	Metaevaluation report of the draft e-assessment framework in light of pilots 2	WP4	4 - AQU CATALUNYA	Report	Confidential, only for members of the consortium (including the Commission Services)	24

Deliverable Number ¹⁴	Deliverable Title	WP number ⁹	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D4.6	Metaevaluation report of the draft e-assessment framework in light of pilots 3	WP4	4 - AQU CATALUNYA	Report	Confidential, only for members of the consortium (including the Commission Services)	30
D4.7	Framework of e-assessment	WP4	4 - AQU CATALUNYA	Report	Public	36
D5.1	Complete descriptions and technical specification of all instruments	WP5	5 - LPLUS GmbH	Report	Confidential, only for members of the consortium (including the Commission Services)	3
D5.2	Technical report with the data definition and usage for all the methods and instruments	WP5	5 - LPLUS GmbH	Report	Confidential, only for members of the consortium (including the Commission Services)	5
D5.3	Instruments technical description and development scheduling	WP5	5 - LPLUS GmbH	Report	Public	7
D5.4	Report of the complete and final technical specification	WP5	5 - LPLUS GmbH	Report	Public	24
D5.5	Report of test protocols and complete technical documentation of the e-assessment portal	WP5	5 - LPLUS GmbH	Report	Public	12
D5.6	Final report of test protocols and complete technical documentation of the e-assessment portal.	WP5	5 - LPLUS GmbH	Report	Public	23
D5.7	User and integration documentation	WP5	5 - LPLUS GmbH	Report	Public	12
D5.8	Final user and integration documentation	WP5	5 - LPLUS GmbH	Report	Public	23
D5.9	Final evaluation report of the e-assessment portal	WP5	5 - LPLUS GmbH	Report	Public	23
D6.1	Report with the final analysis of partners' learning environments	WP6	9 - protOS	Report	Confidential, only for members of the consortium	5

Deliverable Number ¹⁴	Deliverable Title	WP number ⁹	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
					(including the Commission Services)	
D6.2	Technical document with the definition of the TeSLA framework, including the data structures and public and private interfaces	WP6	18 - Watchful	Report	Confidential, only for members of the consortium (including the Commission Services)	6
D6.3	Technical document with the definition of the TeSLA plugins for each partner's learning platform	WP6	9 - protOS	Report	Confidential, only for members of the consortium (including the Commission Services)	7
D6.4	Technical document with the definition of the external software tools	WP6	18 - Watchful	Report	Confidential, only for members of the consortium (including the Commission Services)	7
D6.5	Planning for the TeSLA software development and risk plan	WP6	9 - protOS	Report	Confidential, only for members of the consortium (including the Commission Services)	8
D6.6	Software implementing the data types and storage system (Alpha)	WP6	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	12
D6.7	Software implementing the data types and storage system (Beta)	WP6	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	18
D6.8	Software implementing the data types and storage system (Release Candidate)	WP6	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	24
D6.9	Software implementing the public and private interfaces (Alpha)	WP6	18 - Watchful	Other	Confidential, only for members of the consortium (including the	12

Deliverable Number ¹⁴	Deliverable Title	WP number ⁹	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
					Commission Services)	
D6.10	Software implementing the public and private interfaces (Beta)	WP6	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	18
D6.11	Software implementing the public and private interfaces (Release Candidate)	WP6	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	24
D6.12	Software implementing the external tools (Alpha)	WP6	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	12
D6.13	Software implementing the external tools (Beta)	WP6	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	18
D6.14	Software implementing the external tools (Release Candidate)	WP6	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	24
D6.15	Software implementing the plugins between the learning platforms and the TeSLA framework (Alpha)	WP6	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	12
D6.16	Software implementing the plugins between the learning platforms and the TeSLA framework (Beta)	WP6	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	18
D6.17	Software implementing the plugins between the learning platforms and the TeSLA framework (Release Candidate)	WP6	18 - Watchful	Report	Confidential, only for members of the consortium (including the Commission Services)	24

Deliverable Number ¹⁴	Deliverable Title	WP number ⁹	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D6.18	Software implementing the learning analytics data gathering (Alpha)	WP6	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	12
D6.19	Software implementing the learning analytics data gathering (Beta)	WP6	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	18
D6.20	Software implementing the learning analytics data gathering (Release Candidate)	WP6	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	24
D6.21	Final TeSLA software ready for distribution, with the technical description for third party developers and final users	WP6	18 - Watchful	Other	Public	36
D7.1	Report with similar experiences in educational scenarios at international level	WP7	6 - OUNL	Report	Public	2
D7.2	Report with population characteristics, geographical distribution and academic data and planned technologies	WP7	13 - AU	Report	Confidential, only for members of the consortium (including the Commission Services)	8
D7.3	Diagram/map with each pilot's scheduling and a global one with all pilots' information. It includes the teachers involved, the e-assessment model and technologies behind it to be tested (Tentative)	WP7	14 - JYU	Report	Confidential, only for members of the consortium (including the Commission Services)	9
D7.4	Diagram/map with each pilot's scheduling and a global one with all pilots' information. It includes the teachers involved, the e-	WP7	14 - JYU	Report	Confidential, only for members of the consortium (including the Commission Services)	12

Deliverable Number ¹⁴	Deliverable Title	WP number ⁹	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
	assessment model and technologies behind it to be tested (Update 1)					
D7.5	Diagram/map with each pilot's scheduling and a global one with all pilots' information. It includes the teachers involved, the e-assessment model and technologies behind it to be tested (Update 2)	WP7	14 - JYU	Report	Confidential, only for members of the consortium (including the Commission Services)	24
D7.6	Pilot coordination protocol for Small Educational pilots	WP7	7 - SU	Report	Confidential, only for members of the consortium (including the Commission Services)	10
D7.7	Pilot coordination protocol for Medium test-bed pilots	WP7	7 - SU	Report	Confidential, only for members of the consortium (including the Commission Services)	13
D7.8	Pilot coordination protocol for Large Scale pilots	WP7	7 - SU	Report	Confidential, only for members of the consortium (including the Commission Services)	25
D7.9	Report with the alternative plan/s for Small Educational pilots	WP7	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	10
D7.10	Report with the alternative plan/s for Medium Test-bed pilots	WP7	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	13
D7.11	Report with the alternative plan/s for Large Scale pilots	WP7	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	25

Deliverable Number ¹⁴	Deliverable Title	WP number ⁹	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D7.12	Report about Small Educational pilots execution	WP7	7 - SU	Report	Confidential, only for members of the consortium (including the Commission Services)	13
D7.13	Report about Medium Test-bed pilots execution	WP7	7 - SU	Report	Confidential, only for members of the consortium (including the Commission Services)	25
D7.14	Report about Large Scale pilots execution	WP7	7 - SU	Report	Confidential, only for members of the consortium (including the Commission Services)	30
D7.15	Analysis report for Small Educational pilots	WP7	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	12
D7.16	Analysis report for Medium Test-bed pilots	WP7	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	18
D7.17	Analysis report for Large Scale pilots	WP7	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	32
D8.1	Report on the Evaluation Framework	WP8	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	5
D8.2	Questionnaires for Small Educational pilots	WP8	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	9

Deliverable Number ¹⁴	Deliverable Title	WP number ⁹	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D8.3	Questionnaires for Medium Test-bed pilots	WP8	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	12
D8.4	Questionnaires for Large Scale pilots	WP8	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	24
D8.5	Evaluation Plan for the Small educational pilots	WP8	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	9
D8.6	Evaluation Plan for Medium test-bed pilots	WP8	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	13
D8.7	Evaluation Plan for Large scale pilots	WP8	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	25
D8.8	Report on Pilot Evaluation (1st year)	WP8	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	15
D8.9	Report on Pilot Evaluation (2nd year)	WP8	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	26
D8.10	Report on Pilot Evaluation (3rd year)	WP8	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	34

Deliverable Number ¹⁴	Deliverable Title	WP number ⁹	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D8.11	Final Evaluation Report	WP8	8 - OU	Report	Public	36
D9.1	TeSLA Website Online	WP9	9 - protOS	Websites, patents filling, etc.	Public	1
D9.2	Communication, Dissemination and Liaisons Plan	WP9	9 - protOS	Report	Confidential, only for members of the consortium (including the Commission Services)	3
D9.3	Communication, Dissemination and Liaisons Report, initial version	WP9	9 - protOS	Report	Confidential, only for members of the consortium (including the Commission Services)	18
D9.4	Communication, Dissemination and Liaisons Report, final version	WP9	9 - protOS	Report	Confidential, only for members of the consortium (including the Commission Services)	36
D9.5	Exploitation Plan	WP9	9 - protOS	Report	Confidential, only for members of the consortium (including the Commission Services)	3
D9.6	Exploitation Report, initial version	WP9	9 - protOS	Report	Confidential, only for members of the consortium (including the Commission Services)	18
D9.7	Exploitation Report, final version	WP9	9 - protOS	Report	Confidential, only for members of the consortium (including the Commission Services)	36

1.3.3. WT3 Work package descriptions

Work package number ⁹	WP1	Lead beneficiary ¹⁰	1 - UOC
Work package title	Project Management		
Start month	1	End month	36

Objectives

The aim of this WP is to perform overall project management, including financial management as well as quality, control and communication management of the whole project and their procedures. These activities cover the following objectives:

- Coordinate the consortium and WP leaders to ensure that all work plan activities meet the scope and objectives of the project.
- Provide an efficient preparation, coordination and review of technical and managerial documentation in order to assure the highest quality to project deliverables and public reports.
- Organise and manage project meetings.
- Motivate the cooperation of the partners and coordinating the decision-making processes.
- Provide risk management and implementing the relevant contingency plans when necessary.
- Control and monitorize resources consumption and costs statements.
- Produce and ensure both technical and financial interim and final reporting to the EC.
- Manage an efficient interaction with the European Commission and the Project Officer, handling administrative and legal matters, delivery of results and reports, and any possible amendment to the Grant Agreement.
- Promote gender equality, work and family life reconciliation and other ethical issues within the project.
- Control and monitorize the strategy for the knowledge management and protection of the outcomes and assets generated within the project in order to resolve any conflict arising and ensure an effective potential exploitation.

Description of work and role of partners

WP1 - Project Management [Months: 1-36]

UOC, ENQA, UNamur, AQU CATALUNYA, LPLUS GmbH, OUNL, SU, OU, protOS, IMT, Imperial, TUS, AU, JYU, EQANIE, INAOE, IDIAP, Watchful

This WP carries out all activities related to the overall legal, ethical, financial and administrative management activities of the

project, ensuring contractual obligations towards the European Commission, a smooth progress of the coordination and support work, resolving any conflicts and providing reporting to the Project Officer.

The WP1 will ensure the achievement of the project objectives and milestones in accordance with the time-scheduled and budgetary constraints, by organising, re-structuring and controlling the inputs and efforts of the beneficiaries. The tasks of the

WP1 will be continuous during the project lifetime and all the partners will be involved in, led by the UOC project coordinator.

The members of the consortium belong to a common sector but also to different fields and type of organisations, therefore an

efficient information flow will be required from the coordinator side.

This WP also provides and is responsible for the quality assurance of the project progress and results. An initial risk management plan has been implemented to identify potential problems during the proposal preparation phase, but will be fine-tune at the beginning of the project execution and action plans will be prepared to deal with them in case they arise.

T1.1 Administrative, financial and pilot management (M1-36, task leader UOC, contributes to D1.2, D1.3)

The administrative and financial tasks include the communication with the European Commission and Project Officer, communication between partners, electronic collaborative tools, support to partners, information exchange, EC requirements assurance, meetings organisation, events organisation, financial flows control, resources follow-up, EC funds transparent distribution among beneficiaries, legal issues, potential amendments management and gender and ethical issues. This task also includes pilot management led by UOC which will be reported in the 6-monthly and annual reports.

T1.2 Project monitoring, quality assurance and reporting (M1-36, UOC, contributes to D1.2-D1.7)

The monitoring task will include the following actions: day-by-day management, effective work and control of deadlines, work plan follow-up, deliverables and milestones follow-up, project advancement measurable indicators,

problems to be solved, decision-making processes, motivation and cooperation, quality assurance, peer review workflow for deliverables, risk management and contingency plan.

Quality assurance and proper risk management are key objectives of task T1.2. The quality assurance plan will take into account as a starting point the metrics depicted in the table Critical Risks for Implementation. The indicators will be periodically revised and updated during the project. The risks and corrective actions will be periodically revised and updated during the project and the development of the pilots. The reporting task will include the official reporting required by the European Commission: interim and annual reports preparation, templates, partners' inputs gathering, content integration, management reports elaboration, costs statements, Participant Portal management and C Forms signature process.

T1.3 IPR management (M1-36, UOC, contributes to D1.8- D1.10)

The UOC and the Innovation Manager will be responsible for defining, implementing and monitoring the actions taken within the strategy for the knowledge management and protection from the beginning of the project to ensure the effective exploitation of TeSLA's innovations. This task aims at identifying the results and the best routes to be exploited and potentially protected (if needed) and will describe the mechanisms for (i) technology watch, patentability requirements, industrial interest; (ii) protection for early disclosure, confidentiality measures; (iii) proper IP right selection. This innovation management is very relevant for the success of the project and the Innovation Manager will play an important role in the management structure and decision-making processes of TeSLA. This task will also be in charge of organising and managing the background and the IPR-related aspects of the Consortium Agreement: economic conditions for the use of the background, treatment of joint ownership, specific agreements on shares, licensing, etc. This task will have a high interaction with WP9 activities.

This task will also define the policy for data management and will control that the beneficiaries meet their responsibilities regarding research data quality, archiving and sharing to ensure that the project contributes to the re-use of the research information and to widespread the knowledge generated. The initial version of the Data Management Plan will be available at M6 and will evolve from the initial plan depending on the progress of the innovations developed. A data management report detailing all actions taken in regard of data selection, curation and publishing will be delivered at the end of the project duration at M24. This task will ensure that the consortium is ready to participate in the Pilot on Open Research Data envisioned by the European Commission within Horizon 2020.

Participation per Partner

Partner number and short name	WP1 effort
1 - UOC	56.00
2 - ENQA	2.00
3 - UNamur	2.00
4 - AQU CATALUNYA	2.00
5 - LPLUS GmbH	2.00
6 - OUNL	4.00
7 - SU	4.00
8 - OU	2.00
9 - protOS	4.00
10 - IMT	2.00
11 - Imperial	2.00
12 - TUS	2.00
13 - AU	2.00
14 - JYU	2.00
15 - EQANIE	2.00
16 - INAOE	2.00

Partner number and short name	WPI effort
17 - IDIAP	2.00
18 - Watchful	2.00
Total	96.00

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D1.1	Quality assurance and risk management plan	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	3
D1.2	Intermediate Project Report	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	18
D1.3	Final Project Report	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	36
D1.4	Periodic interim management report	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	6
D1.5	Periodic interim management report ²	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	12
D1.6	Periodic interim management report ³	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	24
D1.7	Periodic interim management report ⁴	1 - UOC	Report	Confidential, only for members of the consortium (including the	30

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
				Commission Services)	
D1.8	Data and IPR Management Plan	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	6
D1.9	Data and IPR Management initial report	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	24
D1.10	Data and IPR Management final report	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	36

Description of deliverables

D1.1 : Quality assurance and risk management plan [3]

The quality assurance plan will take into account as a starting point the metrics depicted in the table Critical Risks for Implementation. The indicators will be periodically revised and updated during the project. The risks and corrective actions will be periodically revised and updated during the project and the development of the pilots.

D1.2 : Intermediate Project Report [18]

An intermediate technical and financial report will be delivered to the EC to comply with the H2020 reporting requirements

D1.3 : Final Project Report [36]

An final technical and financial report will be delivered to the EC to comply with the H2020 reporting requirements

D1.4 : Periodic interim management report [6]

Biannual periodic reports will be prepared in order to monitor the technical and financial execution of the project

D1.5 : Periodic interim management report 2 [12]

Biannual periodic reports will be prepared in order to monitor the technical and financial execution of the project

D1.6 : Periodic interim management report 3 [24]

Biannual periodic reports will be prepared in order to monitor the technical and financial execution of the project

D1.7 : Periodic interim management report 4 [30]

Biannual periodic reports will be prepared in order to monitor the technical and financial execution of the project

D1.8 : Data and IPR Management Plan [6]

It will define the strategy for the knowledge management and protection from the beginning of the project to ensure the effective exploitation of TeSLA's innovations, as well as the policy for data management and will control that the beneficiaries meet their responsibilities regarding research data quality, archiving and sharing to ensure that the project contributes to the re-use of the research information and to widespread the knowledge generated.

D1.9 : Data and IPR Management initial report [24]

The report will evolve from the initial plan depending on the progress of the innovations developed

D1.10 : Data and IPR Management final report [36]

A data management report detailing all actions taken in regard of data selection, curation and publishing will be delivered at the end of the project

Schedule of relevant Milestones

Milestone number ¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
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DRAFT

Work package number ⁹	WP2	Lead beneficiary ¹⁰	1 - UOC
Work package title	Requirements and modeling of the educational framework		
Start month	1	End month	8

Objectives

The main goal of this WP is to define a general educational framework for an adaptive trust assessment system for teaching and learning in Higher Education. This goal includes the following ones:

- Analyse the European theory and existing experience of the partners institutions.
- Bring further clarity to the conceptualization of the field.
- Provide a foundation for the different models of adaptive trust e-assessment patterns for different educational contexts to support institutions, managers, teachers and learning designers in their e-assessment process.
- Provide a grounding for technical development of assessment tools and systems

Description of work and role of partners

WP2 - Requirements and modeling of the educational framework [Months: 1-8]

UOC, AQU CATALUNYA, LPLUS GmbH, OUNL, SU, OU, TUS, AU, JYU

To achieve the main goal of this WP, all the universities involved in the project (UOC, OUNL, SU, OUUK, TUS, AU, JYU) will provide their main concerns regarding assessment practices in their institutions. Each learning scenario has to be described taking into account the competencies to be achieved, the activities to be performed, the assessment criteria as well the expected learning outputs. A description of each virtual learning environment understood as a virtual classroom has to be also provided. The training experience about special educational needs will also be analysed and detailed to provide wellfounded information in the e-assessment framework. This means that learner profiles are being collected for each institution to identify special requirements and facilitate learner performance in learning activities. Current trends and new challenges carried out by other institutions and research outputs at international level about e-assessment will be also collected.

Once this information is collected, a set of e-assessment models will be described and standardized to define the educational framework for an adaptive trust-based e-assessment system. Each educational institution involved in the project will select the most suitable models to be introduced into their teaching and learning processes. Then the adaptive approach consists in defining the most suitable e-assessment pattern and technology, for each learning scenario. An e-assessment proposal about what should be tested in the pilots will be provided. LPLUS will help in the definition of the functional requirements of the defined e-assessment framework and AQU will help in the analysis of the quality restrictions of each university in order to take them into account in the final system.

The general educational framework will serve as the basis for developing e-assessment tools and resources to ensure authorship in any type of learning activities, final examinations or exercises. The technological requirements will be built through attending models, patterns and specifications provided by the educational framework. The educational framework has to provide a set of guidelines to enhance the e-assessment processes through learning activities in each scenario but also in the mandatory fields from an educational viewpoint have to be respected and supported by technology.

The tasks and the partners involved in each task are specified as follows:

T2.1 State of the Art (M1-M2, task leader SU, contributes to D2.1)

Definition of the main characteristics of European assessment scenarios based on evidences from the literature and the practice of the partners institutions.

T2.2 Educational framework (M1-M2, task leader UOC, contributes to D2.2)

Identification of the key elements and interconnections for the educational framework

T2.3 Accessibility (M1-M3, task leader JYU, contributes to D2.3)

Revision of the the models in respect to special accessibility issues

T2.4 Disabilities (M1-M3, task leader JYU, contributes to D2.4)

Analysis of the pedagogical models in respect to learners with disabilities

T2.5 Assessment models (M3-M5, task leader UOC, contributes to D2.5)

Define the assessment models based on the educational framework elaboration of a range of assessment models/patterns (including type of activities, learning outputs and competencies)

T2.6 Providing the elaborated e-assessment models/patterns to the partner institutions for evaluation, selection and adaptation to their needs : (M4-M4, task leader AU, contributes to D2.6)

Propose e-assessment models that institutions can select and adapt to support their teaching and learning needs

T2.7 Institutional adaptation (M4-M8, task leader OUUK, contributes to D2.7)

Selection, adaptation and contextualisation of the e-assessment patterns in each partner-institution and mapping the pilots (planning of which patterns of evaluation in which learning scenarios, subjects, groups of learners will be applied).

Definition and selection of the suitable e-assessment models by each institution to transfer to WP 7, for planning pilots.

T2.8 Functional requirements (M4-M5, task leader TUS, contributes to D2.8)

Define functional requirements and specifications based on the developed models to support the technological definition of the system.

Participation per Partner

Partner number and short name	WP2 effort
1 - UOC	16.00
4 - AQU CATALUNYA	1.00
5 - LPLUS GmbH	1.00
6 - OUNL	6.00
7 - SU	6.00
8 - OU	6.00
12 - TUS	6.00
13 - AU	6.00
14 - JYU	8.00
Total	56.00

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D2.1	Report with the state of the art	6 - OUNL	Report	Public	2
D2.2	Conceptual map with interconnections represented	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	2
D2.3	Recommendations for User Experience definition	6 - OUNL	Report	Confidential, only for members of the consortium (including the Commission Services)	3
D2.4	Guidelines (or recommendations) of adaptive approaches for learners experience	7 - SU	Report	Confidential, only for members of the consortium (including the Commission Services)	3

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
	(didactical guideline)				
D2.5	Report describing the teaching and learning process (including educational special needs)	14 - JYU	Report	Confidential, only for members of the consortium (including the Commission Services)	5
D2.6	Report with a set of e-assessment models	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	4
D2.7	Summarizing Table with e-assessment models for each partner	13 - AU	Report	Confidential, only for members of the consortium (including the Commission Services)	8
D2.8	Report with detailed functional requirements from an educational point of view	12 - TUS	Report	Confidential, only for members of the consortium (including the Commission Services)	5

Description of deliverables

The deliverables are described as a report which contains the gathered information and its analysis and conclusions.

D2.1 : Report with the state of the art [2]

Definition of the main characteristics of European assessment scenarios based on evidences from the literature and the practice of the partners institutions.

D2.2 : Conceptual map with interconnections represented [2]

Conceptual map of the educational framework with the key elements and interconnections.

D2.3 : Recommendations for User Experience definition [3]

It will propose e-assessment models that institutions can select and adapt to support their teaching and learning needs, taking into account all types of end learners

D2.4 : Guidelines (or recommendations) of adaptive approaches for learners experience (didactical guideline) [3]

A set of guidelines/recommendations containing the most suitable e-assessment pattern and technology for adaptive e-assessment.

D2.5 : Report describing the teaching and learning process (including educational special needs) [5]

This report will describe the educational processes that involve the teachers and learners, taking into account the special education needs.

D2.6 : Report with a set of e-assessment models [4]

This report will summarize the different e-assessment models that cover the needs of all the institutions participating in the pilots.

D2.7 : Summarizing Table with e-assessment models for each partner [8]

Table with the e-assessment models used by each of the partners involved in the pilots.

D2.8 : Report with detailed functional requirements from an educational point of view [5]

It will define functional requirements and specifications based on the developed models to support the technological definition of the system.

Schedule of relevant Milestones

Milestone number ¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS1	TeSLA requirements defined	5 - LPLUS GmbH	6	Deliver D6.2, which combines the requirements from all related WPs and defines the final system design.
MS3	Ready for pilots	7 - SU	9	The deliver D7.3 will contain the planning for the pilots, taking into account all the requirements to start

Work package number ⁹	WP3	Lead beneficiary ¹⁰	3 - UNamur
Work package title	Data privacy and ethics		
Start month	1	End month	33

Objectives

The major challenge of this WP is to integrate the privacy dimension (based on legal social and ethical issues) in a project is to try to identify the learner as much as possible. As the recognition of the learner is a major challenge in this project, we will have to design a system which protects privacy without reducing the trustability and correctness of the recognition. The objectives are therefore:

- Analyse the concept of proportionality towards the identification of the data needed to be done by the WP5.
- Detect legal and ethical constraints with respect to the European privacy principles.
- Define and implement security mechanisms required for each data type.
- Preserve the ethical code at European level.

Description of work and role of partners

WP3 - Data privacy and ethics [Months: 1-33]

UNamur, UOC, LPLUS GmbH, OUNL, SU, OU, IMT, TUS, AU, JYU, Watchful

The WP will explore the main ethical and legal issues raised by the project regarding its legal compliance and its social and ethical acceptability. Those issues will be identified by organizing a workshop with the designers (LPLUS, PROTOS and IMT) and universities (UOC, OUNL, SU, OUUK, TUS, AU and JYU) in order to understand the major technological choices at work to support the learners' identification and the trust of the system. Based on this understanding, a legal state-of-the-art will be conducted in order to point out the pertinent legislation as, for instance, the European Convention on Human Rights (e.g. art. 8 and 14), the Convention for Protection of Individuals with regard to Automatic Processing of Personal Data (108 of the Council of Europe), articles 7 and 8 of the EU Charter of Fundamental Rights, Directive 95/46 on the protection of individuals with regard to the processing of personal data and on the free movement of such data and, if the case arises, the new regulation on Privacy. The ethical analysis will explore the script of the project and will design a cartography of the different actors concerned in the project. This cartography will help to explore the balance of interests between the different

actors regarding their social acceptability of the technological choices embarked in the script.

The results of the primary exploration will be used in order to analyze the used data and methods in WP5 from a proportionality side. That is, to identify if the data collected is proportional in the sense of the European privacy and ethical

principles. In this sense, we will analyze, amongst others, the opportunity to use a Trusted Third Party (TTP) to allow the project to be compliant with the legal constraints. The framework will have to be analyzed from an ethical point of view. In this analysis, UNamur will participate as the data privacy and ethics expert with the leaders of technological WPs (LPLUS and PROTOS), and IMT as the security expert.

Indeed, social acceptability is a major issue to have a successful project or not. This analysis will be conducted on both learners and teachers and on universities and evaluators. To validate social acceptability, a sample of the 'public' concerned with the project will be drawn up with the help of the consortium in order to create a panel of 100 representatives. The criteria to be used to make this panel will take into account the roles (learners, academic assessors, education authority...) but also the national sensitivities for privacy protection as analyzed by our team in the PRACTIS project (<http://www.practis.org/>). This panel will be questioned through a online survey in order to collect their requirements regarding privacy protection to be

supported by the project and their assessment on the technological and organizational specifications that could make the project socially acceptable. The analysis of this survey will identify the points of consensus but also the controversies expressed by the public in order to help the designers to improve the social acceptability of the technological specifications of the system. A web survey will be conducted in order to assess the area of social acceptability.

To ensure the compliance of the TeSLA project with the legal restrictions and its ethical aspects, a FAQ and roadmap will be performed for best practices, and an advisory group will be created as an independent consultant, with the responsibility of providing recommendations and audit the development of the project with respect to ethical and data privacy points of view.

T3.1 State of the Art (M1-M2, task leader UNamur, contributes to D3.1)

To explore the main ethical and legal issues raised by the project. First legal and ethical analysis will document the privacy and ethical requirements for a socially acceptable and economically supportable balance between recognition and privacy.

T3.2 Legal and Ethical aspects. Social acceptability. (M2-M32, task leader UNamur, contributes to D3.2)

Analysis of the ethical aspects of the project, the legal restrictions related to data privacy and issues to be considered for social acceptability. We will provide a first deliverable with the legal aspects and considerations about methods and data involved in WP5. This task will then focus its activity on the ethical and social acceptability, with a first deliverable in M15, and will continue all along the project to guarantee compliance with the legal and ethical requirements.

T3.3 Ethical considerations on assessment (M6-M9, task leader UNamur, contributes to D3.3, D.3.4)

The WP will question the project on some issues as the length of the exam/evaluation, the kind of picture which will create an alert. What will be an abnormal picture?

T3.4 Ethical & Legal Advisory Group (M4-M33, task leader UNamur, contributes to D3.5, D3.10)

The objective of this task is fourfold:

1. Elaborate an agreement between the consortium and the board that defines the mission statement of the board, that protects its independency and that organizes its agenda.
2. Prepare the documents and the materials to be submitted to the board to collect their assessments and recommendations.
3. Translate the recommendations to make them operational for all the partners associated to the project.
4. Document all this ethical process to make the ethical specification traceable and improve the accountability of the project.

T3.5 FAQ and roadmap (M5-M33, task leader UNamur, contributes to D3.6-D3.9)

The objective of this task is threefold:

1. UNamur will operate all along the project and with ongoing consultancy (help desk) regarding the main and relevant privacy's questions encountered by the partners in their technological tasks.
2. A FAQ document will be written to summarise these questions and answers;
3. Based on these questions (and the answers given by UNamur), on the concepts and processes emerging from the previous WP2 tasks and on existing best practices, an ethical roadmap will be drawn up. This roadmap will formalize the ethical diary of the project in order to set up concepts, methods and best practices that should help other projects to manage the balance between recognition and privacy.

Participation per Partner

Partner number and short name	WP3 effort
1 - UOC	1.00
3 - UNamur	30.00
5 - LPLUS GmbH	2.00
6 - OUNL	1.00
7 - SU	1.00
8 - OU	1.00
10 - IMT	2.00
12 - TUS	1.00
13 - AU	1.00
14 - JYU	1.00
18 - Watchful	2.00
Total	43.00

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D3.1	State of the Art	3 - UNamur	Report	Public	2
D3.2	Data privacy considerations for information managed in the TeSLA project	3 - UNamur	Report	Confidential, only for members of the consortium (including the Commission Services)	4
D3.3	Legal and ethical framework	3 - UNamur	Report	Confidential, only for members of the consortium (including the Commission Services)	15
D3.4	Legal and ethical framework 2	3 - UNamur	Report	Confidential, only for members of the consortium (including the Commission Services)	32
D3.5	Special issues on specific aspect of the exam/ evaluation	3 - UNamur	Report	Confidential, only for members of the consortium (including the Commission Services)	9
D3.6	FAQ and roadmap	3 - UNamur	Report	Confidential, only for members of the consortium (including the Commission Services)	9
D3.7	FAQ and roadmap 2	3 - UNamur	Report	Confidential, only for members of the consortium (including the Commission Services)	12
D3.8	FAQ and roadmap 3	3 - UNamur	Report	Confidential, only for members of the consortium (including the Commission Services)	24
D3.9	FAQ and roadmap 4	3 - UNamur	Report	Confidential, only for members of the consortium (including the	33

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
				Commission Services)	
D3.10	Final Report from Advisory Group	3 - UNamur	Report	Public	33
D3.11	Infomed consent	3 - UNamur	Report	Confidential, only for members of the consortium (including the Commission Services)	9
D3.12	Copies of ethical approvals	3 - UNamur	Report	Confidential, only for members of the consortium (including the Commission Services)	9

Description of deliverables

D3.1 : State of the Art [2]

It will explore the main ethical and legal issues raised by the project. First legal and ethical analysis will document the privacy and ethical requirements for a socially acceptable and economically supportable balance between recognition and privacy

D3.2 : Data privacy considerations for information managed in the TeSLA project [4]

Starting with the detailed description of all the technologies involved in the TeSLA project and the analysis of the European and local legislation in each country where pilots will be performed, this document will explain all the considerations to take into account in terms of data privacy, including protocols, data storage, restrictions in how and how long data is stored.

D3.3 : Legal and ethical framework [15]

A legal state-of-the-art will be conducted in order to point out the pertinent legislation

D3.4 : Legal and ethical framework 2 [32]

Update of the legal state-of-the-art conducted in order to point out the pertinent legislation

D3.5 : Special issues on specific aspect of the exam/evaluation [9]

This document will be a set of recommendations in the evaluation process from an ethical point of view. It will consider aspects as the format or duration of the assessment activities and or the use of certain technologies in some of the activities.

D3.6 : FAQ and roadmap [9]

A FAQ document will be written to summarise privacy's questions encountered by the partners in their technological tasks. Based on these questions (and the answers given by UNamur), on the concepts and processes emerging from the previous WP2 tasks and on existing best practices, an ethical roadmap will be drawn up. This roadmap will formalize the ethical diary of the project in order to set up concepts, methods and best practices that should help other projects to manage the balance between recognition and privacy

D3.7 : FAQ and roadmap 2 [12]

Update of the FAQ document written to summarise privacy's questions encountered by the partners in their technological tasks. Based on these questions (and the answers given by UNamur), on the concepts and processes emerging from the previous WP2 tasks and on existing best practices, an ethical roadmap will be drawn up. This

roadmap will formalize the ethical diary of the project in order to set up concepts, methods and best practices that should help other projects to manage the balance between recognition and privacy

D3.8 : FAQ and roadmap 3 [24]

Update of the FAQ document written to summarise privacy’s questions encountered by the partners in their technological tasks. Based on these questions (and the answers given by UNamur), on the concepts and processes emerging from the previous WP2 tasks and on existing best practices, an ethical roadmap will be drawn up. This roadmap will formalize the ethical diary of the project in order to set up concepts, methods and best practices that should help other projects to manage the balance between recognition and privacy

D3.9 : FAQ and roadmap 4 [33]

Update of the FAQ document written to summarise privacy’s questions encountered by the partners in their technological tasks. Based on these questions (and the answers given by UNamur), on the concepts and processes emerging from the previous WP2 tasks and on existing best practices, an ethical roadmap will be drawn up. This roadmap will formalize the ethical diary of the project in order to set up concepts, methods and best practices that should help other projects to manage the balance between recognition and privacy

D3.10 : Final Report from Advisory Group [33]

Final report from the external Advisory Group on the ethical and legal aspects with a description and evaluation of how the project has dealt with ethical and legal matters, both in its development as the TeSLA system itself.

D3.11 : Infomed consent [9]

Informed consent procedure and documents related to this procedure.

D3.12 : Copies of ethical approvals [9]

Copies of ethical approvals for the collection of personal data by the competent University Data Protection Officer/ National Data Protection authority.

Schedule of relevant Milestones

Milestone number ¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS1	TeSLA requirements defined	5 - LPLUS GmbH	6	Deliver D6.2, which combines the requirements from all related WPs and defines the final system design.

Work package number ⁹	WP4	Lead beneficiary ¹⁰	4 - AQU CATALUNYA
Work package title	Quality assurance in online higher education		
Start month	1	End month	36

Objectives

The main goal of this WP is to assure and guarantee the quality of e-assessment processes in Higher Education. It includes:

- Define the quality aspects that must be followed during the project development to be aligned with the aims of the quality assurance agencies responsible for the Higher Education System.
- Establish the quality parameters of learner assessment in online Higher Education (considering ESG).
- Ensure the timely implementation of the baseline activities according to the agreed procedure.
- Guarantee that the proposed model of e-assessment fits the criteria defined by quality agencies to be accredited

Description of work and role of partners

WP4 - Quality assurance in online higher education [Months: 1-36]

AQU CATALUNYA, ENQA, EQANIE

The work will focus on how European Standards and Guidelines (ESG) could be adapted to online institutions and online or blended programmes. The analysis will take into account how internal and external quality assurance should be implemented for online Higher Education.

In relation with European standards and guidelines for internal quality assurance within Higher Education institutions, particular attention will be brought into standards 1.3 “Assessment of learners” (learners should be assessed using published criteria, regulations and procedures which are applied consistently) and 1.5 “Learning resources and learner support” (institutions should ensure that the resources available for the support of learner learning are adequate and appropriate for each programme offered). From the external quality assurance point of view, a deep analysis will be conducted in relation with standards 2.2 “Development of external quality assurance processes” and 2.4 “Processes fit for purpose”.

A new version of ESG may be approved in 2015. The project will take into account all the points of this new version that are relevant for online Higher Education. For example, learner centered-learning or learner admission, progression, recognition and certification.

The partners involved in this WP are the three quality and certification agencies (AQU, ENQA and EQANIE), and will take into account the ESG in order to validate the quality aspects of the pilots. This will provide results to improve quality criteria for e-assessment in teaching and learning processes (assessment methodology, assessment fairness, assessment consistency, etc.). ENQA has the global vision of the European standards and AQU has expertise in the accreditation and quality auditory of online Higher Education institutions. EQANIE will provide a more technological point of view of accreditation and quality standards.

T4.1 State of the art (M1-M2, task leader ENQA, contributes to D4.1)

Analyse the European Standards and Guidelines (ESG) taking into account the characteristics of online provision of educational offers by institutions and degree programmes.

T4.2 Framework Analysis (M2-M4, task leader EQANIE, contributes to D4.2)

Identification of the elements to be considered in the system, in terms of academic activities, competence evaluation, assessment models and the guarantees provided by technological systems.

T4.3 Pilots quality indicators (M5-M6, task leader AQU, contributes to D4.3)

Propose a set of quality indicators that will be used to assess the performance and achievements in the pilots.

T4.4 Pilots quality (M10-M30, task leader AQU, contributes to D4.4 - D4.6)

Verify the quality aspects of the pilots and extract recommendations for improving next pilots (metaevaluation).

T4.5: Quality framework (M34-M36, task leader ENQA, contributes to D4.7)

Define a framework for quality assurance for e-assessment, considering all the information gathered during the Tesla project

Participation per Partner

Partner number and short name	WP4 effort
2 - ENQA	24.00
4 - AQU CATALUNYA	36.00
15 - EQANIE	20.00
Total	80.00

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D4.1	Report on the analysis of the ESG from the online teaching and learning perspective.	2 - ENQA	Report	Public	2
D4.2	Definition of the quality indicators to continue the development of the pilots	15 - EQANIE	Report	Public	4
D4.3	Pilots Quality indicators	4 - AQU CATALUNYA	Report	Confidential, only for members of the consortium (including the Commission Services)	6
D4.4	Metaevaluation report of the draft e-assessment framework in light of pilots 1	4 - AQU CATALUNYA	Report	Confidential, only for members of the consortium (including the Commission Services)	18
D4.5	Metaevaluation report of the draft e-assessment framework in light of pilots 2	4 - AQU CATALUNYA	Report	Confidential, only for members of the consortium (including the Commission Services)	24
D4.6	Metaevaluation report of the draft e-assessment framework in light of pilots 3	4 - AQU CATALUNYA	Report	Confidential, only for members of the consortium (including the Commission Services)	30
D4.7	Framework of e-assessment	4 - AQU CATALUNYA	Report	Public	36

Description of deliverables

D4.1 : Report on the analysis of the ESG from the online teaching and learning perspective. [2]

It will analyse the European Standards and Guidelines (ESG) taking into account the characteristics of online provision of educational offers by institutions and degree programmes

D4.2 : Definition of the quality indicators to continue the development of the pilots [4]

It will propose a set of quality indicators for the TeSLA technological framework.

D4.3 : Pilots Quality indicators [6]

Definition of the quality indicators that will be used to assess the performance and achievements in the pilots.

D4.4 : Metaevaluation report of the draft e-assessment framework in light of pilots 1 [18]

Metaevaluation of the e-assessment framework from the point of view of quality, including the project and framework itself, the protocols for the evaluation, and the small test-bed pilots.

D4.5 : Metaevaluation report of the draft e-assessment framework in light of pilots 2 [24]

Metaevaluation of the e-assessment framework from the point of view of quality, including the project and framework itself, the protocols for the evaluation, and the medium test-bed pilots.

D4.6 : Metaevaluation report of the draft e-assessment framework in light of pilots 3 [30]

Final metaevaluation of the e-assessment framework from the point of view of quality, including the project and framework itself, the protocols for the evaluation, and all conducted pilots (including large scale pilots).

D4.7 : Framework of e-assessment [36]

A framework for quality assurance for e-assessment, considering all the information gathered during the TeSLA project

Schedule of relevant Milestones

Milestone number ¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS1	TeSLA requirements defined	5 - LPLUS GmbH	6	Deliver D6.2, which combines the requirements from all related WPs and defines the final system design.

Work package number ⁹	WP5	Lead beneficiary ¹⁰	5 - LPLUS GmbH
Work package title	Design and implementation of trusted assessment mechanisms		
Start month	1	End month	24

Objectives

The main goal of this WP is to design and implement technologies behind the project to be integrated and used in pilots. It involves identifying and implementing all the technological requirements and tools to support the adaptive trust e-assessment

model. The specific objectives are:

- Specify the biometric techniques (facial recognition, keystroke dynamics and voice recognition).
- Analyse and specify the forensic analysis (natural language analysis).
- Implement security techniques (digital signature, encryption, timestamp,...).
- Specify, design and implement the authorship and plagiarism evaluation

Description of work and role of partners

WP5 - Design and implementation of trusted assessment mechanisms [Months: 1-24]

LPLUS GmbH, UOC, UNamur, protOS, IMT, Imperial, INAOE, IDIAP, Watchful

There are several systems (instruments) to support an adaptive trust assessment model. The consortium has to analyze the existing instruments and to check the transferability to a standardized model. In addition to the general ability, it needs to be investigated whether the instruments are suitable in the context of high stake loadings (up to 10,000 simultaneous assessments). Furthermore, it has to be explored how single or multiple instruments are suitable for the different test formats (continuous, formative, final and peer assessments) and finally, make available the appropriate instruments on a web-based e-assessment portal.

T5.1 Specification of each system (instrument) (M1-M3, task leader LPLUS, contributes to D5.1)

Define the requirements on the input data, storage and the outputs of each system. The description should include (if applicable), and other criteria may be stated:

- Input data description and possible formats to be used in each system.
- Data quality aspects such as sampling, resolution or type of documents.
- Minimum data block for evaluation, that is, the minimum valid length for a prediction (number of pages of a document, number of frames, seconds of sound, ...)
- Estimation of the learnt models size in Mb/person.

T5.1.1 Specification of Forensic Analysis Tool (M1-M3, task leader INAOE)

The forensic analysis tool comprises mechanisms and devices for determining the verification and authorship attribution of written documents. In this task, the formal requirements on the format, type and lengths of the documents will be analysed, including any additional consideration in terms of information storage and the outputs of the system.

T5.1.2 Specification of Face Recognition Tool (M1-M3, task leader IMPERIAL)

The partners will define the requirements for best practice tools and methods for face recognition to become part of the TeSLA control instruments specifically for e-assessment. The quality information on the input images and time restrictions will be defined. In addition, the learnt models for this biometric technique will be detailed together with the output format.

T5.1.3 Specification of Voice Recognition Tool (M1-M3, task leader IDIAP)

The requirements of the voice recognition (or speaker recognition) tool will be defined in terms of accuracy (False Acceptance Rate vs False Rejection Rate), duration of utterances as well as speed for enrollment and test.

T5.1.4 Specification of Plagiarism Analysis Tool (M1-M3, task leader UOC)

Plagiarism detection consists of carrying out a comparison of learners' deliverables to find common elements. This comparison can be carried out between learners submitting an activity, between activities submitted in the context of the same course (in the same semester or other semesters) or even with the Internet content. The format of the documents to be analysed and the reference information will be defined. The outputs of the system will be described in order to be analysed in the final system.

T5.1.5 Specification of security techniques (M1-M3, task leader IMT)

Security techniques are those tools related to information security, such as the digital signature, encryption, timestamp or anti-spoofing, that will be used to secure the communications and for digital document validation, and to avoid authentication vulnerabilities in face and voice recognition.

T5.2: Analysing of the existing control instruments (M3-M5, task leader LPLUS, contributes to D5.2)

The information provided for all instruments is analysed and we will work out the concept for the technical requirements (informations, format, quality) to implement trusted assessment mechanisms. Balancing with the limitations coming from WP3 regarding privacy and ethics and from WP4 (quality) will also be done.

T5.3 Technical specification (M5-M7, task leader LPLUS, contributes to D5.3)

LPLUS: Based on the experience of the partners, the results of WP 3, the requirements of the educational model (WP 2) and the quality standards (WP 4) LPLUS will make a specification for an integrated web based portal (suite) containing the available instruments to ensure learner authentication and authorship. To ensure the correct integration of the developed systems with the final system, the leader of WP6 (PROTOS) will participate in the technical specification. To ensure that this will be done keeping in mind the concept of proportionality requested from a privacy point of view, UNamur will collaborate.

T5.4 Implementation of each systems (M8-M24, task leader LPLUS, contributes to D5.4 and D5.7)

To implement the instruments defined in T5.1 in accordance with the technical specifications provided by WP6. This task will be conducted in an incremental strategy, providing functionalities as soon as they are integrated. During the pilots, the results of each one of the modules will be analysed in terms of performance and scalability, introducing the required improvements to the system and instruments.

T5.4.1 Implementation of Forensic Analyse Tool (M8-M24, task leader INAOE)

Implementation of the trusted assessment mechanisms based on forensic analysis for confirming/refuting the authorship of documents written by the learners. These techniques comprise profile-based representations, standard supervised-learning methods, ad hoc authorship-analysis features and distributed representations. Such methodologies have been evaluated in benchmark data and in several evaluation campaigns. At the end, a technical report with a quantitative evaluation of the performance of the authorship analysis mechanisms will be provided.

T5.4.2 Implementation of Face Recognition Tool (M8-M24, task leader IMPERIAL)

IMPERIAL will implement a face recognition tool applying a pipeline that comprises of (a) facial landmark localization, (b) face normalization by using the acquired from step (a) detected landmarks (i.e., also called as face “frontalization”) and (c) feature extraction by training a Deep Convolutional Neural Network –DCNNs (based on the results acquired from steps (a) and (b)), using a large database of facial samples. This pipeline will be tailored to the needs of a continuous verification scenario. That is, facial landmarks will be tracked in videos. Then, using the acquired facial landmarks along with the rich information provided from the video frames, statistical normalization of the face will be implemented (i.e., a rich face “frontalization” exploiting the video frames). The existing facial databases will be exploited to train a DCNN which will be used for features extraction. Finally, it is worth noting that all the steps will be implemented in such a way that real-time high-performance face verification is achieved.

T5.4.3 Implementation of Voice Recognition (M8-M24, task leader IDIAP)

IDIAP will implement the latest state-of-art text-independent voice recognition techniques based on i-Vectors top-ranked during the last International evaluations organized by NIST.

T5.4.4 Implementation of Plagiarism Analysis Tool (M8-M24, task leader UOC)

The UOC will implement a plagiarism detection tool based on Natural Language Processing based on their current working system. The current system is integrated with this university campus and has been widely tested in many different subjects. Those methods will be implemented taking into account the TeSLA framework in order to be used by different institutions.

T5.4.5 Implementation of security techniques (M8-M24, task leader IMT)

IMT will coordinate and carry out with the implementation of the security mechanisms of the system. It will include the digital signature of learners’ deliverables in order to avoid non repudiation. The timestamp mechanisms, which provide the learners with a delivery receipt that guarantee the finishing date and content of their deliverables. Finally, IDIAP will implement the anti-spoofing techniques for voice and face recognition.

T5.5 Programming the e-assessment portal (M8-M23, task leader LPLUS, contributes to D5.5, D5.6)

Based on the agreed specification LPLUS will design and manufacture a standard assessment tool (web application) for preparation, monitoring and validation of any kind of distance examination procedures.

T5.6: Implementation of the e-assessment portal (M9-M23, task leader LPLUS, contributes to D5.7)

Implement the e-assessment portal that will be used by the TeSLA system. This task is the bridge between the development team in WP5 with the integration team in WP6, and will assist in implementing the trust-assessment instruments required for successful integration.

T5.7: Evaluation of the e-assessment portal (M10-M23, task leader LPLUS, contributes to D5.9)

Analyse the data provided by the pilots’ execution and to extract improvements for all the instruments. Performance and system requirements will be monitored and analysed in order to ensure a correct scalability of the TeSLA system.

Participation per Partner

Partner number and short name	WP5 effort
1 - UOC	12.00
3 - UNamur	3.00
5 - LPLUS GmbH	60.00
9 - protOS	4.00
10 - IMT	25.00
11 - Imperial	16.00
16 - INAOE	16.00
17 - IDIAP	60.00
18 - Watchful	12.00
Total	208.00

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D5.1	Complete descriptions and technical specification of all instruments	5 - LPLUS GmbH	Report	Confidential, only for members of the consortium (including the Commission Services)	3
D5.2	Technical report with the data definition and usage for all the methods and instruments	5 - LPLUS GmbH	Report	Confidential, only for members of the consortium (including the Commission Services)	5
D5.3	Instruments technical description and development scheduling	5 - LPLUS GmbH	Report	Public	7
D5.4	Report of the complete and final technical specification	5 - LPLUS GmbH	Report	Public	24
D5.5	Report of test protocols and complete technical documentation of the e-assessment portal	5 - LPLUS GmbH	Report	Public	12
D5.6	Final report of test protocols and	5 - LPLUS GmbH	Report	Public	23

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
	complete technical documentation of the e-assessment portal.				
D5.7	User and integration documentation	5 - LPLUS GmbH	Report	Public	12
D5.8	Final user and integration documentation	5 - LPLUS GmbH	Report	Public	23
D5.9	Final evaluation report of the e-assessment portal	5 - LPLUS GmbH	Report	Public	23

Description of deliverables

D5.1 : Complete descriptions and technical specification of all instruments [3]

Report detailing all the instruments, including the input data, storage and outputs of all the methods. That will include formats, quality requirements and size indicators.

D5.2 : Technical report with the data definition and usage for all the methods and instruments [5]

Technical requirements for all the instruments, that will take into account the requirements of each individual instrument and the limitations and requirements to deal with privacy, ethics, and quality.

D5.3 : Instruments technical description and development scheduling [7]

Technical description of each instrument to be able to be incorporated to the final TeSLA system. It will contain the API and data formats of all instruments and the detailed instruments development schedule.

D5.4 : Report of the complete and final technical specification [24]

Technical description of the final version of the web portal, containing the detailed description of the API both for general functionalities and to accessing the functionalities of each instrument. It will also include the description of the data, usage and methodology.

D5.5 : Report of test protocols and complete technical documentation of the e-assessment portal [12]

Description of the test protocols used to ensure that the e-assessment portal and all the instruments work properly, with the used indicators and test data used for tests. It will also contain the results on the tests in the already developed parts of the system.

D5.6 : Final report of test protocols and complete technical documentation of the e-assessment portal. [23]

Description of the test protocols used to ensure that the e-assessment portal and all the instruments work properly, with the used indicators and test data used for tests. It will also contain the results for the final system.

D5.7 : User and integration documentation [12]

Documentation for the use of the e-assessment portal for users and developers.

D5.8 : Final user and integration documentation [23]

Documentation for the use of the e-assessment portal for users and developers, containing the changes introduced during the development.

D5.9 : Final evaluation report of the e-assessment portal [23]

Report with the results and indicators for the test pilots at e-assessment portal and instruments.

Schedule of relevant Milestones

Milestone number ¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS1	TeSLA requirements defined	5 - LPLUS GmbH	6	Deliver D6.2, which combines the requirements from all related WPs and defines the final system design.
MS2	TeSLA development planning	18 - Watchful	8	Deliver D6.5, which contains the final development planning.
MS5	TeSLA system developed	1 - UOC	18	The of D6.7, D6.10, D6.13, D6.16, and D6.19 will contain all software system
MS6	2nd year pilots executed and analysed	7 - SU	26	The deliver D8.9 will contain the details or the execution and the results analysis for 2nd year pilots
MS7	3rd year pilots executed and analysed	8 - OU	34	The deliver D8.10 will contain the details or the execution and the results analysis for 3rd year pilots.
MS8	TeSLA framework evaluated and released	1 - UOC	36	The deliver D6.21 will contain the TeSLA system's final release. The deliver D8.5 contains the final evaluation report for the pilots and the system

Work package number ⁹	WP6	Lead beneficiary ¹⁰	18 - Watchful
Work package title	Integration of the framework in learning environments		
Start month	1	End month	36

Objectives

To integrate the technical and methodological topics worked on in WP5 into the learning environments of partners involved in the development of pilots. This objective takes into account the educational properties for learning and e-assessing defined in WP2, the pilots themselves (WP7), and the exploitation plan designed in WP9. The specific objectives are:

- Analyse critical features of each partner's learning environment (especially the ones involved in pilots), including the learner information system, to ensure the assessment system is transferable to multiple organizations and fits into special learning needs.
- Analyse the most suitable learning and assessment tools in order to cover all the needs from all academic activities that will be applied in pilots.
- Define and implement flexible software modules in different learning environments to cover each stage of pilots till the end of the large scale pilots considering each previous learning analysis.
- Define a system according to the exploitation plan.

Description of work and role of partners

WP6 - Integration of the framework in learning environments [Months: 1-36]

Watchful, UOC, UNamur, LPLUS GmbH, OUNL, SU, OU, protOS, IMT, TUS, AU, JYU

One of the main concerns of the TeSLA project is to adapt the technology to the educational needs, and not the contrary. In this line, this WP is devoted to the final integration of all the technological modules in order to cover all the requirements coming from the educational and special needs analysed in this WP2, the requirements on data quality and flow defined in WP5 and the requirements extracted from the analysis of all partners' educational frameworks analyzed in this WP. The integration must take into account security aspects for the final system and the data privacy and ethical concerns provided by WP4. The final system will be built by assuring partially the integration across each pilot till the final one. The final goal of this WP is to define the software and hardware infrastructure that will allow all the partners to connect their learning environments to the TeSLA system in order to perform all the required types of learning activities with all the guarantees in terms of data privacy, security, authentication and authorship.

The first task of this WP will be to work with all the partners involved in the pilots in order to collect all the specifications in their learning environments, since some universities use their own platforms and other use standard platforms such as Moodle or Blackboard. This task will involve the technical staff of those universities (UOC, OUNL, SU, OUUK, TUS, AU and JYU), with the help of PROTOS, which is an expert in learning platforms development.

Using the information gathered on the first task, together with the adaptive e-assessment model developed in WP2, that has been informed by assessment practices across partner institutions and the data requirements provided by WP5, the second task of this WP is to define a public interface of the TeSLA system to be tested in pilots, taking into account:

- Functional requirements: WP2 delivers a conceptual model, based on assessment types, and related to authentication and authorship requirements. That means that all the types of activities required by the educational institutions are covered (e.g. write an essay, solve cases, answer questions orally, or by completing a multiple choice test, etc.) and taking into account the context (e.g. institution, policy, location, special needs...). The TeSLA framework must support all the identified use cases, adapting the system to the needs of each institution and learner.
- Technical requirements: Each learning platform uses different authentication standards and provides public interfaces with different actions and data models. The public interface of the TeSLA system must ensure that all those platforms will be able to connect to all those systems and interchange the required data.
- Statistical information: Apart from being able to guarantee authentication and authorship in the e-assessment process, and to provide all the information required by WP8 for evaluation, the aim of the project is to improve the learning experience of the learners. One of nowadays' most growing interests in the educational field is the ability of get information about the learning process. In this sense, the public interface of the TeSLA system will provide the required methods to obtain as much information as it will be possible from all the activities done on the system, allowing the educational centres to use this system to perform learning analytics over the assessment process. In addition, other information will be gathered to verify /certify that all the internal modules are working as is expected.

Once the public interface is defined, the technical staff of each university that participates in the pilots can start working on creating the connectors or plug-ins that will allow their learning platforms to connect and take advantage of the trusted eassessment mechanisms provided by the TeSLA system.

The public interface is the contract between the world and the TeSLA system, defining which functionalities are provided and how to use them. This is because many technologies are required in order to provide such functionalities, and much of the data will require to be stored in the system (biometric models, activities, ...). It will also require defining internal interfaces and data formats to ensure that all the technological modules developed in WP5 can interoperate in order to provide the required functionalities. These issues will be tested by the iterative pilots. WFSF will collaborate with LPLUS in order to ensure connectivity; UNAMUR will ensure that data privacy and ethical restrictions are successfully achieved, and IMT will take care about the final system security aspects. The data flow and activity models will also be defined. As a result, the formal technical structure of the TeSLA system will be created and provided to WP5 in order to develop their modules according to the specifications of the final system. In the definition of those requirements, the following aspects will be considered:

- Security: Access to the system is restricted to allowed users in the approved ways, preserving the system's integrity and data protection.

- Interoperability: There exist some standards for some parts of the technologies involved in the TeSLA system. Use those standards reduce the integration risks and facilitate future exploitation of the project results. For instance, in the case of biometric part, there exists a standard call BioAPI that defines data flows and formats together with all the protocols to perform biometric actions. There are also standards on the digital signature of documents, which will allow the validation of those secure documents by third party software. Standards for guaranteeing the accessibility of learners with special needs (mental and physical disable or special learning needs) into the system will be considered.

- Scalability: The system design requires being able to grow in functionalities and in number of users. This must be considered in design time, for instance using cloud services.

- Data privacy: The data coming from learning platforms, together with all the data gathered during the assessment process and all the internal information stored in order to provide the required functionalities (e.g. biometric models of the users), needs to be stored and protected in order to accomplish all the data privacy considerations, provided by WP3. Once the design of the TeSLA system has been provided to WP5, the goal of this WP will be to implement the public and internal interfaces and the data storage system, in parallel with the development of the connectors between each partner learning platform and the TeSLA system. In addition, some external tools may be necessary in order to collect some type of information, such as plugins for web browsers or learning platforms to interact with the final users (e.g. capture keystroke patterns), or certain adaptations for disabled learners.

As an integration WP, the software development planning will be defined in this WP. The information will be obtained from the planning of the internal tasks (e.g. planning on the development of the plugins) and from the planning obtained from WP5 with respect to the development of the specific modules and the e-assessment portal. This planning will be provided to the WP7 in order to define the targets and timing of the pilots.

The tasks considered for this WP are as follows, considering that all the implementation tasks cover both the development and testing of all the software:

T6.1 Analyse learning frameworks (M1-M5, task leader WFSF, contributes to D6.1)

In this task, the different institutions participating in the pilots (UOC, OUNL, SU, OUUK, TUS, AU and JYU) will provide the main characteristics of their institutional learning systems in order to perform an analysis of requirements and restrictions of the final TeSLA system.

T6.2 TeSLA design (M5-M6, task leader WFSF, contributes to D6.2)

In this task, the public and private interfaces will be defined. The data type and formats involved in the internal and external communication will be defined.

T6.3 Plugins design (M6-M7, task leader PROTOS, contributes to D6.3)

To define the plugins to connect each partner's learning platform to the TeSLA system, taking into account the conversion between the platform's internal data representation and the TeSLA standardized data formats.

T6.4 External learning tools design (M6-M7, task leader WFSF, contributes to D6.4)

Some information used by the TeSLA system will come directly from the learning platform, but other information such as the key patterns, images and audio will require the developing of small tools to acquire the data in the user devices and send it to the TeSLA system. In this task, we will define those tools in terms of functionality, structure and data formats taking into account special target groups with learning needs.

T6.5 Development planning (M7-M8, task leader WFSF, contributes to D6.5)

Once all the involved systems have been defined, in this task, a development planning of the TeSLA system will be designed. This planning will consider the instruments for development planning provided from WP5 and the development of the system, external tools and plugins. The development of the system will be done using an incremental approach, adding functionalities as soon as they are available to be partially tested in pilots. This information will be used by WP7 in order to define the contents of the pilots taking into account the development status of TeSLA. Planning

adaptation due to results of the pilots will be conducted in the implementation tasks related to the affected module of the system.

T6.6 TeSLA Data management implementation (M9-M24, task leader WFSF, contributes to D6.6 - D6.8)

Implementation of data structures and the data management system, including databases and backup systems and protocols.

T6.7 TeSLA interfaces implementation (M9-M24, task leader LPLUS, contributes to D6.9 - D6.11)

Implementation of public interfaces that will be used by the learning platforms and external tools, and the internal interfaces used by WP5 e-assessment portal. All the security issues related to ensure control access to the system's public interface from external applications would be implemented by IMT.

T6.8 External tools implementation (M9-M24, task leader WFSF, contributes to D6.12 - D6.14)

Implementation of the external tools to capture required information, such as video/audio, keystroke times, etc.

T6.9 Plugins implementation (M9-M24, task leader PROTOS, contributes to D6.15 - D6.17)

Implementation of the plugins between the TeSLA system and the learning platforms. In this task, the technical staff of each university will work with PROTOS in the design of the required plugins to connect its learning framework with the TeSLA system.

T6.10 Monitoring and data gathering implementation (M9-M24, task leader WFSF, contributes to D6.18 - D6.20)

Apart from the TeSLA system and the instruments required for a trusted e-assessment, we will store information about the use of the system and their modules across the pilots. This information will contain errors or warnings generated by the modules, performance statistics and auditory logs (i.e. incorrect data information, denied accesses or large response time for interface methods, incoherent biometric identification, etc.). This information will help to analyse the behaviour of the TeSLA system during the tests in order to detect errors or technical problems. Moreover, this information will allow to apply learning analytics approaches that can help to reinforce the learning model and the system security on each pilot till the end.

T6.11 TeSLA system release (M23-M36, task leader WFSF, contributes to D6.21)

In order to be able to successfully exploit the results of the project, a final distribution of the system will be prepared. The final release will contain the different versions of the TeSLA system that are considered in the exploitation plan, with the described functionalities (i.e. some free of charge versions with a subset of the instruments or time-limited full test versions). Each release will be accompanied with their technical and end-user documentation and the licence documentation.

Participation per Partner

Partner number and short name	WP6 effort
1 - UOC	10.00
3 - UNamur	1.00
5 - LPLUS GmbH	6.00
6 - OUNL	4.00
7 - SU	4.00
8 - OU	4.00
9 - protOS	12.00
10 - IMT	15.00
12 - TUS	4.00
13 - AU	4.00
14 - JYU	10.00
18 - Watchful	60.00
Total	134.00

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D6.1	Report with the final analysis of partners' learning environments	9 - protOS	Report	Confidential, only for members of the consortium (including the Commission Services)	5
D6.2	Technical document with the definition of the TeSLA framework, including the data structures and public and private interfaces	18 - Watchful	Report	Confidential, only for members of the consortium (including the Commission Services)	6
D6.3	Technical document with the definition of the TeSLA plugins for each partner's learning platform	9 - protOS	Report	Confidential, only for members of the consortium (including the Commission Services)	7
D6.4	Technical document with the definition of the external software tools	18 - Watchful	Report	Confidential, only for members of the consortium (including the Commission Services)	7
D6.5	Planning for the TeSLA software development and risk plan	9 - protOS	Report	Confidential, only for members of the consortium (including the Commission Services)	8
D6.6	Software implementing the data types and storage system (Alpha)	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	12
D6.7	Software implementing the data types and storage system (Beta)	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	18
D6.8	Software implementing the data types and storage	18 - Watchful	Other	Confidential, only for members of the consortium (including the	24

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
	system (Release Candidate)			Commission Services)	
D6.9	Software implementing the public and private interfaces (Alpha)	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	12
D6.10	Software implementing the public and private interfaces (Beta)	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	18
D6.11	Software implementing the public and private interfaces (Release Candidate)	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	24
D6.12	Software implementing the external tools (Alpha)	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	12
D6.13	Software implementing the external tools (Beta)	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	18
D6.14	Software implementing the external tools (Release Candidate)	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	24
D6.15	Software implementing the plugins between the learning platforms and the TeSLA framework (Alpha)	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	12
D6.16	Software implementing the plugins between the learning	18 - Watchful	Other	Confidential, only for members of the consortium (including the	18

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
	platforms and the TeSLA framework (Beta)			Commission Services)	
D6.17	Software implementing the plugins between the learning platforms and the TeSLA framework (Release Candidate)	18 - Watchful	Report	Confidential, only for members of the consortium (including the Commission Services)	24
D6.18	Software implementing the learning analytics data gathering (Alpha)	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	12
D6.19	Software implementing the learning analytics data gathering (Beta)	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	18
D6.20	Software implementing the learning analytics data gathering (Release Candidate)	18 - Watchful	Other	Confidential, only for members of the consortium (including the Commission Services)	24
D6.21	Final TeSLA software ready for distribution, with the technical description for third party developers and final users	18 - Watchful	Other	Public	36

Description of deliverables

D6.1 : Report with the final analysis of partners' learning environments [5]

Technical report with the details and requirements of all learning platforms used by all institutions involved in the pilots

D6.2 : Technical document with the definition of the TeSLA framework, including the data structures and public and private interfaces [6]

Description of the TeSLA platform, with the functional and technical requirements and the statistical data that will be captured by the platform. It will include the API for e-assessment portal and the API that institutions will use to connect with their own e-learning systems.

D6.3 : Technical document with the definition of the TeSLA plugins for each partner's learning platform [7]

Description of the plug-ins that will connect each institution e-learning system with the TeSLA platform.

D6.4 : Technical document with the definition of the external software tools [7]

Some information used by the TeSLA system will come directly from the learning platform, but other information such as the key patterns, images and audio will require the developing of small tools to acquire the data in the user devices and send it to the TeSLA system. We will define those tools in terms of functionality, structure and data formats.

D6.5 : Planning for the TeSLA software development and risk plan [8]

Development schedule for the whole TeSLA system, including the availability of each functionality and a risk plan definition.

D6.6 : Software implementing the data types and storage system (Alpha) [12]

Software that will implement the data structures and the storage mechanisms. Alpha version of the software.

D6.7 : Software implementing the data types and storage system (Beta) [18]

Software that will implement the data structures and the storage mechanisms. Beta version of the software.

D6.8 : Software implementing the data types and storage system (Release Candidate) [24]

Software that will implement the data structures and the storage mechanisms. Release candidate version of the software.

D6.9 : Software implementing the public and private interfaces (Alpha) [12]

Software that will implement the public interfaces used by institution plug-ins and private interfaces used by the e-assessment portal. Alpha version of the software.

D6.10 : Software implementing the public and private interfaces (Beta) [18]

Software that will implement the public interfaces used by institution plug-ins and private interfaces used by the e-assessment portal. Beta version of the software.

D6.11 : Software implementing the public and private interfaces (Release Candidate) [24]

Software that will implement the public interfaces used by institution plug-ins and private interfaces used by the e-assessment portal. Release candidate version of the software.

D6.12 : Software implementing the external tools (Alpha) [12]

Implementation of the external tools to capture required information, such as video/audio, keystroke times, etc.

D6.13 : Software implementing the external tools (Beta) [18]

Implementation of the external tools to capture required information, such as video/audio, keystroke times, etc.

D6.14 : Software implementing the external tools (Release Candidate) [24]

Implementation of the external tools to capture required information, such as video/audio, keystroke times, etc.

D6.15 : Software implementing the plugins between the learning platforms and the TeSLA framework (Alpha) [12]

Software that implements the plug-ins that connect the learning platform of the institutions participating in the pilots with the TeSLA platform. Alpha version.

D6.16 : Software implementing the plugins between the learning platforms and the TeSLA framework (Beta) [18]

Software that implements the plug-ins that connect the learning platform of the institutions participating in the pilots with the TeSLA platform. Beta version.

D6.17 : Software implementing the plugins between the learning platforms and the TeSLA framework (Release Candidate) [24]

Software that implements the plug-ins that connect the learning platform of the institutions participating in the pilots with the TeSLA platform. Release Candidate version.

D6.18 : Software implementing the learning analytics data gathering (Alpha) [12]

Software that implements the learning analytics data gathering. Alpha version.

D6.19 : Software implementing the learning analytics data gathering (Beta) [18]

Software that implements the learning analytics data gathering. Beta version.

D6.20 : Software implementing the learning analytics data gathering (Release Candidate) [24]

Software that implements the learning analytics data gathering. Release Candidate version.

D6.21 : Final TeSLA software ready for distribution, with the technical description for third party developers and final users [36]

The final release will contain the different versions of the TeSLA system that are considered in the exploitation plan, with the described functionalities (i.e. some free of charge versions with a subset of the instruments or time-limited full test versions). Each release will be accompanied with their technical and end-user documentation and the licence documentation

Schedule of relevant Milestones

Milestone number ¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS1	TeSLA requirements defined	5 - LPLUS GmbH	6	Deliver D6.2, which combines the requirements from all related WPs and defines the final system design.
MS2	TeSLA development planning	18 - Watchful	8	Deliver D6.5, which contains the final development planning.
MS3	Ready for pilots	7 - SU	9	The deliver D7.3 will contain the planning for the pilots, taking into account all the requirements to start
MS5	TeSLA system developed	1 - UOC	18	The of D6.7, D6.10, D6.13, D6.16, and D6.19 will contain all software system
MS6	2nd year pilots executed and analysed	7 - SU	26	The deliver D8.9 will contain the details or the execution and the results analysis for 2nd year pilots
MS7	3rd year pilots executed and analysed	8 - OU	34	The deliver D8.10 will contain the details or the execution and the results analysis for 3rd year pilots.
MS8	TeSLA framework evaluated and released	1 - UOC	36	The deliver D6.21 will contain the TeSLA system's final release. The deliver D8.5 contains the final evaluation report for the pilots and the system

Work package number ⁹	WP7	Lead beneficiary ¹⁰	7 - SU
Work package title	Design and development of pilots		
Start month	1	End month	32

Objectives

The main goal of this WP is to define and perform large scale pilots using the trust based assessment system for learning. This goal implies:

- Define the number and schedule of pilots, including: goals, subjects, type of population and specific groups considering the state of the project; type of activities, final examination; the adaptive assessment model (according to learner behaviour and special learning needs); interaction and communication with academic staff and learners; teaching and learning guidelines.
- Define a pilot coordination protocol.
- Establish quality objective success metrics.
- Create an assessment protocol model for critical risks management.

Description of work and role of partners

WP7 - Design and development of pilots [Months: 1-32]

SU, UOC, LPLUS GmbH, OUNL, OU, protOS, TUS, AU, JYU, Watchful

The consortium plans to develop pilots in a progressive, secure and scalable form taking into account the expected largescale learners' impact in all the participant universities (UOC, OUNL, SU, OUUK, TUS, AU, and JYU). The first step is to design how pilots should be conducted: geographical distribution and gender issues, the scheduling according to each educational institution, which type of e-assessment model and technology will be applied in each learning scenario, the population involved in each pilot considering the specific group of learners with mental and physical disabilities and how the teaching and learning will be performed for each group of learners. In this step, quality issues, data privacy, ethics and security guidelines from WP3 and WP4 must be considered (UNAMUR will participate to check privacy and ethical issues accomplishment). The quality agencies will not participate in the pilots execution, since they will act as external auditory involved in the posterior evaluation performed in WP8.

All the methodology employed will be based on an iterative and progressive process for enhancing the following pilots. An assessment protocol model for critical risks management will be developed for each pilot and improved for the next ones and it includes technical staff (LPLUS, PROTOS, and WFSF) for supporting pilots' technology. Pilots will be conducted in three phases to test the e-assessment models and technologies developed in previous WPs. The tasks are planned to maximise and guarantee all the elements involved in the learning process: learning activities, outcomes and competencies, learning resources and learning outcomes. The rationale behind the pilots is to increase the number of participants, the integration of technologies and the e-assessments models in each phase taking special care of disabled learners.

Pilots will be conducted as follows:

1. Small Educational Pilots: In this first stage, we plan to involve about 600 learners from the different universities during the first year of the project. In this phase, the TeSLA system will be under development, therefore no technology will be tested, but we will test the coordination between all the partners and the defined protocols and data flows between involved WPs and actors (learners, teachers, auditory, ...). The assessment methodology will also be tested, using different evaluation type (continuous assessment, formative assessment, peer-assessment, etc.) and data collection for their posterior analysis and coordination protocols. A first critical risks guideline will previously be defined (on design step).

2. Medium Test-bed Pilots: This second phase will be conducted during the second year of the project, and the TeSLA system is expected that it will start providing functionalities at the start of this year and be fully functional for the last pilots in this phase. We plan to involve about 3,500 learners in this phase during 4 thematic pilots:

- a. Biometry: Some pilot cases will be defined in order to test the biometric instruments of the system (Face recognition, voice recognition, and keystroke dynamics).
- b. Security and integrity: Some pilot cases will be defined in order to test the issues related to security and integrity aspects of the system, such as the encrypted channels, the digital signature and timestamp of learners' deliverables.
- c. Document analysis: Some pilot cases will be defined in order to test the authorship of the deliverables with the forensic analysis and plagiarism instruments.

d. Scalability: After the previous specific pilots where the different instruments of the TeSLA system have been tested and improved with the pilot results, pilot cases to test will be conducted with all the instruments with a growing number of learners to detect scalability issues.

3. Large Scale Pilots: This final phase of the pilots will be conducted during the third year of the project. The goal of this phase is three fold: 1) To test the TeSLA system's integration and scalability. 2) To test the refinement of the TeSLA modules and the European e-assessment Model performed with the feedback of previous pilot phases in a pre large-scale scenario. 3) To test the reliability of authentication and authorship mechanisms.

Two rounds will be performed during this phase, the first one will involve about 6,500-7,000 learners and the second and final round will involve between 10,000 and 14,000 learners. Each pilot stage will start with the definition of the coordination protocols and goals of each one of the involved cases. Each case will define the involved universities, subjects, teachers, learners' distribution, metrics and the dates.

After each pilot case, all the information of each institution and from the TeSLA system will be collected and summarized in a report. This report will be provided to WP8 for evaluation. After the evaluation, feedback and recommendations will be provided to all affected WPs in order to refine the instruments and protocols.

The tasks for pilot design and execution are defined as follows:

T7.1 State-of-the-art (M1-M2, task leader OUNL, contributes to D7.1)

All the universities involved in the pilots (UOC, OUNL, SU, OUUK, TUS, AU, and JYU) will analyse previous pilot experiences in their institutions and in the literature. This information will be used in order to incorporate interesting actions/experiences and to avoid previous errors.

T7.2 Population definition (M1-M8, task leader AU, contributes to D7.2)

All the universities involved in the pilots (UOC, OUNL, SU, OUUK, TUS, AU, and JYU) will define their contribution to the pilots in number of learners, evaluation time periods and skills. This information will be combined in order to define the pilot population, in numbers, distribution and availability (dates and quantity). Learners with mental or physical disabilities will be considered during the population definition in order to plan how their learning needs will be managed.

T7.3 Pilot Planning (M8-M24, task leader JYU, contributes to D7.3)

Using the information from the previous task and the TeSLA development planning, the planning of the pilot execution will be defined. It will include the dates of each pilot, its duration, the number and type of learners and goals, and the involved teachers of each institution (adaptive). For this task, all the universities involved in the pilots (UOC, OUNL, SU, OUUK, TUS, AU, and JYU) will work with the leaders of the technical WPs (LPLUS and WFSF). After the analysis of each pilot execution, the planning will be adapted to the new circumstances.

T7.4 Pilot coordination and metrics (M9-M25, task leader SU, contributes to D7.4 - D7.6)

Establish the pilot coordination protocol including the success metrics. Since those protocols will affect not only the coordination between project partners, but between the members of each institution (learners and teachers), all the universities will be involved in this task. The coordination protocol and metrics will change during the project due to the inclusion of new techniques in the pilots and the feedback from previous pilots.

T7.5 Critical risk management (M7-M25, task leader UOC, contributes to D7.9-D7.11)

The pilots will be conducted by the universities in their subjects, therefore, real learners will be included as test users, and one of the main goals of the project is to ensure that all the learners will be able to be assessed and they are not disturbed from their learning process. In this sense, before each pilot, the possible risks for the methodologies and technology involved in the pilots will be analysed and alternatives will be provided to ensure that learners are not affected in case something does not work as expected. Some alternatives to planned pilots can depend on each institution; therefore, all the universities (UOC, OUNL, SU, OUUK, TUS, AU, and JYU) will participate in this task. Technological alternatives in case of instrument malfunction or failure will be defined by technological partners (LPLUS and WFSF). After the execution of each pilot case, the risk management will be revised and adapted.

T7.6 Pilot execution (M9-M30, task leader SU, contributes to D7.12 - D7.14)

All the universities participating in the pilots (UOC, OUNL, SU, OUUK, TUS, AU, and JYU) will conduct the pilots defined by the pilot planning and collect the expected information. Each institution will be responsible for providing all the required information to their staff (administrative and technological), their teachers and learners following the designed protocols and the formats specified by WP8. All the information will be provided by the project in the languages required for each institution. Technological partners (LPLUS and WFSF) will assist university technical staff to ensure that their learners can use the TeSLA system with the instruments that each pilot requires.

T7.7 Pilot analysis (M9-M32, task leader OUUK, contributes to D7.15 - D7.17)

After each pilot, the universities participating in the pilots (UOC, OUNL, SU, OUUK, TUS, AU, and JYU) will collect all the information of the pilot from their institution. Technical information collected by the TeSLA system will be collected by LPLUS and WFSF. All this information will be provided to the WP5 and WP6 for system improvement and performance analysis, and to WP8 for evaluation. Finally, with the recommendations provided by those WPs after

feedback analysis, the pilots' protocols and the TeSLA system will be adapted to solve detected problems or to add additional information

Participation per Partner

Partner number and short name	WP7 effort
1 - UOC	24.00
5 - LPLUS GmbH	4.00
6 - OUNL	18.00
7 - SU	30.00
8 - OU	18.00
9 - protOS	9.00
12 - TUS	18.00
13 - AU	18.00
14 - JYU	18.00
18 - Watchful	4.00
Total	161.00

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D7.1	Report with similar experiences in educational scenarios at international level	6 - OUNL	Report	Public	2
D7.2	Report with population characteristics, geographical distribution and academic data and planned technologies	13 - AU	Report	Confidential, only for members of the consortium (including the Commission Services)	8
D7.3	Diagram/map with each pilot's scheduling and a global one with all pilots' information. It includes the teachers involved, the e-assessment model and technologies behind it to be tested (Tentative)	14 - JYU	Report	Confidential, only for members of the consortium (including the Commission Services)	9

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D7.4	Diagram/map with each pilot's scheduling and a global one with all pilots' information. It includes the teachers involved, the e-assessment model and technologies behind it to be tested (Update 1)	14 - JYU	Report	Confidential, only for members of the consortium (including the Commission Services)	12
D7.5	Diagram/map with each pilot's scheduling and a global one with all pilots' information. It includes the teachers involved, the e-assessment model and technologies behind it to be tested (Update 2)	14 - JYU	Report	Confidential, only for members of the consortium (including the Commission Services)	24
D7.6	Pilot coordination protocol for Small Educational pilots	7 - SU	Report	Confidential, only for members of the consortium (including the Commission Services)	10
D7.7	Pilot coordination protocol for Medium test-bed pilots	7 - SU	Report	Confidential, only for members of the consortium (including the Commission Services)	13
D7.8	Pilot coordination protocol for Large Scale pilots	7 - SU	Report	Confidential, only for members of the consortium (including the Commission Services)	25
D7.9	Report with the alternative plan/s for Small Educational pilots	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	10
D7.10	Report with the alternative plan/s	1 - UOC	Report	Confidential, only for members of	13

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
	for Medium Test-bed pilots			the consortium (including the Commission Services)	
D7.11	Report with the alternative plan/s for Large Scale pilots	1 - UOC	Report	Confidential, only for members of the consortium (including the Commission Services)	25
D7.12	Report about Small Educational pilots execution	7 - SU	Report	Confidential, only for members of the consortium (including the Commission Services)	13
D7.13	Report about Medium Test-bed pilots execution	7 - SU	Report	Confidential, only for members of the consortium (including the Commission Services)	25
D7.14	Report about Large Scale pilots execution	7 - SU	Report	Confidential, only for members of the consortium (including the Commission Services)	30
D7.15	Analysis report for Small Educational pilots	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	12
D7.16	Analysis report for Medium Test-bed pilots	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	18
D7.17	Analysis report for Large Scale pilots	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	32

Description of deliverables

D7.1 : Report with similar experiences in educational scenarios at international level [2]

All the universities involved in the pilots (UOC, OUNL, SU, OUUK, TUS, AU, and JYU) will analyse previous pilot experiences in their institutions and in the literature. This information will be used in order to incorporate interesting actions/experiences and to avoid previous errors.

D7.2 : Report with population characteristics, geographical distribution and academic data and planned technologies [8]

All the universities involved in the pilots (UOC, OUNL, SU, OUUK, TUS, AU, and JYU) will define their contribution to the pilots in number of learners, evaluation time periods and skills. This information will be combined in order to define the pilot population, in numbers, distribution and availability (dates and quantity).

D7.3 : Diagram/map with each pilot's scheduling and a global one with all pilots' information. It includes the teachers involved, the e-assessment model and technologies behind it to be tested (Tentative) [9]

Tentative planning for the pilots execution, including the dates, its duration, the number of learners and goals. This planning will be updated before each pilot in order to reflect any deviation in related tasks or experiences learnt from already done pilots.

D7.4 : Diagram/map with each pilot's scheduling and a global one with all pilots' information. It includes the teachers involved, the e-assessment model and technologies behind it to be tested (Update 1) [12]

Planning for the pilots execution, including the dates, its duration, the number of learners and goals. This planning will reflect the any deviation in related tasks or experiences learnt from small educational pilots.

D7.5 : Diagram/map with each pilot's scheduling and a global one with all pilots' information. It includes the teachers involved, the e-assessment model and technologies behind it to be tested (Update 2) [24]

Planning for the pilots execution, including the dates, its duration, the number of learners and goals. This planning will reflect the any deviation in related tasks or experiences learnt from medium test-bed pilots.

D7.6 : Pilot coordination protocol for Small Educational pilots [10]

An effective and active communication protocol between and across educational institutions, for Small Educational pilots

D7.7 : Pilot coordination protocol for Medium test-bed pilots [13]

An effective and active communication protocol between and across educational institutions, for Medium Test-bed pilots

D7.8 : Pilot coordination protocol for Large Scale pilots [25]

An effective and active communication protocol between and across educational institutions, for Large Scale pilots

D7.9 : Report with the alternative plan/s for Small Educational pilots [10]

Risk management plan for the Small Educational pilots, including alternative plans for both, educational and technological risks and its influence on each WPs.

D7.10 : Report with the alternative plan/s for Medium Test-bed pilots [13]

Risk management plan for the Medium Test-bed pilots, including including alternative plans for both, educational and technological risks and its influence on each WPs.

D7.11 : Report with the alternative plan/s for Large Scale pilots [25]

Risk management plan for the Large scale pilots, including alternative plans for both, educational and technological risks and its influence on each WPs.

D7.12 : Report about Small Educational pilots execution [13]

Report about the execution of the Small Educational pilots, from educational and technological point of view.

D7.13 : Report about Medium Test-bed pilots execution [25]

Report about the execution of the Medium Test-Bed pilots, from educational and technological point of view.

D7.14 : Report about Large Scale pilots execution [30]

Report about the execution of the Large Scale pilots, from educational and technological point of view.

D7.15 : Analysis report for Small Educational pilots [12]

Report with the analysis of Small Educational pilots and the suggestions to be included in future pilots and the WPs involved

D7.16 : Analysis report for Medium Test-bed pilots [18]

Report with the analysis of Medium Test-bed pilots and the suggestions to be included in future pilots and the WPs involved

D7.17 : Analysis report for Large Scale pilots [32]

Report with the analysis of Large Scale pilots and the suggestions to be included in future pilots and the WPs involved

Schedule of relevant Milestones

Milestone number ¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS3	Ready for pilots	7 - SU	9	The deliver D7.3 will contain the planning for the pilots, taking into account all the requirements to start
MS4	1st year pilots executed and analysed	7 - SU	13	The deliver D8.8 will contain the details of the execution and the results analysis for 1st year pilots.
MS6	2nd year pilots executed and analysed	7 - SU	26	The deliver D8.9 will contain the details or the execution and the results analysis for 2nd year pilots
MS7	3rd year pilots executed and analysed	8 - OU	34	The deliver D8.10 will contain the details or the execution and the results analysis for 3rd year pilots.

Work package number ⁹	WP8	Lead beneficiary ¹⁰	8 - OU
Work package title	Pilots evaluation		
Start month	1	End month	36

Objectives

This WP will evaluate the outputs from the other WPs and consideration of evaluation will therefore be integrated into all WP activities from the outset. The evaluation will be iterative and agile, and use data from real learning environments. The specific objectives are:

- Develop a framework for the evaluation of pilot activities with particular consideration to five key stakeholder views: educators, agencies, learners, institutions and the project
- Plan for, and implement the co-ordinated pilot evaluations undertaken in the project.
- Validation and analysis of data for reporting and iterative development purposes

Description of work and role of partners

WP8 - Pilots evaluation [Months: 1-36]

OU, UOC, ENQA, UNamur, AQU CATALUNYA, LPLUS GmbH, OUNL, SU, protOS , IMT, Imperial, TUS, AU, JYU, EQANIE, INAOE, IDIAP, Watchful

This WP will be responsible of the evaluation of the pilots and to provide recommendations for the TeSLA system and the eassessment model improvements. All the universities involved in the pilots (UOC, OUNL, SU, OUUK, TUS, AU, and JYU) will participate defining the indicators for evaluation, taking into account their institutional indicators. The technical partners (LPLUS, IMT, PROTOS and WFSF) will define the indicators for instruments' evaluation and performance monitoring. Finally, the quality agencies (ENQA, AQU, and EQANIE) will define their own indicators. All these indicators with the expected format will be provided to WP6 and WP7 in order to guarantee that all the information required for extracting such indicators is collected by the system or in the pilots' execution.

WP7 will provide a report containing the details of the pilot execution, issues found on the protocols or failures in the system and actions taken. In addition, all the indicators will be provided. Additionally, some questionnaires will be designed and provided to WP7 to be conducted before and after the pilots by their participants (teachers and learners). The results of those tests will also be included in the WP7 report. The aim of those questionnaires is to collect information about expectations, opinions and personal experiences on e-assessment and with the developed tools and instruments. All this information will be analysed by the universities and technical partners in order to provide a critical feedback about the pilots, educational model and the TeSLA system. UNAMUR will evaluate that the pilots respect the data privacy legality and ethical principles. A report with the feedback and improvement recommendations will be written and delivered to WP5, WP6 and WP7 to be taken into account for future pilots.

The quality agencies will not participate in this report, as they will act as auditors of the project quality. After each pilot, the report from WP7 with all the information and the report with the feedback and recommendations will be provided to the quality agencies in order to perform their evaluation on the whole pilot execution, from the definition of the system and pilots to the

pilot's execution and posterior analysis. The conclusions of this auditory will be reported in WP4 deliverables.

T8.1 Definition of the evaluation measures (M1-M5, task leader OUUK, contributes to D8.1)

This task aims to gather stakeholder views in respect to what measures, indicators and key questions that the project will employ in its evaluation of the pilot studies and associated development activity. These will be used to develop an Evaluation Framework that not only sets the definition of type and format of data to be collected and structure for monitoring and reporting of evaluation data, but will serve to highlight what each stakeholder groups considers most important for determining the success and effectiveness of the assessment tools and their implementation. The framework will be used by partners and where required templates and/or protocols will be created based on the framework. This task will align with work undertaken on other WPs including the Educational Framework (WP2), Quality guidelines (WP4), and Dissemination activities (WP9).

T8.2 Questionnaires design (M5-M24, task leader UOC, contributes to D8.2)

Design of the questionnaires that will be used for surveys to teachers and learners before and after each pilot. Those questionnaires will be provided to WP7 before each pilot in order to be distributed to all the universities that participate in the pilots.

T8.3 Evaluation planning (M5-M25, task leader OUUK, contributes to D8.3 - D8.5)

Before each pilot, a planning for the evaluation process will be prepared in consultation with partners so as to ensure co-ordinated data capture and adequate time for reflection, analysis and feedback. This planning will define the actors that will participate from the different institutions, expected results, and timing for each pilot.

T8.4 Evaluation report (M12-M34, task leader OUUK, contributes to D8.8 - D8.10)

Prepare and write an Interim Evaluation Report on pilots undertaken in each year of the project. This task will consist of supporting partners in capturing and analysing their data, project-level capture of data (such as from non-pilot partners and other non-project stakeholders), overseeing preparation of partner reports, collation and meta-analysis of partner reports and write an internal development report (for use by WP5/6 in the iterative development of the project assessment technologies, for revisions to the Educational Framework in WP2, and the update of pilot planning, protocols and risk management in WP7).

T8.5 Final evaluation Report (M27-M36, task leader OUUK, contributes to D8.11)

Prepare and write a final Evaluation Report. This task will consist of supporting partners in reflecting data capture and capturing and analysing each year data, project-level capture of data (such as from non-pilot partners and other non-project stakeholders), overseeing preparation of partner reports, collation and meta-analysis of partner reports and writing of the final report.

Participation per Partner

Partner number and short name	WP8 effort
1 - UOC	6.00
2 - ENQA	10.00
3 - UNamur	2.00
4 - AQU CATALUNYA	9.00
5 - LPLUS GmbH	4.00
6 - OUNL	4.00
7 - SU	4.00
8 - OU	18.00
9 - protOS	4.00
10 - IMT	4.00
11 - Imperial	4.00
12 - TUS	4.00
13 - AU	4.00
14 - JYU	4.00
15 - EQANIE	9.00
16 - INAOE	1.00
17 - IDIAP	1.00
18 - Watchful	4.00
Total	96.00

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D8.1	Report on the Evaluation Framework	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	5
D8.2	Questionnaires for Small Educational pilots	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	9
D8.3	Questionnaires for Medium Test-bed pilots	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	12
D8.4	Questionnaires for Large Scale pilots	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	24
D8.5	Evaluation Plan for the Small educational pilots	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	9
D8.6	Evaluation Plan for Medium test-bed pilots	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	13
D8.7	Evaluation Plan for Large scale pilots	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	25
D8.8	Report on Pilot Evaluation (1st year)	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	15

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D8.9	Report on Pilot Evaluation (2nd year)	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	26
D8.10	Report on Pilot Evaluation (3rd year)	8 - OU	Report	Confidential, only for members of the consortium (including the Commission Services)	34
D8.11	Final Evaluation Report	8 - OU	Report	Public	36

Description of deliverables

D8.1 : Report on the Evaluation Framework [5]

It will set the definition of type and format of data to be collected and structure for monitoring and reporting of evaluation data and it will serve to highlight what each stakeholder group considers most important for determining the success and effectiveness of the assessment tools and their implementation. The framework will be used by partners and when required templates and/or protocols will be created based on the framework.

D8.2 : Questionnaires for Small Educational pilots [9]

Questionnaires will be used for surveys to teachers and learners before and after each pilot. They will be provided to WP7 before each pilot in order to be distributed to all the universities that participate in the pilots.

D8.3 : Questionnaires for Medium Test-bed pilots [12]

Questionnaires will be used for surveys to teachers and learners before and after each pilot. They will be provided to WP7 before each pilot in order to be distributed to all the universities that participate in the pilots.

D8.4 : Questionnaires for Large Scale pilots [24]

Questionnaires will be used for surveys to teachers and learners before and after each pilot. They will be provided to WP7 before each pilot in order to be distributed to all the universities that participate in the pilots.

D8.5 : Evaluation Plan for the Small educational pilots [9]

Planning for the evaluation process prepared in consultation with partners so as to ensure coordinated data capture and adequate time for reflection, analysis and feedback. This planning will define the actors that will participate from the different institutions, expected results, and timing for each pilot.

D8.6 : Evaluation Plan for Medium test-bed pilots [13]

Planning for the evaluation process prepared in consultation with partners so as to ensure coordinated data capture and adequate time for reflection, analysis and feedback. This planning will define the actors that will participate from the different institutions, expected results, and timing for each pilot.

D8.7 : Evaluation Plan for Large scale pilots [25]

Planning for the evaluation process prepared in consultation with partners so as to ensure coordinated data capture and adequate time for reflection, analysis and feedback. This planning will define the actors that will participate from the different institutions, expected results, and timing for each pilot.

D8.8 : Report on Pilot Evaluation (1st year) [15]

Interim Evaluation report on pilots undertaken in the first year of the project. This report will be used in order for revisions to the Educational Framework and the update of pilot planning, protocols and risk management.

D8.9 : Report on Pilot Evaluation (2nd year) [26]

Interim Evaluation report on pilots undertaken in the second year of the project. This report will be used in order for revisions to the Educational Framework and the update of pilot planning, protocols and risk management.

D8.10 : Report on Pilot Evaluation (3rd year) [34]

Interim Evaluation report on pilots undertaken in the last year of the project. This report will be used in order for revisions to the Educational Framework and the update of pilot planning, protocols and risk management.

D8.11 : Final Evaluation Report [36]

Final evaluation report for all the pilots undertaken during the project.

Schedule of relevant Milestones

Milestone number ¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS1	TeSLA requirements defined	5 - LPLUS GmbH	6	Deliver D6.2, which combines the requirements from all related WPs and defines the final system design.
MS4	1st year pilots executed and analysed	7 - SU	13	The deliver D8.8 will contain the details of the execution and the results analysis for 1st year pilots.
MS6	2nd year pilots executed and analysed	7 - SU	26	The deliver D8.9 will contain the details or the execution and the results analysis for 2nd year pilots
MS7	3rd year pilots executed and analysed	8 - OU	34	The deliver D8.10 will contain the details or the execution and the results analysis for 3rd year pilots.
MS8	TeSLA framework evaluated and released	1 - UOC	36	The deliver D6.21 will contain the TeSLA system's final release. The deliver D8.5 contains the final evaluation report for the pilots and the system

Work package number ⁹	WP9	Lead beneficiary ¹⁰	9 - protOS
Work package title	Communication, Dissemination, Liaisons and Exploitation		
Start month	1	End month	36

Objectives

The main goal of this WP is to conduct and perform the dissemination and the exploitation of the project. It implies:

- Create a public web site and other communication tools and dissemination materials.
- Communicate general project activities and results to a wider public based on a thorough communication strategy via web, social media, press channels and print material.
- Disseminate the scientific and technical results of TeSLA via tutorials, targeted workshops and interaction with other EU projects and interested third parties.
- Manage project liaisons to attract third-party stakeholders.
- Observe the market and identify the potential use and commercial exploitation of technology and knowledge developed in the project

Description of work and role of partners

WP9 - Communication, Dissemination, Liaisons and Exploitation [Months: 1-36]

protOS, UOC, ENQA, UNamur, AQU CATALUNYA, LPLUS GmbH, OUNL, SU, OU, IMT, Imperial, TUS, AU, JYU, EQANIE, INAOE, IDIAP, Watchful

The commercial perspectives of this project promote a special effort on behalf of all consortium members to assess exploitation. What is more, given that the very first steps can influence the project's subsequent exploitation, a continual follow-up of the decisions that are made regarding the commercial exploitation possibilities is necessary. For this reason, TeSLA defines a specific profile for this function in the person of the Innovation Manager, whose job is to assess future alternatives of use and potential collaboration agreements with different institutions that will imply a greater commercial development of the system.

T9.1. Communication (M1-M36, task leader UOC, contributes from D9.1 to D9.4)

A comprehensive and target oriented communications of the project includes a thorough communication strategy based on a coherent corporate/project identity. This will be the basis of all communication activities and will enable a strong outer appearance. We will create a project website (tesla-project.eu) by M1, and maintain and update it continuously throughout the project. Additionally, we will be present and active in selected social networks such as Twitter, Facebook and LinkedIn to build up and reach out to an interested community. Further internal and external communication means comprise of publishing press releases, developing brochures and posters, publishing a newsletter and develop audiovisual productions.

T9.2. Dissemination (M3-M36, task leader PROT, contributes from D9.1 to D9.4)

This task has the goal of disseminating the project results, and distribute information for public and potential third party companies and institutions interested in exploiting the results. Dissemination in scientific and industrial workshops will be carried out, at national and European levels. The task will deliver a Dissemination Plan on M3 that will describe the tools, activities and means of cooperation, which will ensure that the project results will be disseminated widely and effectively to the different target groups. Some of the dissemination activities will be the scheduling, planning and preparation of two international workshops targeting key players of the European eLearning sector in M16 and M34. This second international workshop will be the International TeSLA Show. In addition, this task will lead the collaboration with other projects, institutions, and relevant national and European agents in the eLearning sector.

T9.3. Liaisons (M18-M36, task leader PROT, contributes from D9.1 to D9.4)

This task will ensure the appropriate external liaisons of the project with other (external) parties (notably other eLearning institutions, initiatives, projects, standardisation bodies, project clusters) with a view towards disseminating the project's results to wider audiences, attracting third-party stakeholders, as well as towards boosting the sustainability and wider use of the project approach to eLearning services. The methodology will include the creation of a list of the possible liaisons and the subsequent appointment of contact persons (from the TeSLA side), which will pursue and manage these liaisons.

T9.4. Exploitation (M5-M36, task leader PROT, contributes from D9.5 to D9.7)

This task provides an umbrella for individual as well as collective exploitation and use of knowledge from the project. TeSLA partners are strongly committed to exploit and continue the development of the project results. The exploitation report will take into account (an update of) technical and commercial developments in the relevant market sectors. The

market watch activity will produce regular updates on industry trends (as part of the periodic reports). Academic partners will track and report on emerging research outside the project that may be relevant. Regular reports will contain market descriptions reflecting the individual business situation of use-case partners, competition analysis (SWOT), technical and business conditions of further successful exploitation, and an analysis of costs, price, revenues, market penetration, share and market profile. In addition to looking at commercial exploitation by the industrial partners, there will be exploitation by the eLearning institutions involved.

Participation per Partner

Partner number and short name	WP9 effort
1 - UOC	6.00
2 - ENQA	5.00
3 - UNamur	6.00
4 - AQU CATALUNYA	5.00
5 - LPLUS GmbH	8.00
6 - OUNL	5.00
7 - SU	5.00
8 - OU	5.00
9 - protOS	25.00
10 - IMT	6.00
11 - Imperial	5.00
12 - TUS	5.00
13 - AU	5.00
14 - JYU	5.00
15 - EQANIE	5.00
16 - INAOE	8.00
17 - IDIAP	8.00
18 - Watchful	8.00
Total	125.00

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D9.1	TeSLA Website Online	9 - protOS	Websites, patents filling, etc.	Public	1
D9.2	Communication, Dissemination and Liaisons Plan	9 - protOS	Report	Confidential, only for members of the consortium (including the Commission Services)	3

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D9.3	Communication, Dissemination and Liaisons Report, initial version	9 - protOS	Report	Confidential, only for members of the consortium (including the Commission Services)	18
D9.4	Communication, Dissemination and Liaisons Report, final version	9 - protOS	Report	Confidential, only for members of the consortium (including the Commission Services)	36
D9.5	Exploitation Plan	9 - protOS	Report	Confidential, only for members of the consortium (including the Commission Services)	3
D9.6	Exploitation Report, initial version	9 - protOS	Report	Confidential, only for members of the consortium (including the Commission Services)	18
D9.7	Exploitation Report, final version	9 - protOS	Report	Confidential, only for members of the consortium (including the Commission Services)	36

Description of deliverables

D9.1 : TeSLA Website Online [1]

A project website will be created (tesla-project.eu) by M1, and maintained and updated throughout the project.

D9.2 : Communication, Dissemination and Liaisons Plan [3]

It will describe the tools, activities and means of cooperation, which will ensure that the project results will be disseminated widely and effectively to the different target groups.

D9.3 : Communication, Dissemination and Liaisons Report, initial version [18]

It will follow up on TeSLA's communication, dissemination and liaisons activities

D9.4 : Communication, Dissemination and Liaisons Report, final version [36]

It will follow up on TeSLA's communication, dissemination and liaisons activities

D9.5 : Exploitation Plan [3]

It will ensure the correct project's exploitation and use of knowledge.

D9.6 : Exploitation Report, initial version [18]

It will take into account (an update of) technical and commercial developments in the relevant market sectors.

D9.7 : Exploitation Report, final version [36]

It will take into account (an update of) technical and commercial developments in the relevant market sectors.

Schedule of relevant Milestones

Milestone number ¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS1	TeSLA requirements defined	5 - LPLUS GmbH	6	Deliver D6.2, which combines the requirements from all related WPs and defines the final system design.
MS8	TeSLA framework evaluated and released	1 - UOC	36	The deliver D6.21 will contain the TeSLA system's final release. The deliver D8.5 contains the final evaluation report for the pilots and the system

1.3.4. WT4 List of milestones

Milestone number ¹⁸	Milestone title	WP number ⁹	Lead beneficiary	Due Date (in months) ¹⁷	Means of verification
MS1	TeSLA requirements defined	WP2, WP3, WP4, WP5, WP6, WP8, WP9	5 - LPLUS GmbH	6	Deliver D6.2, which combines the requirements from all related WPs and defines the final system design.
MS2	TeSLA development planning	WP5, WP6	18 - Watchful	8	Deliver D6.5, which contains the final development planning.
MS3	Ready for pilots	WP2, WP6, WP7	7 - SU	9	The deliver D7.3 will contain the planning for the pilots, taking into account all the requirements to start
MS4	1st year pilots executed and analysed	WP7, WP8	7 - SU	13	The deliver D8.8 will contain the details of the execution and the results analysis for 1st year pilots.
MS5	TeSLA system developed	WP5, WP6	1 - UOC	18	The of D6.7, D6.10, D6.13, D6.16, and D6.19 will contain all software system
MS6	2nd year pilots executed and analysed	WP5, WP6, WP7, WP8	7 - SU	26	The deliver D8.9 will contain the details or the execution and the results analysis for 2nd year pilots
MS7	3rd year pilots executed and analysed	WP5, WP6, WP7, WP8	8 - OU	34	The deliver D8.10 will contain the details or the execution and the results analysis for 3rd year pilots.
MS8	TeSLA framework evaluated and released	WP5, WP6, WP8, WP9	1 - UOC	36	The deliver D6.21 will contain the TeSLA system's final release. The deliver D8.5 contains the final evaluation report for the pilots and the system

1.3.5. WT5 Critical Implementation risks and mitigation actions

Risk number	Description of risk	WP Number	Proposed risk-mitigation measures
R1	Changes in the project team, one person leaving the project (risk level: medium)	WP1	The project management foresees ongoing communication with participants and their teams in order to identify this type of situations. Partners have been chosen for their background and knowledge, and are able to provide different experts to the project. Participants are aware of this possibility and have to identify and communicate these situations as early as possible. Participants will consider substitutes with equivalent (or higher) qualifications and expertise. The consortium will inform the substitutes about their role and responsibilities.
R2	Changes in the project consortium, one partner leaving the project (risk level: low)	WP1	Partners have been selected because of commitment with the project. This could delay or even make impossible reaching some of the project objectives (e.g. critical milestones as pilots and demonstration activities implementation on time). Effective management procedures are applied to timely intercept problems, remove or reallocate partners and, if needed, replace them with new partners with suited skills and profiles. The Consortium Agreement will realise the policies behind this. The Consortium will invite other entities that showed interest in the project in the proposal preparation phase.
R3	Poor performance of partners (risk level: low)	WP1	The project management already foresees ongoing communications and control mechanisms to avoid this situation. In general, the distribution

Risk number	Description of risk	WP Number	Proposed risk-mitigation measures
			<p>of the EC contribution to intermediaries will require the submission of deliverables on time and in appropriate quality. The corrective action is activated when a delay of more than a week without justification is incurred by one participant. A warning and a new internal deadline is communicated. In case of recurrence, the PMB will discuss the measures to be undertaken. The Consortium Agreement shows the mechanisms to identify a defaulting partner.</p>
R4	<p>Delay in the project work plan and timeframe (risk level: low).</p>	WP1	<p>Delays in a WP could affect activities under other(s) WP(s) and the pilots implementation, but the consortium has already taken this aspect into account in order to minimise the risk. Proceed with activities, taking advantage of a decoupled work plan flow, execution of tasks in parallel, review and revise resource allocations to enable catch-up, reschedule activities.</p>
R5	<p>Compliance with the new General Data Protection Regulation of the EC (risk level: low)</p>	WP1	<p>The e-assessment system and pilots will include by design a clear set of user data privacy, security and information directives and features in order to cover the data protection framework early on. Besides, in the Data Management Plan of WP1, the Consortium will thoroughly monitor the evolution of this regulation in the Data Management task of the project.</p>
R6	<p>Lack of engagement in development of framework by Partners in Year 1 (risk level: low)</p>	WP2, WP3, WP4, WP5, WP6, WP7	<p>All project partners have some (albeit often very small) amount of time allocated to this WP thereby ensuring all partners have</p>

Risk number	Description of risk	WP Number	Proposed risk-mitigation measures
			time to contribute to the framework
R7	Inconsistent data collected that is not comparable across pilot case studies (risk level: low)	WP6, WP7, WP8	The framework will set expectations and protocols for the gathering of data and reporting. WP8 will be active during pilots in ensuring partners are collecting appropriate data
R8	Partners do not complete their pilot evaluations on time (risk level: low-medium)	WP7, WP8	WP8 has allocated time for the WP led to oversee and coordinate the writing of pilot case studies and ensure these remain on track
R9	Lack of evaluation of activities undertaken in WP4-5 (risk level: low)	WP4, WP5, WP8	WP8 will work with these WPs from the outset to ensure monitoring, data capture and evaluation takes place on this activity.
R10	Low participation in project events (risk level: low)	WP9	The multidisciplinary partners, their direct network of contacts, their capacity of mass dissemination, and the quality of the liaisons and engagement strategy make this risk unlikely. The contingency plan is activated in case that an event has 25% less registered participants than the targeted number. The person responsible for the event organisation notifies the PMB of the situation and contacts new potential interested participants. Additional interested actors are identified by the other partners and Advisory Board members. The consortium investigates reasons for the low involvement and agrees on corrective actions to improve the approach for the second round of events. The PMB can re-allocate additional budget for covering the corrective actions.

Risk number	Description of risk	WP Number	Proposed risk-mitigation measures
R11	Low publicity of the project activities and outcomes (risk level: low)	WP9	The customised and coherent communication and engagement strategy, supported by multidisciplinary partners and their high quality network of contacts, make this risk unlikely.
R12	Property rights over developed modules do not allow to test all the desired instruments. (risk level: low)	WP5, WP6, WP9	Establishing the appropriate rules, structures and processes during the preparation of the consortium and grant agreements between partners.
R13	Proprietary learning systems difficult the integration of the TeSLA framework. (risk level: medium)	WP6	The institutions with a proprietary learning platform, that is not based on the standard ones have more person months in the integration part.

1.3.6. WT6 Summary of project effort in person-months

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total Person/Months per Participant
1 - UOC	56	16	1	0	12	10	24	6	6	131
2 - ENQA	2	0	0	24	0	0	0	10	5	41
3 - UNamur	2	0	30	0	3	1	0	2	6	44
4 - AQU CATALUNYA	2	1	0	36	0	0	0	9	5	53
5 - LPLUS GmbH	2	1	2	0	60	6	4	4	8	87
6 - OUNL	4	6	1	0	0	4	18	4	5	42
7 - SU	4	6	1	0	0	4	30	4	5	54
8 - OU	2	6	1	0	0	4	18	18	5	54
9 - protOS	4	0	0	0	4	12	9	4	25	58
10 - IMT	2	0	2	0	25	15	0	4	6	54
11 - Imperial	2	0	0	0	16	0	0	4	5	27
12 - TUS	2	6	1	0	0	4	18	4	5	40
13 - AU	2	6	1	0	0	4	18	4	5	40
14 - JYU	2	8	1	0	0	10	18	4	5	48
15 - EQANIE	2	0	0	20	0	0	0	9	5	36
16 - INAOE	2	0	0	0	16	0	0	1	8	27
17 - IDIAP	2	0	0	0	60	0	0	1	8	71
18 - Watchful	2	0	2	0	12	60	4	4	8	92
Total Person/Months	96	56	43	80	208	134	161	96	125	999

1.3.7. WT7 Tentative schedule of project reviews

Review number ¹⁹	Tentative timing	Planned venue of review	Comments, if any
RV1	20	LUXEMBOURG	
RV2	36	LUXEMBOURG	

D
R
A
F
T

1.4. Ethics Requirements

Ethics Issue Category	Ethics Requirement Description
PROTECTION OF PERSONAL DATA	- Detailed information must be provided on the informed consent procedures that will be implemented
HUMANS	- The applicant must clarify how consent/assent will be ensured in case children and/or adults unable to give informed consent are involved.
PROTECTION OF PERSONAL DATA	- Copies of ethical approvals for the collection of personal data by the competent University Data Protection Officer / National Data Protection authority must be submitted
HUMANS	- The applicant must clarify whether vulnerable individuals/groups will be involved. Details must be provided about the measures taken to prevent the risk of enhancing vulnerability/stigmatisation of individuals/groups.
HUMANS	- The applicant must clarify whether children and/or adults unable to give informed consent will be involved and, if so, justification for their participation must be provided.
PROTECTION OF PERSONAL DATA	- Justification must be given in case of collection and/or processing of personal sensitive data
HUMANS	- Details on the procedures and criteria that will be used to identify/ recruit research participants must be provided
NON-EU COUNTRIES	- The applicant must confirm that the ethical standards and guidelines of Horizon2020 will be rigorously applied, regardless of the country in which the research is carried out
PROTECTION OF PERSONAL DATA	- Detailed information must be provided on the procedures that will be implemented for data collection, storage, protection, retention and destruction and confirmation that they comply with national and EU legislation
HUMANS	- Detailed information must be provided on the informed consent procedures that will be implemented.

1. Project number

The project number has been assigned by the Commission as the unique identifier for your project. It cannot be changed. The project number **should appear on each page of the grant agreement preparation documents (part A and part B)** to prevent errors during its handling.

2. Project acronym

Use the project acronym as given in the submitted proposal. It can generally not be changed. The same acronym **should appear on each page of the grant agreement preparation documents (part A and part B)** to prevent errors during its handling.

3. Project title

Use the title (preferably no longer than 200 characters) as indicated in the submitted proposal. Minor corrections are possible if agreed during the preparation of the grant agreement.

4. Starting date

Unless a specific (fixed) starting date is duly justified and agreed upon during the preparation of the Grant Agreement, the project will start on the first day of the month following the entry into force of the Grant Agreement (NB : entry into force = signature by the Commission). Please note that if a fixed starting date is used, you will be required to provide a written justification.

5. Duration

Insert the duration of the project in full months.

6. Call (part) identifier

The Call (part) identifier is the reference number given in the call or part of the call you were addressing, as indicated in the publication of the call in the Official Journal of the European Union. You have to use the identifier given by the Commission in the letter inviting to prepare the grant agreement.

7. Abstract

8. Project Entry Month

The month at which the participant joined the consortium, month 1 marking the start date of the project, and all other start dates being relative to this start date.

9. Work Package number

Work package number: WP1, WP2, WP3, ..., WPn

10. Lead beneficiary

This must be one of the beneficiaries in the grant (not a third party) - Number of the beneficiary leading the work in this work package

11. Person-months per work package

The total number of person-months allocated to each work package.

12. Start month

Relative start date for the work in the specific work packages, month 1 marking the start date of the project, and all other start dates being relative to this start date.

13. End month

Relative end date, month 1 marking the start date of the project, and all end dates being relative to this start date.

14. Deliverable number

Deliverable numbers: D1 - Dn

15. Type

Please indicate the type of the deliverable using one of the following codes:

- R Document, report
- DEM Demonstrator, pilot, prototype
- DEC Websites, patent filings, videos, etc.
- OTHER

16. Dissemination level

Please indicate the dissemination level using one of the following codes:

- PU Public

CO Confidential, only for members of the consortium (including the Commission Services)
EU-RES Classified Information: RESTREINT UE (Commission Decision 2005/444/EC)
EU-CON Classified Information: CONFIDENTIEL UE (Commission Decision 2005/444/EC)
EU-SEC Classified Information: SECRET UE (Commission Decision 2005/444/EC)

17. Delivery date for Deliverable

Month in which the deliverables will be available, month 1 marking the start date of the project, and all delivery dates being relative to this start date.

18. Milestone number

Milestone number: MS1, MS2, ..., MSn

19. Review number

Review number: RV1, RV2, ..., RVn

20. Installation Number

Number progressively the installations of a same infrastructure. An installation is a part of an infrastructure that could be used independently from the rest.

21. Installation country

Code of the country where the installation is located or IO if the access provider (the beneficiary or linked third party) is an international organization, an ERIC or a similar legal entity.

22. Type of access

VA if virtual access,
TA-uc if trans-national access with access costs declared on the basis of unit cost,
TA-ac if trans-national access with access costs declared as actual costs, and
TA-cb if trans-national access with access costs declared as a combination of actual costs and costs on the basis of unit cost.

23. Access costs

Cost of the access provided under the project. For virtual access fill only the second column. For trans-national access fill one of the two columns or both according to the way access costs are declared. Trans-national access costs on the basis of unit cost will result from the unit cost by the quantity of access to be provided.