



Quality plan

Erasmus+ Programme

Key Action 2 “Capacity Building for Higher Education”

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1. About the project / Executive summary

The e-LIVES project aims to develop innovative solutions in e-learning for e-engineering as part of the modernisation of the Southern Mediterranean countries training program (Algeria, Jordan, Morocco and Tunisia). As a matter of fact, the number of students having access to higher education system in South Mediterranean countries has more than doubled during last 15 years and this step forward involve in parallel important difficulties for universities to handle the management of this increased number of students. In STEM (Science, Technology, Engineering and Mathematics), one promising solution concerns the development of nationally accredited e-learning training ("e-engineering training"), with e-learning being a very modern and efficient solution to integrate multiple profiles of students.

At the end of the project, the beneficiary partners will be 100% independent for creating and managing an e-engineering training and, thanks to the innovative e-engineering solutions, to deal with a range of administrative, human and material obstacles to HEIs modernization.

The e-LIVES project pursues the 5 following specific objectives:

- Identification of the best practices in order to build high-quality e-engineering training
- Development of reliable remote laboratory solutions with online access to Practical Works 24/24 and 7/7
- Development of practical open staff trainings in South Mediterranean universities
- Control and value the used pedagogical innovation solutions
- Promote e-engineering within the South Mediterranean countries mainly through National Dissemination Workshops in all the partner countries involved in the project

2. Introduction

2.1. Aim and scope of the document

The aim of this Quality Plan is to set out the quality assurance procedures for the e-LIVES project. The concrete purpose is to ensure that project results and deliverables are of high quality and reach the objectives set out in the approved work plan.

The current Quality Plan will be updated as often as necessary and it will be revised each project year in order to be validated by the Steering Committee held during each General Assembly.

2.2. Abbreviations and Acronyms

Word	Abbreviations/Acronyms
e-Learning InnoVative Engineering Solutions	e-LIVES
EACEA	Education, Audiovisual and Culture Executive Agency
Project Officer	PO
National Erasmus+ Office	NEO
Project Coordinator	PC
Project Manager	PM
Lead Partner	LP
Local Coordinator	LC
Work-package	WP
General Assembly	GA
Steering Committee	SC

3. Quality roles and responsibilities

3.1. Within the consortium

3.1.1. Project coordination team

The project coordination team (UNILIM) is in charge of the general daily quality management of the project with respect to the EU rules and the work plan. The coordination is in the first instance directly targeted to the lead partners of each work-package (*see section 3.1.3*) and the local coordinators (*see section 3.1.4*). The coordination can be extended to the whole consortium when necessary, i.e. regarding the administrative and financial management.

The coordination team is composed of:

- The project coordinator (G. ANDRIEU) and the co-coordinator (C.DALMAY) for the overall management of the project
- The project manager (C. CHASSEAU) for the administrative and financial management
- The e-learning engineer (T.FREDON) for technical and the e-learning issues

3.1.2. Steering Committee

The Steering Committee is the executive board for decision making that takes strategic decisions, solves conflicts, plans and monitors the project activities. To ensure an efficient decision-making process, the voice majority is required with a veto right for the grant applicant (for financial matters). In case of a tie, the vote of the grant applicant is decisive. The Steering Committee meetings take place twice a year: one face-to-face, during the General Assembly (GA), held during the first semester of the academic year (October-November), and the other one online, held during the second semester of the academic year (June-July).

Minutes are disseminated within the whole consortium and the Steering Committee members can amend it among a specific period fixed by the coordination team.

The Steering Committee is composed of 10 members (8 voters) defined as follows:

- 3 members from the grant applicant (UNILIM):
 - o The coordinator (G. ANDRIEU)
 - o The co-coordinator (C. DALMAY) - *only with the advisory role*
 - o The project manager (C. CHASSEAU) - *only with the advisory role*
- 1 member for each Programme Country partner (EU) :
 - o Portuguese local coordinator (M. GERICOTA – IPP)
 - o Spanish local coordinator (C. PEREZ-MOLINA – UNED)
 - o Belgian local coordinator (J. BOYDENS – KU Leuven)

- 1 member for each Partner Country partner (non-EU)
 - o Algerian local coordinator (A. BENACHENHOU – UMAB)
 - o Moroccan local coordinator (M. SKOURI – UCAM)
 - o Tunisian local coordinator (A. BEN TAZIRI – UVT)
 - o Jordanian local coordinator (S. AL-JUFOUT – TTU)

3.1.3. Work-package Leaders

The lead partners and the back-up partners

In order to ensure the quality of the project activities, the project is organised among six work-packages. Two partners coordinate each work-package: one Lead partner (LP) and one Back-up partner (BP), each lead partner and back-up partner have been chosen for their expertise in the WP main topic during the set-up of the project. This pair working is always formed by a Programme country and a Partner country, as follows:

- **WP1 – Best practice identification in e-engineering**
 - o Lead partner: Universidad Nacional de Educación a Distancia – UNED (SP)
 - o Back-up partner: Université Virtuelle de Tunis – UVT (TN)
- **WP2 – Development of reliable remote laboratory solutions**
 - o Lead partner: Université Cady Ayad Marrakesh – UCAM (MO)
 - o Back-up partner: Labsland. S. A. (SP)
- **WP3 – Development of e-engineering trainings**
 - o Lead partner: Université Abdelhamid Ibn Badis Mostaganem – UMAB (DZ)
 - o Back-up partner: Université de Annaba – UBMA (DZ)
- **WP4 – Quality assessment of efficient pedagogical innovative solutions**
 - o Lead partner: Université de Kairouan – UniK (TN)
 - o Back-up partner: Katholieke Universiteit Leuven – KU Leuven (BE)
- **WP5 – Dissemination, networking, sustainability**
 - o Lead partner: Instituto Politecnico do Porto – IPP (PT)
 - o Back-up partner: Tafila Technical University - TTU (JO)
- **WP6 – Project management**
 - o Lead partner: Université de Limoges – UNILIM (coordination team - FR)
 - o Back-up partner: NA

The role of the lead partners:

The lead partner, assisted by the back-up partner, coordinates the work-package and ensures that all the activities are contributing efficiently to the objectives of the WP in accordance with the planned actions and the expected results. More specifically, the lead partner is in charge of:

- Day-to-day implementation: The lead partner is in charge of the implementation of his/her work-package activities dealing directly with the involved partners. The LP ensures that all the partners are smoothly cooperating in order to implement the actions and accomplish the objectives; send milestone reminders about submission deadlines and the procedures to be followed; provides comments and suggestions on the deliverables, and verifies the satisfactory implementation of the recommendations.
- Monthly remote meeting: The lead partner animates the monthly remote meeting on the Moodle platform (*see section 4.2.2.*) following the calendar sent by the project coordinator at the end of the previous month. Then, the lead partner uploads the minutes of the online meeting in his/her work-package section.
- General assembly: The lead partner manages his/her work-package work-session and uploads the presentation and the minutes on the Moodle platform.
- Link with the project coordination team: The lead partner reports any difficulties to the project coordinator, as often as necessary. The coordination team deals directly with the lead partner regarding the corresponding work-package.

3.1.4. Local coordinators

The local coordinator (LC) is responsible for all the partners of his/her country. The LC is the first contact point regarding the e-LIVES project in the corresponding country and therefore the LC is also in charge to communicate all the relevant information to the project coordinator and the Steering Committee on behalf of partners from his/her country.

Therefore, there are 8 local coordinators representing the 8 countries and the 14 partners involved in the project:

- French local coordinator (G. ANDRIEU – UNILIM)
- Portuguese local coordinator (M. GERICOTA – IPP)
- Spanish local coordinator (C. PEREZ-MOLINA – UNED) representing UNED and Labsland
- Belgian local coordinator (J. BOYDENS – KU Leuven)
- Algerian local coordinator (A. BENACHENHOU – UMAB) representing UMAB, UBMA and U8M45.
- Moroccan local coordinator (M. SKOURI – UCAM) representing UCAM and UAE.

- Tunisian local coordinator (A. BEN TAZIRI – UVT) representing UVT and UniK
- Jordanian local coordinator (S. AL-JUFOUT – TTU) representing TTU and PSUT

The local coordinators have been selected for their expertise in European project management during the set-up of the project.

3.2. External of the consortium

The quality assessment of the e-LIVES project is also ensured by the involvement of various external stakeholders, both for the overall activities implementation and the administrative and financial management.

3.2.1. EACEA Project Officer (PO) and National Erasmus+ Office (NEO)

The external monitoring of the project is performed by the EACEA and the National Erasmus Offices (NEO) of each partner country.

The EACEA Project officer (PO) is the contact point for the Project Coordinator at the EACEA.

The project officer contributes in managing, monitoring and evaluating the implementation of the project. In particular, by ensuring the follow-up of projects' implementation: supports projects' coordinators and partners, monitors the implementation of contractual obligations via reporting, remote monitoring and monitoring visits; gathers and handles external expertise.

According to Erasmus+ regulations, the PO shall not be contacted directly by project partners.

The Project Coordinator is the only one allowed to contact the PO. Therefore, the project partners shall contact the Project Coordinator about any concerns that need to be communicated with the PO.

The NEO (or EU delegation) are acting on behalf of the EACEA in order to monitor and support the Erasmus+ projects under implementation within their countries.

The NEO performs three types of monitoring, based on deliverable achievement: preventive (in the first project year), advisory (after the first project year), and control (after the end of the project – sustainability check). NEO will assess various aspects of project implementation: relevance, efficiency, effectiveness, impact, and sustainability.

The NEO can organise monitoring visit(s) during the project implementation within one or more partners' institutions of the same country or within one partner's institution by inviting the other local partners to join the visit. Since the beginning, the coordination team has established and made available various documents aiming to help the partners to present efficiently the project,

its aims, the activities, the expected results/impacts as well as the overall project management process.

3.2.2. External quality experts

3.2.2.1. Quality expert about the project's activities

The contribution of an external reviewer (quality expert) has been foreseen in the description of the project. Therefore, one expert in the field of e-engineering will be selected in order to assess the methodology of the project and the quality of the deliverables. The curriculum vitae of the selected expert will be submitted to the EU for approbation. This expert is expected to intervene around the middle of the project and will attend the 2nd General Assembly (November 2019 at Madrid, Spain). The expert will prepare a detailed report containing his comments and recommendations.

3.2.2.2. Administrative and financial expert

According to the Erasmus+ rules, before the end of the project, an audit will be operated regarding the administrative and financial management in order to ensure that it has been set up effectively and efficiently, in accordance with the EU Grant Agreement rules.

The project coordinator will write and diffuse the call of tender, select the most relevant application, host the audit society and give all the requested documents.

4. Project procedures and process

4.1. Activities follow-up

As already described, the global management structure has been built in such a manner to have different monitoring levels not forgetting the importance of having a thematic and geographical close follow-up. This is why e-LIVES project is organised among six work-packages, each one led by one lead partner in order to ensure the quality of the project activities, who is working in close link with a second identified partner (back-up partner) as described within *section 3* as well as the identification of 8 local coordinators, one for each project's country. The quality standards of each WP will be presented in detail within *section 5*.

Nevertheless, the overall quality control and monitoring of the e-LIVES project is ensured by the WP6 activities, which is dedicated to the project management and led by the project coordination team (UNILIM).

During the first semester of the project, various monitoring tools have been developed and made available such as a detailed GANT diagram gathering all the main activities and sub-activities within each work-package and their timetables. The overall quality of the project activities is monitored by using indicators such as on-time delivery of the implementation of all work packages and the realisation of the planned objectives. This is quantified in an annual progress report corresponding to the minutes of the General Assembly (organised during the last semester of each year – *see section 4.2.2*). Based on this report, the Steering Committee (SC) takes the necessary actions if needed and decide to request intermediate progress reports taking into account the corrective measures. As it will be explained within *section 4.2*, the consortium members meet themselves online on a bi-monthly basis, which allows to monitor rapidly any deviations; and thus, corrective actions can be taken to regain the quality goals expected as quickly as possible.

4.2. Internal communication and meetings

The internal communication is the key to success of the project; therefore, it is the biggest characteristic of the e-LIVES project management with the transparency to the partners as the watchword. It is for this reason that various communication process and tools have been established since the setting up of the project and are currently applied within the project.

Under the e-LIVES project, apart from emails, various ways of communication are adopted in order to have a high-quality level of communication to ensure an efficient implementation.

4.2.1. The e-LIVES Moodle platform

Moodle is a free and open-source learning management system (LMS) which is developed on pedagogical principles, Moodle is used for blended learning, distance education, flipped classroom and other e-learning projects in schools, universities, workplaces and other sectors. Moodle is already used for the EOLES bachelor degree (which is a result of the former project at the origin of the e-LIVES project) and it will be used by the partners to implement their own e-learning curricula as the result of the e-LIVES project.

A dedicated Moodle platform for e-LIVES has been created by the project coordinator at the stage of the project's application as the main tool of management. The consortium must use the Moodle platform as the first tool of communication, even before the e-mails. Apart from its benefit to implement a smooth and efficient management, as it will be described below, this way of communication has been also chosen in order to train all the project members to this e-learning platform.

An account on the platform is systematically created for each new e-LIVES member (all staff working on the project – *more than 100 people have currently the access*). Consequently, every member can have access to the same information at any time.

Each WP has a dedicated sub-section, which is animated and fed of content by its own lead partner. All the relevant information of the project must be systematically uploaded on the Moodle platform (working documents, documentation, annual and bi-monthly meetings' reports, any other relevant information). In addition, the Moodle platform has many efficient plugins allowing a smooth management: one forum by WP allowing to communicate in specific items and to involve all the relevant members on this item (with notifications sent by e-mail in parallel), provision of uploading areas for any documents, quiz, scheduler, questionnaire, web conferencing system, etc. The platform allows different types of access depending on the purpose, the document uploaded can be shared to all the members or the access can be restricted to the administrators of the section (case of the administrative and financial supporting documents uploaded by the partners for the project manager).

4.2.2. The meetings

Two main kinds of meetings are regularly organised: the bi-monthly remote meetings and the general assemblies, both gathering the main members of the project. Nevertheless, bilateral meeting or multilateral meetings, but not necessarily gathering all the partners, can be organised as often as necessary regarding specific items.

The bi-monthly remote meetings are organised, as their name suggests, twice a month on Thursday morning and each meeting is dedicated to specific work-packages, with the same frame every month as presented below:

- 1st Thursday of the month: WP2 and WP4.
- 3rd Thursday of the month: WP1, WP3 and WP5.

The WP6 is covered as often as necessary at any time.

The project coordinator sends at the end of every month the dates of the remote meetings of the following month. At least one person must represent each partner and each lead partner of WP must animate his/her own WP session.

These remote meetings are organised directly on the Moodle platform through the BigBlueButton tool which is an open-source web conferencing system directly integrated to the Moodle and allows the use of various ways of communication at the same time (eg. sound, image, forum, screen sharing, etc.). Each bi-monthly remote meeting is recorded and it is

available on the Moodle platform at the end of the meeting without any expiry date; in that sense each member can stream the meeting at any time and the information communicated and the decisions made are completely transparent to the entire consortium.

The General Assembly is organised once a year during the last semester of the calendar year and in a different country each time alternating between Partner Country and Programme Country as planned at the beginning of the project:

- Kick-Off Meeting, December 2017, hosted by UNILIM at Limoges (FR)
- General Assembly #1, November 2018, hosted by UAE at Tétouan (MO)
- General Assembly #2, November 2019, hosted by UNED at Madrid (SP)
- Final General Assembly, June 2020, hosted by TTU at Tafila (JO)

Each partner is represented by an average of 4 people (except the project coordination team which is always composed of 4 people, the EU partners are for their part represented by 3 people only). Each work-package is covered by organising a dedicated section animated and reported by the corresponding lead partner; one Steering Committee is also organised in this occasion.

The General Assembly allows organising a face to face meeting, which is very important to ensure an efficient implementation of the project activities by presenting the activities and results of each work-package for the year ending and planned the activities and expected results of the coming year.

4.2.3. The mailing lists

Even if the communication by e-mail is not prioritized, two main mailing lists have been implemented:

- **The coordination team mailing list** gathers all the members of the coordination team (UNILIM). The partners should use it as often as possible in order to inform the whole coordinating team in the same time for any relevant issues regarding the project instead of using the individual contacts of each member.
- **The members' mailing list** gathers all the members of the consortium and allows to diffuse information among the partners at the same time. Access is systematically created for each new members (*more than 100 people are currently recipient*).

4.3. Administrative and financial management

The overall administrative and financial management is ensured by the project coordinator and the project manager, in accordance with the EU rules of the Grant Agreement. Within the project

e-LIVES the grant is managed differently depending on the partner, combining centralised management and decentralised management, although the EU rules are the same for the whole consortium some specific rules can appear regarding the centralized management of the grant.

The daily administrative and financial management is carried out at two levels; on one hand by the coordinating institution and on the other hand, in parallel within each partner institution. The project manager coordinates and ensures the daily management of the project in direct contact with the coordinator, the partners and the internal and external administrative services (finance, accounting, schooling, international relations, etc.). This management in direct contact with the competent persons/services allows a smooth administrative and financial management, thus ensuring that the deadlines and the rules of the grant agreement are respected.

The administrative and financial management is facilitated and consolidated by the implementation of various dedicated tools and procedures in accordance with the EU rules, the e-LIVES internal rules and the project coordinator rules (if relevant):

- Establishment of a consortium agreement setting out the rights and duties of the partners,
- Establishment of numerous tools and «templates" directly available on the e-LIVES Moodle platform.

The main tool is the administrative and financial guidelines gathering all the rules and process of the administrative and financial management, which is updated and upgraded as often as necessary. The guide presents the administrative and financial rules and process in accordance with the EU rules, the e-LIVES internal rules (also included to the Consortium Agreement) and the project coordinator's own rules, if relevant. Each rule and process is described in details and illustrated with examples in order to make easier and clearer the management. Each financial heading and its own specificities and rules are presented here. This guideline also includes various templates related to the justification of the use of the EU co-funding (travel report, time sheets, joint declarations, etc.).

All the supporting documents expected by the EACEA is managed and centralized by the project coordinator (UNILIM) in accordance with a dedicated calendar (presented within the guidelines) and with the grant agreement calendar.

5. Quality standard

Quality standards for planned activities and outputs in each WP are set out and described below, as well the deliverables.

5.1. Quality standards for activities and outputs

The quality managers will ensure the adherence to the quality standards established for the activities for which they are in charge of: respecting the planned activities, applying the calendar/timetables and delivering the expected results. The latest International Organization of Standardisation (ISO) 9001 will be considered as a standard for assuring quality in this project.

Each main activity is preceded by the establishment of a work plan providing the basis for implementation by setting out the criteria to be followed in order to guarantee that appropriate quality levels are attained. As aforementioned, these activities, divided in 6 different work packages running during the 3 years of the project, are the following: WP1, WP2, WP3, WP4, WP5 and WP6, respectively. More concretely, each work package is planned with a set of tasks and an appropriate deadline for each task.

5.1.1. WP1 – Best practice identification in e-engineering

WP1, entitled "Best practices identification in e-engineering" and led by UNED, is an introductory WP. The aim is to identify all the best practices existing to build high-quality e-engineering training. To reach this objective, different sources are already identified: EU projects on a similar topic (including EOLES), related journals or conferences, existing training... The main output of this WP is a critical best practice guide delivered at the end of the first year, this guide being a support for WP 2, 3, 4 and 5 with the selection of top-good practices to be promoted in the project. Conclusions of this best practice analysis will also be presented in an interactive manner during the different national dissemination workshops (NDWs) organised the last year of the project.

- List of tasks involved in WP1 are as follows:
 - WP1.1 - Mapping of topics of interest
 - WP1.2 - Identification of guide writers for each theme
 - WP1.3 - Writing of an e-engineering good practice guide
 - WP1.4 - Selection of top-good practices to be promoted in the project
 - WP1.5 - Monthly online meeting about the progress of WP activities

5.1.2. WP2 – Development of reliable remote laboratory solutions

WP2, entitled "Development of reliable remote laboratory solutions" and led by UCAM, aims at giving the possibility for each beneficiary partner to build its own remote laboratory. Indeed, after defining a high-quality reference remote practical work (HQRRPW) to develop, each partner will work in parallel, with the help of European partners, to have the practical work

operational. The HQRRPW build in this WP has to be thematically relevant, able to handle a large number of students, with a high level of security, with an integrated associated schedule allowing students to reserve time slots and requiring simple maintenance. The participation of the company LabsLand will help us to reach this ambitious programme. In order to ensure the ownership, pedagogical innovative tools will be proposed (video tutorials, technical data sheets) to support Partners countries in the development of their remote practical works. Learning by doing will be the main idea of the WP2. To check that practical works (PW) are well functioning and adapted to the teaching, a trainee practical exercise of the one-day testing session will take place at the end of the project in a real class environment. Demonstrations of the practical works and detailed presentation of the approach leading to develop a remote laboratory will also be presented during the NDWs.

- List of tasks involved in WP2 are as follows:
 - WP2.1 - Detailed definition of the high-quality reference remote practical work (HQRRPW)
 - WP2.2 - Identification of teaching and technical staff
 - WP2.3 - Inventory and purchase of equipment
 - WP2.4 - Choice, development and installation of remote laboratory computer management system
 - WP2.5 - Tutorials on the remote laboratory implementation
 - WP2.6 - Implementation of HQRRPW
 - WP2.7 - Trainee practical exercise: 1-day testing session of HQRRPW in the real class environment
 - WP2.8 - Monthly online meeting about the progress of WP activities
 - WP2.9 - Preparation material for national dissemination workshops

5.1.3. WP3 – Development of e-engineering training

In WP3, entitled "Development of e-engineering trainings" and led by UMAB, the aim is to help beneficiary universities to have all the required information in order to overcome all the inherent obstacles inherent to the creation of an e-engineering training and acquire relevant knowledge. The methodology is based on a training of trainees who will become future trainers (training chain). Summary sheets will be written containing relevant information on all the important problems a university has to solve before being able to start an e-engineering training as for instance: How to obtain a national accreditation, pay teachers involved in an e-learning training, assess students skills, handle technical issues, ensure a good daily pedagogical

follow-up of the students, train the teachers, build a curricula and so on. In parallel, 3 trainee practical exercises are planned to match the learning by doing approach promoted in the project. These exercises will deal with installation and personalisation of a Learning Management System and with the pedagogical script writing of lectures linked to the HQRRPW. The training material available on the website of the project will also be used during the 4 NDWs organized in each partner country involved in the project.

- List of tasks involved in WP3 are as follows:
 - WP3.1 - Identification of trainers and a pool of trainees
 - WP3.2 - Writing of a summary or data sheets by trainers for each issue about creating an e-engineering training in good conditions
 - WP3.3 - Trainee Practical Exercise: Installation and personalisation of LMS
 - WP3.4 - Trainee Practical Exercise: Pedagogical schematisation of lectures linked to the HQRRPW
 - WP3.5 - Testing session of lectures related to HQRRPW in real class environment
 - WP3.6 - Monthly online meeting about the progress of WP activities
 - WP3.7 - Preparation material for national dissemination workshops and selection of trainers among trainees for each workshop

5.1.4. WP4 – Quality assessment of efficient pedagogical innovative solutions

WP4, entitled "Quality assessment of efficient pedagogical innovative solutions" and led by UniK, focuses on 2 different kinds of quality controls:

- To provide efficient quality tools able to assess accurately the quality of e-engineering training. Key stakeholders directly involved in the curriculum (students and teachers) will be implicated in the different quality processes. A peer-review working group will be created within the consortium in order to ensure a sufficient quality level of all the documents created and aimed to be disseminated outside the consortium.
- To control the efficiency of e-LIVES project training, satisfaction questionnaires will be filled-in by trainees. The obtained results from the trainee practical exercises of WP2 and 3 will be exploited and future trainers' skills will be measured and valorised after NDWs.
- List of tasks involved in WP4 are as follows:
 - WP4.1 - Template of satisfaction questionnaire addressed to students
 - WP4.2 - Template of satisfaction questionnaire addressed to teaching staffs
 - WP4.3 - Satisfaction questionnaire for trainers and trainees of the project

- WP4.4 - Working group for the review process of training materials
- WP4.5 - Selection of independent experts for the mid-review of training materials produced
- WP4.6 - Exploitation of the results from training practical exercises
- WP4.7 - Valorization of the e-engineering skills acquired during the national dissemination workshops

5.1.5. WP5 – Dissemination, networking, sustainability

WP5 entitled "Dissemination / Networking / Sustainability" and led by IPP. The planned actions for dissemination are as follows:

- The organisation of a NDWs in all the different partner countries involved in the project showing the main results of the project including lectures, training sessions, practical work demonstrations, etc. These workshops will occur the last year of the project and will be our main dissemination tools. 15 persons (teachers, technicians but also rectors) for each beneficiary partner are planned to attend the workshop also open to interested persons from the whole country
- The organisation of a final open dissemination conference in the framework of the last GA of the project
- The implementation from the beginning of the project of a project website containing in free access all the deliverables created in the project in order to ensure a wide dissemination of the results
- The creation of a Special Interest Group (SIG) within the International Association of Online Engineering (IAOE) association, organizer of the international Remote Engineering and Virtual Instrumentation (REV) conference and counting more than 2000 members over the world. The SIG will promote the development of e-engineering in the Mediterranean Basin, a geographical area poorly represented until now
- List of tasks involved in WP5 are as follows:
 - WP5.1 - Design and update of the project public website
 - WP5.2 - Creation of project pages in the most relevant social networks
 - WP5.3 - Creation of a special interest group within IAOE
 - WP5.4 - Bi-annual publication of an e-newsletter
 - WP5.5 - Development of a communication plan and promotion materials
 - WP5.6 - Organization of national dissemination workshops
 - WP5.7 - Final dissemination conference

5.1.6. WP6 – Project management

WP6, entitled "project management" and coordinated by UNILIM, is a transversal WP ensuring the day-to-day monitoring of the project including the relation with the EU and the partners, the administration and financial follow-up in accordance to EU rules, the organisation of committees and meetings and the purchase of equipment. A dedicated project manager has been assigned to allow a quality and up-to-date management during all the project duration.

- List of tasks involved in WP6 are as follows:
 - WP6.1 - Establishment of project steering committee
 - WP6.2 - Drafting and signing consortium agreement
 - WP6.3 - Drafting and agreeing upon management procedures
 - WP6.4 - Development of project management tools
 - WP6.5 - Project's administrative and financial follow-up
 - WP6.6 - Organisation and minutes drafting of steering committee meetings
 - WP6.7 - Preparation and minutes drafting of annual general assemblies

5.2. Quality control monitoring

The quality control will be performed over two different axes: one on overall quality and another one on individual quality from different perspectives.

On the first axis, overall quality will be monitored using indicators such as on-time delivery of the implementation of all work packages and realisation of the formulated objectives. This will be quantified in the annual progress report and an independent expert will validate the conclusions made. This expert will provide a contemplating report with thoughtful remarks and deviations expected in the long run of the project. Based on those reports, the steering committee will take necessary actions and, if needed, decide to request intermediate progress reports for validation of proposed corrective measures.

On the second axis, individual quality will be measured using questionnaires for dedicated groups of people involved in the project. These groups are (1) students in WP4.1, (2) teachers in WP4.2 and (3) trainers and trainees in WP4.3. Questionnaires for students (1) serve as a basis to improve the quality of an e-engineering training on many aspects. Some of those aspects are, ease of use of the e-learning tools, pedagogical resources, organisational support, quality of the follow-up, giving feedback both in the group and as well as individually, evaluating teachers' motivation and technical assistance and so on. Questionnaires for teachers (2) will serve as a basis for points of improvement as well as for intake of students. Goals are to check the ease of

use to set up the new material, with respect to the required knowledge, required tools, availability of the infrastructure, experimenting with dummy student. Rostering, scheduling of individual students, upgrading and refreshing courses for new enrolment, changing quizzes and PWs. Validation of the entry level of students both at the technical level and at usage of English as an educational language. Specific templates will be implemented to help to generate useful documents for quality control assessment. Questionnaires for trainers and trainees (3) is to get their opinion on e-learning training, material, tools and their quality. The aim of this questionnaire is to improve the follow-up of the trainees in order to help them to reach the assigned objectives in WP2 and WP3.

Moreover, the steering committee will meet online on a regular basis and deviations will be monitored rapidly and thus, corrective actions will be taken to regain the quality goals described in the proposal. Hence, the yearly progress report containing all information about the process and merely serves as a reflection of ongoing work for the steering committee. On the other hand, this report is the basis for the independent expert to pinpoint pitfalls overlooked by the steering committee and work package leaders.

5.3. Specific work packages for quality control

In this project, quality control and monitoring will be done through WP6 and WP4. More concretely, WP6 is for quality control of the project, WP4 is for quality control of the e-engineering training.

Concerning the quality control and monitoring of the EU project itself, it is ensured by WP6 activities. The grant coordinator and the project manager allocated to this specific WP are particularly in charge. As aforementioned, monitoring tools as timetables and budget follow-up files will be produced. Overall quality of the project activities and assignments will be monitored using indicators such as on-time delivery of the implementation of all work packages and realization of the e-form formulated objectives as already mentioned above in *section 4.1*.

In addition, WP4 has been dedicated to monitor the quality of the e-engineering training, in all of its aspects. The objectives of this WP is to generate tools to measure educational quality in e-engineering training, after the project is finished. Two different kind of quality controls will be done:

- Provide efficient quality tools able to assess accurately the quality of e-engineering training. Key stakeholders directly involved in the curriculum (students and teachers) will be implicated in the different quality processes

- Control the efficiency of e-LIVES project training through questionnaire. Satisfaction questionnaires will be filled-in by trainees and results from the trainee practical exercises of WP2 and 3 will be exploited and future trainers' skills will be measured and valorised after NDWs

5.4. Quality standards for document deliverables

Each stage of the implementation and the setting up of activities and outputs will be discussed during the bi-monthly meeting as well as during the General Assembly. In this way, quality of the activities outcome can be improved. At the end of each finished activity, a draft version of deliverables should be made available to partners and to the project coordinator for an internal review. This review process could be iterated as needed until the final delivery. The quality managers will ensure that all recommendations have been adequately addressed, discussed and reflected before the final delivery.

Moreover, the quality of the project deliverables depends on the work of individual partners, their individual teams, the cooperation within the team, as well as their cooperation with the WP leader and the partners involved in the activity. Results of the project work will be reported in the final deliverables. Deliverables must address the goals and activities defined in each work package description. All the deliverables must be validated before being published. Every deliverable must meet appropriate standards for:

- Coverage of the topics stated in the project proposal and grant agreement
- Achievements and quality of the results
- Level of clarity to the user
- Handling the problems
- The approach of work

5.5. Quality standards for work progress and final reports

The work progress of each work package will be assessed every month through the discussions and presentations in the on-line meetings, and more particularly every 6 months during the Steering Committee meeting. Ultimately, the steering is the highest decision making body of the project to closely monitor the work progress and officially approves the final reports. In addition, the annual general assembly meeting will allow presenting the results of the past year and the planned actions of the coming year.

Furthermore, the beneficiary (project coordinator) has to provide an intermediary progress report and a final report in accordance with the requirement of the Grant Agreement signed with the EACEA. The coordination team with the help of each quality manager will be responsible for ensuring that these reports are fully in order to the EACEA requirement.

6. Risk management

The WP leaders, Steering Committee members and Project Coordinator shall continuously assess the risks involved and possible delays during the meetings. In addition, the identification and assessment of new risks is a joint responsibility of all project partners who have to communicate them to the Project Coordinator and the Steering Committee. In case of serious risks, Steering Committee should suggest alternatives and the proposed corrective actions that will make the risk consequences acceptable for the consortium. All the partners should take care of the proper allocation of given resources.

6.1. Types of risk

There are several possible risks in this field such as, delay in the project implementation, last minute implementation with low quality, less time spending on the project and financial costs not properly maintained. More concretely, there are three different types of risks present as follows:

6.1.1. Technical risk

It is a risk associated with the implementation of the activities and outputs that may affect the level of performance necessary to reach the objectives. To assess this risk, the bi-monthly online meetings are planned to discuss and track the work progress thoroughly.

6.1.2. Cost risk

The ability of the project to achieve the cost objective as determined in the approved budget and in accordance with the Grant Agreement rules. Therefore, the cost risks can be of two types:

- The non-respect of the EU rules: The grant's use is not in accordance with the grant agreement and therefore the related budget will be rejected at the end of the project.
- An overconsumption of the budget: the project activities real costs exceed the unit costs allotted by the Grant Agreement and make impossible a balanced budget at the end of the project.

6.1.3. Schedule risk

Risk associated with the appropriateness of the time estimated and allocated for the development and implementation of the activities and outputs of the project.

- Schedule estimates and objectives are not realistic and reasonable
- Project execution falls short of the schedule objects as a result of failure to technical risks
- Schedule against available resources (human, machinery, money, etc.) are wrongly estimated

6.2. Risk management and responsibilities

Risk managers involved in the project and their responsibilities to overcome the risks are as follows:

- The Project Coordination team (project coordinator and project manager) are the main risk manager and responsible for tracking effort to reduce the risk, combine risk briefings, reports, and documents as delivered by WP leaders and partners
- The Steering Committee discusses and assists the risk manager to handle with any risks arising
- The Work Package leaders are responsible for risk assessment within their work packages, which includes identification, analysis, handling, information, monitoring, and tracking efforts to reduce low and moderate risks
- The Local Coordinators of each partner country also responsible for risk assessment within their work package

6.3. Risk management process

The risk management process surrounds these three key steps are as follows:

6.3.1. Risk identification

The identification of critical risk events, which could have an adverse impact on the project, and analysis of these events to determine the likelihood of occurrence variance and consequences. Risks are to be identified by all individuals in the project, specifically by the WP leaders. The basic procedure for identifying risks consists of the following steps:

- Understand the requirements and the overall project quality and performance goals
- Examine the operational (functional and environmental) conditions under which the outputs must be achieved by referring or relating to the work plan
- Evaluate each activity/task against sources/areas of risk
- Schedule follow up against deadlines

6.3.2. Risk handling

After the identification of the risks, the systematic approach to handle each identified risk must be developed, which can involve additional monitoring of partners, change of tasks or the ordering of tasks in the project plan as well as early discussion with the EACEA to warn the PO of potential problems.

6.3.3. Risk monitoring

Risk monitoring systematically tracks and evaluates the performance of risk-handling actions. Each risk manager will monitor the risks in his/her own framework area. He/she compares the planned results with the achieved results to determine the status and the need for any change in the risk handling actions. Risk monitoring keeps track of identified risks, handled risks and new risks. It also monitors the execution of planned strategies for the identified risks and evaluates their effectiveness.