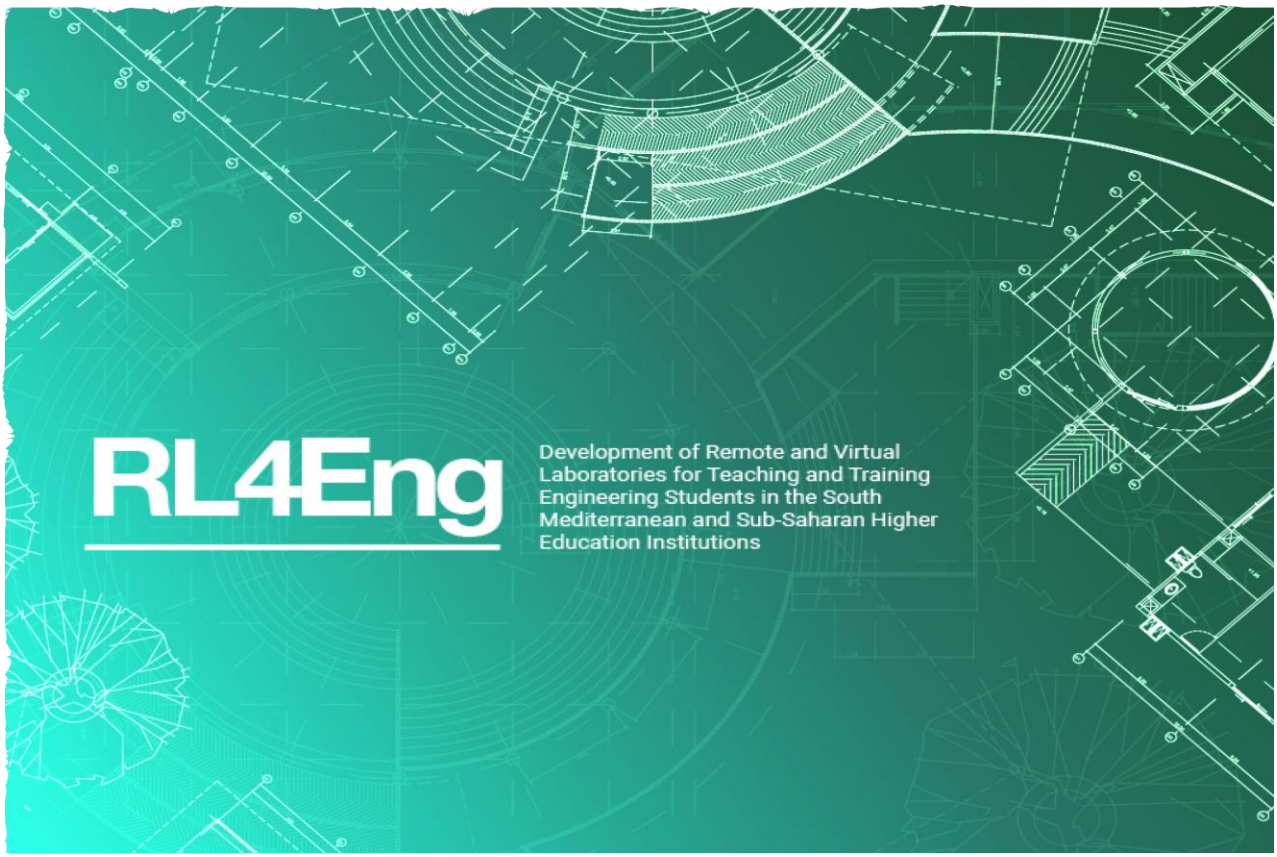

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Handbook

Management and Quality

January 2023

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YU	Yarmouk University - Jordan
BRSU	Bonn-Rhein-Sieg University of Applied Sciences - Germany
UCLM	University of Castilla-La Mancha - Spain
PS	Professional Start - Germany
TAGITI	Talal Abu-Ghazaleh Information Technology International - Jordan
HTU	Hussein Technical University – Jordan
UOP	University of Petra - Jordan
BAU	Al-Balqa Applied University - Jordan
AUT	Aqaba University of Technology - Jordan
UOB	University of Balamand - Lebanon
LU	Lebanese University - Lebanon
UCA	Universite Cadi Ayyad - Morocco
UM5	Universite Mohammad V DE Rabat - Morocco

SUZA	The State University of Zanzibar - Tanzania
NM-AIST	The Nelson Mandela African Institution of Science and Technology - Tanzania

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1. Summary

The purpose of this deliverable is to provide background information on the project and all of its management procedures and requirements, including project organization (management board, project manager, financial manager, work package managers, exploitation manager, etc.), governing bodies (with names of individuals responsible for the project tasks), communication procedures, quality assurance, etc. A collaboration framework is given with details on tasks and activities.

2. Background

In this section we give the underlying background with respect to rational, content, and activities of the project.

2.1 Project Rationale

The economic crisis and pandemic in South Mediterranean and sub-Saharan countries have put the HEIs in a challenge to accommodate for the new requirements of online teaching.

The RL4Eng project aims to improve the quality of higher education in third countries and make it more relevant into the today's digital transformation world through establishing Remote and Virtual Laboratories for Teaching and Training Engineering Students to modernize the current teaching approaches and improve the digital and entrepreneurial capacities of both students and teachers in South Mediterranean and Sub-Saharan HEIs.

The project's contribution to the priorities of the call includes the digital transformation under which digital education is the focus of the project. Online teaching for laboratories has been implemented in EU countries with successful outcomes.

The involvement of different European Universities will help integrate good practices and minimise potential risks in implementing the RL4Eng project. South Mediterranean HEIs have identified the necessity of training with numerous initiatives available in the European system. Few Research is available on the effective delivery of remote labs and take-home labs.

The project involves several workpackages in efforts made to elevate the knowledge of remote labs and take home labs in the partners institutions via capacity building for students, staff and faculty and share of experiences.

A remote lab will be established in each country of the partners institutions and a take-home lab will be established in each HEI of the partner countries.

The very nature of remote labs, and take-home labs makes them sustainable and easily scalable as they become part of the university structure and receives part of its budget.

Moreover, the nature of the remote labs makes them sustainable as they are accessible from everywhere and could be used for both teaching and for research.

2.2 Project Content

South Mediterranean and sub-Saharan universities have been taking "small measures" to implement distance learning since 2015. In light of the challenges imposed on the education sector due to the COVID-19 crisis, the public authorities in these countries published regulations and accreditation guidelines for distance learning and blended learning. These authorities are currently developing strategies for remote education.

The pandemic imposed challenges on healthcare and well-being of people, in addition to "grave economic, social and educational implications", however, South Mediterranean countries and Tanzania have worked on turning these challenges into opportunities that boost resilience and recovery. Universities utilised their resources to ensure the continuation of the education process, as well as to maintain business. The volume of the resources was different at each university. Distance learning should be considered an important component for higher education, and a tool to improve universities' competitiveness in regards to cultivating an "innovative educational environment".

For instance, the current distance learning practices at Jordanian universities was reviewed in a distance learning policies paper developed by the Ministry through various surveys. The results indicated that the software and platforms required for the process are available at most universities. However, results also indicated that most universities lack the facilities required for producing good quality digital learning content. The results have highlighted universities' efforts to offer digitised courses using distance learning. The surveys indicated that faculty members prefer holding interactive sessions with their students, using platforms such as Zoom and Microsoft Teams. One drawback of the developed surveys is that they did not evaluate student and faculty experiences in laboratories online teaching methods – a very crucial component in the curriculum of many disciplines, mainly including Engineering disciplines, on bringing theory and practice together in a meaningful way.

Several studies were conducted in Lebanon to highlight the needs of connected learning/distance learning. Studies indicated the deficit presence of a linkage between the skills supplied by the HEIs and the labour market demands in the fast paced changes as a result of the emerging globalized economy in the era of digital transformation. In fact, the Lebanese national strategy Teaching and Learning in the Digital Age: Lebanon's National Educational Technology Strategic Plan has indicated the importance of new technologies to elevate teaching and learning. In Morocco, during the COVID-19 pandemic, the Moroccan government and the commission of University presidents (CPU) has implemented several actions to ensure the proper transformation from face to face to distance education. Several measures have been taken by the universities such as the Mohammad V university (UM5R)

where Information Communication Technologies (ICTs) have been developed to ensure the effective educational transformation. Studies done in Morocco in this regard, has indicated that several actions need to be taken to ensure the proper implementation of the ICT tools which includes the need to the acquisition of equipment, training for faculty, installation and configuration of platforms and updating the content on these platforms among others. Research did not focus on the online teaching for laboratories and the experience of both students and faculty in third countries.

In Tanzania, studies have indicated that in order to improve the academic performance of HEIs, using modern technologies in teaching and learning processes becomes a necessity. Several studies evaluated the use of e-learning in Tanzania and those indicated several shortcomings which included the poor attitude, lack of skills among the teachers and students and insufficient ICT infrastructure. Therefore, allocation of funds to ensure universities are having an adequate ICTs infrastructure is a vital concern. Moreover, ICT curriculum need to be updated along with providing the proper training towards the use of ICTs to enhance students' attitude towards e-learning.

The RL4Eng project will revisit the practical training component in the Engineering curriculum, in general, and study the challenges of delivering it online. Based on this study, the curriculum will be updated to suit the local context and reflect the latest developments in science and technology. The updated component will take into consideration the online delivery mode perspective, as well. More specifically, laboratories will be conducted remotely and virtually, taking advantage of similar experiences at the EU partners, in two modes: (1) the student will be able to connect to a remote server to do the experiment on the server on another equipment connected to the server, and (2) the student will be able to conduct the experiment virtually at home, with remote and synchronous supervision from the teacher. The development of a suitable didactical approach and the shift to digital learning will be accompanied by the Centre for teaching development and innovation at HBRS (ZIEL https://www.h-brs.de/en/ziel) as experienced partner in train-the-trainer activities and at UCLM.

The RL4Eng project aims to improve the quality of higher education in third countries and make it more relevant into the today's digital transformation world through establishing Remote and Virtual Laboratories for Teaching and Training Engineering Students to modernize the current teaching approaches and improve the digital and entrepreneurial capacities of both students and teachers in South Mediterranean and Sub-Saharan HEIs.

The RL4Eng is relevant to the scope of the call as it will focus on the mismatches between the HEIs capabilities and the requirements to ensure an efficient delivery for laboratories online teaching. The curriculum will be updated to include innovative learning for the laboratories under the online teaching methods. This in turn would ensure the active engagement of students and make the teaching process more towards the leaner centred

approach and implement all the strategies of real problem-based teaching and learning. The project addresses several objectives of the call, for instance the project will focus on the objectives of improving the quality of higher education in third countries and make it more relevant into the today's digital transformation world. On the other hand, the project will bring together an innovative approach into online teaching of laboratories modernizing the current teaching approaches and improving the digital and entrepreneurial capacities of both students and teachers. Professional development of the teachers will be another area of focus under which training will be implemented impacting the long-term quality and modernization of higher education. Fostering an environment of cooperation and exchange of experiences will take part as well to ensure an efficient capacity building and a good exchange of practices.

The project's contribution to the priorities of the call includes the digital transformation under which digital education is the focus of the project. The COVID-19 pandemic has highlighted the need to effectively and efficiently exploit the opportunities of digital technologies in learning and teaching. The project will support the enhancement of digital skills and competence development to engage learners, educators, and HEIs in the digital transformation process. The project will target a large group of learners, and educators ensuring the proper use of information communication technology tools taking into account online teaching for laboratories as the area of focus. The project also comes in accordance with the specific objectives of the call as it will improve the quality of higher education to make it more relevant to the needs of the global market making the required transition towards the digital transformation.

The general objectives of the project will address the needs of the partner countries and are in accordance with the specific objectives of the call as mentioned above. Accordingly, the General objectives of the project will be:

- To support cooperation between higher education institutions in the south Mediterranean and sub-Saharan region (Jordan, Lebanon, Morocco and Tanzania) and Europe in the field of engineering education. The KPIs for this objective will include: establishing long-term partnerships between the partners' institutions, regular meetings, shared lab resources, and training sessions and exchange of expertise and skills between the partners.
- To support responsiveness of higher education in third countries not associated to the Erasmus+ programme, particularly the south Mediterranean sub-Saharan region (Jordan, Lebanon, Morocco and Tanzania), to react to recent trends in education that emerged due to the COVID-19 pandemic. The KPIs will include: Changes done in the curriculum to adapt to the new emerging issues, local training for the students, training of faculty and staff.
- To introduce new approaches and initiatives in higher education, based on peer learning and transfer of experience and good practice affecting not only the

institutions but also the society at large. The KPIs include: Training sessions for both students, staff and faculty, changes done in the curriculum, establishment of labs infrastructure, number of students benefiting from the program.

- To address the 21st century challenges such as shifts towards a digital economy, benefitting the society as a whole.
  The KPIs include: Needs analysis, an adequate SWOT analysis, meetings to discuss the capacities at the partners HEIs.
- To enhance higher education's relevance for the labour market and the society, by designing innovative curricula and introducing innovative elements in the existing curricula. The KPIs include: number of students benefiting from the program, changes done in the curriculum, labs taught, improved assessment methods, improved digital skills, students employment increases, more involvement is research related to digital transformation.

2.3 Quality Assurance and Monitoring

The quality of the project outcomes will be validated based on an indicative quality plan and the KPIs for implementing project outcomes. The quality aspects of the project will be validated using two approaches.

1. An automated approach: where a quality management software is used to monitor project progress, timetable, milestones, cost effectiveness, and KPIs
2. Expertise from partner institutions: Some of the team members have expertise in the quality assurance procedures given their current positions and academic experiences on quality assurance topics.

The procedures of the quality assurance will focus on potential risks and responses when problems arise such as issues in

1) validating quality indicators, 2) progress report delays, and 3) incomplete data to finish projects phases.

The Quality Management Committee (QMC) will regularly check the project deliverables, collect data needed for quality evaluation, and resolve any critical quality issues during project phases. QMC will be also responsible for checking whether the established Remote labs and take-home labs will work according to the created model. The committee will carry out adjustments needed to resolve any critical issues based on several quality metrics. For instance, whether the achieved results are close to project outcomes and if the results are sustainable on

the long term. The quality factors will be measured by considering the measures in the logical framework matrix, the overall aim of the project, its specific objectives, and outcomes.

There will be several indicators to measure the quality aspects for the project including:

- The number of the trained staff who gains the technical/legal knowledge in the Remote labs, take-home labs area
- Whether the target number of beneficiaries (male and female) is reached
- South mediteraanian partner universities have created remote labs, and take-home labs in cooperation with European partners.
- A solid model is created to operate, teach and manage remote labs, and take-home labs
- Quality concepts and measures in the field of remote labs, and take-home labs
- HEIs awareness on how to teach and manage remote labs, and take-home labs
- Students outcomes attainement in the lab assigemnts, and projects, number of successufly implemented experiments under the adopted new model
- Students outcomes attinement in senior design projects
- Creation of national and international collaborations in the remote labs, and take-home labs based on many working groups, seminars and workshops
- Integration of new remote labs, and take-home labs infrastructure in the Partners HEIs
- Procedural steps taken by the universities in the esablishment of remote labs, and takehome labs
- Results of the surveys conducted and produced needs analysis reports
- The target values for the indicators will be based upon the values discussed by the QMC in the project providing guidance about the actual performace with respect to quality and the interention strategies for improvement. Previous EU experiences could be also helpful in estabishing benchmark values with respect to the indicators.

The QMC will be responsible for preparation an in-depth quality plan, which will be used as a reference by all partners. The plan will include procedures to be followed for quality assurance as well as a tutorial on using the quality management software.

Data will be gathered using partner institutions quality procedures. QMC will evaluate the quality of the training activities planned at all EU partners (WP 1 through 6). Furthermore, external evaluation for the project quality is planned during the project lifetime and coordinated by Professional Start together with the QMC.

2.4 Consortium Rationale

Hochschule Bonn-Rhein-Sieg (H-BRS), Sankt Augustin

H-BRS was founded in 1995. It is a dynamic and research-driven university with around 9,000 students, approximately 150 professors and 260 research associates. They are supported by around 400 highly qualified lecturers from the fields of academia, business and industry.

The university is located in Hennef, Rheinbach and Sankt Augustin. In Bonn, the University of Applied Sciences runs the B-IT (Bonn-Aachen International Centre for Information Technology) jointly with Bonn University and Aachen Technical University (RWTH). The focus on innovation makes itself visible with several well established facilities at the university identifying the institution as one of the regional players for entrepreneurship and transfer to society.

H-BRS has introduced a remote lab many years ago and is successfully applying since then. In particular during the Covid-19 pandemic the remote lab at H-BRS is used by a high number of international partners. The FPGA Vision Remote Lab of HBRS has received several awards and will serve as a template for the partner south Mediterranean and Sub-Saharan project coordinator. This role builds up on previous successful collaborative projects with the partner HEIs. H-BRS and in particular IVC will contribute its experience and knowledge in implementing and operating a remote lab and Take-Home labs. In this context H-BRS will offer to host the partner south Mediterranean, and Sub-Saharan HEIs Professors, staff members and students and will organize several workshops and practical training on remote lab and TakeHome lab.

The underlying idea is to initiate knowledge transformation in the practical use of remote labs and Take-Home labs to build up the partner south Mediterranean and Sub-Saharan HEIs own labs. As part of the project both the equipment for remote labs and Take-Home labs will be purchased, the curriculas and teaching materials will be adapted to remote lab and Take-Home lab teaching and learning and practical training for the partner south Mediterranean and SubSaharan HEIs Professors and students will be carried out.

Partners included from H-BRS are experts in Digital Technology and Fundamentals of Electrical Engineering and founders of the remote lab and Take-home labs at H-BRS. They will contribute to the project with their expertise and will supervise and monitor the remote lab development at partner south Mediterranean and Sub-Saharan HEIs.

Yarmouk University (YU) is a public university located in Irbid City in northern Jordan. It was established by a Royal Decree in 1976. The mission of the University is to provide quality education to its students in the various fields of specialization and at different levels of achievements ranging from the undergraduate to graduate levels, to engage its faculty and students in relevant research programs that would be needed to fuel economic growth and development of the country, and contribute to human welfare and prosperity in its wider context, to render public service at national and international levels through fostering a dynamic environment of cultural enrichment, and the provision of educational and training opportunities to the local community.

Yarmouk University has 15 faculties, 16 scientific research centres, 104 research and teaching centres and 9 business incubators. The total number of staff is nearly 2300 and the total number of students is 32,000.

The University is expanding to meet the needs for new, high-quality research and teaching facilities as well as to further enlarge its network of international relations. YU has cooperation agreements with nearly 100 institutions worldwide and has received several research grants funded by World Bank, EU, USAID, DFG, DAAD, KOICA, JAICA, and others. YU has demonstrated excellent and practical experience with current and previous EU funded projects, having participated in a number of EU-funded projects through the Tempus and Erasmus programs. It was the first university in Jordan to lead a Tempus project in 2010, entitled: "Industry Oriented Masters Program-Towards an EU Approach". It is also heavily involved in an Erasmus+ ICM exchange programme for the exchange of students and staff to the EU.

YU will lead the consortium of RL4Eng with the support from all programme and partner country institutions, which will be the key to achieve the project’s aims. YU will implement and conduct the overall coordination and project management (WP6). YU is responsible for leading the project, managing the budget, and preparing interim and final reports. YU will ensure that the project objectives have been achieved efficiently within the budget and time limits. Based on a new model and the individual capacities achieved via the training process, YU will coordinate with the partner country institutions to establish remote labs/take home labs. The requirements and activities to establish the labs will be discussed between partners. This set of activities will be handled internally by the project team at each partner institution. The project team from YU in collaboration with partner HEIs is expected to focus on specific benchmarks for measuring the

capacities of partner institutions to establish remote labs, and take-home labs. The benchmarks will be created based on the EU best practices in this area. The defined benchmarks will be agreed upon by all partners. YU will participate in all trainings offered through RL4Eng. In addition, YU will coordinate with TAG-ITI to disseminate project outcomes in the best way to reach the maximum number of each stakeholder.

Al Hussein Technical University (HTU) is a new university that is envisioned to address the skill set requirements of the new economies of technology. It is expected to support talented Jordanian youth in the pursuit of quality and relevant technical and vocational education in response to the national strategy for HRD that is aligned to both Jordan 2025 and the UN sustainable development agenda 2030. HTU is set as a private non-profit technical university with premises located at the King Hussein Business Park, a prestigious location for world leading businesses, companies, and industries. It will offer practical hands-on educational programs that will primarily contribute to technical workforce development across Jordan on a continuous basis.

This will be achieved by providing a long-term solution to deal with the issues of employability and lack of skilled professionals.

HTU is meant to be the first of its kind in the region as an impressive technical university building on Jordan's strong tradition of academic achievement and long heritage of openness, inclusiveness, and mutual cooperation. It will primarily be based on training students in technical education and promoting the values of strong work ethics, professionalism, and a sense of social, global, and civic responsibility.

Important objectives of HTU are to:

-Provide high quality teaching and learning in vocational and technical training and bachelor's degree programs. This is driven by the fact that capabilities of most of the engineering and science programs are declining due to poor teaching practices and to the need for more effective pedagogical practices on in-classroom innovation, practice orientation, learner-centric approach, and intensive use of technologies.

-Design unique curricula in domains of relevance to local and regional market needs as well as innovation capabilities and new practices of the 21st century. The design of the courses will be half theory in a mentored classroom and half hands-on practices in a specialized laboratory and its intended learning outcomes will further enhance interconnecting.

As a new technical university with full support from the Royal Crown Prince Foundation, HTU is one of the main partners who will support all the activities of the project and contribute to its deliverables.

-HTU as part of its mission will gain in depth expertise related to development of remote labs, take home labs

- HTU will be active in initiating procedures to manage requirements of remote labs, take home labs at academic institutions in Jordan.

- HTU will benefit from EU experience to create a model for a support system that assists in handling issues related to remote

labs, take home labs, creating and managing relationships between partner institutions

- HTU will participate in the training workshops related to the project activities including but not limited to running remote labs, take home labs

- HTU will partner with other universities to gain the knowledge needed to establish remote labs.

UOP (formally registered as Petra for Education) is a private university in Jordan that has eight faculties: The faculty of Architecture & Design, the Faculty of Information Technology, the Faculty of Pharmacy & Medical Sciences, the Faculty of Arts and Sciences, the Faculty of Administrative & Financial Sciences, the faculty of Mass communication, the faculty of Law and the Faculty of Engineering. UOP offers 27 Bachelor degrees and 6 Master degrees. UOP accommodates more than 7000 students, 24% of them are international students from 31 different countries. The university has got several national and international certificates. UOP has achieved the ISO 9001 of Management for supporting higher education certificate and the certificate of Quality Assurance of the Higher Education Accreditation Commission; In addition, the University is 1st runner-up on the QS ranking of private universities. UOP works toward quality, relevance and alignment in terms of teaching and research, as well as bridging with industry, public and private sectors and with the community at large. The team members have a strong expertise in the fields of teaching, E-learning, innovation and entrepreneurship. The university has several supporting units such as innovation centre, academic development centre and E-learning centre. The university is participating in several EU funded projects and UOP staff is engaged in many research activities with European joint projects

UOP will have a key role in the project. UOP will participate in the state-of-art analysis through preparation of the remote labs, take home labs infrastructure at the partner universities. It will participate in the promotional campaign materials, preparation of training material, and helps in organizing the workshops in Jordan. UOP will participate as a member of the steering committee and be responsible for many activities during the project. UOP will participate in all activities including, management meetings, trainings, and dissemination events.

Founded in 1985, The University of Castilla-La Mancha (UCLM) is spread out over four main campuses: Albacete, Ciudad Real, Cuenca and Toledo and two satellite campuses located in Talavera de la Reina and Almadén. The university now offers 45 Bachelor's degree programmes and 34 official Master's degree programmes and a wide a selection of postgraduate courses

and doctorate programmes. There are currently over 27,000 students with close to 2,500 professors and researchers and nearly 1,100 administrative staff.

The University of Castilla-La Mancha is opened to the world and is working to develop its strategy of Internationalization in order to collaborate and participate in all of the regions of the world. The UCLM collaborates actively internationally through different programs as Erasmus, Jean Monnet, International Language assistant program, student and research mobility with

Latin America under the Banco Santander program, Fundacion Carolina (Master and PhD recruiting program), Science without borders (Brazil), double degrees, bilateral agreements and exchange programs. The UCLM develops its own programmes mainly with Latin American countries working on International Credit Mobilities, Joint Masters Degrees and third Cycle mobilities. The staff (teaching and non-teaching) participate in activities to enhance the quality of our teaching programmes and the services of our institution.

With regard to student mobility for the academic year 2016-17, near 500 students studied abroad whilst more than 900 foreign students came to study in their campuses.

Research policy at UCLM has allowed a great collaboration with other research institutes, research can be done either outside or within our university itself by over 237 groups dedicated to it. UCLM is placed in an excellent position in the main national and international rankings that include R&D+I indicators.

UCLM has, a good background in the remote labs, take home labs. This experience will be transferred to the partner country institutions mainly through providing a specialised workshop on related skills and competences, on its campus in Albacete.

They will contribute their experience and knowledge in implementing and operating a remote lab and Take-Home labs. In this context it will offer to host the partner south Mediterranean, and Sub-Saharan HEIs Professors, staff members and students and will organize several workshops and practical training on remote lab and Take-Home lab.

UCLM will lead WP2 on training. As such, UCLM will be responsible for identifying the main training needs, producing the training material and validating the quality of the provided trainings. UCLM will also participate in the other activities including the management meetings and dissemination events.

Mohammed V University (MU5) colloquially known as university Mohammed V de Rabat is a Moroccan higher education establishment located in the capital city of Rabat. The university was established by a Royal Decree of King Mohammed V in 1957 and currently enrolls over 62000 students. The University offers a range of undergraduate and graduate programs in Law, Medicine, Dentistry, Health Sciences, Sociology, Political Sciences, Developmental Studies, International Relations, Performing Arts and Design, Languages, Literature, and Linguistics.

Mohammed V University also offers programs in Philosophy, Theology, History, Chemistry, Physics, Geological Sciences, Computer Science, Economics, Business Management, Education, Electrical Engineering, Electronic Engineering, Mathematics, and Statistics. The University has an urban campus located in the Moroccan capital city of Rabat. The university comprises of a number of modern buildings which house the university faculties and departments, student accommodation, university administrative offices, and student services.

Mohammed V University offers facilities such as classrooms and lecture halls, laboratories, Engineering and Research labs, research centres, amphitheatres, sports facilities, and library with a number of books, journals, and periodicals in both digital and print formats.

Mohammed V University offers a number of international exchange and study abroad programs at partner institutions worldwide in addition to distance learning programs. The university also offers tuition fee waivers, financial aid programs, scholarships, and grants to deserving students.

The University is also a member of a number prestigious groups and professional bodies such as International Forum of Public Universities, Euro-Mediterranean Universities Network, and Federation of the Universities of the Islamic World.

Mohammed V University will take part in getting in depth expertise related to development of remote labs, take home labs and will be active in initiating procedures to manage requirements of remote labs, take home labs at academic institutions in Morocco. MU5 will be the local coordinator for Morocco coordinating with the other partner institution on issues related to the labs, needs analysis and training. The remote lab will be established in the local coordinators HEIs and the take home labs will be created at all partner HEIs. The University will benefit from

EU experience to create a model for a support system that assists in handling issues related to remote labs, take home labs, creating and managing relationships between partner institutions. It will also take part in in the training workshops related to the project activities including but not limited to running remote labs, take home labs Founded in 1978, Cadi Ayyad University (CAU) today brings together 15 faculties and schools spread over 4 cities (Marrakech,

Kelaa des Sraghna, Essaouira and Safi) And covering all the scientific, technical, economic, legal, medical, human and social sciences.

The University has about 106,000 students enrolled in 221 initial training courses and 42continuing education courses, framed by 1658 teachers and researchers and 754 administrative. UCA is engaged in a new development dynamic, which takes into consideration national policies led by the high guidelines of his Majesty the King. These policies take into account, on the one hand, the needs of the country in particular, on the other hand, the impact of globalization. It promotes the establishment of a training offer in line with the specificities of the Marrakech-Safi region and the socio-economic world; Since 2017, following a meeting with the socio-economic world, UCA had launched, for the first time in Morocco, mandatory modules of soft skills, languages and cultures. Scientific research is one of the pillars on which our innovative teaching model is based and which puts us in a position of national and regional leadership. UCA has chosen to make R&D its key success factor, by promoting quality scientific production. Today 3000 students are enrolled in the doctoral program, more and more of whom are under joint supervision with France, Switzerland, Italy, Belgium, Canada and Romania.

The contribution to the development of the region and the country through scientific research becomes even more fruitful with the launch of the Innovation City planned in the coming months. This structure, which covers 10,400 square meters, should accelerate the competitiveness of the Marrakech-Safi region by integrating researchers, teachers, companies, etc. Indeed, Cadi Ayyad University gives a very important place to the internationalization of its activities. This openness to the international community is reflected in a policy of cooperation in teaching and research with over 300 partnership relations with foreign universities and participates in many international cooperation programs.

The university will take part in gaining required expertise for remote labs, take-home labs. It will also take part in managing the training sessions and quality related issues. It will benefit from the partners institutions to establish remote-labs, take-home labs and It will also take part in in the training workshops related to the project activities including but not limited to running remote labs, take home labs.

The Lebanese University (LU) is the only public institution in Lebanon carrying out the functions of the public higher education with its various majors and degrees, scientific research, and continuous training. The Lebanese University adopted the strategy to enhance cooperation

and exchange expertise and cultures in various fields of higher education with local, Arab and international universities. To achieve these objectives, several actions have been implemented such as the conclusion of framework agreements, the mobility of students and professors, the creation of research teams in collaboration with international laboratories, participation in Erasmus Plus type projects (Capacity Building) for the updating programs, developing partnerships and cooperation projects with European and international academic institutions.

The university will take part in managing quality management of the project along with providing support in the needs analysis for the corresponding partner institutions. It will also benefit from the partner institutions to establish remote-labs, take-home labs and It will also take part in in the training workshops related to the project activities including but not limited to running remote labs, take home labs.

The University of Balamand (UOB) is a private institution, secular in its policies and approach to education. It welcomes faculty, students, and staff from all faiths and national or ethnic origins. The university is located in the northern district of El-

Koura, Lebanon. It was founded by the Orthodox Patriarch Ignatius IV of Antioch in 1988. The university's main campus is adjacent to Balamand Monastery, but it has two other campuses in Beirut: One is in Sin el Fil, which houses the majority of the Lebanese Academy of Fine Arts, and the other neighbors Saint George Hospital in Achrafieh, which houses the faculty for medicine and medical sciences. It also has campuses in Akkar and Souk El Gharb.

Formerly conceived as just a project in the Koura District, it fused administratively with the Lebanese Academy of Fine Arts (ALBA) and St. John of Damascus Institute of Theology to become a full-blown university.The University of Balamand was founded by the Patriarch through the concept of a Kouranian engineer called Elias Abi Chahine of Amioun, in which the concept formed between years 1983 and 1987, in the midst of the Lebanese Civil War. The project started soon after Governmental Clearance in 1988. As of 2014, the implementation of its Master Plan at the mount of long heritage, Balamand, proceeds steadily. The university consists of 12 faculties.

The university will take part in providing support in the quality management of the project along with managing the activities and maintaining the quality of the training sessions. The university will also benefit from establishing the labs. UOB will be the local coordinator for Lebanon coordinating with the other partner institution on issues related to the labs, needs analysis and training. It will participate as a member of the steering committee and be responsible for many activities during the project. It will also participate in all activities including, management meetings, trainings, and dissemination events.

Aqaba University of Technology (AUT) is the first private university established in southern Jordan. It was established in 2015.

The university provides a number pf undergraduate programs accredited by The Jordanian Higher Education Accreditation Commission.

These programs are distributed over five faculties: Munib and Angela Al Masri Faculty of Engineering, where the majors of civil Engineering and Architecture are taught. Michael Sayegh Faculty of Pharmacy. The Faculty of Information Technology, which teaches the majors of Software Engineering and Artificial Intelligence. The Faculty of Arts and Sciences teaches the specialisations of Physiotherapy, Medical and Radiological Imaging and Occupational Education and Public Safety. The last faculty is the faculty of Administrative Financial Sciences, where Accounting and Business Administration are taught. Currently the total number of students is about 860 students, and total number of staff is around 56 members. AUT is a member of many academic associations; The Association of Arab Universities since 2019, International Association of Universities since 2020, and Mediterranean Universities Union. AUT has also international accreditations such as AQACHEI and ASIC Accreditation.

AUT has launched The Red Sea Studies Centre which is concerned with the history, heritage, environment and exploitation of natural resources of the red sea, besides preparing research related to the field of renewable energy and water in the region.

Another centre is also coming to light soon, which is an intercultural program for teaching Arabic for non-speakers, this program will introduce visitors to the history and culture of our country.AUT attracts students from the neighboring countries especially Egypt. The university provides accommodation for male and female students, plus a well-equipped health centre, sports hall and football playgrounds. It also has a cafeteria, supermarket and restaurant. AUT has interest in solar system energy and makes use of the sun energy to provide the required energy for the university usage.

The university will take part in providing support in the dissemination events and activities. The university will also benefit from establishing the labs. The Faculty of Information Technology, which teaches the majors of Software Engineering and Artificial Intelligence will provide help in the needs analysis. It will participate as a member of the steering committee and be responsible for many activities during the project. It will also participate in all activities including, management meetings, trainings, and dissemination events.

Al-Balqa’ Applied University (BAU) is a government-supported university located in Salt, Jordan, was founded in 1997, a distinctive state university in the field of Bachelor and associate degree Applied Education, at the capacity of more than 21,000 student distributed into 10,000 at the bachelor's degree program and 11,000 at the associate degree program.

Balqa' Applied University was formed by merging several colleges distributed over almost all of the Jordanian provinces. The merger was the result of royal decree, under the auspices of his majesty the late King Hussein to provide qualified professionals who focus on applied technical studies. A recent stadium was constructed to hold official graduation and ceremonies and was finished in 2011.

BAU is ranked 5th on national level, and has achieved an international ranking of 2575 and a regional ranking of 55 according to the Webometrics Ranking of World Universities ranking, as well as a regional ranking of 79 according to US News Education.

BAU will take part in the needs analysis and in the management of the project events and it will gain in depth expertise related to development of remote labs, take home labs as it has different campuses. BAU will be the lead coordinator, coordinating with the local coordinators in partners HEIs. It will be active in initiating procedures to manage requirements of remote labs, take home labs at academic institutions in Jordan. it will benefit from EU experience to create a model for a support system that assists in handling issues related to remote labs, take home labs, creating and managing relationships between partner institutions. It will participate as a member of the steering committee and be responsible for many activities during the project.

It will also participate in all activities including, management meetings, trainings, and dissemination events.

Talal Abu-Ghazaleh Information Technology International (TAG-ITI) is a global IT firm specialized in providing professional services in a range of ICT disciplines. TAG-ITI employs over one hundred professionals located across its offices worldwide and has been proudly serving the international business community since the company's establishment in 2001. With unrivalled business experience and in-depth ICT knowledge, TAG-ITI is able to tailor its services to meet its clients' needs in accordance with their relevant business environments. By drawing upon the expertise of its dedicated and diverse personnel, TAG-ITI promises to continue responding to the business and technological needs of an evolving world market.

Since its founding in 2001, Talal Abu-Ghazaleh Information Technology International (TAGITI) has been dedicated to offering local and international clients with high quality services. With over 15 years of experience in providing professional services around the world, TAG-ITI has implemented many ICT related projects over the past decade, ranging from providing e-

Solutions to clients to offering MIS strategic plans and consultations for various business sectors. TAG-ITI has also acquired an outstanding record of success among its clients in the field of website development, which include important inter - governmental and international organizations as well as leading companies in banking, industry, insurance and commerce.

TAG-ITI is characterized by its high standards and quality of varied ICT service offerings and by its focus on promoting a culture of innovative and high performance service delivery. Our strong professional service orientation focuses on specific regional needs, as well as intimate knowledge of technology as well as social and business cultures, all of which enable us to meet our clients' needs through tailor-made ICT services to their relevant business environments.
TAG-ITI provides numerous distinct ICT services: Website Development, Web Portal Development, Website Design, Website Translation, Website Audit, E-design

and structure module, E-marketing module, E-media / content module, E-security module, Esolutions / web coding module .

Interstandards provide a framework for performing and promoting websites auditing using the international guidelines for quality in the web development sector and serve as a unified industry benchmark for evaluating internet websites. These are in addition to other diverse ICT business services that include: Document, Workflow and Archiving Solutions, Desktop Applications

Development, Mobile Applications Development, E-Commerce Applications Development: EMarketing: Services include:

Direct Mail, Web and Banner Advertisements, Pay Per Click, Pay Per Impression, Social Network campaigns: Facebook, Twitter, LinkedIn and other websites. ICT Consulting: IT Auditing: Enterprise Resource Planning (ERP), Digital Marketing Services, Creating social profiles on related and needed major networking sites, Deciding a suitable theme for the designs to be used on all channels, Complying with UNDP standards and guidelines when designing and creating the content, Creating and writing the content, Answering audience queries and feedback on regular basis, Creating and increasing engagement with fan base, Regularly feeding data to the accounts.

RL4Eng is characterised by its high standards and quality of performance. TAG-ITI will be responsible for portal development according to project needs. Project portals development and maintenance & social media promotion

TAG-ITI will work in conjunction with project team to: Establish the new portal that will highlight the objectives, activities, and deliverables of the project; it shall help the project to play a more effective role in supporting the dire needs of the targeted audience. Furthermore, it will aim at effectively delivering a dynamic platform through which the intended audience will have the access to information about development activities throughout the project in addition to keeping up with the project latest news, programs at national and local levels. In terms of the social media promotion, TAG-ITI staff shall execute the following dissemination procedures:

Creating social media pages, Posting to and monitoring a range of social media accounts, simultaneously, Writing project content that is suitable for various social media platforms, Responding to and addressing the community's queries and about the project, professionally and timeously, Keeping up-to-date with the latest project news, Compiling weekly/monthly social media platform reports, Monitoring effective benchmarks (best practices) for measuring the impact of social media campaigns on the project output, Analyzing, reviewing and reporting on effectiveness of campaigns to maximize results, Advertising project activities at international conferences and fairs, media coverage and press release.

TAG-ITI will use a number of specific strategies designed to fulfil the outcomes of the project, which should focus on the following: Advertising, Event Marketing & Organizing, Media Relations, Media Coverage, Media Strategy, Public Relations, Publications, Social Media, Website Design & Content. The strategic communication plan should focus on communication goals and measurable objectives. TAG-ITI will be involved in the meetings.

The Nelson Mandela African Institution of Science and Technology (NM-AIST) is a fullyfledged university established under the Universities Act No. 7 of 2005. It is fully registered with the Tanzania Commission for Universities (TCU) with Reg. No. 028.

NM-AIST was established in 2009 as a unique Institution for promoting Science, Engineering, Technology and Innovation (SETI) in Eastern and Sub-Saharan African. The NM-AIST only offers postgraduate programmes in STEM. Its roles are Teaching/ Training and skills development, Research & Innovation, Outreach and community engagement, Incubation management and Commercialization.

The State University of Zanzibar (SUZA) was established by Act No. 8 of 1999 of the Zanzibar House of Representatives which was then amended by Act No. 11 of 2009, and further reamended by Act No. 7 of 2016. The latter amendment has justified SUZA to merge with other

Zanzibar higher learning institutions; these are then Zanzibar Institute of Financial Administration (ZIFA), College of Health Sciences (CHS) and the Zanzibar Institute of Tourism Development (ZIToD). His Excellency Dr. Hussein Ali Mwinyi, the President of Zanzibar and Chairman of the Revolutionary Council is the Chancellor of the University. The University became operational in September 2001.

Currently, SUZA consists of seven campuses that are found at equally beautiful but different locations within the islands. Six campuses are located in Unguja and one campus in Pemba Island. Tunguu is the main SUZA campus located about 12 km away from Zanzibar town. The campus is actually huge and brand new decorated with green field that offers cutting-edge infrastructure of the World standard. It gives to students a local alternative to some of the world's attractive learning environments. The second campus is inherited from the first Teachers' Training College in East Africa, Nkrumah campus at Beit el Ras. This is located along the coast of the Indian Ocean 5 kilometers away from the Stone Town; Nkrumah is a unique and unparalleled campus in the region that is constantly and naturally decorated by glittering blue sea and white sand beach along the perimeter of the campus. Here, our students enjoy very enriching learning environment along with the sea breezes. Vuga as the third campus is located in the heart of the famous and historic Stone Town. Zanzibar is proud of this campus and it is very magnificently conserved by UNESCO World heritage site that vividly manifests rich culture and history of Zanzibar and its people. Thus, Vuga campus is composed of old but well-kept historic structures that are surrounded by social amenities and public offices. Benjamini Mkapa as the fourth Campus is located in Mchangamdogo at Pemba Island. This campus is inherited from the Benjamin Mkapa Teachers' Training College. The fifth Campus is Maruhubi which is situated along the Indian Ocean Sea shore 4 kilometers away from the town center, and 14 kilometers away from Zanzibar airport. To reach public and private transport is readily available at a reasonable cost.

Chwaka is the sixth Campus located at Chwaka village; scenic fishing village in Central District 30 kilometers away from Zanzibar town. The seventh Campus is inherited from the then College of Health Sciences at Mbweni. More new campuses that will house new schools are expected to be built in the next five years in accordance with the university strategic plan. These will be located in both, Unguja and the sister island of Pemba. As an academic public institution, SUZA commits to deliver quality education to transform society to be well educated, to acquire responsible leadership and practical entrepreneurial skills, and to adopt democratic citizenry. Most importantly, SUZA fully contributes in preparing and shaping future leaders of the country both in private and public sectors. At heart, SUZA strives to fully contribute towards establishing a sustainable society amidst the ever-emerging new challenges of the 21st century and challenges of the future. SUZA aims at elevating its reputation even higher. In addition to its reputation in offering quality education, SUZA strengthens its research undertake in order to globally contribute in generating new knowledge and thus, answering difficult questions that puzzle the world today.

Both NM-AIST and SUZA will take part in the needs analysis and in the management of the project events and it will gain in depth expertise related to development of remote labs, take home lab. SUZA will be the local coordinator for the institutions in Tanzania coordinating all

needs, management and development, training issues among others. Both institutions will be active in initiating procedures to manage requirements of remote labs, take home labs at academic institutions in Tanzania. They will benefit from EU experience to create a model for a support system that assists in handling issues related to remote labs, take home labs, creating and managing relationships between partner institutions. They will participate as a member of the steering committee and be responsible for many activities during the project. They will also participate in all activities including, management meetings, trainings, and dissemination events.

Professional Start (PS) is a German Partnership organized under German Civil Code. Frank Uhland and Horst Hermann are the owners and partners. In addition, Professional Start works with a number of external partners. All partners have profound international professional knowledge and experience stem from long lasting leadership and executive assignments as well as from consulting experience in large German enterprises.

Recent activities of Professional Start (PS) were: Training of entrepreneurs (SME), Establishing a Business Career and Development Centre (BCDC) at ´Regentropfen College of Applied Science´ in Ghana (Upper East Region), Training of PhD students at Bonn-Rhein-Sieg University/ Sankt Augustin/Germany, Individual business coaching of students and professionals, Consulting Al Hussein Technical University/ Amman/Jordan establishing a business campus and a business academy to develop entrepreneurship. Quality Management in the EU-project BITTCOIN Jo.

Based on their experience and area of expertise, PS will work on continuous monitoring of project progress also applying Key Performance Indicators, assuring the establishment of Remote Labs (RL) and Take Home Labs (THL,) the quality of the training process. Basis for KPIs are the project description and the input from the partners. Professional Start is leading the QMC and will be involved in all management and committee meetings.

For support, a quality monitoring software will be used to validate the quality of deliverables and project tasks. This tool with reading and writing rights for the project partners allows a two-level consolidation of KPI and monitoring via dashboards.

The partners will agree on a detailed Quality Assurance Plan following the kick-off meeting. QMC meetings will approve frequent Quality Assurance Reports, distributed to the project partners for corrective measures. Professional Start will also step in with templates to be filled in by the partners during the process to keep momentum and enhance transparency of project status. This proactive approach will be included in the Quality Assurance Plan as well.

2.5 Project activities

The projects activities are categorized into six work packages (WP), with each work package assigned a leader institution, which will be responsible for the execution, management, coordination, and delivery of activities. The details of work packages, activities, and timeline are outlined as follows:

[WP-1] Preparation (BAU)

D1.1 – Report on the needs analysis phase.

D1.2 – Reports of Surveys Results and Recommendations.

D1.3 – Report on remote labs, take-home labs and Implementation steps.

[WP-2] Development: Training (UCLM)

D2.1 – Report on the trainings performed.

D2.2 – A report of the visit at H-BRS.

D2.3 – A report of the visit, including a detailed procedure for labs development and Documentation on training material.

D2.4 – Training materials on remote labs Methods and Approaches.

[WP-3] Development: Remote and Take-Home Labs Establishment (BRSU)

D3.1 – E-training portal.

D3.2 – Report on the labs equipment, tools, software and capacities.

D3.3 – Remote labs, take-home labs ePortal Video conferencing room.

[WP-4] Quality Plan (PS)

D4.1 –Quality Assurance Plan.

D4.2 – Internal Quality assurance reports (PHASE I).

D4.3 – Internal Quality assurance reports (Phase II).

D4.4 – External Quality assurance report (PHASE I).

D4.5 – External Quality assurance report (PHASE II).

[WP-5] Dissemination & Exploitation (TAGITI)

D5.1 – Dissemination tools and materials (project portal Web banners and advertisements for dissemination of information).

D5.2 – Biannual Dissemination Events.

D5.3 – Sustainability Plan.

D5.4 – Dissemination Plan.

[WP-6] Management (YU)

D6.1 – Report on the Steering committee, RLEC, QMC meetings.

D6.2 – Biannual Progress Reports.

D6.3 – Biannual reporting of project events, trainings, portal and labs.

D6.4 – Reports on the annual meetings conducted at YU.

D6.5 – Project Management Handbook.

D6.6 – Partnership Agreement.

2.6 Glossary

RL4Eng	Development of remote and virtual laboratories for teaching and training engineering students in the South Mediterranean and Sub-Saharan higher education institutions
ICT	Information and Communication Technology
WP	Work package
D	Deliverable
HEIs	Higher Education Institutions
RL	Remote Labs
THL	Take Home Labs

3. Collaboration framework

It is important to define a collaboration framework early on to identify responsibilities, deliverables, and important guidelines. The requirements are defined as follows:

Operational requirements

[OR-1]	RL4Eng shall continue to function smoothly after the completion of the project.
[OR-2]	RL4Eng shall be capable to guarantee – in a sustainably fashion – resources, services, and support of remote and take-home labs, as well as collaboration between partners.

[OR-3] RL4Eng shall be capable to adapt to the growing needs and requirements of remote and take-home labs and all related services and resources.

[OR-4] Each consortium partner shall be capable to participate in a different extent and capacity, but it shall be clear and outlined in the various agreements and documents how a partner participates.

[OR-5] RL4Eng shall make optimal use of the different resources offered by the consortium members.

[OR-6] RL4Eng shall operate in a transparent way.

[OR-7] RL4Eng shall be capable to quickly adapt to changes in the remote and take-home labs requirements.

[OR-8] The overall collaboration framework of RL4Eng shall be flexible enough that it can support remote and take-home labs, development of resources, and availability of services in a sustainable fashion.

[OR-9] In order to gain long-term stability and foster regular communication, RL4Eng aims at holding workshops and conferences, which is planned to take place regularly (by the same partners).

[OR-10] The funding to achieve the objectives derived from this set of requirements shall be available in a sustainable fashion. There shall be no burden placed on individual partners to acquire funding for RL4Eng.

[GR-11] Continuous curricula changes to accommodate remote and take-home labs at partner universities and introduction of new study programs shall be encouraged on continuous basis

[GR-12] All RL4Eng documents shall be formatted according to a document standard provided by RL4Eng.

[GR-13] For all recurring RL4Eng documents, document templates shall be provided.

[GR-14] Public documents shall contain the list of members and the logo of EU, and all member institutions.

[GR-15] The content of this document shall be updated at all times.

Administrational requirements

[OR-1] RL4Eng administration shall be implemented in such a way that it supports consortium members in the optimal execution of tasks.

[OR-2] The organisation of the collaboration shall be kept simple.

[OR-3] The administration shall be kept to the minimum required and processes shall be streamlined towards efficiency.

[OR-4] Duties and rights of all involved partners shall be clearly defined.

[OR-5] All administration and decision processes shall be clearly defined, and shall be carried out in a transparent way.

[OR-6] RL4Eng shall implement an easy-to-use web portal, which supports RL4Eng management and administration.

Quality requirements

[QR-1] Consortium members shall support RL4Eng in delivering highly quality resources and services.

[QR-2] Quality standards shall be defined and implemented. These standards shall not be whitewashed for the purpose of completion and delivery.

[QR-3] Quality checkpoints shall be implemented before and after each delivery.

[QR-4] A simple yet efficient quality management system shall be implemented.

[QR-5] A simple yet efficient information base shall be implemented at RL4Eng to support the maintenance of a terminology base and list of remote and take-home labs resources and services.

4. Management structure

The following diagram shows the management structure of RL4Eng

Figure 1: Management structure diagram

Where the following definitions shall apply:

Project Coordinator	Responsible for RL4Eng coordination activities with all partners
Technical Manager	Responsible for RL4Eng technical management
Work Package Manager	Responsible for the management of the work package on behalf of the member institutions
Task leader	Responsible for the delivery of the specific tasks in the activities belonging to the specific work package
Member institution	RL4Eng Legal partner
Member representative	Individual representing the member institution
Committees	Responsible for the coordination as well as progress monitoring. The project coordinator is part of all committees

4.1 Project Coordinator

The project coordinator is the grant holder. He is responsible of the central management of RL4Eng and carries out the following functions in coordination with the committee members:

Administrative functions:

[AF-1] Represent the main contact point with the EACEA

[AF-2] Coordinate the interim report and final report

[AF-3] Follow up on membership agreements

Financial functions:

[FF-1] Manages project financing and transfer of funds to member institutions

[FF-2] Monitors and approves claims of expenses incurred during the execution of project activities

4.2 Technical manager

The *technical manager* is responsible of the technical management of RL4Eng and carries out the following functions in coordination with the technical board members:

Information functions

[IF-1] Support regular communication amongst members

[IF-2] Inform members about changes in RL4Eng plans

[IF-3] Circulates project activities and status on regular basis

Management functions

[MF-1] Bilaterally co-ordinate with each manager of RL4Eng work packages on progress and how activities and tasks are carried out at the member institutions

[MF-2] Develop a work plan and tools for the delivery of tasks in coordination with work package leaders

[MF-3] Monitor progress and gather information about overall quality and definition of quality indicators for task deliverables and the RL4Eng overall success

[MF-4] Manage the execution of work packages in coordination with work package managers

[MF-5] Regularly communicate with member representatives regarding performance, problems or successes

[MF-6] Scheduling of management and technical board meetings in coordination with board members

Support functions

[SF-1] Monitor and maintain RL4Eng website

[SF-2] Monitor and maintain RL4Eng Portal

4.3 Work package manager

The *Work package manager* is responsible of the management of the work package activities and represents the contact person for all related activities to that work package. The work package manager carries out the following functions:

Development functions

[DF-1] Coordinate and monitor the execution of activities and tasks related to the specific work package in cooperation with the task leaders

[DF-2] Develop a work plan of the tasks and follows their quality and timely implementation

[DF-3] Carry out quality control and monitoring of the outcomes and results of the tasks in implementation

Reporting functions

[RF-1] Report to the technical board on the execution of activities, quality of deliverables, and overall impact with measures

[RF-2] Coordinate with task leaders for the interim and final report to EACEA

4.4 Task leader

The task leader is responsible of the execution of the task in coordination with all partner institutions through their contact persons. The task leader carries out the following functions:

Development functions

[DF-1] Carry out the execution of the assigned task in coordination with the member contact person

[DF-2] Develop a work plan for the execution of the assigned task, required resources, and other requirements to ensure quality and timely implementation of the task/ activity

[DF-3] Carry out quality control and monitoring of the outcomes and results of the assigned task and provide indicators of performance

Reporting functions

[RF-1] Report to the work package manager on the execution of the task/ activity, quality of deliverable, and overall impact with measures

[RF-2] Coordinate with the contact persons of member institutions for the interim and final report to EACEA

4.5 Member institution

A member institution is consortium member, which supports the development of RL4Eng in a variety of ways. As a minimum, the support must include the willingness to collaborate on all activities associated with it (like regular communication, update of curriculum material, development of resources, etc.) but may go beyond, like assisting RL4Eng in resource/ service development, exchange of knowledge and other forms of collaboration. A member institution becomes a member when it fulfils the following member requirements:

[MR-1] Signing a collaboration agreement

[MR-2] Nominating and endorsing a working team

[MR-3] Naming a Member contact person

[MR-4] Agreeing to follow the procedures laid out in this document

The partnership agreement defines the terms of collaboration. In particular it explicitly states the ways a member institutions is willing to collaborate in the development and use of resources. The annexes contain a model agreement. Each member institution is responsible to inform RL4Eng project coordinator and technical manager in the following cases:

[C-1] Change of Member contact person (when it occurs)

[C-2] The intent to leave RL4Eng (if possible at least 3 months earlier)

4.6 Member representative

The member contact person represents the main contact person of the member institution, who has been named as the responsible towards the RL4Eng. The contact person carries out the following functions:

Administrative functions

[AF-1] Coordinates with the project director on all administrative reporting, staff costs, coordination of travels, time sheets, and necessary reporting

[AF-2] Support regular communication with all persons involved in RL4Eng

Development functions

[DF-1] Carry out the execution of tasks at the member institution in coordination with the task leaders

[DF-2] Take the lead responsibility for RL4Eng implementation and coordinates with the team members at the member institution

[DF-3] Carry out quality control and monitoring of the outcomes and results of the assigned task and provide indicators of performance

Reporting functions

[RF-1] Report to the task leaders on the execution of the task/ activity, quality of deliverable, and overall impact with measures

[RF-2] Coordinate with the task leaders and workshop managers for the interim and final report to EACEA

[RF-3] Inform members about changes of personnel

4.7 Committees

The following committees, are established, each one will focus on different aspects of the WPs and will examine if project objectives are achieved.

4.7.1 Project Steering Committee (PSC):

PSC shall act as the Management Committee for the project.

Main Tasks:

Provide guidance and monitor the execution of the work packages.

Pre-requisite:

A representative of every organization shall participate in regular management meetings and support execution of tasks.

Expected Results:

Timely full achievement of the tasks according to the work packages.

Committee Members:

- Mwaffaq Otoom, YU
- Dania T. Bani Hani, YU
- Rainer Herpers, HBRS
- Horst Hermann, PS
- Tamador Al Quasi, AUT
- Saeid Abu Romman, BAU
- Feras Kafia, HTU
- Aseel Abukhalil, TAGITI
- Ali Maqousi, UOP
- Rodrigue Imad, UOB
- Abed Ellatif Samhat, LU
- Ismail Kassou, MU5
- Raja Elassali, UCA
- Enrique Arias, UCLM
- Elizabeth Mkoba, NM-AIST

- Maryam Khamis, SUZA

4.7.2 Quality Management Committee (QMC):

QMC shall act as the Committee for the Quality Assurance and thus support Professional Start in WP 4.

Main Tasks:

Monitor and report and quality parameter of the project and initiate actions for remedy.

Pre-requisite:

QSC shall be a working committee with committed members.

Expected Results:

Quality Assurance Reports, remedy activities and – finally – 100% achievement in all work packages.

Committee Members:

- Tamador Al Quasi, AUT
- Hazem S Hasan, BAU
- Feras Kafia, HTU
- Ali Maqousi, UOP
- Abed Ellatif Samhat, LU
- Raja Elassali, UCA
- Emilio Gomez, UCLM
- Andres Honrubia, UCLM
- Elizabeth Mkoba, NM-AIST

4.7.3 Remote Lab Establishment Committee (RLEC):

RLEC as a sub committee to the PSC shall focus on timely establishment of the RL and

THL. **Main Tasks:**

Provide guidance and monitor the execution of the procurement and installment of the RL, THL and Video Conferencing Rooms.

Pre-requisite:

A representative of every RL establishing organization shall enforce execution of procurement and installation.

Expected Results:

Timely establishment of RL, THL and Video Conferencing Rooms.

Committee Members:

- Rainer Herpers, HBRS
- Mohammad Alzubaidi, YU
- Rodrigue Imad, UOB
- Ismail Kassou, MU5
- Maryam Khamis, SUZA
- Horst Hermann, PS

5. Implementation

RL4Eng will use a collaboration platform for the coordination and implementation of the framework that consist of the following major components:

[CP-1] A public website of RL4Eng

[CP-2] A central document portal (henceforward called RL4Eng Portal), along with a clearly pre-defined structure of what goes where and who is responsible for what

[CP-3] a repository of RL resources, facilities, and services accessible based on predefined privileges (authentication and authorization)

This platform shall be implemented using (ASP.NET, MSSQL, HTML5, CSS, etc.) and shall be updated on regular basis.

5.1 RL4Eng website

RL4Eng.com website will be implemented and maintained on continuous basis, and shall acknowledge the collaboration and contribution of partners. It shall also be clearly visible at all partner's websites. RL4Eng.com shall include the following pages:

[PG-1] Main page that displays important links, quick links, search, portal entry, and latest news.

[PG-2] Subpages for RL4Eng overview, activities, events, newsletters, posters, and personal profiles of individuals involved

[PG-3] Links to the members' web sites

[PG-4] Public information about recent RL4Eng meetings, events, conferences, etc.

[PG-5] Training materials

RL4Eng TM makes sure that members are involved in producing the content and are informed of major changes.

5.2 RL4Eng Portal

RL4Eng portal (https://www.rl4eng.com/portal/) will be implemented as a web-based system, which supports RL4Eng management, and will consist of the following portal components:

[PC-1] A small set of clearly defined templates for all activities.

[PC-2] A small number of clearly defined email lists for the various activities, which are logged in a forum

[PC-3] a permanent action list for the RL4Eng

RL4Eng portal shall abide to the following rules:

[PR-1] The portal folder structure is always clearly defined.

[PR-2] Each individual who is a member of the consortium can read the whole portal (transparency). Any other person cannot read the portal except for external reviewers.

[PR-3] The portal shall be implemented in such way that

- It supports access control on user basis
- It maintains document versioning
- It automatically generates meta data such as: creator, creation date, etc.
- It supports a comment field for each document
- It supports upload and download of documents
- It supports basic search
- It supports a notification mechanism; with that mechanism, a user can subscribe to email notifications in case of folders being changed (new documents, updates, deletions etc.)
- Every member representative and every member contact point is by default registered for notification of certain folders

[PR-4] For each document placed into the portal by an individual, the comment field must be filled in by that individual. Document names shall be long descriptive names, which are self-explanatory.

[PR-5] Documents are not sent via email in the RL4Eng. Instead they are placed in an appropriate folder and are referenced by their artefact id in email communications.

[PR-6] The member acronym is used to identify portal areas and documents where useful.

6. Members list and contact persons

Surname	Name	Affiliation	Country	eMail	Tel/Mobile	Role
Otoom	Mwaffaq	Yarmouk University	Jordan	motoom@gmail.com	+962 790143171	WP6 – Project Coordinator
Alzubaidi	Mohammad	Yarmouk University	Jordan	maalzubaidi@yu.edu.jo	+962 795332584	Researcher
Bani Hani	Dania	Yarmouk University	Jordan	dt.banihani@yu.edu.jo	+962 797095956	Researcher
Shehadeh	Ali	Yarmouk University	Jordan	ali.shehadeh@yu.edu.jo		Researcher
Herpers	Rainer	Bonn-Rhein-Sieg University of Applied Sciences	Germany	rainer.herpers@h-brs.de	+49 1717702396	WP3 Leader Researcher
Schüler	Sabine	Bonn-Rhein-Sieg University of Applied Sciences	Germany	sabine.schueler@h-brs.de	+49 1732564403	Administrator
Schlenker	Ursula	Bonn-Rhein-Sieg University of Applied Sciences	Germany	ursula.schlenker@hbrs.de	+49 1635561999	Administrator
Schwandt	Andrea	Bonn-Rhein-Sieg University of Applied Sciences	Germany	andrea.schwandt@hbrs.de		Researcher
Hermann	Horst	Professional Start	Germany	hh@professonal-start.de	+49 15114805360	WP4 Leader
Uhland	Frank	Professional Start	Germany	fu@professional-start.de	+49 15143124055	Manager
Weber	Erwin	Professional Start	Germany	erwin.weber@outlook.com	+49 1715576249	Manager
Müller	HAJO	Professional Start	Germany	hm@professional-start.de	+49 1712266734	Manager
Abu Khalil	Aseel	Talal Abu-Ghazaleh Information Technology International	Jordan	aabukhalil@tag.global	962 795119785	WP5 Leader Administrator Technical
Abu Hawileh	Ayman	Talal Abu-Ghazaleh Information Technology International	Jordan	aabuhaweleh@tag.global	+962 797471225	Technical
Manasrah	Elham	Talal Abu-Ghazaleh Information Technology International	Jordan	emanasrah@tag.global		Technical
Maqousi	Ali	University of Petra	Jordan	amaqousi@uop.edu.jo		Coordinating Partner Researcher
Abu-Arqoub	Mohammad	University of Petra	Jordan	abu-arqoub@uop.edu.jo		Researcher
Otoum	Nesreen	University of Petra	Jordan	notoum@uop.edu.jo		Researcher
El-Khalili	Nuha	University of Petra	Jordan	nuhak@uop.edu.jo	+962 795596785	Researcher
Kafiah	Feras	Al Hussein Technical University	Jordan	feras.kafiah@htu.edu.jo		Coordinating Partner Researcher
Al Shaggah	Atheer	Al Hussein Technical University	Jordan	atheer.alshaggah@htu.edu.jo		Researcher
Al Zu'bi	Sereen	Al Hussein Technical University	Jordan	sereen.alzu'bi@htu.edu.jo		Researcher
Al Quasi	Tamador	Aqaba University of Technology	Jordan	talqaisi@aut.edu.jo	+962 796245801	Researcher
Alweshah	Mohammed	Aqaba University of Technology	Jordan	mweshah@aut.edu.jo	+962 776501331	Dean
Kassaymeh	Sofian	Aqaba University of Technology	Jordan	samsaak@gmail.com	+962 799575459	Researcher
Ahmad	Emad	Aqaba University of Technology	Jordan	eahmad@aut.edu.jo	+962797897111	Researcher

Hasan	Hazem	Al-Balqa' Applied University	Jordan	hazem@bau.edu.jo		WP1 Leader Researcher
Abu Romman	Saeid	Al-Balqa' Applied University	Jordan	saeid.aburomman@bau.edu.jo		Researcher
Imad	Rodrigue	University of Balamand	Lebanon	rodrigue.imad@balamand.edu.lb		Coordinating Partner Researcher
Samhat	Abed Ellatif	Lebanese University	Lebanon	samhat@ul.edu.lb	+961 3116276	Coordinating Partner Researcher
Kassou	Ismail	MOHAMMED V UNIVERSITY IN RABAT	Morocco	ismail.kassou@um5.ac.m a	+212 661492573	Coordinating Partner Researcher
Elassali	Raja	University of Marrakech Cadi Ayyad	Morocco	r.elassali@uca.ma	+212 661642261	Coordinating Partner Researcher
Hassboun	Touria	University of Marrakech Cadi Ayyad	Morocco	t.hassboun@uca.ac.ma		Researcher
Zrikem	Maria	University of Marrakech Cadi Ayyad	Morocco	m.zrikem@uca.ma		Researcher
Arias	Enrique	Universidad de Castilla - La Mancha	Spain	enrique.arias@uclm.es	+34 636211784	WP2 leader Researcher
Gomez	Emilio	Universidad de Castilla - La Mancha	Spain	emilio.gomez@uclm.es		Researcher
Honrubia	Andrés	Universidad de Castilla - La Mancha	Spain	andres.honrubia@uclm.e s		Researcher
Martínez	José	Universidad de Castilla - La Mancha	Spain	joseluis.martinez@uclm.es		Researcher
Carrión	Carmen	Universidad de Castilla - La Mancha	Spain	carmen.carrion@uclm.es		Researcher
Caminero	Blanca	Universidad de Castilla - La Mancha	Spain	mariaBlanca.caminero@uclm.es		Researcher
Lozano	María	Universidad de Castilla - La Mancha	Spain	maria.lozano@uclm.es		Researcher
Gallud	José	Universidad de Castilla - La Mancha	Spain	jose.gallud@uclm.es		Researcher
Mkoba	Elizabeth	Nelson Mandela African Institution of Science and Technology	Tanzania	elizabeth.mkoba@nm-aist.ac.tz		Coordinating Partner
Kaijage	Shubi	Nelson Mandela African Institution of Science and Technology	Tanzania	shubi.kaijage@nm-aist.ac.tz		Researcher
Khamis	Maryam	The State University of Zanzibar	Tanzania	maryam.khamis@suza.as.tz	+255 773455565	Coordinating Partner
Yussuf	Suleiman	The State University of Zanzibar	Tanzania	suleiman.yussuf@suza.ac.tz		Researcher
Masoud	Khairiya	The State University of Zanzibar	Tanzania	khairiya.mudrik@suza.as.tz	+255 774743979	Researcher
Makeme	Moh´d	The State University of Zanzibar	Tanzania	mmhagiz@suza.as.tz		Researcher
Adnan	Ali	The State University of Zanzibar	Tanzania	ali.adnan@suza.ac.tz		Researcher

RL4eng

Partners

Contact Information:

Dr.mwaffaq Otoom

Email: motoom@gmail.com

Mobile +962790143171

Website: https://rl4eng.com