



ECARDINALE

AN ENTOV-HVM PROPOSAL TO THE EIT MANUFACTURING
PROPOSAL TO “ENABLE THE CAPABILITY FOR RAPID DIFFUSION
OF INNOVATION IN HIGH VALUE MANUFACTURING”

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Overview

This project proposal is submitted by [Dr. Oliver Schwabe](#) on behalf of the University of Padova representing the [Open European Network for ENTERprise InnOVation in High Value Manufacturing - ENTOV-HVM](#) in response to the EIT Manufacturing [pre-call guidelines](#) for activities to be executed in 2021 (12 month period). The project will continue after 2021 and fund itself through ongoing course revenues.

ENTOV-HVM builds on deep global experience in the acceleration of innovation ecosystems in [high value manufacturing](#) (HVM) and seeks to help enable wide audiences in the disruptive acceleration of innovations from ideation to market saturation through an accredited stackable set of micro-courses delivered online by a network of participating universities to existing and future business enterprise partners.

Aim

ECARDINALE aims to help strengthen Europe's innovation capacity and at fostering innovation in higher education, business and the broader socio-economic environment of the EU by helping to disruptively accelerate the value creation from ideas in high value manufacturing (HVM) ecosystems from ideation to market saturation.

The aim will be achieved by designing, developing, and sustainably implementing an accredited [virtual and open education offering](#) to enable participants to rapidly diffuse innovations related to technology, processes, organizational design and culture from initial idea to becoming a household name across the iterative (living) innovation ecosystems as seen from a [value network perspective](#). Courses will be suitable for face-to-face and / or hybrid delivery mechanisms which will subject to separate revenue sharing agreements.

This project aspires to qualify at least **xxx** individuals from industry and higher education to accelerate the diffusion of innovations from ideation to market saturation in high value manufacturing industries. This project further aspires to help create at least **xxx** (internal and / or external) start-up proposals as the result of a “capstone” course defining and launching a specific innovative venture aligned to EU strategies.

Foundations

This proposal extends work on previously submitted proposals for:

1. Open European Network for ENTERprise InnOVation in High Value Manufacturing (ENTOV-HVM) – OC-2019-1-23678 (September 2019). Summary: Competitive advantage in high value manufacturing (HVM) industries, like aerospace and pharmaceuticals, is created by diffusing new ideas to market saturation as rapidly as possible. Examples are super-alloys and metal printing. Unfortunately the primary (in-) dependent variables and their dependencies affecting the speed of such remain unclear. ENTOV-HVM aims to explore the factors affecting the speed of diffusion of innovation in high value manufacturing by using living systems based research methods. A multidisciplinary network of experienced innovation stakeholders, partnering with early career researchers and young innovators from COST Inclusiveness Target Countries (ITCs), will co-create and collaborate through techniques such as training, joint research-industry workshops, and Living Labs to help unravel the dynamics, drivers and game-changing events of innovation diffusion. Learning will be disseminated through these techniques, conference contributions, journal papers, and mini-conferences to inform policy developments and practice. The Action will establish seven ITC-led workgroups (1) Success Stories: Mapping the innovation diffusion of

successful historical HVM innovations, (2) Living Networks: Creating a reference-architecture and its simulation for game-changing exchanges in HVM innovation diffusion, (3) Disruptive Technology: Understanding how technology disruptively accelerates HVM innovation diffusion, (4) Disruptive Relationships: Understanding how human relationships disruptively accelerate HVM innovation diffusion, (5) Designing for Rapid Diffusion: Defining the optimal design of HVM ideas to diffuse in a "heart-beat", (6) Innovation Automation: Establishing an online platform for simulating HVM innovation diffusion and (7) Event / Mission coordination. Participants: Alleyne Inc. – Canada, Centre of Studies on Migrations and Intercultural Relations – CEMRI – Portugal, Cranfield University – United Kingdom, ed-media e.V. – Germany, Entovation International – USA, EureCons Förderagentur GmbH – Germany, EUREKA Network – Belgium, Eurofocus International Consultants Ltd. – Germany, Hochschule Kaiserslautern – Germany, Kaunas University of Technology – Lithuania, Latvian Technological Center – Latvia, LNEC – Laboratório Nacional de Engenharia – Portugal, Maynooth University – Ireland, Pasher & Associates – Israel, Riga Technical University – Latvia, Rzeszów University of Technology – Poland, Sabanci University – Turkey, Technical University of Kosice – Slovakia, Technische Universität Berlin – Germany, University of Lisbon – Portugal, University of Luxembourg – Luxembourg, University of Maribor – Slovenia, University of Padova – Italy, Vilnius University – Lithuania. The proposal is available at https://innovation-web.eu/oc-2019-1-23678_fullproposal_proposerfinal20190828.

2. European Knowledge Alliance for Accelerating the Diffusion of Innovation in High Value Manufacturing Ecosystems (ADI-HVM) – 621364-EPP-1-2020-1-UK-EPPKA2-KA (February 2020). Summary: ADI-HVM aims to strengthen Europe's innovation capacity and at fostering innovation in higher education, business and the broader socio-economic environment of the EU. The expected outcome is to help disruptively accelerate the value creation from ideas in high value manufacturing (HVM) ecosystems from ideation to market saturation. This will be achieved by designing, developing, and sustainably implementing a career framework to generate new skills and capabilities in project, program management and entrepreneurship based upon principles of the Open Education Europe initiative. HVM is the application of leading edge technical knowledge and expertise to the creation of products and associated services which have strong potential to bring sustainable growth and high economic value. Such potential is characterised by a combination of high R&D intensity and high growth typically found in industries such as aerospace and pharmaceuticals. The career framework will be developed and implemented for higher education, vocational training and continuous professional development. The programme will consist of joint-accredited, stackable and micro-certified multi-disciplinary learning modules around an easy to use simulation and forecaster of innovation system behaviour and the path of ideas from ideation to market saturation. Liberal arts aspects will be integrated with key STEM principles. ADI-HVM will furthermore create (a) an open, adaptive and inclusive community of applied learning and collaboration from a diverse set of higher education, business, and individuals, (b) a system dynamics simulator based on living systems principles, which enables the forecasting and monitoring of the end-to-end innovation journey and its value creation based on principles of intellectual capital reporting, (c) a set of actionable interventions for accelerating the speed of value creation, and (d) policy recommendations at individual, organizational, regional and EU levels. Participants: Airholding – Embraer Research and Technology Europe (Business) – Portugal, Aristoncavi SPA (Business) – Italy, Ausys Automation Systems (Business) – Slovakia, Baladi (Business) – Israel, BERD (Business) – Portugal, Edelweiss Connect GmbH – Switzerland, ed-Media – Germany, Entovation International Ltd. – USA, Eurecons Förderagentur GmbH – Germany, Eurofocus International Consultants Ltd. – Germany, Exceuticals (Business) – Portugal, GB Innovation Ltd. – Ireland, Hochschule Kaiserslautern – Germany, Impetus Solutions (IT Solutions) – India, Kaunas University of Technology – Lithuania, National University of Ireland Maynooth – Ireland, Pasher & Associates – Israel, Riga Technical University – Latvia, Rolls-Royce

Deutschland Ltd & Co KG (Business) – Germany, Sabanci University (Business) – Turkey, Technische Universität Berlin – Germany, Tuke University – Slovakia, University of Bremen – Germany, University of Lisbon – Portugal, University of Luxembourg – Luxembourg, University of Padova – Italy, Vilnius University – Lithuania, Volvo Lastvagnar AB (Business) – Sweden. The proposal is available at <https://innovation-web.eu/adi-hvm-detailed-project-description-ka-2020-en-20200222-final>.

This proposal is related to previous research work related to:

1. RAND Europe (2004-2005) "Evaluation of Networks of Collaboration in IST Research within the European Research Area" (ERAnets)". This FP6 Information Society and Technology projects created networks to share know-how and conduct research. Networks are particularly important to the European Research Area (ERA) to link geographically-distant centers of excellence and to disseminate knowledge across Europe. This vision of a networked knowledge economy is also central to the Lisbon Objectives. Using network analysis this study examined dynamics created within the ERA at the system-wide level. Available at <https://ec.europa.eu/research/evaluations/pdf/archive/fp6-evidence-base/evaluation-studies-and-reports/evaluation-studies-and-reports-2005/eranets-evaluation-of-networks-of-collaboration-2005.pdf>
2. Altec SA (2007) "Effectiveness of ICT RTD Impacts on the EU Innovation System". The purpose of this evaluative study was to assess where and how regional innovation systems can be reinforced by EU, Member State and Regional initiatives aimed at strengthening links between ICT RTD and deployment. The focus was on understanding regional innovation as an ecology that converts ICT related knowledge diffusion and value creation into long-term competitiveness and economic growth. Available at: <https://op.europa.eu/en/publication-detail/-/publication/1fa86f11-7b6d-4b19-b4be-21bcba811262>

Background

The speed of value creation was prioritized especially because social and political pressure is rapidly growing for industry to adapt to immediate and growing global challenges such as population growth, climate change and trade imbalances. Especially industries with comparatively complex products struggle to address these challenges in a timely manner. The major financial and planning uncertainties in this context give rise to concern in high value manufacturing spaces. The lower the speed of value creation the greater the uncertainty associated with successfully evolving from the front-loaded high investment profile to a profit generation phase through asset usage. High uncertainty exists because the needed changes are complex adaptations (innovations) of highly regulated design and manufacturing engineering solutions in very complicated whole product life cycles, which can span multiple decades. Additionally these innovations occur in deeply tiered globally diverse supply networks and eco-systems, and must diffuse to a point of market saturation in order to generate the intended benefits. This uncertainty is very dynamic and involves a very high number of interdependent (systemic) variables, which leads to volatile risk profiles that are extremely difficult to forecast with the robustness required for investment decision making and monitoring. Disruptively accelerating the diffusion of innovation from ideation to market saturation requires acknowledgement of the complex adaptive nature of the innovation phenomenon and shifting the perspective from linear process to living systems. It also means focusing on ecosystems versus individual organizations.

Key Definitions

- Ecosystems are that interplay of multiple stakeholders assuming multiple roles in a web of tangible and intangible exchanges that work towards a shared purpose. Innovation is understood as the ability to transfer knowledge from the point of origin to the point of highest need across the complete whole product life cycle and diffusion of innovation curve from ideation to market saturation.
- HVM is the application of leading edge technical knowledge and expertise to the creation of products and associated services which have strong potential to bring sustainable growth and high economic value. Such potential is characterized by a combination of high R&D intensity and high growth typically found in industries such as aerospace and pharmaceuticals.

Objectives

In order to achieve this aim ECARDINALE proposes an accredited education activity for the engagement, connection and empowerment of professionals and executives in high value manufacturing through training focused on increasing the capability to accelerate the diffusion of innovations from ideation to market saturation. This activity primarily targets strategic object 2 of the EIT Manufacturing “Manufacturing Innovation Ecosystems” aligned to the flagship “Platforms for Digitized Value Networks”. The proposal furthermore aligns with Pillar 3 of the preliminary Horizon Europe strategic plan “Innovative Europe” and in particular with the emphasis on [European innovation ecosystems and European Institute of Innovation Technology](#). The relevant mission area is considered to be “[climate neutral and smart cities](#)” and within that the concept of “urban manufacturing” as a potentially viable avenue of (re-) creating European competitive advantage in a knowledge economy that is dependent on social integration of manufacturing with urban centers. The project proposal supports the European policies in the fields of education and training as formulated by the [European Policy Cooperation ET 2020 framework](#). The proposal also follows principles of the “[Responsible and Flexible Career Development Framework for Researchers](#)”.

The education activity will be based on a series of courses offering a vocational, higher education and continuous professional development solution for all levels of experience. The curriculum will align to the [European transparency and recognition tools and principles](#). The curriculum is furthermore based on the [European Qualifications Framework](#) and initial considerations expect the vocational solution to align to EQF level 3, the higher education solution to align to EQF level 5 and the continuous professional development solution to align to EQF level 4. Formal assessment and sanctioning of the EQF levels will be sought respecting that national qualification frameworks may differ. The courses developed during the project will be submitted for assessment under the [European Credit and Transfer System](#). The vocational solution will be submitted for assessment under the European Credit System for Vocational Education and Training. In respect to the validation of non-formal and informal learning the project will and consider examine relevant [recommendations of the Commission](#).

Course Details

The activity will be implemented as a series of stackable Masters-level certificate courses delivered purely online with a duration of six weeks each that are joint-accredited by the university partners of this proposal and follow not only EU Open Education principles but are also designed in accordance with US ASTD standards for accredited online course delivery. Face to face and hybrid learning offerings can be created and delivered by project partners under separate licensing agreements. Completion of the mandatory foundations courses plus one specialization will qualify for (to be defined) ECTS. Each module will be completed through an online time-bound multiple choice test. Face-to-face “day schools” will be optional. This activity will run one year whereby the courses will be

developed and accredited in the first six months with delivery commencing in the second half of the year and serving as the foundation for an ongoing delivery as an embedded part of the university offerings after the end of the project. Initial participants will be drawn from current business members of the ENTOV-HVM network.

ECARDINALE will furthermore create an open, adaptive and inclusive community of applied learning and collaboration from a diverse set of higher education, business, and individuals.

The following individual certificate courses will (potentially) be provided. The nature of an overarching certificate for participants upon completion of all foundations courses and one specialization course, i.e. a Master degree in Innovation Acceleration Management is aspired. Courses may be taken in parallel and the Capstone course must be taken last. A course example (from a different context) to suggest look, feel and structure of final course documentation and dynamics is available at <https://innovation-web.eu/online-course-example-20200303>. All courses will be accompanied by relevant multi-media materials (i.e. videos and podcast) plus be subject to a robust “ever-greening” process enabling bi-annual revisions.

Foundation Modules (Mandatory in sequence).

These courses set the foundation for the domain specialization and enable participants to effectively apply the generic model for diffusion of innovation from ideation to market saturation in their personal and professional contexts.

F-1: Principles, Orchestration and Acceleration of Innovation Ecosystems

This course aims to introduce participants to the concept of innovation ecosystems from a living systems perspective using a generic simulation model and value network principles. Participants are furthermore educated in how to orchestrate the behavioral dynamics of such ecosystems across the various archetypes from ideation to market saturation, including how to identify and / or implement acceleration game changers effectively. This course is supported by the book [“Value Networks and the True Nature of Collaboration” by Verna Allee and Oliver Schwabe](#) and enhanced by a variety of publications on the diffusion of innovation in manufacturing. The proposed course author is [Dr. Oliver Schwabe](#).

F-2: Innovation and the Arts in Manufacturing Innovation.

This course aims to introduce participants to the pivotal role of the liberal arts in manufacturing innovation, therefore the importance of including arts in the paradigm of science, technology, engineering and mathematics (STEM). Based upon historical reflections and the influence of diversity from multiple perspectives, participants are enabled to ensure a broader perspective is applied to innovation in order to accelerate its progress from ideation to market saturation. in the last view years. This course is supported by the book [“Innovation and Arts: The Value of Humanities Studies for Business” edited by Piero Formica and John Edmondson](#) and enhanced by a variety of publications on the diffusion of innovation in manufacturing. The propose course author is [Dr. Piero Formica](#).

F-3: Design Principles of Innovations for Rapid Diffusion from Ideation to Market Saturation.

This course aims to introduce participants to the concept of the diffusion of innovation curve as applied to manufacturing innovation, with an emphasis on understanding the various adopter categories and the factors influencing not only in-category but also cross-category adoption. In addition the technical readiness / maturity phases preceding market introduction are explored in order to arrive at an integrated overarching end-to-end life cycle perspective. This course is supported by the book [“Diffusion of Innovations” by Everett M. Rogers](#) and enhanced by a variety of publications on the diffusion of innovation in manufacturing. The proposed course author is [Dr. Pinar Bilge](#)..

F-4: Innovation Ecosystem Simulation, Monitoring and Forecasting.

Using a generic simulation model and value network principles this course aims to introduce participants to the actual activity of simulating innovation ecosystem performance, monitoring the progress of innovations from ideation to market saturation through these and then robustly forecasting the speed of this diffusion as applied to manufacturing innovation. This course is supported by the book "[Business Dynamics: Systems Thinking and Modeling for a Complex World](#)" by [John D. Sterman](#) and enhanced by a variety of publications on the diffusion of innovation in manufacturing. The proposed course author is [Dr. Brian Donnellan](#).

F-5: Key Methods: Experimental Innovation, Contamination Labs and Structured Ideation.

This course aims to enable participants in the application of three specific methods which have proven highly successful in enabling the rapid diffusion of innovations in manufacturing. Experimental innovation is based on blue sky creative ignorance perspective for finding ideas. Contamination Labs enable diverse sets of stakeholders to identify ideas with especially high value potential and structured ideation enables the systematic forecasting of innovation development based on specific ideas. This course is supported by the books [xxx](#) and enhanced by a variety of publications on the diffusion of innovation in manufacturing. The proposed course author is [Giovanni Baldassarri](#) on behalf of [Dr. Piero Formica](#), [Dr. Fabrizio Dughiero](#) and [Dr. Christian Thurnes](#).

F-6: Risk and Uncertainty Management

This course aims to introduce participants to the principles of managing risk and uncertainty in innovation ecosystems including generic interventions and approaches for managing such within acceptable boundaries. This course is supported by the book [xxx](#) and enhanced by a variety of publications on the diffusion of innovation in manufacturing.

F-7: Capstone: Creating and Launching Your Own (Internal or External) Business

This is the final course of the program and guides participants through a structured process from the idea for a high potential innovation in the area of domain specialization to presenting that as a concept proposal to a group of relevant decision makers. All previous learnings are integrated. The course is based on a series of "Knowledge Innovation Practicums" developed by the late enterprise innovation thought-leader [Debra Mae Amidon](#) and her book "[The Innovation SuperHighway](#)". The proposed course authors are [Dr. Oliver Schwabe](#) and [Lynne Schneider](#).

Domain Specializations (One required).

These courses can be started upon completion of the foundation courses and are focused on disruptively accelerating the diffusion of innovations in the domain specializations into internal / external extended supply chains. These courses are based on case studies (see draft example at <https://open-european-innovation-network.blogspot.com/2020/02/entov-hvm-accelerating-innovation.html>) and relevant recent publications selected shortly before course start.

S-1: Complex Sales.

Using the [generic narrative for the diffusion of innovation](#) and based upon an industry case study from [xxx](#) this course aims to introduce participants to the specific nature of the complex sales process relevant for innovation diffusion from ideation to market saturation of solutions in high value manufacturing and their (extended) ecosystems This course is supported by the book [xxx](#) and enhanced by a variety of publications on the diffusion of innovation in manufacturing.

S-2: Advanced Manufacturing Technology.

Using the [generic narrative for the diffusion of innovation](#) and based upon an industry case study from [xxx](#) this course aims to introduce participants to the specific nature of innovation diffusion from ideation to market saturation for advanced manufacturing technology solutions in high value manufacturing and their (extended) ecosystems This course is supported by the book [xxx](#) and enhanced by a variety of publications on the diffusion of innovation in manufacturing.

S-3: Advanced Digital Manufacturing Systems.

Using the [generic narrative for the diffusion of innovation](#) and based upon an industry case study from **xxx** this course aims to introduce participants to the specific nature of innovation diffusion from ideation to market saturation for advanced digital manufacturing systems solutions in high value manufacturing and their (extended) ecosystems This course is supported by the book **xxx** and enhanced by a variety of publications on the diffusion of innovation in manufacturing.

S-4: Artificial Intelligence.

Using the [generic narrative for the diffusion of innovation](#) and based upon an industry case study from **xxx** this course aims to introduce participants to the specific nature of innovation diffusion from ideation to market saturation for artificial intelligence solutions in high value manufacturing and their (extended) ecosystems This course is supported by the book **xxx** and enhanced by a variety of publications on the diffusion of innovation in manufacturing.

S-5: Bio-Inspired Manufacturing.

Using the [generic narrative for the diffusion of innovation](#) and based upon an industry case study from **xxx** this course aims to introduce participants to the specific nature of innovation diffusion from ideation to market saturation for bio-inspired manufacturing solutions in high value manufacturing and their (extended) ecosystems This course is supported by the book **xxx** and enhanced by a variety of publications on the diffusion of innovation in manufacturing.

S-6: Block-chain.

Using the [generic narrative for the diffusion of innovation](#) and based upon an industry case study from **xxx** this course aims to introduce participants to the specific nature of innovation diffusion from ideation to market saturation for block chain solutions in high value manufacturing and their (extended) ecosystems This course is supported by the book **xxx** and enhanced by a variety of publications on the diffusion of innovation in manufacturing.

S-7: Smart Connected Factory.

Using the [generic narrative for the diffusion of innovation](#) and based upon an industry case study from **xxx** this course aims to introduce participants to the specific nature of innovation diffusion from ideation to market saturation for smart-connected factory solutions in high value manufacturing and their (extended) ecosystems This course is supported by the book **xxx** and enhanced by a variety of publications on the diffusion of innovation in manufacturing.

S-8: Cybersecurity for Products and Services.

Using the [generic narrative for the diffusion of innovation](#) and based upon an industry case study from **xxx** this course aims to introduce participants to the specific nature of innovation diffusion from ideation to market saturation for cybersecurity solutions for products and services in high value manufacturing and their (extended) ecosystems This course is supported by the book **xxx** and enhanced by a variety of publications on the diffusion of innovation in manufacturing.

S-9: Digital (Ecosystem) Platforms.

Using the [generic narrative for the diffusion of innovation](#) and based upon an industry case study from **xxx** course aims to introduce participants to the specific nature of innovation diffusion from ideation to market saturation for digital (ecosystems) platform solutions in high value manufacturing and their (extended) ecosystems This course is supported by the book **xxx** and enhanced by a variety of publications on the diffusion of innovation in manufacturing.

S-10: Digital Supply Chain Integration.

Using the [generic narrative for the diffusion of innovation](#) and based upon an industry case study from **xxx** this course aims to introduce participants to the specific nature of innovation diffusion from ideation to market saturation for digital supply chain integration solutions in high value manufacturing

and their (extended) ecosystems This course is supported by the book xxx and enhanced by a variety of publications on the diffusion of innovation in manufacturing.

S-11: Scalable Cloud Solutions.

Using the [generic narrative for the diffusion of innovation](#) and based upon an industry case study from xxx course aims to introduce participants to the specific nature of innovation diffusion from ideation to market saturation for scalable cloud solutions in high value manufacturing and their (extended) ecosystems This course is supported by the book xxx and enhanced by a variety of publications on the diffusion of innovation in manufacturing.

S-x (Further specializations can be requested by business partners).

Delivery Structure

The completion of a course by participants is structured for six weeks with a weekly asynchronous workload of 10 hours and a weekly synchronous workload of 2 hours. Moderation of a course by a dedicated trained facilitator is estimated to require 1 hour weekly per participant on average. The project aspires to deliver 10 full (foundation and specialization) courses with 10 participants each to 10 individual business enterprises as “closed events”, 10 courses with 10 participants as “open events” and also offer the courses as self-paced non-facilitated “open” offerings.

Core partners will accredit all courses at their institution, embed these in their offerings and deliver these while drawing on the course authors for actual delivery based on separate agreements.

Work Packages and Timeline

WP number	WP title	Project Month(s)
WP1	Preparation	1
WP2	Management & Administration	1-12
WP3	Conduct In-Depth Needs Analysis	1-3
WP3	Marketing and Sales	1-12
WP4	Quality Assurance	1-12
WP5	Create Foundation Courses	1-3
WP6	Create Specialization Courses	2-4
WP7	Course Delivery	4-12
WP8	Effectiveness Evaluation	4-12
WP9	Dissemination and Exploitation	6-12
WP10	Learning and Collaboration Community	4-12

Activity Team

The lead proposer EIT Manufacturing is to be defined.

ENTOV-HVM Proposal Partners are listed below:

Team Member	Strengths	Role	Contribution
Aligned to Milan – CLC South (Italy, Switzerland)			
<p>University of Padova (Country: IT. Acronym: PU. PIC: 999995602, Higher Education) - (Lead ENTOV-HVM Proposer)</p>	<ul style="list-style-type: none"> • Proven EU Program Delivery Expertise • Various Foundation Expertise • Various Specialization Domain Expertise • Strong Industry Relationships • Proven Course Delivery Capability 	<ul style="list-style-type: none"> • Manage Program • Author (Refresh) Courses • Accredit Courses • Market Courses • Deliver Courses 	<ul style="list-style-type: none"> • ECARDINALE Program Management • ECARDINALE Program Administration • Course Authoring and Refreshing (Course(s): xxx) • Institutional Accreditation of All Courses • Institutional Marketing of All Courses • Institutional Delivery of All Courses (with proposal partner course authors)
Aligned to Darmstadt – CLC Central (Germany, The Netherlands, Belgium)			
<p>Hochschule Kaiserslautern (Country: DE. Acronym: KU. PIC: 997739479, Higher Education).</p>	<ul style="list-style-type: none"> • Various Foundation Expertise • Various Specialization Domain Expertise • Strong Industry Relationships • Proven Course Delivery Capability 	<ul style="list-style-type: none"> • Author (Refresh) Courses • Accredit Courses • Market Courses • Deliver Courses 	<ul style="list-style-type: none"> • Course Authoring and Refreshing (Course(s): xxx) • Institutional Accreditation of All Courses • Institutional Marketing of All Courses • Institutional Delivery of All Courses (with proposal partner course authors)
<p>Technical University of Berlin (Country: DE. Acronym: BU. PIC: 999986678, Higher Education)</p>	<ul style="list-style-type: none"> • Various Foundation Expertise • Various Specialization Domain Expertise • Strong Industry Relationships • Proven Course Delivery Capability 	<ul style="list-style-type: none"> • Author (Refresh) Courses • Accredit Courses • Market Courses • Deliver Courses 	<ul style="list-style-type: none"> • Course Authoring and Refreshing (Course(s): xxx) • Institutional Accreditation of All Courses • Institutional Marketing of All Courses • Institutional Delivery of All Courses (with proposal partner course authors)
Aligned to Gothenburg – CLC North (Finland, Sweden, Estonia, Lithuania, Ireland)			
<p>National University of Ireland Maynooth (Country: IE. Acronym: MU. PIC: 999901415, Higher Education).</p>	<ul style="list-style-type: none"> • Various Foundation Expertise • Various Specialization Domain Expertise • Strong Industry Relationships 	<ul style="list-style-type: none"> • Author (Refresh) Courses • Accredit Courses • Market Courses • Deliver Courses 	<ul style="list-style-type: none"> • Course Authoring and Refreshing (Course(s): xxx) • Institutional Accreditation of All Courses • Institutional Marketing of All Courses • Institutional Delivery of All Courses (with proposal partner course authors)

Team Member	Strengths	Role	Contribution
	<ul style="list-style-type: none"> Proven Course Delivery Capability 		
Aligned to Bilbao– CLC West (France, Portugal, Spain)			
University of Lisbon (Country: PO. Acronym: LU. PIC: 949885305, Higher Education).	<ul style="list-style-type: none"> Various Foundation Expertise Various Specialization Domain Expertise Strong Industry Relationships Proven Course Delivery Capability 	<ul style="list-style-type: none"> Author (Refresh) Courses Accredit Courses Market Courses Deliver Courses 	<ul style="list-style-type: none"> Course Authoring and Refreshing (Course(s): xxx) Institutional Accreditation of All Courses Institutional Marketing of All Courses Institutional Delivery of All Courses (with proposal partner course authors)
Aligned to Vienna – CLC East (Czech Republic, Greece, Slovakia, Austria)			
Tuke University (Country: SK. Acronym: TU. PIC: 999839238, Higher Education).	<ul style="list-style-type: none"> Various Foundation Expertise Various Specialization Domain Expertise Strong Industry Relationships Proven Course Delivery Capability 	<ul style="list-style-type: none"> Author (Refresh) Courses Accredit Courses Market Courses Deliver Courses 	<ul style="list-style-type: none"> Course Authoring and Refreshing (Course(s): xxx) Institutional Accreditation of All Courses Institutional Marketing of All Courses Institutional Delivery of All Courses (with proposal partner course authors)

The extended team supports the core team based on their expertise, received “train the trainer” qualification in delivering all course, will deliver courses for core partners and consists of:

1. Eurecons Förderagentur GmbH (Country: DE. Acronym: EC. PIC: 905058792, SME – Consulting). Supports launching capstone projects.
2. Eurofocus International Consultants Ltd. (Country: DE. Acronym: EF. PIC: 996802071, SME – Innovation Research). Expert for innovation ecosystems and online course design and delivery.
3. ed-Media (Country: DE. Acronym: EM. PIC: 897137578, SME – Communications & Marketing). Expert in online content design and online course administration.
4. Riga Technical University (Country: LV). Acronym: RU. PIC: 999920718, Higher Education). Expert in effectiveness evaluation of online course deliveries.
5. Vilnius University (Country: LT. Acronym: VU. PIC: 999893170, Higher Education). Expert in integrating humanities with STEM innovation approaches.
6. University of Bremen (Country: DE. Acronym: UB. PIC: 999987454, Higher Education). Domain expert in artificial intelligence.
7. Kaunas University of Technology (Country: LT. Acronym: UK. PIC: 999844961, Higher Education). Domain expert in integrating humanities with STEM innovation approaches.
8. University of Luxembourg (Country: LU. Acronym: UL. PIC: 999878620, Higher Education). Domain expert in manufacturing ecosystems and living labs.

9. Entovation International Ltd. (Country: USA. Acronym: EI. PIC: 897107993, SME – Consulting). Expert in knowledge innovation.
10. Edelweiss Connect GmbH (Country: CH. Acronym: EW. PIC: 993226069, SME – Consulting). Expert in community building.
11. Pasher & Associates (Country: IL. Acronym: EP. PIC: 983984394, SME – Consulting). Expert in community building.

Extended support team members will furthermore be licenses to host and distribute courses in the same manner that core partners do.

Business partners act as lead industry representative to ensure that the unmet needs of industry are addressed. Potential business partners¹ from the ENTOV-HVM Network are:

1. Rolls-Royce Germany (Country: DE. Acronym: RRD. PIC: 999945356, Industry – Aerospace).
2. GB Innovation Ltd. (Country: IE. Acronym: GB. PIC: 897249904, SME – R&D).
3. Baldani Ltd. (Country: IS. Acronym: BA. PIC: None, SME – Food Manufacturing).
4. Aristoncavi (Country: IT. Acronym: AC. PIC: None, Industry – Cable Manufacturing).
5. Airholding - Embraer Research and Technology Europe (Country: PO. Acronym: AH. PIC: 898696271, SME - Aerospace).
6. BERD (Country: PO. Acronym: BE. PIC: 912009521, SME – Civil Engineering).
7. Exceuticals (Country: PO. Acronym: EX. PIC: 897313827, SME – Pharmaceuticals).
8. Volvo Lastvagnar AB (Country: SE. Acronym: VL. PIC: 998813269, Industry – Automobile).
9. Ausys Automation Systems (Country: SK. Acronym: AA. PIC: 909013773, SME – Robotics).
10. Sabanci University (Country: TU. Acronym: SU. PIC: 999856892, Higher Education / Manufacturing).

Target KPI Values

ECARDINALE aims to positively impact the EIT Core Key Performance Indicators for Education as follows:

1. Number of Graduates (ECTS): **xxx** participants completing **xxx** foundation and domain courses of ECTS accredited educational modules confirmed by the KIC Education Director.
2. Number of Start-Ups Created: **xxx** start-up PROPOSALS created through the capstone course.
3. Number of Participants: **xxx** individuals registering for **xxx** foundation and domain courses of ECTS accredited educational modules confirmed by the KIC Education Director.
4. Number of Institutions: **xxx** higher education institutions accrediting and offering educational modules.

Estimated Costs

Funding Requested

Since proposal partners are non-member organizations of the EIT Manufacturing they will act as "activity partners" whereby the maximum of €300,000 funding including travel and subsistence for an initial and a final face-to-face project meeting of all partners in Padua, Italy is requested.

Budget is reserved for:

1. The creation of ten (10) foundation and ten (10) specialization courses. The development of each course is estimated to require 5 weeks (25 days) full-time effort including preparation of

¹ Final core and extended team partners will be adding one new manufacturing company each.

supporting materials (i.e. videos and pod-casts). Course authors will be identified in the participating core and / or extended partners. For budgeting purposes the highest H2020 Erasmus+ daily unit cost for Knowledge Alliance is used, therefore €353 at a manager level. 20 courses will hence require 1,000 days of effort equating to €176,500. Based on re-use principles this calculated budget will be reduced to €150,000. Actual unit costs will be assigned based on the highest rate available for the country the authoring partner is located in. This budget will be distributed on a work package basis to authoring partners.

2. An initial and final face-to-face meeting of a maximum of 2 representatives from a maximum of 10 partners at the University of Padua for a two-day duration. Based on H2020 Erasmus+ travel and subsistence guidelines the budget for these meetings is set at the maximum of €360 round-trip travel plus subsistence of €100 for travel AND working days. Assume 1 day travel TO and one day travel FROM.
 - a. 20 representatives travelling to two events of two day duration = $(20 * €360) + (20 * 4 * €100) = €15,200$.
 - b. 20 representatives attending two events of two day duration = $(20 * 4 * €100) = € 8,000$
 - c. Further budget of €5,000 is reserved for coordination meetings with co-location centers.
 - d. Management meetings will be held as part of the initial and final events.
3. Business partners neither receive nor contribute funding.

100% of "KAVA" (KIC Complementary Activity) cost contribution is expected from the EIT Manufacturing, therefore staff funding (contribution to existing employment contracts due to partial position funding), sub-contractor funding (daily rates) and travel/subsistence.

It is acknowledged that participating organizations will be required to become a member of the EIT Manufacturing and pay a membership fee of 7.5% of the funding received equating to €22,500.

Funding is furthermore requested for support functions by the following core partners:

- University of Padova (Italy) – Program Management & Administration (0.5 FTE €35,000)
- Ed-Media (Germany) – Learning Content Creation (0.5 FTE €35,000)
- Tuke University (Slovakia)– Quality Management (0.25 FTE €12,000)
- Riga Technical University (Latvia) – Effectiveness Evaluation (0.25 FTE €12,000)

All partners receiving free (train the trainer) training and 36 month revenue sharing partnerships based on Creative Commons by Attribution only licensing.

The learning platform will be provided free of charge by ENTOV-HVM.

EIT Return on Investment

A return on investment will be achieved through a licensing based revenue sharing partnership related to commercial course deliveries by partners.

Intellectual Property

All content will be made publicly available under Creative Common Attribution Only license. Accredited delivery of content will generally be licensed under revenue sharing partnership principles.

Partner Profiles

Partner number – P1 – Eurofocus International Consultants Ltd.

Organisation name	Country
Eurofocus International Consultants Ltd	United Kingdom

Eurofocus International Consultants Ltd ("Eurofocus") is a SME consulting organization focused on creating and facilitating collaboration networks across broad ranges of diverse participants with a focus on accelerating the speed of diffusion of innovations from ideation to market saturation in high value manufacturing. Eurofocus is owner-led and has one employee, with an IT development team in India it has worked with for many years. The owner has researched and published widely while holding teaching positions at multiple US and European universities. The current key activity of Eurofocus is the creation and facilitation of the "Open European Network for ENTerprise InnOVation in High Value Manufacturing" (ENTOV-HVM). Eurofocus is affiliated with the global innovation think-tank Entovation Ltd (see www.entovation.com). Eurofocus activities build on two decades of work in joint-ventures with various partners such as Verna Allee Associates, Value Networks LLC, the Proof of Value Network and Entovation which, through work with many organizations globally has resulted in a large spectrum of tools, techniques and methods suited for fast and effective creation and facilitation of collaboration networks. In particular Eurofocus has been instrumental to the development of an advanced network analysis and visualization tool provided as a software-as-a- service which is pending re-activation in 2020. Website: www.innovation-web.eu.

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Dr. Oliver Schwabe	<p>Highly experienced business (value) network strategist with a wide range of academic and industrial experience in the ideation, design, development and implementation of change processes in multiple industries. Deeply skilled weaver of the relationship patterns fundamental to making change work across the social, organizational and technological interfaces of extended supply chains and supply networks.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Schwabe, O. Schneider, L. Almeida, N. Salvado, A.F. (2019) A Framework for Accelerating Innovation through Innovation Webs. Sustainability and Automation in Smart Constructions: Proceedings of the International Conference on Automation Innovation in Construction (CIAC-2019), Leiria, Portugal. Rodrigues, H., Gaspar, F., Fernandes, P., Mateus, A. (Eds.). Springer eBook on Advances in Science, Technology & Innovation (in press) • Schwabe, O. (2018) A Geometrical Framework for Forecasting Cost Uncertainty in Innovative High Value Manufacturing. PhD Thesis, Cranfield University • Schwabe, O., Shehab, E., Erkoyuncu, J.A. (2016) A Framework for Early Life Cycle Visualisation, Quantification and Forecasting of Cost Uncertainty in the Aerospace Industry. Journal Progress in Aerospace Sciences, 84, pp. 29-47.

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<ul style="list-style-type: none"> • Schwabe, O., Shehab, E., Erkoyuncu, J.A. (2015) Uncertainty Quantification Metrics for Whole Product Life Cycle Cost Estimates in Aerospace Innovation. Journal Progress in Aerospace Sciences, 77, pp. 1-24. • Allee, V., Schwabe, O. (2015) Value Networks and the True Nature of Collaboration. Meghan-Kiffer Press, ISBN-10: 0929652525 • Allee, V., Schwabe, O. (2009) Measuring the Impact of Research Networks in the EU: Value Networks and Intellectual Capital Formation. European Conference on Intellectual Capital, Haarlem, The Netherlands, April 28-29, 2009, Conference Proceedings. • Allee V., Innocenti, A., Koumpis, S., Mavridis, A., Molinari, F., Pasher, E., Shachar, S., Schwabe, O., Tektonidis, D., Tresman, M, Vontas, A. (2007) Effectiveness of ICT RTD Impacts on the EU Innovation System: Annex to the Final Report. Evaluation Study for the European Commission, DG Information Society and Media Directorate C Lisbon Strategy and Policies for the Information Society, Unit C3 – Evaluation and Monitoring

Partner number – P2 – Tuke University

Organisation name	Country
Tuke University	Slovakia

The Technical University of Kosice (TUKE) was established in 1952, with the aims to satisfy the needs of Eastern Slovakia in education and research. The content of education and research at TUKE includes the entire complex of sciences and arts. Today, TUKE has 9 different faculties: Faculty of Mining, Ecology, Process Control and Geotechnology, Faculty of Materials, Metallurgy a Recycling, Faculty of Mechanical Engineering, Faculty of Electrical Engineering and Informatics, Faculty of Civil Engineering, Faculty of Economics, Faculty of Manufacturing Technologies with a seat in Presov, Faculty of Arts, and Faculty of Aeronautics. The number of students currently attending nine TUKE Faculties exceeds 16,000. Approximately 13,000 of them are full-time students, out of which there are 8,500 Bachelor students, 4,000 Master students and over 500 PhD students. The department of Safety and Quality of Production (as a part of Faculty of mechanical Engineering) was established in 2001 and since then has been focusing on the education and research in three scientific disciplines. Safety area deals mainly with the safety management of technical systems, application of risk assessment of major hazard accidents and Occupational Health and Safety problematics. In the area of Production quality, it focuses on process management and improvement, implementation and integration of management systems. As for Maintenance management, it is mainly the implementation of TPM and RCM methods in practice. The common characteristic of all three scientific areas is their synergy based on risk management. Website: <http://www.tuke.sk/>

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Prof. Hana Pacaiova, PhD.	Full time professor and Deputy Head of the Department of Safety and Quality at Faculty of Mechanical Engineering, Technical University of Kosice. She obtained her degree as a professor in 2003 at Technical University of Kosice, in the field

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>Safety of Technical Systems. Her professional orientation is focused on Occupational safety and health issues, Risk Assessment – tools, Machinery safety, Safety management systems, SQAS assessment, Maintenance management (RCM, TPM), Project management. She is a member of of many research bodies (i.e. Supervisory board Slovak Maintenance Society, Member of Board Slovak Diagnostic Association, Member of Accreditation commission Slovak National Labor Inspectorate, Member of European Health and Safety Committee (EFNMS)). She is also a board member of the international conference AHFE, USA. She is author and co – author of more than 270 papers, includes 21 education books and publication. Her worldwide experience are linked also with international projects (i.e. Twinning Adviser in successful project in Czech Republic (Strengthening of Labor Inspection Administration, 2007) and Enlargement Action Plan (New members of Topic Center - Bilbao, 2005, 2004)). She was also task leader for project iNTegRisk (7FP). Her practical experience are linked with many cooperation with industry and several national researches and projects granted by European structural funds.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Development of GRAM - A risk measurement tool using risk based thinking principles / H. Pačaiová, J. Sinay, A. Nagyová - 2017. In: Measurement. Vol. 100 (2017), p. 288–296. - ISSN 0263-2241 Available at: http://www.sciencedirect.com/science/article/pii/S0263224117300040. • An effective model for the quality of logistics and improvement of environmental protection in a cement plant / Dušan Malindžák, Andrzej Pacana, Hana Pačaiová - 2017. In: Przemysl Chemiczny. Vol. 96, no. 9 (2017), p. 1958-1962. - ISSN 0033-2496 • Maintenance management as a basic tool for safety prevention / Hana Pačaiová - 2009. In: Kolloquien zum Qualitätsmanagement. No. 3 (2009), p. 65-70. - ISSN 1611-6267 • Human reliability in maintenance task / Hana Pačaiová - 2010. In: Frontiers of Mechanical Engineering in China. Vol. 5, no. 2 (2010), p. 184-188. - ISSN 1673-3479 • Safety and risk philosophy in maintenance management / Hana Pačaiová - 2010. - 1 elektronický optický disk (CD-ROM). In: Applied Human Factors and Ergonomics (AHFE) : 3rd International Conference : 17-20 July 2010, Miami, Florida USA. - S.I. : USA Publishing, 2010 P. 1-9. - ISBN 978-0-9796435-4-5
Dipl. Ing. Anna Nagyová, PhD.	<p>She is a senior lecturer and internal auditor for quality management system (QMS) at Technical University of Kosice. She is the holder of many certificates, from different area (i.e. Ms Project – basics, Project management, Personal management, Information and communication technologies). She was team member of several different projects: Implementation of QMS, Implementation of BBS in Whirlpool, Slovakia, 7FP international project, 3 national projects and 5 projects from structural funds.</p>

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Development of GRAM - A risk measurement tool using risk based thinking principles / H. Pačaiová, J. Sinay, A. Nagyová - 2017.In: Measurement. Vol. 100 (2017), p. 288–296. - ISSN 0263-2241 available at: http://www.sciencedirect.com/science/article/pii/S0263224117300040. • Systematic approach in maintenance management improvement / Hana Pacaiova ... [et al.] - 2013.In: International Journal of Strategic Engineering Asset Management. Vol. 1, no. 3 (2013), p. 228-237. - ISSN 1759-9733 • An Empirical Study of Root-Cause Analysis in Automotive Supplier Organisation / Anna Nagyová ... [et al.] - 2019.In: Kvalita Inovácia Prosperita = Quality Innovation Prosperity. - Košice (Slovensko) : Nadácia Q-Impulz Roč. 23, č. 2 (2019), s. 34-45 [print]. - ISSN 1335-1745 Spôsob prístupu: http://qip-journal.eu/index.php/QIP/article/view/1243/1128. • Methodic of Quality Control Evaluation in research Projects / Anna Nagyová, Hana Pačaiová - 2013.In: 16th QMOD-ICQSS Proceedings : Quality Management and Organizational Development Conference : 4th - 6th September 2013, Portorož, Slovenia. - Maribor : University of Maribor, 2013 P. 1295-1306. - ISBN 978-961-232-269-4 • Risk management as a common aspect of management systems / Hana Pacaiova, Stefan Markulik, Anna Nagyova - 2016.In: QMOD-ICQSS Conference. - Lund : University Library Press, 2016 P. 639-652. - ISBN 978-91-7623-086-2
<p>RNDr. Zuzana Kimakova, PhD.</p>	<p>She is a senior lecturer of Department of applied mathematics and informatics, on Faculty of Mechanical Engineering of TUKE, where she works as lecturer of mathematics courses for gradual and post-gradual programs. She also participates in research and development, focusing on application of mathematical methods, mainly in field of statistics analysis. She participated in research and development of 5 VEGA projects, 1 KEGA project, and 1 project APVV. She is an author and co –author of 1 scientific paper in accredited foreign scientific journal, 15 papers in foreign and 12 papers in domestic journals. She is also co-author of 4 university textbooks, 9 coursebooks.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • KNEŽO, Dušan - ANDREJIOVÁ, Miriam - KIMÁKOVÁ, Zuzana - RADCHENKO, Svetlana: Determining of the optimal device lifetime using mathematical renewal models - 2016. In: TEM Journal. Vol. 5, no. 2 (2016), p. 121-125. - ISSN 2217-8309 • ANDREJIOVÁ, Miriam - KIMÁKOVÁ, Zuzana - PIŇOSOVÁ, Miriama - KRÁLIKOVÁ, Ružena: Application of Multidimensional Statistical Methods for the Air Quality Evaluation in the Vicinity of a Strategic Plant - 2016. In: The Holistic Approach to Environment. Vol. 6, no. 3 (2016), p. 105-118. -

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	ISSN 1848-0071
RNDr. Miriam Andrejiova, PhD.	<p>She graduated in 1997 at Faculty of Science at Pavol Jozef Šafárik University in Košice in field of mathematics and physics. She obtained her postgraduate degrees in „Theory of Physics Teaching” at Faculty of Science at University of Pavol Jozef Šafárik in Košice. Since 1998 she has worked as assistant at Department of Applied Mathematics and Informatics at Faculty of Mechanical Engineering, Technical University in Košice. She is an author or co-author of two monographs, university textbooks and many scientific publications aimed at applying mathematical and statistical methods in practice.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • ANDREJIOVÁ, Miriam - GRINČOVÁ, Anna - MARASOVÁ, Daniela: Measurement and simulation of impact wear damage to industrial conveyor belts. In: Wear. Vol. 368 (2016), p. 400-407, ISSN 0043-1648.(vdatabáze CurrentContents) • ANDREJIOVÁ, Miriam - GRINČOVÁ, Anna: Classification of impact damage on a rubber-textile conveyor belt using Naive-Bayes methodology.In: Wear. Vol.414-415 (2018), p. 59-67.(vdatabáze CurrentContents) • ANDREJIOVÁ, Miriam - GRINČOVÁ, Anna - MARASOVÁ, Daniela: Failure analysis of the rubber-textile conveyor belts using classification model.In: Engineering Failure Analysis. č. 101 (2019), p. 407-417, ISSN 1350-6307.(vdatabáze CurrentContents)
Dipl. Ing. Tomas Stejskal, PhD.	<p>He is associate professor at Faculty of Mechanical engineering. His areas of interest are technical diagnostics (vibrodiagnostics), machine maintenance, machine design and methodology or philosophy of technical creativity. He is also interested in the consistency of modern physics and mathematics. Currently he teaches modelling in CAD systems and design of production machines.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Stejskal, T. et al. Specific principles of work area stiffness measurement applied to a modern three-axis milling machine. The International Journal of Advanced Manufacturing Technology, 2019, 102.5-8: 2541-2554. • Stejskal, T., et al. Measurement of Maximum Deviation from Roundness Based on the Inverse Kinematics Principle. Measurement Science Review, 2019, 19.6: 271-278. • Stejskal, T., et al. Measurement of static stiffness after motion on a three-axis CNC milling table. Applied Sciences, 2018, 8.1: 15. • Stejskal, T., et al. Elimination of thermal drift in measuring the positioning accuracy of a three axis milling machine. Advances in Science and

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	Technology Research Journal, 2017, 11.
Assos. prof. Renata Turisova, PhD.	<p>She is associate professor at Faculty of Mechanical Engineering, Department of safety and quality. Professional orientation or specialization: integrated management with focus on quality and safety, statistical and quantitative methods in quality, management and marketing. 163 publications.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Increasing the accuracy of the FMEA method / Renáta Turisová, Jaroslava Kádárová - 2015.In: Investment Management and Financial Innovations. Vol. 12, no. 4 (2015), p. 176-186. - ISSN 1810-4967 • Ergonomics versus product attractiveness / Renata Turisova, JurajSinay - 2017.In: Theoretical Issues in Ergonomics Science. Vol. 18, no. 1 (2017), p. 1-13. - ISSN 1464-536X • Proposal of performance assessment by integration of two management tools / JaroslavaKádárová, JozefMihok, Renáta Turisová - 2013.In: Quality Innovation Prosperity. Roč. 17, č. 1 (2013), s. 88-102. - ISSN 1335-1745 Available at: http://www.qip-journal.eu/index.php/QIP/article/view/143/145.
Prof. Jozef Svetlik, PhD.	<p>He is a full time professor at the Department of Production Machinery, Faculty of Mechanical Engineering, Technical University of Kosice. His activity is focused on Design of Modular Manufacturing Equipment, CAD-supported Design and Engineering Methodology, Industrial Design. He was a member of international projects: Universities as engines of knowledge society development, Research of a new generation of materials, constructions and technologies for the 21st century industry also head of and member of several national projects.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Virtual prototyping of machine tools / Peter Demeč, Jozef Svetlík - 1. vyd - Lüdenscheid : RAM-Verlag - 2017. - 156 p. - ISBN 978-3-942303-61-3. • Numerical Calculation of Oil Dispersion through the Air Flow Applied to the Inner Surface of Slim Tubes / Jozef Svetlík ... [et al.] - 2019. In: Applied Sciences. - Basel (Švajčiarsko) : Multidisciplinary Digital Publishing Institute Roč. 9, č. 12 (2019), s. 1-19 [online]. - ISSN 2076-3417 • Measurement of static stiffness after motion on a three-axis CNC milling table / Tomáš Stejskal ... [et al.] - 2018. In: Applied Sciences - Basel. Vol. 8, no. 1 (2018), p. 1-17. - ISSN 2076-3417 • Film thickness estimation for the oil applied to the inner surface of slim tubes / Jozef Svetlík ... [et al.] - 2017. In: Applied Sciences. Vol. 7, no. 10 (2017), p. 1-15. - ISSN 2076-3417 • Research into oil film coating of a steel pipe interior by oil mist blowing / J.

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	Svetlík ... [et al.] - 2018. In: Metalurgija. Vol. 57, no. 1-2 (2018), p. 95-98. - ISSN 0543-5846
Prof. Milan Oravec, PhD.	<p>He is a full time professor at the Department of Safety and Quality Production, Faculty of Mechanical Engineering, Technical University of Kosice. Milan is a member of several scientific councils and trade unions. Within the framework of scientific and professional activities, he focuses on safety, especially in the fields of engineering, chemistry, petrochemistry and critical infrastructure. The publication activity as well as UV and PP are on the TUKE library website. At present, he addresses the causality of phenomena in energy fields representing phenomena in engineering, electrical engineering, including processes in I4. He solved approximately 150 technical tasks for practice based on economic activity. He is a specialist in the prevention of major industrial accidents and a member of an expert committee at the Ministry of the Environment of the Slovak Republic within the Commission for the Prevention of Serious Industrial Accidents. In the Czech Republic, in several CoR research institutions, e.g. SUJCHBO. He is currently developing relations with Instytut Techniczny Wojsk Lotniczych (ITWL) Warszawa in the field of mapping phenomena in energy, aviation through magnetic fields.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Image Encryption Algorithm with Plaintext Related Chaining / Ľuboš Ovseník ... [et al.] - 2019. In: Computing and Informatics : Computers and Artificial Intelligence. - Bratislava (Slovensko) : Ústav informatiky Roč. 38, č. 3 (2019), s. 647-678 [print]. - ISSN 1335-9150 • Influence of the working environment on safety and health protection at work and of the employees in an office space / Milan Oravec, Michaela Balážiková, Marianna Tomašková - 2018. In: Science. Business. Society. Vol. 3, no. 3 (2018), p. 115-121. - ISSN 2367-8380 • Experimental measurements of low-frequency magnetic fields in terms of safety / Milan Oravec ... [et al.] - 2016. In: MM Science Journal. Vol. 2016, no. October (2016), p. 1066 - 1072. - ISSN 1803-1269 • Extra low frequency magnetic fields of welding machines and personal safety / Hana Pačaiová ... [et al.] - 2018. In: Journal of Electrical Engineering. Roč. 69, č. 6 (2018), s. 493-496. - ISSN 1335-3632 • Modification of procedure to initiate the solids according to EN 60695-2-10 for materials used in historic buildings / Andrea Majlingová ... [et al.] - 2013. In: European Journal of Environmental and Safety Sciences. Roč. 1, č. 1 (2013), s. 8-12. - ISSN 1339-472X
Dipl. Ing. Juraj Glatz, PhD.	He is a researcher at the Department of Safety and Quality of Production, Faculty of Mechanical Engineering, Technical University of Košice. His activity is focused on major industrial accidents, explosion prevention in industry, risk assessment, occupational health and safety, road tunnels safety and risks in the context of Industry 4.0. He was a member of international project 7. RP iNTeg-Risk Early Recognition, Monitoring, and Integrated Management of Emerging,

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>New Technology related Risks and also member of several national projects.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Maintenance management system / Hana Pačaiová, Juraj Glatz - 2015. In: MM Science Journal. October (2015), p. 665-669. - ISSN 1805-0476 Spôsob prístupu: http://www.mmscience.eu/october-2015.html... • The application of magnetic materials for a neodymium-based thermal fuse in sprinklers / Michal Hovanec, Michal Gorzás, Juraj Glatz - 2016. In: Production Management and Engineering Sciences. - Leiden : CRC Press, 2016 P. 79-83. - ISBN 978-1-138-02856-2 Available at: http://www.scopus.com/record/display.uri?eid=2-s2.0-84949845079&origin=resultslist&sort=plf-f&src=s&... • Oil tank fire modeling for the purposes of emergency planning / Juraj Glatz, Michal Gorzás, Michal Hovanec - 2016. In: Production Management and Engineering Sciences. - Leiden : CRC Press/Balkema, 2016 P. 73-77. - ISBN 978-1-138-02856-2 Available at: http://www.scopus.com/record/display.uri?eid=2-s2.0-84949895138&origin=resultslist&sort=plf-f&src=s&... • Analysis of low frequency magnetic fields generated during welding / Juraj Glatz, Michal Gorzás, Zuzana Kotianová - 2017. In: MM Science Journal. Vol. 2017, no. December (2017), p. 2046-2049. - ISSN 1803-1269 • Risk management in context of Industry 4.0 / Juraj Sinay, Zuzana Kotianová, Juraj Glatz - 2018. In: Industry 4.0 : an International Scientific Journal. Roč. 3, č. 6 (2018), s. 340-342 [print]. - ISSN 2534-8582
<p>RNDr. Zuzana Kotianová, PhD.</p>	<p>She is scientist at the Department of Production Safety and Quality, Faculty of Mechanical Engineering, Technical University of Košice. Her activity is focused on major industrial accidents, explosion prevention in industry, risk assessment, occupational health and safety, behaviour based safety (BBS) and risks in the context of Industry 4.0. She was a member of international project 7. RP iNTeg-Risk Early Recognition, Monitoring, and Integrated Management of Emerging, New Technology related, Risks and also member of several national projects.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Measurement of low-frequency noise during CNC machining and its assessment / Michaela Balážiková ... [et al.] - 2018. In: Measurement. Vol. 119 (2018), p. 190-195. - ISSN 0263-2241 Available: https://www.sciencedirect.com/science/article/pii/S0263224118300903... • Intermediate ceiling board - risk element of road tunnels / Milan Oravec ... [et al.] - 2017. In: Fire protection,safety and security 2017. - Zvolen : Technická univerzita vo Zvolene, 2017 s. 149-160. - ISBN 978-80-228-2957-1 • Modelling ammonia pipeline leakage for the proposed pipeline change /

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>Hana Pačaiová, Zuzana Kotianová, Tomáš Brestovič - 2016. In: Production Management and Engineering Sciences. - Leiden : CRC Press/Balkema, 2016 P. 509-515. - ISBN 978-1-138-02856-2 Available: http://www.scopus.com/record/display.uri?eid=2-s2.0-84949921155&origin=resultslist&sort=plf-f&src=s&...</p> <ul style="list-style-type: none"> • Solid aerosol - source of occupational diseases / Juraj Glatz, Zuzana Kotianová, Michal Gorzás - 2019. In: MM Science Journal. - Prague (Česko) : MM Publishing č. December (2019), s. 1-4 [print, online]. - ISSN 1803-1269 • [GLATZ, Juraj - KOTIANOVÁ, Zuzana - GORZÁS, Michal] • Analysis of low frequency magnetic fields generated during welding / Juraj Glatz, Michal Gorzás, Zuzana Kotianová - 2017. In: MM Science Journal. Vol. 2017, no. December (2017), p. 2046-2049. - ISSN 1803-1269
Assos. prof. Stefan Markulik, PhD.	<p>He is associated professor at Department of Safety and Quality Production. He is also manager at Faculty of mechanical engineering and internal auditor for quality management system (QMS). His scientific and professional activities are focused to lecturing, publishing, participating in national and international scientific conferences. He has experience with several research projects and cooperation with industry. He actively provides professional lectures and helps to create cooperation between students and enterprises. His mainly orientation is implementation of management systems in enterprises.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Balážiková, M., Sinay, J., Dulebová, M., Markulik, Š., Kotianová, Z.: Measurement of low-frequency noise during CNC machining and its assessment - 2018. In: Measurement. Vol. 119 (2018), p. 190-195. - ISSN 0263-2241. • Pačaiová, H., Sinay, J., Turisová, R., Hajduová, Z., Markulik, Š.: Measuring the qualitative factors on copper wire surface - 2017. In: Measurement. Vol. 109 (2017), p. 359-365. - ISSN 0263-2241. • Nagyová, A., Balážiková, M., Markulik, Š., Sinay, J., Pačaiová, H.: Implementation proposal of OH&S management system according to the standard ISODIS 45001 - 2018. In: Advances in Intelligent Systems and Computing 604 : AHFE 2017. - Cham : Springer International Publishing, 2018 P. 472-485. - ISBN 978-3-319-60525-8. • Markulik, Š., Cehlár, M., Kozel, R.: Process approach in the mining conditions - 2018. In: Acta Montanistica Slovaca. Roč. 23, č. 1 (2018), s. 46-52. - ISSN 1335-1788. • Markulik, Š., Kamenický, L.: How to transform the requirements into the management system? - 2015. In: SGEM 2015. - Sofia : STEF92 Technology, 2015 P. 689-693. - ISBN 978-619-7105-40-7
Assos. prof. Jaroslava Kadarova, PhD.	<p>She is an associate professor at the Institute of Management, Industrial and Digital Engineering, of the Faculty of Mechanical Engineering, Technical University of Kosice. In 1998 she graduated from the University of Economics in Bratislava. She received her PhD. degree in Engineering Technologies and</p>

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>Materials from the Technical University of Kosice in 2006. Since 2010 she is working as associate professor in Industrial Engineering. Her research interests include strategic, financial, and crisis management, controlling and innovations.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Operating parameters at hydrogen leak from a metal hydride container applied in automotive industry and pressure effects of an explosion on the environment / Tomáš Brestovič ...[et al] - 2019.In: Journal of Molecular Liquids. - Amsterdam (Holandsko) : Elsevier Roč. 290 (2019), s. 11206-11206 [print, online]. - ISSN 0167-7322 Spôsob prístupu: https://www.sciencedirect.com/science/article/pii/S0167732219308372. • Ecological analysis related to creation of gaseous emissions within transport focused on fulfilment of the future emission standards / Michal Puškár, Melichar Kopas, Jaroslava Kádárová - 2017.In: Transportation Research Part D. Vol. 57 (2017), p. 413–421. - ISSN 1361-9209 • ADC Environmental study focused on the suitability of vehicle certifications using the new European driving cycle (NEDC) with regard to the affair "dieselgate" and the risks of NOx emissions in urban destinations / Michal Puškár ... [et al.] - 2019.In: Air Quality, Atmosphere and Health. - DORDRECHT (Holandsko) : Springer Nature Roč. 12, č. 2 (2019), s. 251-257 [online]. - ISSN 1873-9318 Available at: https://link.springer.com/article/10.1007/s11869-018-0646-5. • ADC Complex analysis focused on influence of biodiesel and its mixture on regulated and unregulated emissions of motor vehicles with the aim to protect air quality and environment / Michal Puškár ... [et al.] - 2019.In: Air Quality, Atmosphere and Health. - DORDRECHT (Holandsko) : Springer Nature Roč. 12, č. 7 (2019), s. 855-864 [online]. - ISSN 1873-9318 Spôsob prístupu: https://link.springer.com/article/10.1007%2Fs11869-019-00704-w. • Improvement of production efficiency of tapered roller bearing by using plant simulation / Peter Malega, Jaroslava Kádárová, Ján Kobulnický - 2017.In: International Journal of Simulation Modelling. Vol. 16, no. 4 (2017), p. 682-693. - ISSN 1726-4529

Partner number – P3 – Riga Technical University

Organisation name	Country
Riga Technical University / Rigas Tehniska universiate	Latvia

Riga Technical University (RTU) is an internationally recognized European university that consists of nine faculties and 35 institutes. RTU is the leading Latvian technical university that is active in knowledge society technologies. RTU has a strong vision to transform the large set of multi-disciplinary expertise into the reusable knowledge of a networked society. RTU has installed the High Performance Computing (HPC) facility and it is available it to RTU institutes as well as international researchers. Distance Education Study Centre (DESC) of RTU, the partner in FuturICT2.0 project, has had a long term experience in 10 cutting-edge EU FP5/FP6/FP7/CIP-PSP-ICT/H2020 projects and in more than 30 international projects related to ICT, Learning Analytics, Data Mining, and Creativity Development. DESC has received the Riga Council Innovation Award 2010 for contribution in eLearning and National research strategy, and the Baltic Sea region BOLDIC 2013 award for the best innovation in developed of multi-screen eLearning technology. DESC has a Multimedia Lab and tools to successfully carry out research on multiplatform ICT solutions. Participating in FuturICT2.0 project events, doctoral schools, seminars, and conferences the team has cutting-edge knowledge in the complexity science, externalities concepts, Finance 4.0 and DLT technology. Team has publications related to research & development of knowledge society technologies and related educational activities. Project team has got a cutting edge knowledge on Economic Complexity and Economic Fitness research by participating in ERA-NET project FuturICT 2.0. Website: www.rtu.lv.

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Dr.phys. Atis Kapenieks	<p>Scientific project manager in Latvia, has a great experience in administration and leading of EU and National level ICT, educational and e-learning projects. He is Head of Latvian delegation in EU 5th, 6th,7th Framework and Horizon 2020 ICT program.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Daugule, I., Kapenieks, A. The Data of the Initial Motivation – A Valuable Source for the Development of the Course Content. A Case Study in the Group of Business Students. International Journal of Engineering & Technology, 2018, Vol.7, No.2.28, 89.-94.lpp. ISSN 2227-524X. • Daugule, I., Kapenieks, A. Collaborative Knowledge Flow — Mapping the E-Learning Environment. No: EDULEARN17: 9th International Conference on Education and New Learning Technologies: Proceedings, Barcelon, 3.-5. July, 2017. 2017, 3304.-3311.lpp. ISBN 978-84-697-3777-4. ISSN 2340-1117. • Gorbunovs, A., Kapenieks, A., Cakula, S. Self-Discipline as a Key Indicator to

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>Improve Learning Outcomes in E-Learning Environment. Procedia - Social and Behavioral Sciences, 2016, Vol.231, 256.-262.lpp. ISSN 1877-0428.</p> <ul style="list-style-type: none"> • Kapenieks, A., Žuga, B., Štāle, G., Jirgensons, M. E-Ecosystem-Driven Approach to Lifelong Learning for the Next Generation. No: New Media for Active Learning in the Digital Age: International Conference: New Media for Active Learning in the Digital Age, Lietuva, Šiauliai, 7.-8. jūnijs, 2013. Šiauliai: Šiauliu universitetas, 2013, 6.-15.pages. ISBN 9786094302039. • Kapenieks, A., Žuga, B., Kapenieks, J., Majore, G., Jirgensons, M., Ozoliņa, A., Apinis, B., Vītoliņa, I., Gorbunovs, A., Kudiņa, I., Kapenieks, J., Gulbis, R., Treijere, M., Slaidiņš, I., Jākobsone-Šnepste, G., Gibže, S., Kapenieks, K., Tomsons, D., Ulmane-Ozoliņa, L., Letinslis, J., Cakula, S., Balode, A., Blija, T., Vilkonis, R., Cibulskis, G., Rutkauskienē, D. "eBig3": A New Triple Screen Approach for the Next Generation of Lifelong Learning. No: Recent Advances in Computer Science, Greece, Rhodes Island, 16.-19. jūlijs, 2013. Rhodes Island: 2013, 306.-310.lpp. ISBN 978-960-474-311-7. ISSN 1790-5109. • Gorbunovs, A., Kapenieks, A., Kudiņa, I. Advancement of E-Portfolio System to Improve Competence Levels. No: Society, Integration, Education : Proceedings of International Scientific Conference: International Scientific Conference "Society, Integration, Education", Latvija, Rēzekne, 24.-25. maijs, 2013. Rēzekne: Rēzeknes Augstskola, 2013, 61.-72.lpp. • Gorbunovs, A., Kapenieks, A. An Effect of ePortfolio System on Competence Improvement at the Different Stages of the Course. No: Rural Environment. Education. Personality (REEP): Proceedings of the 6th International Scientific Conference, Latvija, Jelgava, 20.-21. marts, 2013. Jelgava: Latvia University of Agriculture, 2013, 200.-206.lpp. ISSN 2255-8071. • Gorbunovs, A., Kapenieks, A., Kudiņa, I. Competence Development in Combined Assessment and Collaborative E-Portfolio Information System. Procedia Computer Science, 2013, Vol.26, 79.-100.lpp. ISSN 1877-0509. • Jonhson, J., Buckingham Shum, S., Willis, A., Swithenby, S., Zamenopoulos, T., MacKay, R., Lorincz, A., Costea, C., Bourgine, P., Louca, J., Kapenieks, A., Kelley, P., Caird, S., Bromley, J., Deakin Crick, R., Goldspink, C., Bishop, S., Helbing, D. The Future ICT Education Accelerator. European Journal of Physics, 2012, Vol.214, Iss.1, 215.-243.lpp. ISSN 1951-6355. e-ISSN 1951-6401.
Ieva Vītoliņa	<p>Researcher, has long term experience in e-content design and delivery. She will contribute to the data analytics and algorithms design. She ambassador of Latvian Open Data Association with good knowledge of Latvian IT industry Landscape.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Vītoliņa, I., Kapenieks, A. User Analysis for E-Inclusion in a Blended Learning Course Delivery Context. No: Society, Integration, Education: Proceedings of the International Scientific Conference, Latvija, Rēzekne, 23.-24. maijs, 2014. Rezekne: Rezekne Higher Education Institution, 2014, 367.-378.lpp.

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>ISBN 978-9984-44-141-2. ISSN 1691-5887. Pieejams: doi:10.17770/sie2014vol2.656</p> <ul style="list-style-type: none"> • Vītoļiņa, I., Kapenieks, A. e-Inclusion and Knowledge Flows in e-Course Delivery. No: 5th International Conference on Computer Supported Education (CSEDU 2013): Proceedings, Vācija, Aachen, 6.-7. maijs, 2013. Aachen: 2013, 417.-422.lpp. ISBN 978-989-8565-53-2. Pieejams: doi:10.5220/0004385204170422 • Vītoļiņa, I., Kapenieks, A. E-Inclusion Measurement by E-Learning Course Delivery. Procedia Computer Science, 2013, Vol.26, 101.-112.lpp. ISSN 1877-0509. Pieejams: doi:10.1016/j.procs.2013.12.010
Viktors Zagorskis	<p>Has substantial research experience in Data Analytics and Machine Learning technologies. He will oversee the technical design of IDL Technology.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Zagorskis V., Kapenieks A., Review of Cognitive Energy Flow Model Concept for Virtual Student, Proceedings of the 11th International Conference on Computer Supported Education, Heraklion, Crete, Greece, 2-4 May 2019, Vol.2, pp.542-549, ISBN: 978-989-758-367-4 • Zagorskis V., Kapenieks A., and Gorbunovs A. Emotions identification utilizing periodic handwriting on mobile surfaces. Periodicals of Engineering and Natural Sciences. Vol 7, No 1 (2019). pp.228-237.. • Zagorskis V., Kapenieks A., and Gorbunovs A. Cognitive Energy Flow Model Concept for Virtual Student. Proceedings of CELDA 2018. 15th International Conference on Cognition and Exploratory Learning in Digital Age, October 26, 2018, pp. 358-362., ISBN: 978-989-8533-81-4 © 2018. • Zagorskis, V., Kapenieks, A. Impact of LMS Selection on Students' Activity Students' Activity Evaluation Problems in Moodle and Open edX Learning Management Systems. No: Proceedings of the 10th International Conference on Computer Supported Education, Portugāle, Funchal, Madeira, 15.-17. marts, 2018. Portugāle: 2018, 505.-512.lpp. ISBN 978-989-758-291-2. • Gintere, I., Zagorskis, V., Kapenieks, A. Concepts of e-Learning Accessibility Improvement – Codes of New Media Art and User Behavior Study. No: Proceedings of the 10th International Conference on Computer Supported Education, Portugāle, Funchal, Madeira, 15.-17. march, 2018. Portugal: 2018, 426.-431.lpp. ISBN 978-989-758-291-2.
Bruno Žuga	<p>He has a degree in Electronics and Telecommunications. His research experience includes research in data mining, learning analytics, multiscreen e-learning; work experience – instructional design for interactive TV and mLearning. He will contribute to state of the art research, evaluation methodology development and validation of results.</p>

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Žuga, B., Kapenieks, K., Vītoliņa, I., Mangusa, L., Kapenieks, A. eLearning Approach eBig3: Development, Delivery and Evaluation. No: Sabiedrība, integrācija, izglītība: Starptautiskās zinātniskās konferences materiāli, Latvija, Rēzekne, 23.-24. maijs, 2014. Rēzekne: Rēzeknes Augstskola, 2014, 379.-387.lpp. ISBN 978-9984-44-141-2. ISSN 1691-5887. • Žuga, B., Kapenieks, A., Gorbunovs, A., Jirgensons, M., Kapenieks, J., Kapenieks, J., Vītoliņa, I., Jākobsone-Šņepste, G., Kudiņa, I., Kapenieks, K., Timšāns, Ž., Gulbis, R. Concept of Learner Behaviour Data Based Learning Support. Procedia Computer Science, 2015, Vol.43, 134.-140.lpp. ISSN 1877-0509. Pieejams: doi:10.1016/j.procs.2014.12.018 • Gorbunovs, A., Kapenieks, A., Kapenieks, K., Žuga, B., Gulbis, R., Kudiņa, I. Conceptual Design and Model of the Feedback Solutions in the Adaptive Integrated Technological Systems. No: The 11th International Scientific Conference "eLearning and Software for Education": Book of Abstracts, Rumānija, Bucharest, 23.-24. aprīlis, 2015. Bucharest: 2015, 42.-43.lpp. Pieejams: doi:10.12753/2066-026X-15-031 • Gorbunovs, A., Kapenieks, A., Žuga, B., Gulbis, R., Kapenieks, K., Kudiņa, I. Conceptual Design and Model of the Feedback Solutions in the Adaptive Integrated Technological Systems. No: Proceedings of the 11th International Scientific Conference eLearning and Software for Education (eLSE-2015), Rumānija, Bucharest, 23.-24. aprīlis, 2015. Bucharest: "Carol I" National Defence University Publishing House, 2015, 210.-215.lpp. ISSN 2343-7669.
Janis Kapenieks	<p>PhD student, played crucial role in creation of multiscreen e-learning environment in university. Long-term experience in building and running high-tech companies in developing countries. He will lead the educational needs research and modelling. He also has experience in scientific software prototype development.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Kapenieks, A., Žuga, B., Vītoliņa, I., Kapenieks, J., Gorbunovs, A., Jirgensons, M., Kapenieks, J., Kudiņa, I., Kapenieks, K., Gulbis, R., Balode, A. Piloting the eBig3: A Triple-screen e-Learning Approach. No: Proceedings of the 6th International Conference on Computer Supported Education (CSEDU 2014), Vol.1, Spānija, Barcelona, 1.-3. aprīlis, 2014. [S.l.]: SciTePress, 2014, 325.-329.lpp. ISBN 978-989-758-020-8. Pieejams: doi:10.5220/0004848603250329 • Kapenieks, A., Žuga, B., Majore, G., Kapenieks, J., Jirgensons, M., Ozoliņa, A., Apinis, B., Vītoliņa, I., Gorbunovs, A., Kudiņa, I., Kapenieks, J., Gulbis, R., Treijere, M., Slaidiņš, I., Jākobsone-Šņepste, G., Gibže, S., Kapenieks, K., Tomsons, D., Ulmane-Ozoliņa, L., Cakula, S., Balode, A., Blija, T., Vilkonis, R.,

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	Cibulskis, G., Rutkauskiene, D., Gailesaite, L. eBig3: Experience in Using Triple- Screen Technology in Lifelong Learning. No: New Media for Active Learning in the Digital Age: International Conference, Lietuva, Šiauliai, 7.-8. jūnijs, 2013. Šiauliai: Šiauliu universitetas, 2013, 16.-25.lpp. ISBN 978-609-430-203-9.

Partner number – P4 – Lisbon University

Organisation name	Country
Universidade de Lisboa/Técnico Lisboa	Portugal

Universidade de Lisboa was created in July 2013, as a result of the merger of Universidade Técnica de Lisboa and Universidade de Lisboa (tracing its origins to the establishment of the Portuguese University in 1290). Universidade de Lisboa has 18 schools and over 100 research units, around 50,000 students, 4.000 lecturers, 2.500 non-academic staff and 400 degree courses. Teaching, research, science, technology and innovation are the core business of Universidade de Lisboa. Instituto Superior Técnico was created in 1911 and is the school of Engineering, Science and Technology and Architecture of Universidade de Lisboa. In these domains, IST represents the largest and most reputed school in Portugal and one of the bests in Europe. IST consists of 10 Departments and there are about 10.000 full-year equivalent under and post graduate students, and about 1.600 full time equivalent teaching and non-teaching staff. Internationalization has been defined as a key strategic goal over the past few years with increasing number of international students and staff, as well as an increasing and dynamic participation in international academic networks and partnerships of excellency. Through a large number of agreements with other institutions worldwide (more than 500), IST participates in more than 50 Double Degree programmes, and joint PhD programmes with MIT, CMU, UT-Austin and EPFL, thus promoting a highly modern and culturally diverse society. Website: <https://tecnico.ulisboa.pt/en/>

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Prof. Nuno Gonçalo Cordeiro Marques de Almeida	Assistant Professor in the Department of Civil Engineering, Architecture and Georesources (IST – University of Lisbon), senior lecturer and member of the scientific committees in the Master Programs in Civil Engineering (2017-2019), Environmental Engineering (2012-2016) and Construction and Rehabilitation (2012-2014) offered at IST (University of Lisbon). He is a member of the research unit Civil Engineering Research and Innovation for Sustainability (CERIS) where he created and advises research on the topic of "Value-driven management of infrastructure and building assets". With a professional background in construction project management, his academic and research activities seek to advance the discipline of asset management and promote the assimilation of innovative solutions to infrastructure, building and advanced facilities of both the public and private sectors. He has advised and coordinated

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>interdisciplinary research and consultancy projects in cooperation with practitioners of the construction, water, rail and road sectors to optimize cost, risk and performance of physical (civil) assets. He is president of the ISO/TC251 Asset Management national "mirror committee" and was involved in the development of the technical specification for aligning financial and non-financial functions within asset management and organizes regular thematic asset management conferences in liaison with other standardization committees. As a member of the International Society of Engineering Asset Management, he is involved in developing a recognition scheme of academic programs that cover the scope of Engineering Asset Management in higher educational institutions. He sits in the scientific committee of three annual international congresses: the World Congress of Engineering Asset Management, Automation Innovation in Construction and Artificial Intelligence and Digital Technology in Construction Management. He has published more than 50 papers in international journals and conferences on value-based decision making, process approach in asset intensive organizations, asset economics, economic information databases, alignment of technical and financial functions within asset management, life cycle cost modelling of building facilities and infrastructure assets, uncertainty in infrastructure asset management planning, engineering design and construction risk management, performance-based buildings, performance indicators and measurement systems, occupational safety and health management in the construction industry, gross margin deviations in construction projects, time-cost relationship models for construction projects, infrastructure condition rating systems using artificial intelligence tools, quality assurance and insurance-based warranty models against construction defects, sustainable construction, construction and demolition waste management and the circular economy for architectural stone, concrete and other cement-based construction materials.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Schwabe, O. Schneider, L. Almeida, N. Salvado, A.F. (2019) A Framework for Accelerating Innovation through Innovation Webs. Sustainability and Automation in Smart Constructions: Proceedings of the International Conference on Automation Innovation in Construction (CIAC-2019), Leiria, Portugal. Rodrigues, H., Gaspar, F., Fernandes, P., Mateus, A. (Eds.). Springer eBook on Advances in Science, Technology & Innovation (in press) • João Vieira, Marta Cabral, Nuno Almeida, Jaime Gabriel Silva & Dída Covas (2020) Novel methodology for efficiency-based long-term investment planning in water infrastructures, Structure and Infrastructure Engineering, DOI: 10.1080/15732479.2020.1722715 • Trindade, M. Almeida, N. Finger, M. Ferreira, D. (2019): Design and development of a value-based decision-making process for asset intensive organizations. Asset Intelligence through Integration and Interoperability and Contemporary Vibration Engineering Technologies, pp. 605-624.

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>Springer. Ed. Mathew, J. Lim, C.W. Ma, L. Sands., D. Cholette, M. Borghesani, P. Proceedings of the 12th World Congress on Engineering Asset Management and the 13th International Conference on Vibration Engineering and Technology of Machinery. ISSN 2195-4356 ISSN 2195-4364 (electronic), Lecture Notes in Mechanical Engineering. ISBN 978-3-319-95710-4 ISBN 978-3-319-95711-1 (Springer eBook) https://doi.org/10.1007/978-3-319-95711-1</p> <ul style="list-style-type: none"> • Salvado, F. Almeida, N. Azevedo, A. (2019): Historical analysis of the economic life-cycle performance of public school buildings, <i>Building Research & Information</i>, 47: 7, 813-832, DOI: 10.1080/09613218.2019.1612730 • Salvado, F. Almeida, N. Azevedo, A. (2018): Toward improved LCC-informed decisions in building management, <i>Built Environment Project and Asset Management</i>, 8: 2, 114-133, doi.org/10.1108/BEPAM-07-2017-0042 • Trindade, M. Almeida, N. (2018): The impact of digitalisation in asset-intensive organisations. <i>Network Industries Quarterly</i>. Special issue: The path towards digitalisation in road infrastructure. Vol. 20, issue 4, 2018 (December) • Almeida, N. Sousa, V. Alves Dias, L.M. Branco, F. (2015): Managing the technical risk of performance-based building structures, <i>Journal of Civil Engineering and Management</i>, 21:3, 384-394 • Almeida, N. Sousa, V. Alves Dias, L.M. Branco, F. (2015): Engineering risk management in performance-based building environments, <i>Journal of Civil Engineering and Management</i>, 21:2, 218-230

Partner number – P5 – ed-media e.V.

Organisation name	Country
ed-media e.V.	Germany

ed-media e.V. is an independent institute at the University of Kaiserslautern (Campus Zweibrücken). The institute organizes MBA distance learning courses (e.g. Motorsport and Innovation Management) at the three locations Zweibrücken, Augsburg and Nürburgring. In addition, ed-media compiles lasting concepts and training further for the authority development in enterprises. Digital applications (e.g. explanation videos and learning systems) are used for this purpose. A further range is the project development and the management of projects approximately around the topics productivity, specialized innovation and digitization. ed-media also develops individual concepts and further training for the personnel development of companies. To this end, ed-media has the experience to prepare employees for their tasks in a target-oriented way using modern forms of learning and digital media and to activate them for self-learning. The focus is on the process towards a learning organisation. As a project taker of projects funded by the Federal Ministry of Labour and Social Affairs and project partner in the INTERREG project PRODPILLOT, the ed-media team can draw on a large pool of experience. The work in these projects ranges from project management to public relations and marketing or the creation of workshops. Website: www.ed-media.org

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Patrick Schackmann	<p>Patrick is managing director of the Institute ed-media and lecturer at the Kaiserslautern University of Applied Sciences for Quality Management and Logistics Project selection. He represents the EU-project PRODPILLOT to improve productivity in SMEs with Lean-Workshop-concepts and support of optimisation projects in the company, a professional security project in the hotel and restaurant industry with the creation of practical aids, checks and training, an ESF project "Demography Cockpit", consulting for SMEs in the industry on the introduction of standardized HR processes and an ESF project "Sustainable Work Logistics", initial consultation of logistics companies in the development of modern personnel policy.</p>
Prof. Dr. Bettina Reuter	<p>Bettina is Professor at the University of Applied Sciences in Kaiserslautern in Germany and heads up the MBA programme for Innovation Management in Motorsport. In 2001 she founded ed-media e.V. which supports organizations in the innovation and digital transformation of learning and organizational processes, as well as the delivery of MBA level distance learning courses.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Reuter, Bettina: Motorsport Management: Basics - Processes - Visions; Springer Verlag 2018 • Reuter, Bettina: "Green Logistics - A Challenge for Controlling? Lecture by RKW Baden-Württemberg, 2014 • Reuter, Bettina: Lean and green - Technological Trends in Logistics, Zukunftsinitiative Rheinland Pfalz (ZIRP), 2012 <p>Since 2018 member of the initiative "we move it - the Business Ecosystem of the Vehicle Industry" of the Ministry of Economics and Transport in Rhineland-Palatinate. FIA World Rally Championship - Rallye Deutschland. 2017, 2018 and 2019 FIA Environmental Officers. Since January 2017, DMSB, Head of AG (Speaker) Qualification)</p>
Daniel Wendel	<ul style="list-style-type: none"> • Master of Arts Mittelstandsmanagement • Bachelor of Arts Industrial Management • EU-project PRODPILLOT to improve productivity in SMEs with Lean-Workshop-concepts and support of optimization projects in the company

Partner number – P6 – Edna Pasher Ph.D & Associates

Organisation name	Country
Edna Pasher Ph.D & Associates	Israel

Edna Pasher Ph.D & Associates is a leading strategic management-consulting firm located in Israel specializing in research, consulting and training. The combination of our unique core competences in the areas of strategy, knowledge and innovation management, and our experience of 41 years enables us to grant managers and organizations the best professional support on their way to the top. Website: www.pasher.co.il

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Dr.Edna Pasher	Dr.Edna Pasher earned her Ph.D (1981) in Media Ecology at New York University department of Communication Arts and Sciences and has served as faculty member at Adelphi University, the City University of New York, the Hebrew University in Jerusalem and the Tel-Aviv University. Edna Pasher founded EP as an international strategic management consulting firm in 1978. The firm provides customized consulting services to organizations both in the private and the public sectors. Edna was the pioneer and leader of the Innovation and Knowledge management movement in Israel and an active member of the international community of the Intellectual Capital pioneers. She has 24 years of experience in regional and international ICT research and innovation projects funded by the EU using a variety of evaluation methodologies, modelling techniques, quantitative and qualitative analysis. Edna is the Founding partner (1991) and chief editor of "Status – the Israeli Management Management", and the Founding Partner and Chairperson (2015) of ISCI Israel Smart Cities Institute (NGO) she is a frequent speaker in international conferences.
Lee Sharir	Lee Sharir is a researcher at Edna Pasher PhD & Associates and a project manager at the Israel Smart Cities Institute (ISCI). Captain in the reserves at the Intelligence corps of the IDF. In her military service, Lee made technological and economic studies. Lee is a BA student in Bar Ilan University in Social Sciences, specializing in economics.

Partner number – P7 – EureCons Förderagentur GmbH

Organisation name	Country
EureCons Förderagentur GmbH	Germany

EureCons Förderagentur GmbH is a private consulting and research company (SME), operating nationally and internationally founded in 2011. As an association of interdisciplinary, cooperating experts from science and practice, as well as international partners, EureCons Förderagentur offers support for companies and local authorities in all areas of strategic development and analysis (scientific and market research, forecasting, SWOT analysis, surveys, etc). In addition, EureCons Förderagentur offers support in management services, project management, creation of consortia, as well as funding advice. Within the framework of European national and international projects we support our clients from development, through partner search, to active support in overall management. An efficient and sustainable Quality

Management is also an integral part of our consultation. The focus in the European projects is on programs such as Horizon 2020, Erasmus+, ESF and Interreg. EureCons Förderagentur sees itself as an interface between consulting and research, as well as a door opener for European projects. EureCons Förderagentur is also responsible for city planning tasks, among them projects for immigrant youth, reviews, intercultural project development and the organization of expert hearings on these topics. As lead partner in several projects (national and international) EureCons Förderagentur provides trainings for entrepreneurs as well as job-trainings. EureCons Förderagentur's key competences are analysis and studies on the labour market/strategic development/networks/knowledgetransfer, methods in staff development in the light of demographic change, quality management coachings as well as project management and creating and leading networks. In general, the staff of FAB has more than 30 years' experience in coachings for long-term unemployed, migrants, younger people and entrepreneurs as well as in leading national and transnational projects:

- Employment Initiative for long-term unemployed over 50 years including transnational internships in agricultural areas.
- Integration through exchange project for unemployed young academics and NEETs. The project provided intercultural training, language trainings, internships, working experience. consulting for entrepreneurs of migration background, job coaching in districts with high migration percentage.
- Train-the-trainer projects for the training of certified "demography trainers" together with nationwide partners.
- Training for single parents: coaching on work life balance challenges regarding time management, re-integration through qualification, job orientation for pre-graduates
- experience as lead partner in IdA (Integration through Exchange) projects, which focused on unemployed academics and young people without qualification. In the IdA project, young people were at first given intercultural and language training and then sent abroad, namely Edinburgh and Rimini, to gain working experience by doing an internship. As lead partner, Förderagentur was responsible for draft development, strategic planning, scheduling, financial planning, networking, management of the consortia, project management, project controlling and reporting.
- ESF article 6 AGIL, with the purpose to develop a local employment strategy on the basis of regional demographic and job market related data. Outcome: local employment strategy.
- Innovative Approaches to the Management of Change - Smart Region - ESF Article 6: Scientific analysis of the reasons for early retirement Selection of measures at company and general level and the realisation of relevant measures in the project regions, Raising the awareness of actors and the general public for the themes of ageing and the labour market. Outcome: guidelines.
- Pro-Fit (Equal II) enterprise improvement by coaching and training courses, with respect to the city quarter activities and structures, and also with respect to the Diversity Management approach. Outcome: Entrepreneur training programme.
- Equal I project "Startklar", which was a start-up coaching project for women, immigrants and persons with handicaps. This project had local and European partners. Outcome: Entrepreneur training programme.
- The EureCons Förderagentur is a partner of KA2-Erasmus mobility project "The Backstage"
- The EureCons Förderagentur is currently hosting partner in several KA1-Erasmus project

EureCons team have more than 10 years of experience in the implementation of European projects in the areas of management, administration and financial management. Thanks to their involvement in international projects, they can lead intercultural dialogues and demonstrate problem solving skills.

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
<p>Prof. Dr. Loreta Huber (geb. Ulvydiene)</p>	<p>Prof. dr. Loreta Huber is an expert consultant at EureCons GmbH. She is a former Vice-Dean for Projects at Vilnius University Kaunas Faculty and currently is a director of the first level study programme of Communication and Information Management Technologies at Kaunas University of Technology (KTU) Lithuania. The programme is implemented with Twente University in Netherlands.</p> <p>Among numerous courses taught are the ones of Communication, Technologies and Innovations of Intercultural Communicattion.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Loreta Ulvydienė "Marital Status: Marriages and Divorces" in Population and Social Development. Jurėnienė V., Mostenska T., Fedulova I. (eds.) Pagal FP7 projektą PRORES (FP7/2007-2013) - "Pro-ecological restructuring for job" Marie Curie International Research Staff Exchange Scheme (IRSES) Grant Agreement Number: PIRSES-GA-2010-269251. Vilnius University, Lithuania; National University of Food Technologies, Ukraine; Institute of World Economy and International Relations, Ukraine. 2015, ISBN 978-609-459-553-0, pp. 33-35. • Loreta Ulvydienė "Urban and Rural Population. Density of Population in Certain Regions" in Population and Social Development. Jurėnienė V., Mostenska T., Fedulova I. (eds.) Pagal FP7 projektą PRORES (FP7/2007-2013) - "Pro-ecological restructuring for job" Marie Curie International Research Staff Exchange Scheme (IRSES) Grant Agreement Number: PIRSES-GA-2010-269251. Vilnius University, Lithuania; National University of Food Technologies, Ukraine; Institute of World Economy and International Relations, Ukraine. 2015, ISBN 978-609-459-553-0, pp. 36-40. • 3. Loreta Ulvydienė "Nationality, Ethnicity in the Country". Languages Spoken. Groups Recognized as Discriminated or Otherwise Suffering from Social Exclusion" in Population and Social Development. Jurėnienė V., Mostenska T., Fedulova I. (eds.) Pagal FP7 projektą PRORES (FP7/2007-2013) - "Pro-ecological restructuring for job" Marie Curie International Research Staff Exchange Scheme (IRSES) Grant Agreement Number: PIRSES-GA-2010-269251. Vilnius University, Lithuania; National University of Food Technologies, Ukraine; Institute of World Economy and International Relations, Ukraine. 2015, ISBN 978-609-459-553-0, pp. 41-53.
<p>Dr. Andreas Werner Huber</p>	<p>Dr. Andreas W. Huber: Graduated in regional development, Project manager to regional projects since 2003 (ESF Art. 6, Equal...) certified consultant on demographic change, certified QM manager, lead scientific analysis concerning labour market, demographic change and skilled personal.</p> <p>Most recent publications related to the domain of the project:</p>

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<ul style="list-style-type: none"> • Technologietransfer – Regionalökonomische Auswirkungen auf Beschäftigungs- und Qualifikationsstrukturen. In: Jahrbuch Sozialwissenschaftliche Technikberichterstattung 2000. Schwerpunkt: Innovation und Arbeit; hrsg. von IAB; IfS; INIFES; ISF; SOFI. Berlin, 2000, S. 253 – 285 • Schaffen Innovationsnetze Arbeitsplätze? In: Regionale Innovationsnetzwerke im internationalen Vergleich. hrsg. von Reinhold Grotz, Ludwig Schätzl, Münster u.a., 2001, S. 101 – 118. ISBN 3-8258-5683-6 • Arbeitsmarkt- und betriebliche Beschäftigungsentwicklung in Bayern. Ergebnisse der bayerischen Teilstichprobe des IAB – Betriebspanels 1999 und 2000 (zusammen mit Paula Heinecker et. al.), Stadtbergen, 2001. • Ausgangslage für ein Konzept „Lebenslanges Lernen“ in Deutschland. Strukturelle, demografische, ökonomische, rechtliche und tarifvertragliche Voraussetzungen. In: LebenslangesLernen. Expertisen zu Lebenslangem Lernen – Lebensarbeitszeiten – Lebensweiterbildungskonten; hrsg. von Senatsverwaltung für Arbeit, Soziales und Frauen. Arbeitsmarktpolitische Schriftenreihe, Band 44, Berlin, 2001, S. IX – XIV • Fachkräftebedarf und „Mismatch“ in Nordschwaben. in: Behling, M., Huber, A., Staudinger, T. (Hrsg.): Perspektiven auf dem Arbeitsmarkt von morgen – Herausforderungen erkennen – Chancen nutzen. Augsburg 2009, S. 90-103. ISBN 3-937387-32-3 • Alternde Betriebe im regionalen Vergleich. In: Arbeitslosigkeit Älterer und Arbeitsmarktpolitik im Angesicht des demographischen Wandels. Ergebnisse aus der Bundesrepublik Deutschland und dem Land Berlin, hrsg. von Andreas Huber, Ernst Kistler und Udo Papies, Stuttgart, 2002, S. 51 – 64. • Regionale Altersstrukturen in Deutschland - Herausforderungen an betriebliche Gestaltungsstrategien. in: Loebe H., Severing E. (Hrsg.): Integration ältere Arbeitsloser - Strategien, Konzepte, Erfahrungen, Bielefeld 2008, S. 45-58. ISBN 978-3-7639-3457-7 • Beschäftigungstrends im Freistaat Bayern. Arbeitsmarkt- und betriebliche Beschäftigungsentwicklung in Bayern. Repräsentative Analysen auf Basis des IABBetriebspanels 2003, Bericht an das BayStMASF und die Regionaldirektion Bayern der Bundesagentur für Arbeit, Stadtbergen 2004. • Fachkräftebedarf und "Mismatch" im Agenturbezirk Augsburg In: Huber, Kräußlich, Staudinger (Hrsg.): Erwerbschancen für Ältere? Probleme, Handlungsmöglichkeiten, Perspektiven, Augsburg 2007, S. 83-98. ISBN 3-937387-31-5 • Management of Change als Steuerung sozialräumlicher Gestaltungsprozesse. Ein Beitrag zur angewandten sozialgeographischen Implementationsforschung, in Terra Facta Nr. 3, Augsburg 2004. ISBN 3-923273-53-3

Partner number – P8 – National University of Ireland Maynooth

Organisation name	Country
National University of Ireland Maynooth	Ireland

Maynooth University is an internationally recognised institution located 25 kilometres outside of Dublin, Ireland, and is the nation’s fastest growing university. One of four constituent universities of the National University of Ireland, Maynooth University in 2019 placed #50 in the global top 100 universities under 50 years old in the Times Higher Education World University Rankings. On 16 June 2017, Maynooth University celebrated its 20th birthday, having been formally established as an autonomous university in 1997. Yet, it traces its origins to the foundation of the Royal College of St. Patrick in 1795, drawing inspiration from a heritage that includes over 200 years of education and scholarship. Today, Maynooth University is a place of lively contrasts—a modern institution, dynamic, rapidly-growing, research-led and engaged, yet grounded in historic academic strengths and scholarly traditions. With 13,000 students from more than 90 countries, Maynooth offers a range of programmes at undergraduate, Master’s and PhD level in the humanities, science and engineering, and social sciences, including business, law, and education. The University also offers a range of international programmes and partnerships. Maynooth’s unique collegial culture fosters an interdisciplinary approach to research, which its world-class academics bring to bear in tackling some of the most fundamental challenges facing society today. The University’s research institutes and centres consolidate and deliver this impact as vibrant communities of learning, discovery and creation. Research at Maynooth also is very much central to its teaching, and the University prides itself on placing equal value on its research and teaching missions. In addition to being named in THE’s Top 50 Under 50, Maynooth University is recognised among the top 350 universities in the world, the top 200 European universities, and as one of the top 200 universities for international connections and outlook. Website: <https://www.maynoothuniversity.ie/>

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Prof. Brian Donnellan	Brian is Vice President of Engagement and Innovation at Maynooth University with over 20 years industrial experience in IT and Innovation Systems Management. He is Chair of Information Systems Innovation Group (www.nuim.ie) and Co-Director of the Innovation Value Institute (www.ivi.ie). See also www.briandonnellan.com .
Dr. Niall Connoley	Niall is Research Fellow at School of Business, Maynooth University with a focus on how to enable sustainable technology adoption, particularly in urban settings. The work addresses strategic alignment of digital strategies with city goals, governance structures and business models. This entails understanding the commercial, social and organisational contexts in which smart technology is deployed in cities so that barriers to implementation can be overcome and system implementations have a greater potential to be successful. Niall is also Vice Chair of the All Ireland Smart City Forum
Dr. Piero Formica	Piero is Senior Research Fellow of the Innovation Value Institute at Maynooth University in Ireland where he leads an international research team on experimentation and simulation of high-expectation start-ups, and Professor of experimental economics at the Contamination Lab, University of Padua. Piero is the winner of the Innovation Luminary Award 2017 (from the Open Innovation Science and Policy Group under the aegis of the European Union).

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Formica, P. (2013) The Experimental Nature of New Venture Creation: Capitalizing on Open Innovation 2.0, Springer • Formica, P. (2015) The Role of Creative Ignorance: Portraits of Path Finders and Path Creators, Palgrave Macmillan • Formica, P. (2018) Exploring the Culture of Open Innovation: Towards an Altruistic Model of Economy, Emerald Publishing Group • Formica, P. (2020) Innovation and the Arts: The Value of Humanities Studies for Business, Emerald Publishing Group

Partner number – P9 – Technische Universität Berlin

Organisation name	Country
Technische Universität Berlin	Germany

The Institute for Machine Tools and Factory Management (Institut für Werkzeugmaschinen und Fabrikbetrieb) at the Technische Universität Berlin (IWF-TUB), Germany has conducted extensive research in multiple perspectives of sustainable manufacturing. Researchers at IWF-TUB have examined and demonstrated in research and industrial projects how global value creation through sustainable manufacturing can be superior to traditional paradigms of management and technology. The Department of Handling and Assembly Technology of the IWF-TUB gets its bearing for research and development from industrial and technological tasks. In doing so it is pre-eminent to exploit potentials for innovation from the manifold interactions between product, material, equipment, process, and organization of facilities and their peripherals as well as the consistent implementation of innovative technology and form of organization. The focus is on one hand computer aided assembly planning and control, prototypic realization and experimental testing of assembly processes and systems, application of sensors for assembly processes as well as allocation of work and facility management. On the other hand, the department approaches technological and organizational chances, changes, and challenges of the digitalization in both forward and reverse flows in manufacturing. Website: https://www.hm-tu-berlin.de/menue/handhabungs_und_montagetechnik/parameter/en/.

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Prof. Dr.-Ing. Franz Dietrich	<p>Prof. Dietrich has project-relevant research experience in manufacturing execution architectures and robot control architectures.</p> <p>Most recent publications related to the domain of the project:</p>

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<ul style="list-style-type: none"> • Dietrich, F., Löchte, C., Jeschke, S., & Raatz, A. (2013). An agent-based concept for planning and control of the production of carbon fibre reinforced plastics aircraft structures with mobile production units. In Automation, Communication and Cybernetics in Science and Engineering 2011/2012 (pp. 607-621). Springer, Berlin, Heidelberg. • Dietrich, F., Maaß, J., Hagner, M., Steiner, J., Goltz, U., & Raatz, A. (2013). Dynamic distribution of robot control components under hard realtime constraints—Modeling, experimental results and practical considerations. Journal of Systems Architecture, 59(10), 1047-1066.
Dr.-Ing. Pinar Bilge	<p>Dr. Bilge's research experience is based on conceptual modelling of interactions among metrics and architecture development for manufacturing and end-of-life activities.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Bilge, P., Badurdeen, F., Seliger, G., & Jawahir, I.S. (2014). Model-based approach for assessing value creation to enhance sustainability in manufacturing. Procedia CIRP, 17, 106-111.

Partner number – P10 – University of Padova

Organisation name	Country
University of Padova	Italy

Established in 1222, the University of Padua (Padova in Italian) is the second oldest university in Italy, after Bologna, and one of the earliest universities in the world. It was originally founded as a school of law by a group of scholars and students who had come from Bologna in pursuit of greater academic freedom. Today, Padua continues to be one of the most prominent universities in Italy and Europe. It is made up of 32 departments and eight schools, which co-ordinate the courses managed by each department, as well as 49 specialisation schools and 43 research and service centres. The University of Padua also runs a host of centres, research organisations and science and technology hubs that are affiliated with the university. Around 60,000 students – 40,000 undergraduates and 20,000 postgraduates – are enrolled at Padua. They share the university’s medieval buildings with more than 3,000 professors and research staff, as well as a commitment to the continuation of Padua’s longstanding tradition of academic innovation. The university’s total budget is over €600 million with around €60 million a year spent on research. Padua is part a network of historical research universities known as the Coimbra Group. Other institutions that are part of this network include the universities of Oxford, Cambridge, Heidelberg, Salamanca, Jena, Leuven and Leiden. The University of Padova has launched in 2016 a dedicated in-house commercial company to exploit and valorise its IP assets and research infrastructures which is the only example as of today in Italy and has gained visibility across the country and beyond as effective tool to support the University in its Third Mission. UniPD will be also a key channel for the project to disseminate the results through the preparation of scientific publications in high impact factor journals as well as foster an open data approach. Through the involvement of Unismart, UniPD will also play a key role in the exploitation of the project results through the industrial network which has been created in the last two years. This will also include secondary applications for the developed knowledge beyond shoes manufacturing to fully value the overall scientific and technological efforts, within a scalable and comprehensive IPR management strategy. Website: <https://www.unipd.it/>

Names of the staff members	Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.
Prof. Fabrizio Dughiero	Fabrizio is Vice Rector for Technology Transfer at University of Padova with the main aim to improve the impact of research on economy and innovation of our territory. Besides a passion for bringing innovation into every effort he collaborates intensively with major manufacturing companies across the world to support the transfer of best practices and technologies.
Giovanni Baldassarri	PwC Consultant with relevant experience in operative model design and transformation. Previous experience in large-scale digital transformation projects. Master Degree in Mechanical Engineering, specialized in Production Management.

Partner number – P11 – Hochschule Kaiserslautern

Organisation name	Country
Hochschule Kaiserslautern	Germany

The Hochschule Kaiserslautern sees itself as a modern university for applied sciences and design. Around 6,000 students from more than 80 countries and some 160 professors study, teach, and research in five faculties at the Kaiserslautern, Pirmasens, and Zweibrücken campuses. In 1996, the Hochschule emerged from a department of the former Hochschule Rheinland-Pfalz, which dates back to the mid-19th century, and utilized its independence to devote itself to the core tasks of undergraduate education, academic development, applied research and development and its resulting technology transfer, and to further improve its competitive standing. The application-oriented research & development is mostly carried out in cooperation with businesses. The Hochschule serves as a partner to the local economy, whereby the support given as part of students' employment in a company means that there are many people actively involved in the transfer of knowledge and technology. The active involvement in the knowledge transfer network, twin-rlp, also taps into the potential of the six other (Fach-)Hochschulen in the Rhineland-Palatinate region. In this project, the Centre of Competence OPINNOMETH (Website: www.hs-kl.de/opinnometh) as part of the department business administration will be active in the project. It aims Operational Excellence and Innovation Methodology as an opportunity to jointly grasp and transfer them into one's own corporate reality in a combination of research and practice. Website: www.hs-kl.de.

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Prof. Dr.-Ing. Christian M. Thurnes	<p>Christian is Professor at the University of Applied Sciences in Kaiserslautern in Germany with a special interest in the structured creation of ideas at the outset of the diffusion of innovation journey (including relevant gamification). Highly experienced in strategic management, entrepreneurship, and creativity and innovation, he works with a spectrum of industrial organizations and has published over 100 times in this field.</p> <p>He has many years of practical and educational experience in the fields of:</p> <ul style="list-style-type: none"> • Structured, systematic innovation methods and creativity techniques • Human-centred (e.g. Design Thinking) and Technology-centred (e.g. TRIZ) innovation methodologies and their project-oriented combination with efficiency and quality programs (e.g. Six Sigma, DFSS) • Innovation Management and tools for Innovation management in different branches and sectors • Strategies and principles of innovation foresight as well as methodical approaches to evaluate futures of innovation processes and diffusion <p>Prof. Thurnes has studied Mechanical Engineering (Diplom), Industrial Engineering (Diplom) and Anragogy (M.A.) and his doctoral thesis focused</p>

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>Knowledge-/Competence-Management. He is founder of the Centre of Competence OPINNOMETH, which concentrates on the topics Operational-Excellence- and Innovation-Methodologies. Furthermore he is vice-director of the council for creating the VDI-standard 4521 on "Innovationsmethodik". He is experienced user, teacher and coach for many different methods and methodologies in education and industries (e.g. TRIZ, Design Thinking, TESE, Directed Evolution, Lego® Serious Play®, and many more).</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Thurnes, C.M.; Graupp, P.; Berendsen, G. et al.: TWI im Gesundheitswesen – das System von innen heraus innovieren. In: Pfanstiel, M.A.; Kassel, K.; Rasche, C. (Hrsg.): Innovationen und Innovationsmanagement im Gesundheitswesen. Springer 2021 (im Druck) • Thurnes, C.M.; Hentschel, C.; Zeihsel, F. (Hrsg.): Playing TRIZ - Games and Cases for Learning and Teaching Inventiveness. Kaiserslautern: Synnovating 2019 • Hentschel, C.; Thurnes, C.M.; Zeihsel, F.: Gamitization – Gamification for Triz-education. In: Cavalluci, Denis; De Guio, Roland; Koziolk, Sebastian (Hrsg). Automated Invention for Smart Industries : 18th International TRIZ Future Conference, TFC 2018, Strasbourg, France, October 29–31, 2018, Proceedings. 1st edition. Aufl. Cham: Springer International PublishingSpringer 2018 S. 29 - 39 (IFIP Advances in Information and Communication Technology ; 541) • Thurnes, C.M.: Bausteine für ein Innovationsmanagement. In: Reuter, Bettina (Hrsg). Motorsport-Management : Grundlagen – Prozesse – Visionen. 1. Aufl. Berlin: Springer Berlin Springer Gabler 2018 S. 58 - 78 • Belski, I.; Cavallucci, D.; Hentschel, C.; Hiltmann, K.; Huber, N.; Koltze, K.; Livotov, P.; Shukhmin, K.; Thurnes, C.M.: Sustainable Education in Inventive Problem Solving with TRIZ and Knowledge-Based Innovation at Universitites. In: Cavalluci, D.; De Guio, R.; Koziolk, S. (Hrsg). TRIZ Future Conference 2018 - Professional Proceedings: Systematic Invention for Smart Industries. Strasbourg: INSA 2018 S. 51 - 73 • Lyubomirskiy, A.; Litvin, S.; Ikovenko, S.; Thurnes, C.M.; Adunka, R.: Trends of Engineering System Evolution (TESE): TRIZ paths to innovation. 1. Aufl. Sulzbach-Rosenberg: TRIZ Consulting Group 2018, ISBN 978-3-00-059846-3 • Lavrov, A.; Thurnes, C.M.: Forschendes Lernen: Innovationsprinzipien verstehen. In: TRIZ-Innovationsprinzipien: Beispiele aus der Logistik (OPINNOMETH - Schriften des Kompetenzzentrums für Operational Excellence und Innovationsmethodik). Bd. 3. Zweibrücken. 2018 ISSN 2199-0301, S. 3 - 5 • Hiltmann, Kai; Thurnes, Christian M.; Adunka, Robert et al.: Standard VDI 4521 Part 3: Inventive Problem Solving with TRIZ: Problem Solution. In: MATRIZ - the international TRIZ association (Hrsg). Conference proceedings of TRIZfest-2017 - 13th International conference. September 14-16, Krakow, Poland. Krakow. 2017 S. 368 - 373. ISBN 978-0-692-52418-3

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<ul style="list-style-type: none"> • Bicheno, J.; Thurnes, C.M.: Lean-Simulationen und –Spiele. Lean-Prinzipien, -Methoden und –Werkzeuge mit Spielen und Simulationen verstehen und erlernen. Kaiserslautern: Synnovating 2016 • Thurnes, Christian M.; Schönberger, Marius; Sohns, Christoph et al.: Contradiction-based innovation library: creating and sharing innovation impulses. In: ISPIM - International Society for Professional Innovation Management (Hrsg). The XXVII ISPIM Innovation Conference – Blending Tomorrow’s Innovation Vintage. Porto. 2016 5 S., ISBN 978-952-265-929-3 • Zeihsel, Frank; Thurnes, Christian M.; Schulze, Jan: Enhancing Patent Portfolio Using TRIZ Workshops. In: ETRIA - The European TRIZ Association (Hrsg). Proceedings of the TRIZ Future Conference 2016. Wroclaw. 2016 5 S. • Thurnes, Christian M.; Zeihsel, Frank; Zlotin, Boris et al.: TRIZ Events Increase Innovative Strength of Lean Product Development Processes. In: Chechurin, L. (Hrsg). Research and Practice on the Theory of Inventive Problem Solving (TRIZ). Switzerland: Springer 2016 S. 187 - 206, ISBN 978-3-319-31780-9 • Näther, Sylvio; Thurnes, Christian M.: TRIZ integration for project managers - discovering further TRIZ benefits. In: MATRIZ - International TRIZ Association (Hrsg). Proceedings of TRIZfest-2016 - 12th International conference - TRIZ and Quality in Design and Manufacturing. July 28-30. Beijing. 2016 S. 380 – 385, ISBN 978-0-692-52418-3 • Adunka, Robert; Czinki, Alexander; Gronauer, Barbara, ...; Thurnes, Christian M. et al.: VDI 4521 Blatt 2 - Entwurf: Zielbeschreibung, Problemdefinition und Lösungspriorisierung. VDI - Verein Deutscher Ingenieure (Hrsg). Berlin: Beuth Verlag 2016 12 S. • Zlotin, Boris; Zusman, Alla; Thurnes, Christian M.: Directed Evolution: Innovationsmanagement und Technologieentwicklung zukunftsorientiert gestalten mit der Methodik der Directed Evolution zur TRIZ-Vorhersage. 1, Auflage in deutscher Sprache, Kaiserslautern: 2015 107 S. ISBN 978-3981549324 • Thurnes, Christian M.; Zeihsel, Frank: Gamificated linking of LEAN and TRIZ for training and education. In: Silva Gomes, J.F.; Meguid, S.A. (Hrsg). Proceedings of the 6th International Conference on Mechanics and Materials in Design, 26-30 July 2015. P. Delgada - Azores. 2015 S. 1337 - 1342, ISBN 978-989-98832-3-9 • Thurnes, Christian M.: Innovation und Fehler - ein untrennbares Paar. In: Visnepolschi, Svetlana: Der innovative Weg zu Null Fehler - Aktuelle Methoden der Antizipierenden Fehlererkennung AFE. 1. Aufl. Kaiserslautern: 2015 S. 3 - 7, ISBN 978-3981549317 • Adunka, Robert; Czinki, Alexander; Gronauer, Barbara; Götz, Kurt; Hartschen, Michael; Hentschel, Claudia; Hiltmann, Kai; Huber, Norbert; Koltze, Karl; Livotov, Pavel; Lohe, Rainer; Mayer, Oliver; Meier, Jürgen; Miecznik, Bert; Mohnkopf, Hermann; Müller, Wolfgang; Nähler, Horst; Scherb, Bruno; Schnittker, Frank C.; Shub, Leonid; Souchkov, Valeri; Thurnes, Christian; Wigger, Tobias: VDI-Richtlinie 4521: Blatt 1 Erfinderisches Problemlösen mit TRIZ - Grundlagen und Begriffe. VDI-Gesellschaft (Hrsg). Berlin: Beuth Verlag 2015 • Hiltmann, Kai; Adunka, Robert; Livotov, Pavel; Mayer, Oliver; Thurnes,

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>Christian M.; Müller, Wolfgang: Wertanalyse und VDI 4521 Erfinderisches Problemlösen mit TRIZ. In: VDI Wissensforum GmbH (Hrsg). Wertanalyse Praxis 2015. Düsseldorf. 2015 S. 73 - 77 ISBN 978-3-942980-49-4</p> <ul style="list-style-type: none"> • Schüßler, I.; Thurnes, C.M.: Lernkulturen in der Weiterbildung. Bielefeld: wbv 2005 148 S. ISBN 3-7639-1845-0

Partner number – P12 – GB Innovation Ltd.

Organisation name	Country
GB Innovation Ltd.	Ireland

GB Innovation Ltd. was incorporated in Ireland in 2014 and provides clients with expertise in the field of R&D. Using an internally developed software tool (ReaDI-Watch) clients are provided with an R&D framework which allows a quantified analysis of R&D processes. The analysis then provides suggested improvements in order to achieve a high level of excellence in R&D, with compliancy to international standardisation. GB Innovation Ltd. services mainly SMEs in Ireland, and also works with the Fraunhofer Gesellschaft in Germany. Website: <https://gbinnovation.ie/>

III.3.12.2. Role of the organisation in the project

This is a business participant in the project and primarily responsible for providing a case study at the outset of the project, verifying the robustness of the simulation tool developed, verifying the robustness of the design principles created, validating the overall simulation model in practice and piloting the career framework as it develops. The participant will support a single two hour virtual workshop for WP9 and separate minimum one day face-to-face workshops each for WP8, WP10, WP11, WP13 and WP14 which will either be hosted at their participating regional institute of higher education or on their premises with a minimum of two participants. Furthermore, support for WP6 is required in the form of creating / piloting a structured ideation case study and by continuously acting as pilot users for learning solutions developed. The effort involved in supporting WP6 will be integrated with face-to-face workshops and supported by self-paced and web-based micro-learning solutions. As a business participant they are furthermore invited to annual team events at their own costs and voluntary participation in WP3, WP4 and WP5. Business participants are not required to contribute any intellectual property to the project, yet if so it will be formally managed via WP3.

The organization will furthermore support WP3 (Quality Assurance) by collectively participating with other organizations as peer reviewers of project deliverable quality before these are disseminated. The organization will also support WP4 (Effectiveness Evaluation) to ensure improvements to project deliverable quality are identified and fed back to those accountable for product deliverables. This supportive role aims at leveraging the combined expertise of project participants for maximising quality

and implementation effectiveness. This approach is based on the paradigm of "wisdom of the crowds" (https://en.wikipedia.org/wiki/The_Wisdom_of_Crowds). The relevant peer review process will be managed by the owners of WP3 and WP4 accordingly. The peer review process will be highly scripted and will be mandatory before official closure of the related tasks. Creating the review script is a task the owner of WP3 and WP4 respectively. The project participants accountable for the results will provide such to a peer review panel and then discuss them in an online conference. The responsibility of the peer review panel will be to use the separately prepared review script to assess the deliverables befor the conference. The peer reviewers will also join project team events, participate in the regular monthly quality and effectiveness review meetings, and support dissemination efforts. At all times, peer reviewers will be accountable for demonstrating effort made / time spent, attending governance and review meetings, and continuously provide high quality improvement suggestions.

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Dr. Fiona Sammler	<ul style="list-style-type: none"> • Mechanical Engineer (Bachelors and Masters degrees from University College Dublin) • PhD in Manufacturing (Technische Universität Berlin) • Over 10 years' experience in fundamental and applied R&D (University and Fraunhofer Gesellschaft) in the manufacturing field, ranging from EU projects to a wide variety of Germany-based publicly funded projects (BMBF, AiF, BMWi, DFG) • International expert for cutting tools/coatings in VDI, ISO and DIN standardisation processes • 5 years' experience with GB Innovation Ltd. working on development of software tool to analyse R&D processes. • Professor for Manufacturing at Technische Universität Berlin since April 2018 <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Minton, T.; Ghani, S.; Sammler, F.; Bateman, R.; Fürstmann, P.; Roeder, M.: Temperature of internally-cooled diamond-coated tools for dry-cutting titanium. International Journal of Machine Tools and Manufacture 75 (2013), 27 - 35. • Wardle, F.; Minton, T.; Ghani, S.; Fuerstmann, P.; Roeder, M.; Richarz, S.; Sammler, F.: Artificial Neural Networks for Controlling the Temperature of Internally Cooled Turning Tools. Modern Mechanical Engineering 3 (2013), 1 - 10. • Uhlmann, E.; Sammler, F.: CVD coated diamond tools for the machining of lightweight materials. Advanced Materials Research 907 (2014), 63 - 73. • Uhlmann, E.; König, J.; Sammler, F.; Richarz, S.: Tribology of treated and coated cutting tool surfaces. Encyclopedia of Tribology, Springer Verlag, 2014, 3896 - 3905. • Uhlmann, E.; Flögel, K.; Sammler, F.; Rieck, I.; Dethlefs, A.: Machining of Hypereutectic Aluminium Silicon Alloys. Procedia CIRP 14 (2014), 348 - 354. • Uhlmann, E.; Sammler, F.; Meixner, M.; Heinrich, D.; Gansert, F.; Reimers, W.; Berger, D.; Rieck, I.: Analysis of residual stresses and wear mechanism

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>of CVD diamond coated cemented carbide tools. Production Engineering Research & Development 9 (2015) 1, S. 99 - 107.</p> <ul style="list-style-type: none"> • Sammler, F.: Steigerung der Nutzungspotenziale von CVD-diamantbeschichteten Werkzeugen, Fraunhofer Verlag, 2015. • "Byrne, G.; Ahearne, E.; Cotterell, M.; Mullany, B.; O'Donnell, G.E.; Sammler, F.: High Performance Cutting (HPC) in the New Era of Digital Manufacturing - A Roadmap. Procedia CIRP 46 (2016), 1-6. • Uhlmann, E.; Stawiszynski, B.; Leyens, C.; Heinze, S.; Sammler, F. : Hard turning of hot work and cold work steels with HiPIMS and DCMS TiAlN coated carbide inserts. Procedia CIRP 46 (2016), 591-594. • Uhlmann, E.; Richarz, S.; Sammler, F; Hufschmied, R.: High Speed Cutting of carbon fibre reinforced plastics. Procedia Manufacturing 6 (2016), 113-123. • Uhlmann, E.; Sammler, F. et. Al: Machining of Carbon and Fibre Reinforced Composites. Procedia CIRP 46 (2016) 63-66. • Uhlmann, E. et. Et.: Solutions for Sustainable Machining. Journal of Manufacturing Science & Engineering 139 (2017) 5. • Byrne, G.; Sammler, F; Byrne, D.: A New Universal Indicator to assess and quantify the Research Readiness Level (RRL) for Excellence in Applied Research, Development & Innovation. R&D Management Conference, Milan, 2018.
David Byrne	<ul style="list-style-type: none"> • Benchmarking and strategic analysis of R&D • Development and implementation of ReaDI-Watch digital platform for R&D optimisation in SMEs • Roadmapping in SMEs • Studied International Business and Finance <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Byrne, G.; Sammler, F; Byrne, D.: A New Universal Indicator to assess and quantify the Research Readiness Level (RRL) for Excellence in Applied Research, Development & Innovation. R&D Management Conference, Milan, 2018.

Partner number – P13 – University of Luxembourg

Organisation name	Country
University of Luxembourg	Luxembourg

University of Luxembourg (UL) has approx. 6.200 students from all over the globe. As one of the youngest universities in Europe, the UL was founded in 2003 in line with the Bologna process. The research teams and about 600 PhD students work in three faculties and three interdisciplinary centres. According to the Times Higher Education (THE) ranking 2016-2017, the UL is ranked #178. In addition, The University of Luxembourg ranks #11 worldwide in the Young University Rankings 2017. Website:

<https://wwwde.uni.lu/>

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Prof. Peter Plapper	<p>Prof. Peter Plapper is a full Professor for Tool Machines and Production Technologies at the University of Luxembourg, Faculty FSTC; Luxembourg and the program director (directeur d'études) of the Master of Science in Engineering - Sustainable Product Creation. From 1994 to 2010, he had increasing responsibility in relation to operational and strategic planning of manufacturing facilities and equipment at Adam Opel and General Motors in Europe and America. Different management positions, involving the development of global manufacturing strategy for Body Shop and General Assembly in 5 plants worldwide.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Plapper, Peter; Oberhausen, Christof; Minoufekar, Meysam: "Application of Value Stream Management to enhance product and information flows in supply chain networks - based on the example of web-based automotive retail business in Management and Production Engineering Review (2018), 9(2), 13-19 • Oberhausen, Christof; Minoufekar, Meysam; Plapper, Peter „Standardized Value Stream Management Method to Visualize, Analyze and Optimize Cross-Enterprise Value Stream Data“ in International Journal of Standardization Research (2017), 15(2), 25-36 • Oberhausen, Christof; Plapper, Peter: "Cross-enterprise value stream assessment " in Journal of Advances in Management Research (2017), 14(2), 182-193 • Plapper, Peter: „Value Stream Management zur Synchronisation im Unternehmensverbund“ Invited Speaker at „Bundestagung der Deutschen MTM- Vereinigung“, Stuttgart, Germany (2016, October) • Oberhausen, Christof; Weber, Daniel; Plapper, Peter: „Value Stream Management in high variability production systems“ in SSRG International Journal of Industrial Engineering (2015), 2(1), 4 • Oberhausen, Christof; Plapper, Peter: „Value Stream Management in the Lean Manufacturing Laboratory“ in Procedia CIRP (2015, July), 32 • Plapper, P.; André, Chr: „Wertstrommethode-Value Stream Mapping“ In: Gläbe, R.; Thomann, H.J. (eds.): Qualitätsmanagement in Dienstleistungsunternehmen. vol. 34. Ed. Köln: TÜV Media, 2011 – ISBN 978-3-8249-1469-2, pp. 1-27
Dr. Meysam Minoufekar	<p>Dr. Meysam Minoufekar focusses on Big Data in Manufacturing and Supply Chains with a focus on Value Stream Management in the context of Lean Management and Operational Excellence. He leads the Operational Excellence and Industry 4.0 group, as a part of Prof. Plapper's team. He has worked as a CTO in a CAD/CAM software company developing software for automated manufacturing systems. Through his activities as at Fraunhofer IPT, he gained</p>

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>extensive experience in managing and realizing projects on national and EU level.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Business analytics in manufacturing: Current trends, challenges and pathway to market leadership by Omar, Yamila; Minoufekr, Meysam; Plapper, Peter • Optimized and flexible scheduling of AGVs and process machines in Re-manufacturing 4 .0 Systems using multi-agent technology and simultaneous scheduling by Groß, Sebastian; Gerke, Wolfgang; Plapper, Peter • Simulation-based optimization using multi-agent technology for efficient and flexible production planning and control in remanufacturing by Groß, Sebastian UL; Gerke, Wolfgang; Plapper, Peter UL • Deriving essential components of lean and industry 4.0 assessment model for manufacturing SMEs by Kolla, Sri Sudha Vijay Keshav UL; Minoufekr, Meysam UL; Plapper, Peter UL • Maximum flow of complex manufacturing networks by Omar, Yamila UL; Plapper, Peter UL • A survey: The usage of Augmented Reality in Industry by Gallala, Abir UL; Hichri, Bassem UL; Plapper, Peter UL • Industry 4.0 – Implementation of an automated assembly line in a wooden modular house production plant: The case Leko Labs by de Vincenzo, Vincenzo UL; Hichri, Bassem UL; Plapper, Peter UL

Partner number – P14 – Airholding - Embraer Research and Technology Europe

Organisation name	Country
Airholding - Embraer Research and Technology Europe	Portugal

The EMBRAER RESEARCH AND TECHNOLOGY EUROPE (EMBRT) is the European arm of the Embraer Research and Technology Unit, and is part of Airholding SA, a full European subsidiary of Embraer S.A. The EMBRT is mostly involved in collaborative projects, up to TRL 7, with partners in Europe and elsewhere. The EMBRT aims, at high level, to bring value to the Embraer group by 1) fostering strategic relationships with European networks of partners and suppliers, 2) creating, exploiting and sustaining new, European based, technology and business streams, and 3) contribute to the overall of aviation safety improvement. In specific, the EMBRT is mainly active in projects related with cyber-physical systems, future propulsion, automation, sustainability and mobility. The EMBRT benefits from Embraer 50 year heritage of successful aircraft design, production, certification and support and more than 14 years collaboration with European partners in Framework and National European R&I programmes. The EMBRT can complement its expertise with know-how from the Embraer group, extending its capabilities.

Airholding is a full Portuguese subsidiary of Embraer, pursuing business in engineering, services, manufacturing of aerospace related products. It also owns and manages Embraer participation in OGMA, an MRO and Aerostructures Manufacture company in Portugal. Website: www.pt.embraer.com

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Dr. Ricardo Reis	<p>Dr. Ricardo Reis is Technical Leader at the Embraer Engineering and Technology Europe. He is an Aerospace Engineer degree with a PhD in Mechanical Engineering for CFD and High Performance Computing. He coordinated and participated in several RD projects either National or European funded. These projects span from future aircraft concept design configurations to composite materials characterization, Industry 4.0 and aircraft systems. Role: will provide context and input for specific use cases related with innovation process from low TRL to market. Namely taking into account existence of different departments and companies interfaces and external partners. He will also interlink with the aerospace industrial ecosystem actors in Portugal and in the Embraer group to provide value added insight to the project.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • FASTEN: EU-Brazil cooperation in IoT for manufacturing. The Embraer use Ricardo Reis, Flávio Diniz, Luciana Mizioka, Rosana Yamasaki, Gléverson Lemos, Marta Quintiães, Ruben Menezes, Narciso Caldas, Roberto Vita, Ralph Schultz, Rafael Arrais and Ariane Pereira MATEC Web Conf., 304 (2019) 04007 DOI: https://doi.org/10.1051/matecconf/201930404007 • FASTEN: an IoT platform for manufacturing. Embraer use case. Ricardo Reis, Flávio Diniz, Luciana Mizioka, Paula Olivio, Gléverson Lemos, Marta Quintiães, Ruben Menezes, Flávio Amadio and Narciso Caldas MATEC Web Conf., 233 (2018) 00009 DOI: https://doi.org/10.1051/matecconf/201823300009 • Hypersonic transatmospheric and exoatmospheric vehicle design using the SUAVE tool. Gonçalves, P.M., Lino da Silva, M., dos Reis, R.J.N. et al. CEAS Space J (2019). https://doi.org/10.1007/s12567-019-00283-7 • Low fidelity models applied to the numerical investigation of hypersonic propulsion. Pedro M. Goncalves, Carlos Silva, Mário Silva and Ricardo Reis. AIAA 2018-0636 Published Online:7 Jan 2018 https://doi.org/10.2514/6.2018-0636

Partner number – P15 – BERD – Bridge Engineering Research & Design, S.A.

Organisation name	Country
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BERD – Bridge Engineering Research & Design, S.A.	Portugal
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BERD’s foundation dates back to 2006, when BERD appeared on the market as a spin-off of the Engineering Faculty of Porto’s University (FEUP), following Pedro Pacheco’s – BERD’s founder – doctoral thesis on Organic Prestressing System (OPS). OPS is a patented solution based on a kind of artificial muscle used in falsework (temporary support structures) to build bridges. BERD also developed M1, a construction equipment that only became viable in combination with OPS technology. The company is experienced in bridge construction industry for more than 10 years and occupies the top 3rd rank worldwide in the area of solutions for bridge engineering. It employs 40 workers (mostly mechanical and structural engineers) and exports 100% of its production. Being based in Portugal, its main geographical markets are Spain, Belgium, Germany, Turkey, Brazil, Colombia and Peru, with clients such as Ochtief, Pavasal and Eurovia. In 2016, BERD created a new business unit to develop innovative Modular Bridge Solutions (MBS), for increased resilience and rapid reestablishment of damaged infrastructure, creating or improving major transportation routes or enabling temporary access to construction sites and special events. MBS solution are applicable to permanent bridges and not only temporary ones. MBS developed four main models MB30, MB60, MB80 and LMB-120, for spans up to 30, 60, 80 and 120m respectively. All these models are embedded with innovative solutions to attain higher resistant and stiffer structures, better assembly and ease of transportation in standard 20” or 40” containers. the LBM-120 bridge represents a new range of modular bridges since the market was offering solutions only up to 90m. Besides the MBS standard models, the company developed tailor made solutions in order to address the specific needs of populations and the increasing demands of its clients worldwide. Recently MBS delivered 148 bridges with spans between 15 and 60m long to the Peruvian government. These bridges will be assembled all over the country to suppress the lack of infrastructures in remote areas. MBS adopted MB60 and designed the new MB36 to better fit to the client requirements. Website: www.mbs.berd.eu and www.berd.eu.

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
José Matos Fernandes	MBA by Porto Business School and degree in Civil Engineering by FEUP. Has over 19 years of professional experience. Is currently responsible for the BERD Modular Bridges Business Unit. He began his career as construction sub-director in the project of the Casa da Música do Porto and later took over as global construction manager, having been involved in some reference works at national level, such as Power Upgrade of the Bemposta and Venda Nova III hydroelectric power plant, the Holy Trinity Church of Fatima and the New Coimbra Pediatric Hospital. In 2015, he worked in Colombia as a production manager, having been responsible for the production of a Portuguese company in projects related to office and residential buildings. Also at the international level, he was in the genesis of setting up a subsidiary of the DVM Group in the United Kingdom by preparing a business plan and later creating the modular bridges business unit at BERD.

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • New Span Range on Modular Bridges – The Arch Relevance. António André, Inês Ferraz, Hugo Coelho, José Fernandes e Pedro Pacheco. Arch2019 – 9th International Conference on Arch Bridges • New Modular Bridge Solutions. António André, José Fernandes, Inês Ferraz e Pedro Pacheco. SteelBridges 2018 • A André et al 2018 IOP Conf. Ser.: Mater. Sci. Eng. 419 012021 • New Modular Bridge Solutions to Spans up to 120m. António André, Diogo Carvalho, José Fernandes e Pedro Pacheco. XI Congresso de Construção Metálica e Mista. Novembro 2017 • New Modular Bridges Solutions—A sustainable Solution to Connect People. António André, José Fernandes, Igor Soares e Pedro Pacheco. InCrease2017, Outubro 2017
<p>Dr. António Morgado André</p>	<p>PhD in Civil Engineering by FEUP, MSc in Structures from the same faculty and a degree in Civil Engineering by IST. Throughout his academic and professional career, he has been Invited Professor at the Department of Civil Engineering at the University of Algarve for 16 years and was a structural designer and consultant. At BERD, he worked since it’s foundation as a senior consultant and designer collaborating on the development of multi-member components. He is currently product manager at Modular Bridges Solutions. As project director, he also has skills in the design, and design review of reinforced concrete structures (with or without prestressing), steel and composite structures, wood and masonry structures.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • New Span Range on Modular Bridges – The Arch Relevance. António André, Inês Ferraz, Hugo Coelho, José Fernandes e Pedro Pacheco. Arch2019 – 9th International Conference on Arch Bridges • New Modular Bridge Solutions. António André, José Fernandes, Inês Ferraz e Pedro Pacheco. SteelBridges 2018 • A André et al 2018 IOP Conf. Ser.: Mater. Sci. Eng. 419 012021 • New Modular Bridge Solutions to Spans up to 120m. António André, Diogo Carvalho, José Fernandes e Pedro Pacheco. XI Congresso de Construção Metálica e Mista. Novembro 2017 • New Modular Bridges Solutions—A sustainable Solution to Connect People. António André, José Fernandes, Igor Soares e Pedro Pacheco. InCrease2017, Outubro 2017

Partner number – P16 – EXMceuticals Portugal, Lda

Organisation name	Country
EXMceuticals Portugal, Lda	Portugal

EXMceuticals, Portugal RD&I, IP, Refining and Product Development. EXMceuticals Portugal (EXM) is driven to provide RD&I activities for a) high-quality cannabis-based ingredients, b) innovative and real-life products and c) IP that can support the development of new products and services. EXM develops the RD&I activities in Tec Labs, a start-up incubator from Faculdade de Ciências, Universidade de Lisboa. EXM is the nervous system of EXMceuticals Inc living system, as it is where RD&I activities are taking place. The company obtained the authorization for cannabis R&D activities from INFARMED, the Portuguese National Authority of Medicines and Health Products, in November 2019. This authorization allows EXM to make a huge step forward in its European operations by being able to import, research and refine cannabinoids and cannabis-based ingredients. Fully operational R&D laboratory will develop cannabis-based formulations for medical and healthcare space and operate as a pilot scale refinery for the transformation of cannabis-based ingredients. The company is very dynamic in establishing strategic partnerships, including Universidade Nova de Lisboa, Universidade Lusofona de Humanidades e Tecnologias and with companies from several sectors ranging from Wellness to Medical and Pharmaceutical. EXM is on process of submitting 2 research projects focusing on cannabis-based therapeutics and cannabinoids green extraction-purification processes. EXM is going from RD&I moving towards a refining facility which will comply to European Union's GMP Standards. Website: www.exmceuticalspt.com

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Prof. Susana Santos	<ul style="list-style-type: none"> • Since January 2019: Consultant at EXMceuticals, Portugal Lda. • Since May 2019 - Chief of Innovation Officer (CIO) at EXMceuticals, Portugal Lda. Role: Formulate, implement and communicate the Company innovation strategy. Promote the development of scientific and technological research translating it to innovation projects for the development of new products and services. Main interests: a) applying scientific knowledge to healthcare and wellness; b) biotechnology strategies for therapeutic and wellness purposes; c) evaluation of phytochemicals with potential therapeutic usage; d) uncovering solutions that enable phytochemicals based product innovation and scale; e) address and contribute to solve the innovation bottlenecks across a product value chain; f) go-to market strategies according to stakeholders demand. • Since 2009: Assistant Professor at Faculty of Engineering, Universidade Lusófona de Humanidades e Tecnologias (FE-ULHT) of several subjects related to Genetics, Molecular Biology, and Biotechnology, Food-Biotechnology and Forensics. • Researcher at Center for Interdisciplinary Development and Research on Environment, Applied Management & Space (DREAMS) at FE-ULHT and at the Center of Structural Chemistry (CQE) at Instituto Superior Técnico-Universidade Nova de Lisboa (IST-UNL). • 2013-2018: Co-founder of HeartGenetics, Genetics and Biotechnology. Role: Chief of Technology Officer and Director of Quality Management System. Development of genetic tests with application in cardiovascular

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>pathologies, pharmacogenetics, cardio-oncology, nutrigenetics, and athletic performance. HeartGenetics pioneers a methodology that integrate Genomics and Computational Technologies to make available innovative knowledge that helps healthcare providers to promote wellness, prevent illness and diagnose diseases.</p> <ul style="list-style-type: none"> Academic profile: PhD in Molecular Biology (Lisbon's Faculty of Sciences) and Post-Doc in Molecular Biology (Lisbon's Faculty of Pharmacy) developing R&D in the subject of Genetics of Cardiovascular Diseases. As a researcher of Lisbon's Faculty of Pharmacy and Lisbon's Instituto Superior Técnico coordinated a national project (Cardiogenetics) and participated in more than 10 national projects (Cardiogenetics and Cancer). Published over 10 scientific papers, a book chapter and over 25 posters and oral communications. <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> Conde, J.; Larguinho, M.; Cordeiro, A.; Raposo, L.R.; Costa, P.M.; Santos, S.; Diniz, M.S.; Fernandes, A.R.; Baptista, P.V.; Gold-nanobeacons for gene therapy: evaluation of genotoxicity, cell toxicity and proteome profiling analysis, <i>Nanotoxicology</i> 08/2014; 8(5):521532.. DOI:10.3109/17435390.2013.802821 Silva, A.; Luís, D.; Santos, S.; Silva, J.; Mendo, A.S.; Coito, L.; Silva, T.F.S.; Guedes da Silva, M.F.C.; Martins, L.M.D.R.S.; Pombeiro, A.J.L.; Borralho, P.; Rodrigues, C.M.; Cabral, G.; Videira, P.; Monteiro, C.; Fernandes, A.R.; Biological characterization of the antiproliferative potential of Co(II) and Sn(IV) coordination compounds in human cancer cell lines: a comparative proteomic approach, <i>Drug Metabolism and Drug Interactions</i> 28 (2013) 167-176. Santos, S., Freitas, A.T. & Fernandes A.R. 2014. Overview of HCM genomics and transcriptomics: molecular tools in HCM assessment for application in clinical medicine. <i>Cardiovascular Disease</i>. ISBN: 978-1-922227-28-7. iConcept Press. Retrieved from http://www.iconceptpress.com/books/cardiovascular-disease
Prof. Adilia Charmier	<ul style="list-style-type: none"> Since January 2019: Consultant of EXMceuticals Portugal Lda Since March 2019: Chief executive Officer (CEO) of the R&D company EXMceuticals Portugal Lda in the field of Biotechnology using green technologies for the extraction of natural products and the characterization of the active purified compounds. Full Professor and Director of the undergraduated Biotechnology and Biotechnology Engineering courses as well as the Postgraduate Program in Circular Economy at Universidade Lusófona ULHT (Lisbon, Portugal). She dedicated her academic career to the teaching of disciplines in the areas of General Chemistry, Organic Chemistry and Chemistry of natural products, supervisor of several national and international students of Masters, PhD and international postdoctoral researchers Coordinator of the research center DREAMS at the Faculty of Engineering of ULHT (Center for Interdisciplinary Development and Research on

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>Environment, Applied Management & Space) and researcher at the center of Structural Chemistry (CQE) at IST-UNL(Portugal).</p> <ul style="list-style-type: none"> • Scientific research includes the various areas of extraction of medicinal plants and wastes using green and biological technologies, as well as the synthesis of Metal-coordinated compounds to produce new biologically active products and their applications in the areas of health, pharmaceutical, nutraceuticals and biomaterials. In addition, she develops scientific research as well as the creation of joint courses in the area of the Circular Economy in partnership with the group IMAT, University of Trier, IfaS, Germany. She has developed and supervised numerous research projects funded by international companies as well as consulting in the Canadian company EXMceuticals. • 68 national and international scientific publications distributed by peer-reviewed international journals, conferences and 3 patents, as well as the organization of national and international seminars and conferences. • Academic profile: PhD in Organic Chemistry (1993), Université Blaise Pascal (France).
Filipa Ferro	<ul style="list-style-type: none"> • Since April 2019: Management support at EXMceuticals Portugal, Lda • MSc. on Environmental Engineering, branch of Management and Environmental Systems (2013) and certified trainer. • Project manager of CIMULACT (H2020) at Mediatedomain, Lda., a project that aimed to engage citizens and several other actors in the co-creation of European Research and Innovation agendas, and responsible for the implementation of the Human Brain Project (H2020 FET Flagship Project) public consultations in Portugal in 2017. • Collaboration in national and international participatory projects mainly focused on the protection and management of coastal areas and marine environment such as PosMARGov, a follow-up project of the national awarded project MARGov – Collaborative Governance of the Protected Marine Areas, and MARLISCO (FP7). • Collaboration in the implementation of the participatory workshops of OPERAs (FP7) in Portugal. • Experience in design, organisation and facilitation of collaborative and participatory processes and multiple stakeholder events; conception and implementation of environmental awareness and educational activities, as well as training activities; creation of communication materials and elaboration of dissemination and communication strategies; social media management; and Science communication. <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Ferro, F. (2017) Environmental Mediation:an instrument for collaborative decision making in territorial planning. Finisterra – Portuguese Journal of Geography
Cândida Rocha	<ul style="list-style-type: none"> • Since January 2019: Consultant at EXMceuticals, Portugal Lda. • Since March 2019 – Waste Management Officer at EXMceuticals,

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>Portugal Lda.</p> <ul style="list-style-type: none"> • Key qualifications: <ul style="list-style-type: none"> ○ Exceptional capacity for organization of large communication events, involving a large number of stakeholders from various backgrounds, acquired by working as communication and event organizer expert in national and international funded project and by working as General Secretary of the Portuguese Association of Environmental Engineering. ○ Over 12 years of professional experience in management of development projects, with large communication activities, in multi stakeholder environments, gained mainly by coordinating national and EU funded projects as General Secretary and by working as Project Manager for different private and public clients (Aveiro University, EDV Energia etc.), including in developing countries (Sao Tome and Principe); ○ Excellent ability and experience to conceptualise and implement communication strategies, action plans and campaigns; ○ Extensive experience in working with media (radio, television, newspapers, etc), social media, and familiar in the use of various communication tools (web, advertising, etc.), accrued by working as coordinator of Communication Plans in national and EU funded project; ○ Over 15 years' experience at achieving excellent results in facilitating trainings, stakeholder meetings and roundtables, lecturing, teaching and coaching; ○ Extensive experience in developing key messages and communicating complex issues as climate change, circular economy, waste management and rural development to the broader public in an accessible and concise manner; ○ Over 15-year experience in organizing national and international conferences, congresses and seminars; ○ Excellent writing and reporting skills, including media news and preparation and drafting comprehensive wide-themed reports.
Nuno Oliveira	<ul style="list-style-type: none"> • Since February 2017: Ecosystem Manager at Esporão S.A. Management of biodiversity and ecosystem services in the context of organic farming and nature conservation; RD&I projects - functional biodiversity; ecosystem services; sustainability reporting; ecotourism & nature conservation; storytelling & public speaking; stakeholder engagement strategy; delegate at BCSD Portugal, the national representative of the World Business Council for Sustainable Development. Company's representative in the H2020 Project 'PROSEU – 'Prosumers for the Energy Union' and representative at the Wines of Alentejo Sustainability Plan. • Expert Ecologist in the areas of Biodiversity and Ecosystem Services Assessment and Valuation. Supporting the consultancy team on developing methodological approaches to evaluate, assess and manage Biodiversity and Ecosystem Services in the context of Forestry Regional Plans for two Portuguese regions - Alentejo and Oeste • Consultancy in various areas relates to Agroecology, Biodiversity and

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>Ecosystem Services, Strategic Environmental Assessment, Sustainability Strategies and Reporting, Business Strategy applied research, and project development. Some examples: Applied Research on Ecosystem Services and Natural Capital Valuation; Multiple Presentations / Lectures by invitation, Biodiversity & Ecosystem Services, Natural Capital, Biomimicry; Consultancy for Esporão SA in Agroecology, Sustainability & Strategic Management: Reporting; Business Ecosystem Analysis & Management; Marketing and Social Media Contents; Ecosystem Services assessment, classification and valuation, both for projects in Portugal and Africa; Sustainability Analysis / Development of Strategic Marketing Plans for SMEs for the agroforestry, tourism, construction and environmental consultancy sectors; Development of Communication / Social Media contents within the framework of organisational Marketing Strategies for Sustainability.</p> <ul style="list-style-type: none"> • Invited Lecturer, ISEG – IDEFE Post-Graduate in Sustainability Management. Expert in Sustainability Strategic Management, Module of Environmental Management and Sustainability – Biomimicry, Ecosystem services, Business Ecosystems, Circular Economy, Bioeconomy. <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Campos, I., Marín-González, E., Luz, G., Barroso, J., & Oliveira, N. (2019). Renewable Energy Prosumers in Mediterranean Viticulture Social–Ecological Systems. <i>Sustainability</i>, 11(23), 6781. • Dzedzic, A.; Smyth, B.; Oliveira, N.G and Simões, A. 2013. Special Report ‘Sustainability and Tourism - A Review of Tendencies and Trends with Future Visions and Recommendations. CIGEST-ISG • Master's thesis co-supervision - Abreu, D. A. C. D. (2018). A economia circular na visão estratégica de uma empresa portuguesa. Master's thesis co-supervision, DREAMS – Lusófona University.

Partner number – P17 – AUSYS s.r.o.

Organisation name	Country
AUSYS s.r.o.	Slovakia

A company AUSYS s.r.o.is focused on automation systems in the industry, deploying new control and monitoring technologies. Portfolio consists from the design and production of machines and production lines and also providing engineering services for PLC and HMI programming, robotic manipulators, vision / camera systems, design and implementation of machine safety, risk assessment and electrical project documentation. They are also providing production of electrical cabinets and wiring of machines and lines, supply of hardware and automation components and service works in manufacturing factories. Website: <https://ausys.sk/en/>

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Dipl. Ing. Tomáš Gazda	Project coordinator, CEO of the company, 8 years of experience in automation industry as designers, programmer and safety technician.
Dipl. Ing. Miroslav Kmec, PhD.	<p>Electrotechnical engineer with PhD. Degree, member of Slovak Electrotechnical Society, 5 years of experience in automation industry.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Possibilities of Using Facts Devices In Power System / Roman Jakubčák, Ľubomír Beňa, Miroslav Kmec - 2013.In: Acta Electrotechnica et Informatica. Roč. 13, č. 3 (2013), s. 8-11. - ISSN 1335-8243. Available at: http://www.aei.tuke.sk/papers/2013/3/2013-3.htm#JAKUBCAK. • Effect of thermal ageing on the oil-paper insulation / Lukáš Lisoň, Irida Kolcunová, Miroslav Kmec - 2014.In: Acta Electrotechnica et Informatica. Roč. 14, č. 4 (2014), s. 23-26. - ISSN 1335-8243. Available at: http://www.aei.tuke.sk/papers/2014/4/2014-4.htm. • Influence of parallel line mutual coupling on distance relay operation / Miroslav Kmec, Ľubomír Beňa, Lukáš Lisoň - 2014.In: Acta Electrotechnica et Informatica. Roč. 14, č. 4 (2014), s. 35-41. - ISSN 1335-8243. Available at: http://www.aei.tuke.sk/papers/2014/4/2014-4.htm. • Relative permittivity and dissipation factor of oil paper insulation / Lukáš Lisoň ... [et al.] - 2014.In: Current Problems of Maintenance of Electrical Equipment and Management. - Košice : TU, 2014 S. 197-203. - ISBN 978-80-553-1818-9 • Effect of series FACTS devices on distance relays / Miroslav Kmec, Ľubomír Beňa, Lukáš Lisoň - 2015.In: Elektroenergetika 2015. - Košice : TU, 2015 S. 564-567. - ISBN 978-80-553-2187-5
Dipl. Ing. Viliam Verčimák	<p>CEO of the company, 8 years of experience in automation industry as designers and programmer.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • PAVLÍK, Marek - ZBOJOVSKÝ, Ján - GERMAN-SOBEK, Martin - HRINKO, Marián, Vision of project Desertec, In: Renewable Energy Sources : proceedings IP 2012 : 8. - 17.6.2012, Špičák – Železná Ruda, Czech Republic. - Plzeň : ZU, 2012 P. 19-22. - ISBN 978-80-261-0130-7. • ZBOJOVSKY, Jan - HOCKO, Pavol - PAVLIK, Marek - KIRALY, Jozef, Operation of hydropower plants in Slovakia, In: Renewable Energy Sources : proceedings IP 2012 : 8. - 17.6.2012, Špičák -Železná Ruda, Czech Republic. - Plzeň : ZU, 2012 P. 99-102. - ISBN 978-80-261-0130-7 • Martin German-Sobek, Marek Pavlik, Samuel Bucko, Energy utilization of biomass in the region of east Slovakia, In: Proceedings of the Intensive

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>Programme 2014 : Perspectives for the development of low-power systems using biomass in the context of the EU energy policy for the Central European region : July 6th to 17th, 2014, Pardubice, Czech Republic. - Plzeň : ZČU, 2014 P. 217-221. – ISBN 978-80-261-0356-1.</p> <ul style="list-style-type: none"> • Additional modification of thermomagnetic properties of objects of low relative permeability in electromagnetic field / Dušan Medveď ... [et al.] - 2017.In: Acta Physica Polonica A. Vol. 131, no. 4 (2017), p. 1138-1140. - ISSN 0587-4246 • Check measurements of magnetic flux density: Equipment design and the determination of the confidence interval for EFA 300 measuring devices / Pavol Liptai ... [et al.] - 2017. In: Measurement. Vol. 111 (2017), p. 51-59. - ISSN 0263-2241

Partner number – P18 – Sabanci University

Organisation name	Country
Sabanci University	Turkey

Established in 1996, Sabanci University (SU) is a modern and successful university founded in 1996 and since then, has continued to progress and raise their standards in academic excellence. According to the Entrepreneurial and Innovative University Index of the Scientific and Technological Research Council of Turkey (TUBITAK), SU has been internationally recognized as one of the most innovative and research-oriented universities in Turkey. SU is among the top three universities in Turkey and it is currently ranked 44th in the Times Higher Education Young University Rankings, an exceptional accomplishment after having competed with the best international universities aged 50 years or under. The University employs more than 700 staff members and teaches to 4100 undergraduate and 1100 graduate students. The research activities at SU aim to enrich educational programs while contributing to social and economic development at regional, national and international level. SU aspires to become an international reference point for innovation in education in research, adapting an interdisciplinary educational infrastructure at the institute. Their mission is twofold: to develop internationally competent and confident individuals, enriched with the ability to reflect critically and independently, combined with a strong sense of social responsibility; and to contribute to the development of science and technology on a global level, as well as disseminating the knowledge created to the benefit of the community. Website: <https://www.sabanciuniv.edu/en/>

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Dr. Lutfi Taner Tunc	Taner Tunc is the project lead for SU. Dr. Tunc is a member of the Faculty of Engineering and Natural Sciences at Sabanci University, affiliated with Manufacturing Engineering Program. He got his BSc in Mechanical Engineering in 2004 from Middle East Technical University in Ankara, Turkey. Then, he

<p>Names of the staff members</p>	<p><i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i></p>
	<p>continued his studies on modelling of machining operations, specifically for 5-axis milling and passed his MSc (2006) and PhD (2010) diplomas in Sabanci University. His research interests include modelling of machining operations together with machine tool dynamics for 5-axis machining. He is focusing on robotic manufacturing, composite manufacturing technologies such as composite machining and automated fibre layup. Also, the excellence and motivation of Dr. Tunc is demonstrated by his election as a research affiliate at the renowned International Academy for Production Engineering (CIRP). In addition of his academic research activities published in high impact journals, Dr. Tunc has very close contact with a large number of international companies, notably from the aerospace industry.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Tunc, L. T., Zatarain, M. (2019). Stability optimal selection of stock shape and tool axis in finishing of thin-wall parts. CIRP Annals. • Tunc, L. T. (2019). Tunc, L. T. (2019). Smart tool path generation for 5-axis ball-end milling of sculptured surfaces using process models. Robotics and Computer-Integrated Manufacturing, 56, 212-221. • Tunc, L. T., Mohammadi, Y., Budak, E. (2018). Destabilizing effect of low frequency modes on process damped stability of multi-mode milling systems. Mechanical Systems and Signal Processing, 111, 423-441. • Tunc, L. T., Stoddart, D. (2017). Tool path pattern and feed direction selection in robotic milling for increased chatter-free material removal rate. The International Journal of Advanced Manufacturing Technology, 89(9-12), 2907-2918. • Tunc, L. T., Budak, E., Bilgen, S., Zatarain, M. (2016). Process simulation integrated tool axis selection for 5-axis tool path generation. CIRP Annals-Manufacturing Technology, 65(1), 381-384. • Tunc, L. T., Shaw, J. (2016). Investigation of the effects of Stewart platform-type industrial robot on stability of robotic milling. The International Journal of Advanced Manufacturing Technology, 87(1-4), 189-199. • Tunc, L. T., Shaw, J. (2016). Experimental study on investigation of dynamics of hexapod robot for mobile machining. The International Journal of Advanced Manufacturing Technology, 84(5-8), 817-830. • Budak, E., Ozturk, E., Tunc, L. T. (2009). Modeling and simulation of 5-axis milling processes. CIRP Annals-Manufacturing Technology, 58(1), 347-350.

Partner number – P19 – Edelweiss Connect GmbH

<p>Organisation name</p>	<p>Country</p>
<p>Edelweiss Connect GmbH</p>	<p>Switzerland</p>

Edelweiss Connect (previously known as Douglas Connect and renamed to Edelweiss Connect as from February 2019) is a Swiss SME located in Basel, specialised in developing and implementing R&D projects, communities and collaboration to transfer solutions for industrial use and advance regulatory acceptance. EwC has experience in scientific research integrating data, in silico and in vitro methods and related infrastructure, and has been involved in organising scientific, communication and knowledge management and solutions development projects since 2008 (<https://edelweissconnect.com/>). EwC served as Project Coordinator of the OpenTox FP7 project which developed an Open Source Predictive Toxicology Framework for the management of toxicology data, algorithms, models and validation. EwC was the Scientific Coordinator of ToxBank, project which developed the infrastructure and predictive toxicology support resources within the SEURAT-1 program. Between February 2014 and January 2017, EwC coordinated eNanoMapper. EwC is currently coordinating OpenRiskNet, a project funded within Horizon 2020 EINFRA-22-2016 Programme, with the main objective to develop an open e-Infrastructure providing data resources and analysis, modelling, simulation and prediction services to a variety of communities requiring risk assessment, including chemicals, cosmetic ingredients, therapeutic agents and nanomaterials. EwC is also involved in EU H2020 projects ACEnano, NanoCommons and EU-ToxRisk, with an important role in building knowledge sharing infrastructure, modelling and community outreach. EwC led the Eurostar's project ToxHQ whose goal was to commercialise new methods in predictive toxicology and risk assessment through establishing industry-driven solutions and an integrating business ecosystem. Website: <https://www.edelweissconnect.com/>

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Dr. Barry Hardy	<p>Dr. Barry Hardy (M), is the Chief Executive Officer (CEO) at Edelweiss Connect. Dr Barry Hardy is leading Edelweiss Connect and its team supporting the development of new integrating solutions in industrial safety assessment. He has coordinated the OpenTox project in predictive toxicology and the ToxBank infrastructure development project. He is currently President of the OpenTox Association, founded in 2015 as an international non-profit organisation promoting an open knowledge community approach to new methods in predictive toxicology. He recently led the infrastructure development for the IMI EBISC stem cell banking project and the eNanoMapper project developing OpenTox solutions supporting nanotechnology safety assessment. New projects include leading OpenRiskNet, knowledge infrastructure development for ACEnano and Eu-ToxRisk and translation of research methods to industrial practice within ToxHQ.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Hardy, B; The Growing Significance of Communities & Collaboration in Discovery & Development, Future Medicinal Chemistry, Vol 1, Issue 2, Spring 2009. • Hardy, B. et al., Collaborative Development of Predictive Toxicology Applications, Journal of Cheminformatics 2010, 2:7, 31 August 2010. • Hardy, B., Apic, G., Carthew, P., et al. (2012). A toxicology ontology roadmap. ALTEX 29, 129-137.

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<ul style="list-style-type: none"> • Hardy, B., Apic, G., Carthew, P., et al. (2012). Toxicology ontology perspectives. ALTEX 29, 139-156. • Kohonen, P., Hardy, B., "The ToxBank Data Warehouse: Supporting the Replacement of In Vivo Repeated Dose Systemic Toxicity Testing", Molecular Informatics, Special Issue: Advances in Computational Toxicology, (2013), Volume 32, Issue 1, 47–63 • Leist M, Ghallab A, Graepel R, ..., Hardy B, et al., Adverse outcome pathways: opportunities, limitations and open questions, Arch Toxicol. 2017 Nov;91(11):3477-3505. • Fadeel B, Farcas L, Hardy B, Vázquez-Campos S, Hristozov D, Marcomini A, Lynch I, Valsami-Jones E, Alenius H, Savolainen K, Advanced tools for the safety assessment of nanomaterials, Nature Nanotechnology, 2018, DOI: 10.1038/s41565-018-0185-0 • Oki N., Farcas L., Abdelaziz A., Florean O., Doktorova T., Exner T., Kohonen P., Grafström R., Hardy B., Integrated analysis of in vitro data and the adverse outcome pathway framework for prioritization and regulatory applications: An exploratory case study using publicly available data on piperonyl butoxide and liver models, Toxicology In Vitro, 2018, DOI: 10.1016/j.tiv.2018.09.002

Partner number – P20 – University of Bremen

Organisation name	Country
University of Bremen	Germany

The University of Bremen is a medium-sized German university with around 20,000 students. Bremen offers a wide range of subjects for its committed and talented students: More than 100 masters programs and bachelor programs, as well as the state law exam. Moreover, with research-based learning, the university has reinterpreted project studies, a defining feature originating from when it was founded. As part of the European university network YUFE - Young Universities for the Future of Europe – it is developing a new model for European higher education together with seven other universities. 2,300 academics (43%), among them 270 professors (32% women), teach and carry out research in a wide range of disciplines. We have a long established tradition in interdisciplinary cooperation and excellent research in natural sciences, engineering, the social sciences and the humanities, as well as in teacher training. From 2012-2019, the university of Bremen with its Institutional Strategy "Ambitious and Agile" was one of eleven universities that held the title of "University of Excellence." The issues of today's and future societies are dealt with in six interdisciplinary, high profile areas focused on the oceans and the global climate, the future of industrial production, the social conflicts of modern welfare states, the interfaces between digital technology and humans, the logistics of global supply chains, and equity in health care. The marine sciences are particularly prominent with their Cluster of Excellence that has been continually funded since 2006. Website: www.uni-bremen.de.

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Dr. Otthein Herzog	<ul style="list-style-type: none"> • 18 years of industry experience, • 16 years of experience as chaired professor of Artificial Intelligence at Universitaet Bremen, • Founder and director of the research and technology transfer Centre for Computing and Communication Technologies (TZI), • PI of the FP7 Integrated Project WearIT@Work and of numerous other EU, BMBF and DFG projects. • Co-PI of the DFG Collaborative Research Center on "Autonomous Cooperating Logistics Processes – A Paradigm Shift and its Limitations" <p>Dr. Herzog is a Fellow of the German National Academy of Science and Engineering - acatech and of the Informatics Association Germany. He has published more than 280 refereed international scientific contributions.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Jan Ole Berndt; Otthein Herzog (2016). Anticipatory Behavior of Software Agents in Self-Organizing Negotiations. In M. Nadin (ed.). Anticipation across Disciplines. Springer International Publishing: Berlin, pp. 231-253. • Warden, T.; Porzel, R.; Gehrke, J.; Langer, H.; Herzog, O.; Malaka, R.(2011). Knowledge Management for Agent-based Control under Temporal Bounds. In Hülsmann, M.; Scholz-Reiter, B.; Windt, K. (eds.). Autonomous Cooperation and Control in Logistics: Contributions and Limitations - Theoretical and Practical Perspectives. Springer: Heidelberg, pp. 229-246. • Stefan Kirn; Otthein Herzog; Peter Lockemann; Otto Spaniol (eds.) (2006). Multiagent Engineering - Theory and Applications in Enterprises. Springer: Heidelberg. • Timm, I.J.; Scholz, T.; Krempels, K.-H.; Herzog, O.; Spaniol, O. (2006). From Agents to Multiagent Systems. Chapter 1.2. In Kirn, S. et al. (eds.). Multiagent Engineering – Theory and Applications in Enterprises. Springer: Heidelberg, pp. 35-51. • Otthein Herzog; Thomas Schildhauer (eds.) (2009). Intelligente Objekte: Technische Gestaltung – Wirtschaftliche Verwertung – Gesellschaftliche Wirkung. acatech DISKUTIERT. Springer: Heidelberg • Florian Pantke, Stefan Edelkamp, Otthein Herzog (2014). Planning with Numeric Key Performance Indicators over Dynamic Organizations of Intelligent Agents. In Jörg P. Müller, Michael Weyrich, Ana L.C. Bazzan (eds.). Multiagent Systems Technologies - Proc. 12th German Conference on Multiagent System Technologies (MATES 2014), Stuttgart, Germany, September 23-25, 2014. Springer: Heidelberg, Berlin, DOI: 10.1007/978-3-319-11584-9_10, pp. 138-155. (Best paper award).

Partner number – P21 – Kaunas University of Technology

Organisation name	Country
Kaunas University of Technology Faculty of Social Sciences, Arts and Humanities	Lithuania

Kaunas University of Technology (KTU) is the leading Lithuanian university that provides a wide range of studies and closely cooperates with business. The University provide studies in the fields of engineering, physical and social sciences, arts and humanities. The research groups that carry out research at KTU contribute to the global scientific knowledge by conducting cutting edge interdisciplinary research related with the most important and up-to-date issues. The University's mission is to provide the research-based studies at international level; to develop and to transfer knowledge and innovative technologies for sustainable development of the State and development of innovations; to create an open creative environment which inspires talents and leaders. The Faculty of Social Sciences, Arts and Humanities at KTU aims to become an intellectual, creative space where innovative solutions and the best ideas are born, therefore collaborative and creative environment meeting the needs of students and teachers is created. The Faculty does not limit itself to traditional lecturing but seeks for innovative teaching methods which foster critical and creative thinking skills. Interdisciplinary projects together with communities of other faculties and universities are encouraged. The Faculty's priority is social partnership and internationalization. Collaboration with private and public organisations, local communities, provide practical knowledge, abilities, and skills which match market needs. This motivates to create joint projects, to propose innovative solutions, and organise practical activities. The experience of studying and training in universities or organisations abroad is a necessary requirement to ensure the quality of studies. (www.ktu.edu and <https://fssah.ktu.edu/>)

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Assoc. prof. Dainora Maumevičienė	Assoc. prof. dr. Dainora Maumevičienė is currently a vice-dean for studies at the Faculty of Social Sciences, Arts and Humanities. She has experience in the development of both formal and informal study programmes and courses, their management, monitoring, quality assurance and accreditation. She also works as a professor of localisation, translation / interpreting, and teaching English as a foreign language. Her interest fields include ICT-integrated and blended English language teaching (with the emphasis on learning environments such as Moodle or Vista); developing learning material applying ICT technologies applicable in distance teaching and learning; localisation of software, databases and learning environments; and interpretation and translation. She has participated and coordinated in project partner countries various European (Leonardo da Vinci, Erasmus) and national (LieMSIS, LVU-Lithuanian Virtual University) projects and has made a number of presentations international conferences and seminars. As an expert in e-learning as applied to languages, the use of innovative didactics (such as design thinking in humanities, social sciences and arts), and on the basis of her wide range of international contacts

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	in her field, she will advise all stakeholders during the project development and implementation in the area project management, dissemination, intellectual output development and other tasks as required during the project implementation and decided by the Project Steering Committee. Being a manager of the project team and KTU the assoc. prof. will compose the team of highly-competent researchers to carry out project-based activities.

Partner number – P22 – Vilnius University

Organisation name	Country
Vilnius University	Lithuania

Vilnius University, one of the oldest and most famous establishments of higher education in Eastern and Central Europe, was founded in 1579. Functioning for a long time as the only school of higher learning in Lithuania, it was a preserver of cultural and scientific traditions, and has played a significant part in the cultural life not only of Lithuania, but the neighbouring countries as well. During more than four centuries of its existence, the University of Vilnius has seen periods of growth and decline, revival, and closure. The University is a unique witness to the history of the Lithuanian state. Vilnius University consists of 23 faculties Faculties, Institutes, Centres & Other Divisions. Vilnius University has a base of 2889 academic staff (teaching staff - 2182; professors - 305; associate professors - 499, ect.), and 707 research staff. The number of students is 20806. Kaunas faculty is the only faculty of Vilnius University in a different city; it was established in 1964 as an alternative in Humanities to the in those days popular technical institutions of higher education. The Faculty was born out of the idea that it would only offer general, fundamental sciences in the field of Humanities, while the speciality studies would be continued on the extramural level. In 1989, the Faculty launched full-time studies and became the Vilnius University Kaunas Faculty of Humanities. In 2017, the name was changed to Kaunas Faculty. Vilnius University Kaunas Faculty unites two institutes: Institute of Social Sciences and Applied Informatics and Institute of Language, Literature and Translation Studies. Currently, the Faculty has a base of 770 students, 599 of whom are the BA level students. The seven departments of the Faculty provide 84 workplaces for lecturers among whom are: 22 professors, 31 associate professors, 31 lecturers. The Faculty has 3 scientists and 40 PhD students. The material base that meets the demands of the study and science process is constantly being updated: currently, the Faculty consists of 22 classrooms, 20 out of which have multimedia equipment, 4 computer classrooms, 2 terminal computer classrooms, video conference studio and a modern audio-visual translation lab (AVL). Website: <https://www.vu.lt/>

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Raimonda Agne Medeisiene	Lectures and seminars on Business Ethics, Public Relations and Responsible Leadership. Experienced in teaching / workshop's leading abroad. Expert of Applied Drama Methods, Creative director of Forum theatre "4 ROOMS",

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>project manager. The strengths are artistic solutions, innovativeness and creativity. The most recent coordinated international project : 2014 -2016 Project coordinator of the research project New Strategies for Working life Collaboration (Project No. NPHZ-2014/10017) financed by Nordplus Horizontal.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Medeišienė, R.A., Lopez Rodriguez, J., Pučėtaitė, R. (2019). Raising moral awareness of intercultural students’ audience using applied drama methods. In H. Lehtimäki, A. K. Dey (ed). Ethics and Responsibility in Human Resources, Leadership, and Startup Business. (pp.98-113)). New Delhi, London, Oxford, New York, Sydney: Bloomsbury • Medeišienė, R.A., Pučėtaitė, R. (2019). Developing middle level management moral competence by Applied Drama Methods. Presentation at the 2019 Annual EBEN Research Conference, Roskilde University, Denmark, http://www.eben-net.org/content/eben-research-conference-2019-roskilde-denmark-26-28-september • Lämsä, A-M., Pučėtaitė R., Kujala J., Medeišienė, R.A., Riivari, E., Bulatova, J., Kooskora, M., Brinkmann, J., Heikkinen, A. Mixed Learning Approach to Teaching Ethics in Leadership and Management: A Case Course In A Multicultural Group. ICMC, Greater Noida, India, December 3–4, 2015
Indre Sciukauske	<p>PhD student and teaching assistant at the Institute of Social Sciences and Applied Informatics at Kaunas Faculty, Vilnius University, Lithuania. She works on her doctoral dissertation, which investigates employer brand impact on services brand. Her research interest areas are brand management, services management and marketing, employer brand conceptualization as well as issues in human resource management.</p>

Partner number – P23 – Entovation International Ltd.

Organisation name	Country
Entovation International Ltd.	USA

Since 1987 our purpose is to leverage the competencies of one another in the spirit of knowledge and innovation to provide innovative consulting support to enterprises, governments, cities and nations to transform and redesign the way we think and where we live. We are results oriented and want you to be successful. We identify new markets that are being underserved, targeting those instead to create an innovative product for a new customer base, enliven macro, meso and micro economies. We create processes and programs that make it easy for new ideas to be heard and adopted and channels for better communication and collaboration around those ideas. We construct a plan and strategy or roadmap that realigns goals around innovation for implementation and achievement of those goals and provide follow-

up support for sustainment. Key to success of this effort will include assessment of innovation diffusion change management strategies for governments and organizations and identifying barriers and potential solutions to innovation diffusion policies and regulations in government and companies. Website: <http://entovation.com/>

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Lynne Schneider	<p>Ms. Schneider is CEO of Entovation International and has over 30 years of experience in the defense industry and international economic development initiatives. She has a successful track record providing innovative strategy and policy solutions to senior officials/military on a global scale in the Middle East, Europe and NATO. Ms. Schneider has extensive knowledge of large and small organization policy/processes, principals fostering change and designing and directing large-scale innovative projects for the Federal Government and private sector applying knowledge of global innovation and knowledge cities, crisis response, economic development and micro-business initiatives. Acts as a Senior Advisor to the Chief Management Officer at DoD covering all aspects of transformation and reform for the business operations of the Department. Maintains the Entovation 100 Global Knowledge Leaders; which includes several global thought leaders and practitioners in the field who play a role in shaping the new knowledge-based econom. Expertise in stability operations with a concentration on Theater Security Cooperation, stabilization strategies for economic and national security, reconstruction, emergency response. Recent success includes revitalization of Tblisi Republic of Georgia, economic development planning and business incubator innovation initiatives in Poland. Entovation books include Innovation Superhighway, Knowledge Economics, Beyond Business Process Re-engineering.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • A Framework for Accelerating Innovation through Innovation Webs with co-authors Oliver Schwabe, Nuno Marques de Almeida and Ana Filipa Salvado.
Chin Hoon Lau	<p>Chin Hoon is a pioneer of international virtual knowledge network, open innovation and online collaborative learning of bioinformatics. Track record: a member of Entovation 100 Global Knowledge Leaders, founder of Internet Biologists (completed a 10-year multiple innovation cycles including ideation, virtual teaming, leadership renewal, delivery of courses, and knowledge transfer through several publications). Expert in policy analysis and development. Track record: 14 years of legislative service, governmental policy and political issue analysis, academically enhanced by 4 years of related postgraduate-level training. Research and industrial experience in molecular biotechnology, e-learning, dotcom start-up, and virtual community. Combined 20 years of social and political innovations at NGO, grassroots and constituency</p>

<p>Names of the staff members</p>	<p><i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i></p>
	<p>level, with the building of micro knowledge entities and increasing knowledge content as the core strategies. Experienced in the management of issues, traps and advantages in the cross and mixed cultural communication within Asians and between the typical East-West, as well as cross socio-economical communication.</p> <p>Most recent publications related to the domain of the project:</p> <ul style="list-style-type: none"> • Lau, C.H., Atherton, D., Gore-Langton, R.E., Kondu, P., Leifer, Z. (2005) Internet Collaboration. In: The Internet for Molecular Biologists. A Practical Approach. (Sansom, C.E. and Horton, R.M., eds). Oxford University Press. • Lau, C.H. (2006) In Search of Permanency: Internet Biologists and Continuity in Virtual Knowledge Network. In: Knowledge Economics: Emerging Principles, Practices and Policies. (Amidon, D.M., Formica, P., Mercier-Laurent, E. eds). Tartu University Press. • Lau, C.H. (2009) The Future of Innovation is Enabling Hope at the Frontiers of Systems, Values and Politics. In: The Future of Innovation (Bettina von Stamm and Ana Trifilova, eds). Gower.
<p>Joel Alleyne</p>	<p>Joel is active academically at the Faculty of Information and Knowledge Media Design Institute (University of Toronto) and has taught at the Faculty of Information and Media Studies (University of Western Ontario). He is a member of the Entovation 100 Global Knowledge Leaders; which includes several global thought leaders and practitioners in the field who play a role in shaping the new knowledge-based economy. Joel is also a faculty member with the Kaieteur Institute for Knowledge Management. Joel has held senior management roles (Chief Information Officer, Chief Knowledge Officer) and is been involved in several projects involving mobile health (mHealth), eHealth, health networking, electronic medical records, knowledge management, strategic planning, and inter-professional care (IPC). He has also done research in these areas and led industry working groups involving both health providers and vendors. sciences industry. Current research involves information and knowledge management.</p>

Partner number – P24 – Rolls-Royce Deutschland Ltd & Co KG

<p>Organisation name</p>	<p>Country</p>
<p>Rolls-Royce Deutschland Ltd & Co KG</p>	<p>Germany</p>

Rolls-Royce Deutschland Ltd & Co KG is a fully owned subsidiary of Rolls-Royce plc. Rolls-Royce is the world’s leading engine supplier for business aviation, powering more than 3,200 aircraft in service today. Rolls-Royce pioneers cutting-edge technologies that deliver clean, safe and competitive solutions to meet our planet’s vital power needs. Rolls-Royce has customers in more than 150 countries, comprising more than 400 airlines and leasing customers, 160 armed forces, 70 navies, and more than 5,000 power and nuclear customers. Annual underlying revenue was £15 billion in 2018, around half of which came from the provision of aftermarket services. In 2018, Rolls-Royce invested £1.4 billion on research and development. Rolls-Royce also supports a global network of 29 University Technology Centres, which position Rolls-Royce engineers at the forefront of scientific research.

The Group has a strong commitment to apprentice and graduate recruitment and to further developing employee skills. Website: <https://www.rolls-royce.com/>

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Andreas Hoessler	<p>Experienced Project / Programme Manager in complex environments of R&D, IT, Operations and Engine Programs, who holds a degree in Mechanical Engineering (Dipl. Ing.) and Programme Management (MSc). Pragmatic working style, multi interested, open minded, continually learning and improving, relishes new challenges and prefers transformational approaches. Remain calm under high pressure. Reflection being applied to daily work. Godfather in the foundation “Haus der kleinen Forscher” (“Little Scientists' House”). Key Note Speaker at the University of Manchester in Project Management. Key expertise includes:</p> <ul style="list-style-type: none"> • Complex Project Management in R&D (Research & Development), IT, Operations and Engine Programs. • Project Portfolio Management • Engine Testing, Validation and Engine Development • Product Lifecycle Management from cradle to grave (theory and applied practice) • Manufacturing processes and relevant improvements (e.g. Data Driven Manufacturing, Process Excellence) • Change, Risk (with special interest) and Stakeholder Management • IT Systems knowledge in Manufacturing and underlying Business Processes. • Enterprise Asset and Service Management • Leadership skills - enthusing diverse, multinational teams to successfully deliver on complex projects. • Easy communication and networking on all levels within and outside the company.

Partner number – P25 – Volvo Lastvagnar AB

Organisation name	Country
Volvo Lastvagnar AB	Sweden

Volvo Lastvagnar AB is a part of Volvo Group, which have around 110 000 employees. We are one of the world's leading manufacturers of trucks, buses, construction equipment and marine and industrial engines. We also provide complete solutions for financing and service. Main task of our affiliation is the powertrain component production (PWT), our group is the global function of PWT which take care of all the Research and Advance Engineering activities for all our production sites as well as current production processes in the daily production. I.e. we take care of production technologies from research to introduction to mass production. Website: <https://www.volvotrucks.se/>

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
Robert Wester	<p>Robert Wester, Manufacturing Technology Manager. Started at Volvo -89 in the local organization in Skövde / Sweden. Have since 2008 been globally responsible for both development and current Verification processes for Powertrain (Diesel engine and transmission). From 2018 I'm global responsible for Manual Assembly within Powertrain. Since 2014: Business Process Developer of the Manufacturing Technology Roadmap Process and Business Process Developer of the Master Process (current WoW for all Factories in Powertrain). Some research & Advanced Engineering projects from last 3 years:</p> <ul style="list-style-type: none"> • Find concepts to minimize EOL, instead use IPV • Future Assembly of Electromobility • Re-configurable production • Vision system to ensure correct Assembly • Material to Man concepts • Concepts to improve ergonomic situations
Danfang Chen	<p>Danfang Chen, Manufacturing Technology Manager, Associate Professor in Sustainable Manufacturing Technology. Number of publications: Journal 6, Conference 9. Involvement in government founded research projects, a few selection from last 5 years:</p> <ul style="list-style-type: none"> • Test bed for the future process fluids in sustainable production • Industrial water • Transitioning to sustainable production – application on automotive powertrain manufacturing processes (SUSTAIN-CRYO) • Innovativ powder based component technologies • Fundamentals of Barkhausen noise and magnetic field modelling • Development of localized electrochemical deposition for re-manufacturing • Non-destructive characterization concepts for production • Capability of Machining Systems and Performance Improvement Technologies

Partner number – P26 – Aristoncavi SPA

Organisation name	Country
Aristoncavi SPA	Italy

Aristoncavi is one of the most important manufacturers of rubber insulated low voltage and medium voltage cables. Aristoncavi has grown up to the present 35.000 sqm, due to a recent expansion and reallocation of the manufacturing sites and warehouses, shared between the two production units dedicated to the manufacture of conductors and electric cables, for different applications. Aristoncavi has moreover achieved leading positions in some market segments for the "special application" cables. In the last years the company has especially invested in the technological growth, by strengthening the technical department with a particular care for the Research & Development of cables dedicated to the industry and tertiary sectors. Aristoncavi has its own innovative specific production and laboratory equipment, capable of engineering and manufacturing "high-tech" cables for different applications. Website: <https://www.aristoncavi.com/>

Names of the staff members	Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.
Leopoldo Destro	Leopoldo Destro is the chief executive of Aristoncavi.

Partner number – P27 – Baladi Ltd.

Organisation name	Country
Baladi Ltd.	Israel

Baladi is one of the largest and leading food companies in Israel. The company is based in the Beer Tuvia's Industrial Zone, near Kiryat Malachi, and includes the logistics centre and the company offices. The company's production activities are carried out at a plant in the Shahak industrial zone in Emek Izrael. Baladi deals with the import, manufacturing and marketing of various high quality good products marketed nation-wide from Kiryat Shmona to Eilat. Website: <http://www.baladi.co.il/?lang=eng>

Names of the staff members	Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.
Erez Dahabani	Erez Dahabani is the owner and CEO of Baladi. He is the 3rd generation in the Dahabani family leading this 104 years old family business. He assumed responsibility of the company at age 16, when his father identified his talent for business, and trusted him to take over the responsibility to lead the company into the future. He is a leader and entrepreneur and under his

Names of the staff members	<i>Summary of relevant skills and experience, including where relevant a list of recent publications related to the domain of the project.</i>
	<p>leadership Baladi has grown steadily gaining trust and respect in Israel and abroad. His secret of success is fast innovation through experimentation. He identifies opportunities and moves fast to exploit them. The company today is one of the leaders in the food market in Israel. Baladi is innovating both in operations and in marketing. The new logistics center will soon open - fully automated - and new convenience products are now leading the market and growing the turnover of Baladi in an amazing speed. Erez is always eager to learn from others and to share his knowledge with others and he will be a great team member in our knowledge alliance focused on accelerating innovation.</p>