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Capacity Building in the field of Higher Education

**strENgtHening skills and training expertise for TunisiAN  
and MorocCan transition to industry 4.0 Era / ENHANCE**

## D5.4. Project quality and risk management guidelines

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## 1. Introduction

This document is developed as part of the ENHANCE project and presents mainly the project quality and risk management guidelines. It comprises the costs and activities tracking to ensure the activities completeness and reporting; the quality strategy for targeting project KPIs with a characterization at short-term and long-term impact for a correct analysis and consequent recovering. Then it presents an approach for an appropriate consortium communications and privacy assuring. Finally, a set of risk management guidelines are introduced.

### 1.1. Purpose of the document

The purpose of the document intends to provide the respective guidelines to assure the completeness of the project's tasks in relation to the established objectives using different tools or mechanisms as KPI and risks analysis which may use additional internal tasks performance by partners through the verification of the reporting costs against the accomplished tasks.

### 1.2. Reference documents

D3.1

### 1.3. Applicability

This document intends to provide the guidance to assure the quality of the outcomes of the ENHANCE project.

### 1.4. Definitions

N/A

### 1.5. Structure of the document

Apart from this chapter, this document starts by having a chapter (3) that presents the project quality for intra project activities mentioning generically the internal document management process and reporting. Then the following chapters present each of the quality approaches and strategies to be followed to reach the targeted project KPIs and risks managements and recovering.

### 1.6. List of acronyms

- DOA – Description of Action
- DIH – Digital Innovation Hub
- CBHE – Capacity Building in the field of Higher Education
- EC – European Commission
- EU – European Union
- GDPR – General Data Protection Regulation
- HE – Higher Education
- HEI – Higher Education Institution
- KPI – Key Performance Indicators
- LeL – Long life eLearning
- MPQ – Maintenance Production Quality
- MS - MicroSoft
- PC – Project Coordinator
- PMB – Project management Board
- WP – Working Package

## 2. ENHANCE project overview

ENHANCE – strENgtHening skills and training expertise for TunisiAN and MorocCan transition to industry 4.0 Era – is an Erasmus Plus project founded under the KA2 Cooperation for innovation and the exchange of good practices (Capacity Building in the field of Higher Education) programme by the European Commission under Grant Agreement N° 619130, to be conducted in the period January 2021 until January 2024. It engages 7 partners from 5 countries with a total budget of 779k€. Further information can be found at <http://eplus-enhance.eu/>.

The emergence of industry 4.0 concepts and applications brings new paradigms impacting all the industrial business domains when they need to conduct successful digital transformations or increase workshops connectivity. The evolution of Maintenance, Production and Quality Engineering (MPQ 4.0) represents the main application domains where Industry 4.0 produces effective beneficial results. Figure 1 gives a global view of ENHANCE project organization.

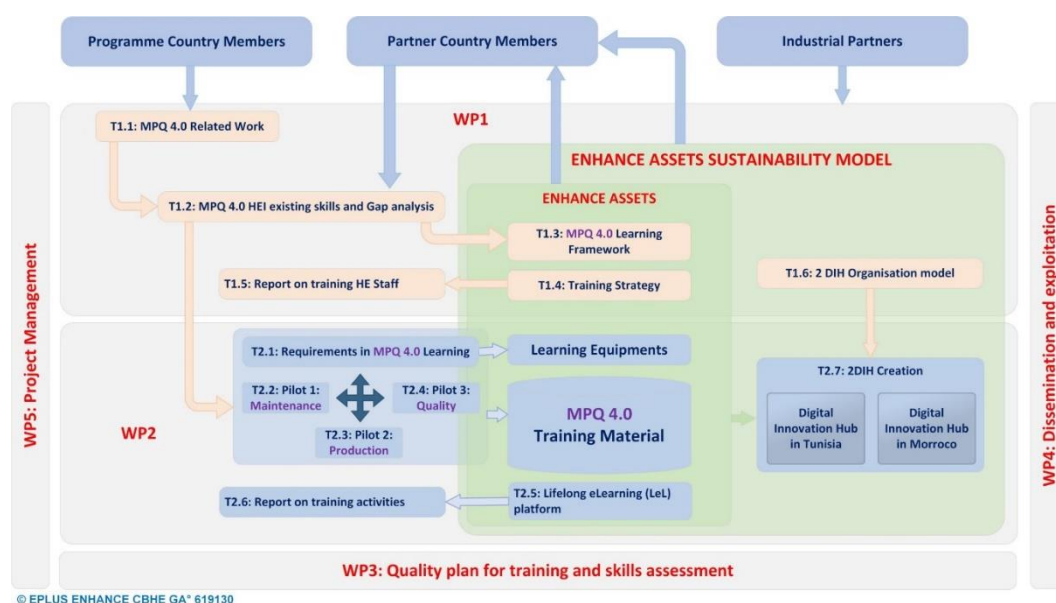


Figure 1. ENHANCE project organization.

The ENHANCE project focuses on building new MPQ training capacities at Higher Education Institutions (HEI) in Tunisia and Morocco to establish interactions between the following stakeholders:

- European universities and research institutions (from France, Germany and Portugal) confirmed MPQ 4.0 competencies, training materials, collaborative research projects, full operational Digital Innovation Hubs (DIH), technology transfer experiences, etc.
- Partner country universities (from Tunisia and Morocco) with teaching and training activities in MPQ and existing connections with their local industrial partners.

The ENHANCE project will create several outputs and two primary tangible outcomes:

- New MPQ 4.0 equipment and training materials developed in connection with the existing training programmes and consolidated through three industrial pilots. The new material will be used to train the trainers and the students in the different partner country universities.
- Two DIHs, one in Tunisia and one in Morocco to sustain the project outcomes through their reuse for training in industry.

ENHANCE aims to propose a Learning Framework for creating effective and sustainable training material for MPQ 4.0 in both partner countries with content approved by academia and industry.

### 3. Project Quality for Intra Project Activities

It contains a set of quality activities that will be carried out with intra project activities. For example, quality strategy for intra project performance in relation to tasks and proposed objectives– eg.Tx.y is delayed, or it doesn't provide all the objectives – any mitigation risks? Connection between deliverables to provide the desired added value.

Minutes of meetings as inputs for bellow mentioned intermediate reports – this would be used for risks management.

Intermediate Reports (6 months) – present here the structure / goal and then clarify its integration of this in the final project periodic report to be sent to EC (half and final reports). This document is a working document that will be in the OwnCloud and updated every 6 months.

#### 3.1. OwnCloud

The ENHANCE document management approach aims at reducing the burden for project partners to synchronize, store, and locate documents. For this, a solution for document management and storage will be used namely, OwnCloud. The OwnCloud refers to synchronized file storage using the WebDAV protocol. It is similar in operation to the well-known Dropbox, but that is self-hosted by ULL. OwnCloud is also often used for backups or for archiving the documents. OwnCloud is used within ENHANCE for the exchange and transfer of documents that are in progress. The documents should be stored in the WP folders (if agreed by all). If an OwnCloud folder is deleted accidentally on an individual user's PC, this deletion will be synchronized to the Server and then synchronized to all other users. The same approach is adopted for all content types. The recovery process is possible but very time consuming.

#### 3.2. Costs and Activities Tracking

The activities tracking is performed by the delivery of timesheets which each ENHANCE partner must do it in monthly basis. Through this, the costs are also tracked.

The timesheets were already presented in the Contract Agreement.

### 4. Quality Strategy for Targeting Project KPIs

The proposed quality strategy also focuses on transversal evaluation “business / overall KPI performance” of the project. In the last section of DOA, it presents several indicators that may be used to measure the project results. These indicators are presented in four categories that are listed in the next sub-chapter.

#### 4.1. Indicators for Project Objectives Evaluation

This section introduces 4 related indicators for project objectives evaluation.

##### 4.1.1. Expected Impact of the Project

Table 1: Project Objectives Indicators

No	Goals	Indicators (a batch from Tunisian and Moroccan)
1	Trained H.E. Staff in MPQ4.0 skills	A first batch of Tunisian and Moroccan H.E staff is trained on MPQ4.0. The trained H.E. staff is converted into trainers for other partner H.E. staff.
2	New skills for IE bachelor programs in the three application domains	New course and teaching materials will be designed as well as new effective training and learning approaches



3	Enhance learners' engagement, strengthen communication, and build new collaboration with Tunisian and Moroccan Companies	The acquired skills from the first part will be used for designing appropriate teaching and learning process of HEIs of Tunisian and Moroccan partners.
4	Successful implementation of prototypes and pilots	Trained H.E. staff will apply acquired knowledge into PC Companies and industry.
5	Trained industrial staff on MPQ4.0.	Partnership will be established with Tunisian and Moroccan industrial companies to implement MPQ4.0 solutions.
6	The 2 DIHs and its competency centres	Created DIHs are in fact training centres and frameworks for skills development and supporting industrial transition.
7	Online Dissemination of MPQ4.0 skills	An online e-learning platform is created. Developed learning materials are used in the online dissemination process.
8	Development of new learning policy and framework for Maghreb PC.	Through this project, PCs will promote and reform the teaching and learning policies in synchronization with Industry 4.0.

#### 4.1.2. Overview of short-term impact indicators

Table 2: Project-short Term Indicators

No	Goals	Quantitative indicators (in numbers please)	Qualitative indicators
1	Development of new and innovative teaching and learning approaches sparking thinking and creativity.	5 training workshops of PC HE faculty members to train a total of 27 faculty members (9 from UCAR, 6 from IIT, 6 from ECC and 6 from UIT)	Degree of satisfaction of trainers
2	Strengthening the collaboration between partner country industry and universities	15 awareness workshops and seminars. The number of MPQ 4.0 research projects The number of brevets	Awareness of companies with regards MPQ4.0 skills.
3	Development of new skills related to MPQ4.0 topics.	504 trained students (180 from UCAR, 100 from IIT, 100 from ECC and 110 from UIT). 30 trained company staff 8 administrative staff will be trained.	Use of new skills in industry and training/teaching approaches.
4	Development of skills in quality and project management in Tunisian and Moroccan HEI	At least one project submitted projects (to Erasmus, or other funded programs)	Increase in the ability of PC partners in managing projects.
5	Enhancement of the capacity of Tunisian and Moroccan HEI to support Companies in integrating new concepts and technologies of MPQ4.0	4 partnership agreements with local industry to support them in solving problems related to MPQ4.0 challenges. The adequacy level between education programs and industrial companies needs with respect to MPQ 4.0 skills	Promote the techniques use and importance of MPQ4.0
6	To be in line with the new Tunisian and Moroccan transition strategy for the development of PC industry	The MPQ4.0 maturity level in partner industrial companies	Increase of competitiveness of local industry
7	Increase the visibility of research laboratories and research centres through the publication of new articles on new and emergent technologies.	4 publications (journal papers, conferences, books, chapter books)	Significant contribution in research

#### 4.1.3. Overview of long-term impact indicators (after the projects EU funding period)

Table 3: Project-long Term Indicators

No	Goals	Quantitative indicators (in numbers please)	Qualitative indicators
1	Economic improvement based on the integration of new MPQ4.0 skills in industry.	Increase by 20% of companies using emerging technologies in Tunisia and Morocco	Improved competitiveness of Tunisian and Moroccan industry
2	To extend the university-industry linkages to other concepts of industry 4.0 such as wireless sensors and IoT	Increase the number of conducted trainings and workshops (by 30%) involving local companies and related to new technologies of IoT and wireless sensors.	Encourage the partnership between universities and PC companies.
3	To develop the new learning framework by considering future market needs	At least 1 created or updated curriculums in ENHANCE HEI PC partners - The number of new external participants (students, industrial and HE staff) - The number of delivered certification	The impact of new learning framework on activities of partners companies.
4	Submission of new European funded projects to develop the industry of the future.	At least one submitted projects.	The motivation of the involved team, regarding the experience of participation in future calls.

#### 4.1.4. Dissemination and exploitation strategy

Table 4: Dissemination and exploitation Indicators

No	Target group	Indicators
1	Tunisian, Moroccan and partner European Faculty members	Number of trainings and workshops for each target group. Number of participants and their satisfaction
2	Students of Tunisian, Moroccan and partner European HE institutes	Number of seminars.
3	Partner Industrials	The rate of application of the new technology in the Production, Maintenance and Quality engineering processes.
4	All industrials, stakeholders and users (non-partners).	Number of attendances at the conferences, seminars, workshops, website, webinar.
5	Policymakers	Number of attendances at the meetings, conferences, seminars, workshops, website, webinar.
6	Wider research community in areas related to our project activities	Number of attendances at the conferences, seminars, workshops, website, webinar.

## 4.2. General ENHANCED KPI Identification

From the indicators presented before it was defined a first draft of potential KPIs that for now has a certain classes of target values in percentage of success. These classes are from A to E representing respectively A= 100%; B=80%; C=60%; D=40%; E=20% of effectiveness. Anyway, the KPIs defined also follow the same above categories and may be readjusted or improved in the following deliverable version.

### 4.2.1. Expected Impact of the Project

Table 5: Project KPIs

KPI	Definition / calculation	Information need satisfied
Skills improvement for HE staffs	-Number of acquired skills/ Number of requested skills	B
Trained H.E Staff in MPQ 4.0 skills	- Number of staff who become able to give training/number of trained staff	C
Industrial staff involvement	Number of trained industrial staff/ number of staff eligible for training	B
Industrial skills improvement	number of acquired skills/ Number of requested skills	B
Curriculum development	Number of new MPQ4.0 related courses/ overall number of MPQ4.0 related courses	E
MPQ 4.0 Implemented projects	Number of realized (or in progress) projects / number of targeted companies	C
E-learning platform performance	Number of participants for each year/ targeted number of participants	C
competency centre and DIH compliance	- Number of Equipment types (in partner institutes) / European required level (by reference to European institutes)	B
Students' involvement	Number of students working on MPQ 4.0 projects / Number of trained students	C

### 4.2.2. Overview of short-term impact indicators

Table 6. Project Short-term KPIs

KPI	Definition / calculation	Information needs satisfied
Satisfaction level of trainers	The average satisfaction level for all students	B
workshops and seminars	The number of realized workshop and seminar / the expected number of workshop and seminar	A
Extended projects	The number of new submitted projects	E
Cooperation with local Industry	The number of Partnerships with local industry to support them in solving problems related to MPQ4.0 challenges.	E

#### 4.2.3. Overview of long-term impact indicators (after the projects EU funding period)

Table 7. Project Long-term KPIs

KPI	Definition / calculation	Information need satisfied
Economic improvement based on the integration of new MPQ4.0 skills in industry.	Number of companies using emerging technologies in Tunisia and Morocco	E
Workshops and seminars	The number of conducted trainings and workshops involving local companies and interested to related technologies	A
The impact of new learning framework on activities of partners companies	The number of updates per year	E
Participation on new European funded projects to develop the industry of the future.	The number of realized projects.	E
Visibility of research laboratories and research centres	Number of scientific publications	B

## 5. Consortium Communications and Privacy

A consortium is a marriage of many alliances and working that provides good opportunity to leverage strengths and resources. It brings many advantages, complementarity, more outreach, and lesser duplication of efforts. How well a consortium communicates within itself and with its external partners is a major determining factor in its success. Ensuring adequate communication among the project stakeholders and partners leads to effective collaborative efforts in issue of development. Additionally, there is the privacy and ethics that must be taken in account in all the communications or in the share of information. At the final of this chapter two sections introduce both issues: GDPR and Ethics management in ENHANCE.

### 5.1. Communication with the Partners

Project stakeholders and partners can build communication with each other through different channels, including face-to-face communication, broadcast media, mobile channels, electronic communication, and written communication (mailing). Mailing (or e-mail) communication, for example, refers to exchange of short informational messages between at least two people (project stakeholders and partners) over a computer network. The Table below presents the mailing lists of project stakeholders and partners developed to be maintained by the administration office.

Table 8. Mailing Lists

Mailing List Name	Recipients	Scope
Contact@eplus-enhance.eu	Coordinator	Contact the project coordinator
enhance@eplus-enhance.eu	All	Share information about the project activities
WP@eplus-enhance.eu	Work package Leaders	Share information about the evolution of the WPs activities
PMB@eplus-enhance.eu	PMB members	Share information with PMB members
'Partner'@eplus-enhance.eu	The resources of each partner	Share information with each partner project members

There are some rules and guidelines for building and developing communication among project stakeholders and partners.

Multiple bi-weekly conference calls are arranged to bring together all active stakeholders' partners needing to be involved. Therefore,

- It is the responsibility of the lead (typically the Project Manager, WP lead, or Task lead) to set up, chair, and minute internal conference calls.
- Calls should always be held even if they are 5 minutes long to ensure momentum and regularity. However, if it is clear there is no business by anyone, the lead should send out a cancellation note.
- All calls should be made by MS Teams. This ensures that all individuals are easily familiar with the conferencing system.
- At least one person from each partner active in the group/WP/Task should participate.
- Agendas, even if simple, should be available at least two days in advance and all partners can add agenda items.
- Minutes should focus on actions, clear points, and decisions.
- The actions should be specifically followed up at the next meeting.
- All partners must check the minutes for clarifications and the "ToDo's". The objections of the minutes need to be stated before or at the next meeting.
- Additional Telcos may be set up to solve pending issues or to dynamize the work.

## **5.2. Plenaries and Other Presential Events**

The plenary meetings are part of the communication meeting that in which the partners attend. Such meetings may include a broad range of events (e.g., conference, workshops) and contents (e.g., keynotes, panel discussions). The plenary meetings are intended to hold and take place at the locations of the project partners as planned and accordingly to the defined travel costs. For each plenary meeting, the Project Manager in cooperation with the local host of the meeting will issue an initial agenda detailing logistics, timing, and primary objectives. The agenda must be issued at least four weeks before the actual meeting and at least one week before a more detailed agenda. All partners should be represented by at least one person in plenaries unless it is clear from the agenda they are needed for less or no days.

For each plenary meeting or single meeting sessions, a partner may be appointed with the responsibility to write "decision minutes". The agenda, decision minutes, all presentations and other documents provided at the meeting are collected in a specific meeting subfolder of the ENHANCE OwnCloud meeting folder. Partners should share presentations and documents within one week after the meeting, but where possible before or during the meeting (e.g., slides).

Apart from the regular plenary meetings, the Project Manager may stimulate or request additional meetings as necessary (e.g., meetings with a special focus on technical or implementation issues).

## **5.3. Consortium Decisions and Mediation**

Consortium decision making has some basic beliefs and values. That is, the consortium must involve and have participation by all those affected at each stage of the process. Consortium should identify its own needs, set priorities, and make decision about different raised and concerned issues such as, examining the situations, arriving at goals, identifying key problems, determining priorities, identifying and analysing alternative solutions, selecting a course of action, developing an action plan, implementing the plan, evaluating the outcome, etc. Mediation refers to conflict resolution procedures, where most of the decisions related to process design and agreement rest with the partners. The decisions in ENHANCE are made by hierarchical structure and top-down approach, as follow:

1. Project Manager/Coordinator
2. Work package Leaders
3. Task Leaders.

Ad hoc consortium planning is an example of a decision that can be taken by the consortium. It refers to those types of necessary actions to achieve the project results. There are many ways to improve the consortium's decision making, but the following simple rules can be particularly helpful:

- Decisions are overtly and openly made in the consortium
- Decision makers take responsibility for their works
- There can be no conflict with consortium decisions
- The decisions can be made, overruled, or adjusted by entities within the hierarchy
- Only attendees, in the case of physical meetings, may vote
- If partners do not vote within the predefined period, their vote will not be counted
- Partners must be careful not to let conflict, uncertainty, and ambiguity slow them down
- A missing response is perceived as approval. This rule does not apply if a partner flags that they are not able to take a decision in the period and justify it. In this case, a missing response should be taken as an abstention

#### 5.4. Communication with EC

Concerning communication with the EC, the Project Coordinator will be the unique communication channel to unify and facilitate the communication procedures. This way, the Project Officer and other officers at the European Commission (EC) will be provided with a unique contact.

#### 5.5. GDPR Management

To ensure the respect of the principles of the GDPR in the overall communications as recommended by the European Commission<sup>1</sup>, the ENHANCE project identifies and ensure the management conformity of the following data sources:

- *For scientific and academic purposes:*

- Scientific state of the art related to MPQ 4.0
- HEI training programmes details and their transformation ambitions
- Industrial requirements for MPQ 4.0 from both partners countries

- *For project management purpose:* the project coordinator will collect personal data about project partners' resources participating in the ENHANCE project. The collected data covers:

- Resources identification: names, emails, postal addresses, etc. for communication during the project
- Resources contractual information: to validate their eligibility to participate in the project, provide timesheets and travel for the different project physical meetings.

The collected data remains available during the project lifetime for update (under the EU's data protection rules) when requested. No external personal data will be collected during the project lifecycle.

The scientific and academic data processing will guide the identification of the gaps between existing teaching programs and the new skills to develop and experiment in the three industrial pilots towards MPQ 4.0. In addition, the gap analysis will guide the update of the list of necessary equipment materials needed to support the implementation of the new training programs.

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<sup>1</sup> [https://ec.europa.eu/info/law/law-topic/data-protection/reform/rules-business-and-organisations/principles-gdpr\\_en](https://ec.europa.eu/info/law/law-topic/data-protection/reform/rules-business-and-organisations/principles-gdpr_en)

The project management-related data processing is supported by a monitoring platform, implemented by the coordinator to provide project resources for all involving partners with reporting interfaces for the analysis of their engagement in the ENHANCE project.

## 5.6. Ethics Management

In the Ethics management two main parts are considered namely, Ethical and Policy Issues.

### 5.6.1. Ethical Issues

The European Commission directives on ethical rules are primarily concerned with issues that are outside the scope of ENHANCE.

The project will primarily process information on the partners' information and there are no plans to treat personal data (whether identified by name or not) of the partners. However, should this happen, all the information related to individuals (including pictures and digital signature, if any) will be managed after explicit consensus and in compliance with the European and national legislation of the countries of interest. Thus, all participants in ENHANCE project will conform to the legislation and regulations in force in the countries where the project activities will be carried out as well the EC Ethical Legislation, where the most relevant rules to the project are:

- Charter of Fundamental Rights of the European Union
- Ethics and data protection (EU Domain-specific guidance)

### 5.6.2. Policy Issues

To spread awareness and knowledge and to explore the wider societal implications of the proposed work, ENHANCE will closely cooperate with various organizations where applicable and it will collaborate with other projects. The experience of the project partners will lead to a synergy of work and a close cooperation between multiple EU CBHE projects. Furthermore, those contacts can be useful when organizing workshops and when bringing together experts from various domains. ENHANCE will use its networks to collect projects results and to foster an active and meaningful discussion about its topics. The result of those activities will be formulated as policy recommendations that could be used by the connected CBHE projects and the EC for standardization issues in the various initiatives where the European Union/Commission may collect such information.

ENHANCE will have to deal with many issues that might be different for every partner. There are a lot of political and economic constraints that directly depend on the physical location of a partner. Most projects completely ignore those differences and treat all partners equal. However, to provide a genuine benefit for the partners, ENHANCE must bear in mind those political and economic differences.

## 6. Risk management guidelines

Risk management is the continuous, systematic, and proactive approach to identify and assess risks and to draft according to risk responses, if necessary. It is applied to control the risks and therefore enhance the probability to achieve the project's objectives.

The main risks in ENHANCE are related to:

- *Timeliness*: when a single deliverable or the whole project not being delivered on time
- *Budget*: when the partners consume their funding share, but they do not finish their tasks
- *Quality*: when the quality of explicit deliverables (e.g., documents and software) and implicit deliverables (e.g., impact) are not in line with the quality goals of the project

- **Scope:** when the project objectives (as defined in each task description) cannot be fulfilled.

Risk monitoring is a continuous task that needs to be pursued until a risk is resolved. In general, risk monitoring is led by the corresponding WP Leads. Single risks are appointed to Work Packages and tasks and may span more than one task or Work Package. Hence, a risk owner is appointed, he is responsible for the risk monitoring and reports regularly to the according WP Lead. Risks need to be reported if the according relevant event will most likely occur. Thus, it should be periodically reported (each 6 months).

The risks may be related to project management, the conception and implementation of the expected ENHANCE outcomes, and/or communication dissemination and the sustainability. The preliminary list of risks is presented in Table 9.

Table 9: Potential risks

Management risks			
Risk	WP Likelihood/ Severity	Proposed risk-mitigation measures	Current Status
Affection of a further expansion of the COVID-19 crisis (or others) on the progress of the project	WP5 Medium/ Medium	Monitoring reinforcement by increasing the contact by telephone and WEBEX web conferencing. Replacing physical meetings (due to travel restrictions) by telephone, video and web conferencing. Putting in place smart working protocols.	Nothing to mention
Insufficient consortium coordination	WP5 Low/Low	The effective management of the consortium will be assured with the appropriate Project Management described in WP5. The roles & responsibilities of each partner are already identified and will be continuously reviewed to mitigate the risk of overlapping and implementation of the same activities from two or more partners. The project is led by ULL, partner that have large experience in project coordination	Nothing to mention
Shortage of resources and/or change of personnel	WP5 Low/Low	All ENHANCE partners have assured that they will choose their best personnel to implement the relevant activities. All partners could change a member of their team with another person with comparable competencies, in case of inability to continue. They will early communicate personnel problems and knowledge gaps. ULL will keep close contact with all partners and will regularly monitor resource consumption and compare it against the remaining work to identify bottlenecks.	Nothing to mention
Technical risks			
Risk	WP Likelihood/ Severity	Proposed risk-mitigation measures	Current Status
Misunderstanding in key terms/concepts	WP1, WP2, WP3, WP4 Low/Low	the partners will start with defining all the terms (e.g., competence, skill, learning materials, platform, ...) and concepts within D1.1 and D1.2 to avoid misunderstanding during the development phases. These terms/concepts will be adopted by all project members	Nothing to mention



Deadlines are not respected	WP1, WP2 Medium/Medium	the risk assessment plan (T5.2/D.5.1) will suggest special measures to accelerate some activities. The project is led by ULL, partner that have large experience in project coordination	Nothing to mention
Difficulties to collect data/knowledge from companies	WP1, WP2 Medium/Low	ENHANCE partner, mainly from PC countries, have assured the possibility of gathering the data/knowledge from HEI and industrial partners in Tunisia and Morocco. Many associated partners from both countries are indirectly involved within the ENHANCE project	Nothing to mention
Insufficient consortium competence / effectiveness / skills	WP1, WP2, WP3, WP4 Low/Low	The project team is highly complementary and gathers the requested skills for the main streams. All the technologies that are going to be used in the implementation of the project outcomes will be carefully selected to minimize potential risks. If a consortium incompetence is identified, the consortium partners will try to fill this gap through the own pools of resources.	Nothing to mention
Legal and administrative issues related to the implementation of the Pilots and the LeL platform	WP2 Medium/Medium	the project team will organize a meeting with the Tunisian and Moroccan ministries of higher education and with the Tunisian and Moroccan ministries of industry and Companies to solve legal and administrative issues	Nothing to mention
Legal and administrative issues related to the implementation of the creation of DIH	WP2 Medium/Medium	the project team will organize a meeting with the Tunisian and Moroccan ministries of higher education and with the Tunisian and Moroccan ministries of industry and Companies to solve legal and administrative issues	Nothing to mention
Problems with the selection of trainers	WP1, WP2, WP3 Low/Low	a set of rules will be defined to select trainers. A waiting list of candidates trainers will be prepared in case of candidate's withdrawal	Nothing to mention
Travel problems due to unexpected events that can prevent necessary meetings for the preparation and development of LeL platform and creation of DIHs	WP1, WP2, WP3, WP4 Medium/Low	Web-conferences with project members will be organized. Partners will collaborate remotely and use specific software tools for work sharing and an efficient interaction.	Nothing to mention
Technical problems related to hosting the mooc or the LeL	WP1, WP2 Low/Low	IT department of each ENHANCE partner will support the project teams to solve such problems	Nothing to mention
<b>Communication &amp; Dissemination risks</b>			
<b>Risk</b>	<b>WP Likelihood/ Severity</b>	<b>Proposed risk-mitigation measures</b>	<b>Current Status</b>
Problems or delays in updating websites and/or ENHANCE pages in social networks	WP4 Low/Low	Apply the dissemination and communication plan developed during the project for a continuously provision of necessary dissemination and communication materials	Nothing to mention
Poor or inadequate co-operation or communication	WP1, WP2, WP3, WP4, WP5 Medium /Low	Keep close contact with all partners by bi-weekly telcos and virtual meetings. Organize regular plenary and technical meetings at different	Nothing to mention

between the ENHANCE partners		partners' sites. Detailed project plan that clearly states goals and responsibilities of the partners.	
Expected reports do not provide the necessary information	WP1, WP2, WP3, WP4, WP5 Medium/Medium	the project executive board will review all reports, particularly audit reports and request the addition of missing information. The quality plan of ENHANCE getting importance to this issue	Nothing to mention
Travel problems due to unexpected events that can prevent the organization of some workshops and conferences	WP1, WP2, WP3, WP4, WP5 Medium/Medium	All ENHANCE partners have the ability to organize web-conferences to overcome travel problems.	Nothing to mention
Some unpredictable events may disturb the normal execution of the project activities.	WP1, WP2, WP3, WP4, WP5 Medium/Medium	In that case, the executive board will suggest appropriate decisions	Nothing to mention
The communication and dissemination will depend on the progress of the project activities	WP1, WP2, WP3, WP4, WP5 Medium/Medium	Since any delay will impact the planned dissemination events, the dissemination plan will be	Nothing to mention
<b>Sustainability risks</b>			
<b>Risk</b>	<b>WP Likelihood/Severity</b>	<b>Proposed risk-mitigation measures</b>	<b>Current Status</b>
Lack of continuously enhancement of the content of the platform (training materials including course materials, video, tutorials, case studies, etc.)	WP2 Medium/Medium	Apply the quality plan developed during the project for the continuously enhancement of platform	Nothing to mention
The expected viability of the ENHANCE project is not achieved	WP1, WP2, WP3, WP4, WP5 Low/Low	New partnerships with local HEIS and industry will be created for raising awareness, project outcomes will be made available for other Tunisian and Moroccan HEI, Maghrebian (Mauritania and Algeria) and African countries, paid training workshops for students and companies' staff will be offered. ENHANCE partner have the intention to proceed with the development of new competencies, skills and projects related to other fields such as health 4.0 or Farming 4.0. ENHANCE partners intend to submit new projects (e.g., Erasmus+, Horizon Europe) in topics addressing challenges related to the industry of the future and to develop new partnership with local industry to solve real problems requiring MPQ4.0 skills	Nothing to mention
Some PC HEIs are not motivated for an evolution of their curriculum	WP1, WP2, WP3, WP4 Low/Low	Project outcomes will be first implemented in project partner HEI. Then a dissemination workshop will be organized to present project results to motivate other HEI.	Nothing to mention