Request for Proposal

Project	Project Title	Project Description	Type
CAMP	Certified Additive Manufacturing Design Professional	Additive Manufacturing is a disruptive manufacturing method that has evolved from its early days as a niche for prototyping to an economically viable production method for medium size and small batch production with huge added value to enhanced part functionality due to the freedom of design. Due to the different design and production philosophies current and up coming engineers must be up skilled in AM topics. As part of the educational program of EIT-M, a big number of educational material has been developed, that covers the topic of Additive Manufacturing. The aim of CAMP is to evaluate the current content, recognize gaps and fill them by create a certifiable educational path for AM designers.	Success Story
LRM	Lean Re-Manufacturing - circular manufacturing transition for companies	The circular approach, via remanufacturing, can transform the impact of the manufacturing sector. Its adoption can have a transformative impact on helping manufacturing meet its sustainability objectives. This project is focused on the development of training content on lean remanufacturing with the objective of helping to minimize waste and improve productivity. The course content will include the development of practical examples of the use of key supporting technologies, within an advanced manufacturing environment. The program will be delivered initially to students and once refined to industry participants. The objective being to deliver a minimum of 16 workshops in 4 countries to a minimum of 160 industry trainees. This workshop based course is aimed at manufacturing professionals and brings 'Lean' together with 'Remanufacturing' for the first time in the World. We will be ahead of the pack in this innovative 'Industry 4.0+' course.	Success Story
FlexMan	Experiential Learning for Flexible and Resilient Manufacturing	In a post COVID-19 outbreak scenario, manufacturing SMEs face the challenges of rapidly build capacity to shift to flexible production paradigms. This requires upskilling personnel from multiple areas in both technical and transformation management topics, as well as provide hands-on opportunities and expert support to start engage towards the transformation. FlexMan makes available a transformational program for manufacturing SMEs with a demand to swiftly integrate tailored solutions for flexible manufacturing. The program is offered to personnel playing a key role in SMEs' digital	Success Story

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		transformation, and its based on a learning path which includes experiential learning and consultancy by experts within research and technology organizations. During the project the program will be delivered to 24 SMEs and 196 professionals across four European hubs; after it will be available on the market.	
SysteMA	Systemic Design and Sustainable Healthcare for MedTech Manufacturing	The European Medical Technology Industry has not been targeted with sustainability demand to the same extent as manufacturing industries in other sectors. This is for several reasons: the industry has been heavily regulated under many MedTech standards, the focus has exclusively been on patient safety, and sustainability demand from healthcare providers has been weak. This has been changing in recent years and the current pandemic has further sharpened the concerns of EU health systems for their environmental impacts. The demand for green procurement, sustainable products/services, and higher environmental standards, is set to increase dramatically. However, companies, especially SMEs, have few tools to fill the knowledge gaps on sustainable healthcare issues. The training programme aims to address this need by offering learning paths tailored according to the starting level and the sustainability goals that professionals and students in the MedTech industry aim to acquire.	Success Story
IMMC	Industrial Mobile Manipulator Challenge	The project aims to set up an industrial mobile manipulator challenge (IMMC). Participants will have to develop and/or improve a mobile manipulator to solve relevant problems from different domains and adapt them to tackle unpredicted challenges. In particular, various domains, such as agriculture, construction, food, health care, logistics, manufacturing, utility, etc., often face similar problems. Hence, each year will target a different domain with meta-challenges. The IMMC would, therefore, create a fertile environment for new ideas, where exciting tasks and diverse teams lead to creating solutions for challenging problems throughout different industries. Further, it will focus on this diversity to form a network of people from different areas through old and new communication channels. So, it will allow interested people of all levels of education to gain valuable skills in robotics and transfer this knowledge into the different European industries.	Success Story
YouLead	Young leaders development program	The project will assist manufacturing SMEs in their digital and technological transformation by helping them to develop talents from within organization. Young employees with engineering background lack knowledge and skills in leadership, that are essential for their performance and effective utilization of resources. The proposed activity aims to overcome the challenge SMEs are facing by creating and pilot testing the leadership program specifically tailored for young leaders with engineering background. SMEs needs will be assessed and learning paths created for the participants. Consortium partners will develop digital learning content and organize learning, workshops and individual consultations for participants. Moreover, SMEs and their	Success Story

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		employees participating in learning activities will be enabled to create networks of young leaders and exchange their experiences.	
TURING	(flexy enhance) EITM digiTal Upskilling and ReskIlliNG programme	The challenge of labor displacement driven by technological innovation has a long and storied history and is currently a strong challenge for companies digitalisation. The TURING programme will contribute to address this challenge by promoting personalised and flexible digital enhancement training programmes, co-created with digital technology providers, companies adopting those technologies and their mature established customers that use similar technologies. Identified personnel in companies intending to adopt digital technologies will benefit from immersive internships in the technology provider and in a mature customer that uses similar technologies, through which they will build competencies regarding the development and use of those technologies that will enable them to adopt in their home companies. The Turing programme will contribute for upskilling and reskilling innovation leaders for the future of manufacturing industries.	Education Case
LIVE4.0	Learning about IoT and Virtualization to better your Experience in Machining in the 4.0 era	The LIVE4.0 project aims at improving SMEs education in the machining field promoting a better use of Industry 4.0 instruments and creating effective learning experiences for their personnel at the job shop. Education on how to achieve a fruitful digitalization of processes to improve their flexibility, resilience and efficiency will be the learning target. LIVE4.0 will exploit the European SMEs huge improvement margin by applying new I4.0 tools to make the transition towards a more advanced and efficient way of manufacturing. LIVE4.0 will provide the knowledge and the experience of partner Universities, it will also bring the example of a partner SME that will be active in providing the user point of view in the content creation and provision, from which the project tagline: "from the SMEs for the SMEs". New and flexible tools as learning nuggets and learning paths will be coupled with live and hands on experience at the job shop to tailor the learning experience to the SMEs needs.	Education Case
WINNING	Women IN maNufacturING	Women represent the largest pool of untapped talents for manufacturing. This limited involvement is mainly due to the lack of attraction of this sector for females and to their underrepresentation within the major disciplines (e.g. STEM) leading to manufacturing jobs. This, in turn, stems from a traditional vision of women's role in industry and from the lack of adequate promotion of manufacturing jobs and the associated educational paths to female students. WINNING, starting from the Virtual Manufacturing Environment (VME) platform developed within the V-Machina project, will promote manufacturing jobs (e.g. working with machinery and robots) to young girls and women, including girls and women in RIS countries. We will use and develop existing VR-based nuggets and incorporate role models to	Education Case

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		engage, inspire and attract females to manufacturing jobs. We will also collect attitudes to such jobs and propose concrete measures for making them desirable, accessible and fun for females.	
IESMA Summer School	Innovation & Entrepreneurship for Sustainable Manufacturing Summer School	The IESMA summer school offers a unique opportunity for developing innovation and entrepreneurship skills for the manufacturing world in an international setting. Participants are immersed in a stimulating learning by doing experience during which innovation experts and companies bring hand-on expertise by launching challenges, coaching team project works and sharing their experience, while international lecturers provide state-of-the-art knowledge. The school is a three-week course hosted partly by SUPSI in Lugano and partly by POLIMI in Milan. The school is addressed primarily to students attending all the programs of the EIT Manufacturing double degree master, but it is also open to external participants with an engineering background. Different backgrounds of students will further enrich the team working and favor the creation of a network, also supported by the offer of a program of social activities.	Education Case
LEARN 4.0	LEveraging digitAl technologies foR sustainable productioN	The technologies expected to foster the fourth industrial revolution have a great opportunity to impact the achievement of more sustainable supply networks. To be wisely adopted, professionals need an ever growing and comprehensive knowledge that spans from understanding of capabilities of vertical technologies and projects' impact assessment, to sustainable manufacturing practices, to soft skills necessary to make the transition effective and accepted by the operators and the company ecosystem. LEARN 4.0 aims at creating personalised learning paths, based on actual gaps in existent curricula, and give these profiles the required technical and soft skills able to drive the transition towards sustainable, resource efficient value networks. To do so, LEARN 4.0 leverages on a network of applied research centres, expert in the related fields, able to magnify the impact of the trainings, thanks to the strict connection with the industrial domain and its sustainable transformation needs.	Education Case
PATHFINDER	Hybrid learning paths for professional education in manufacturing	Professional education in manufacturing that integrates hybrid learning can provide a serious boost to trainer performance and trainee outcomes. Hybrid learning utilizes and combines the benefits of online learning (e.g. flexibility, reusability, easy access and cost efficiency) and those of contact learning (e.g. social presence, physical interaction, instant and personalized feedback). COVID-19 changed the traditional contact learning paths for working professionals and is expected to change how professional education will be organised and delivered in the future. Therefore, the PATHFINDER activity aims to ANALYSE, DESIGN, DEVELOP, IMPLEMENT and EVALUATE hybrid-learning paths for working professionals. The activity will (i) provide a benchmark for	Education Case

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		professional education in manufacturing, (ii) serve as a guide for optimizing future paths of instructional delivery, and (iii) open a marketplace by integrating already developed and new learning nuggets into existing training programs.	
LeDAM	Leveraging competences and skills of professionals in digital and automated manufacturing processes (LeDAM)	The activity aims at the development of co-designed blended educational modules and hands-on sessions, developed with the industrial ecosystem and companies directly involved in the partnership. Therefore upskilling and reskilling are considered key elements for competitiveness in a rapidly changing technology scenario. Contents include: technologies related to digitalization and automation of manufacturing processes, AI and VR/AR as enabling tools to leverage flexibility, productivity, competitiveness and greener processes. The automation and digitalization revolution that is taking place represents a great challenge especially for the manufacturing sector. The main challenge, apart from research and innovation, is the ability to rapidly and effectively update the competencies of already employed technicians and managers, and to introduce and implement the new digital paradigms as key enabling technologies for more productive and eco-compatible manufacturing processes.	Education Case
VR-PLC	PLC-Centered VR-Training for Industry 4.0	PLCs are an important part of any automated shop floor operations across all manufacturing industries. They are frequently used not only in industry automation and OEM machinery sector (79%) but also in food industry (70%), automotive (69%), chemistry (53%), energy (48%) and building automation (41%) or transport (31%) [IRA 2021, p. 15]. To better prepare industrial professionals for the challenges of the digital transformation up- and reskilling of their existing workforce is essential. For that this projects aims at created comprehensive workshops on the role of PLCs and industrial automation with regards to Industry 4.0. For that, existing training PLC standards will be augmented with virtual representation, enabling remote and simulated workshops. Through a train-the-trainers approach professionals develop the skills necessary to drive innovation in their companies.	Education Case
Skills4PdM	Employees Skills for Predictive Maintenance	Predictive maintenance solutions are gaining increasing interest in the European manufacturing industry. Condition monitoring combined with Artificial Intelligence, may significantly improve maintenance activities in a shopfloor. Nevertheless, these underlying concepts and technologies are not familiar to the existing workforce and management. Thus, the aim of this project is to improve the know-how of existing workforce and actively support their re-skilling or upskilling in relation to predictive maintenance as part of a smart manufacturing paradigm, making also available didactic materials to educate them regarding new technologies and challenges of Industry 4.0.	Education Case

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RIEMANN	ROS-based Education of Advanced Motion Planning and Control	This project reduces technological barriers to the use of robots or fleets in industrial environments. This project will train a large pool of university students and professionals in advanced concepts of autonomous robotics, especially in the use of existing open-source libraries on mobile platforms. Advanced yet didactic training materials enable professionals to understand the inner workings of robotic systems implemented in ROS and other open-source frameworks. The courses are designed for professionals of all groups and skill levels. Building on the basic courses on ROS and robotic systems, the audience learns at a pace that suits their needs. Regular assessments of skill levels allow for the shortest possible training to achieve maximum impact. Learners can choose to include additional theoretical background to supplement their practical skills with a scientific layer. This design will save many hours currently spent on unnecessary training due to inappropriate course content.	Education Case
DigitalPlan	Learning Path with Micro Certification in Digital Facility Layout Planning and Optimisation	A productive facility layout is vital in all manufacturing companies. However, there is a knowledge gap in deploying and using state of the art 3D digital facility layout design tools in engineering and manufacturing companies. DigitalPlan will offer a learning path that will equip engineering and manufacturing employees, especially from SMEs, as well as engineering students and professionals to understand in depth the theory and practice related to facility layout design and planning, using digital manufacturing solutions. The digitalisation of engineering and manufacturing activities goes hand in hand with improved management practices and corporate performance but a vast majority of the engineering and manufacturing workforce lacks the necessary digital skills. The DigitalPlan learning path is an opportunity for academic / technological institutions and companies to upskill students and staff towards expanding their digital manufacturing capabilities.	Education Case
CAMplus4.0	Professional Training for Advanced Toolpath and NC-Code Optimization	CAM technology is well established in the industrial field for the purpose of fast and efficient NC-Code generation. Due to rapid developments in the field of information and communication technologies, several advanced CAM modules such as process force calculation, chip formation analysis, and spindle speed/ feed-rate optimization have been researched and developed in the last decades, however, have not been industrialized to a broad field of industrial companies yet. To succeed implementation of these advanced tools, it is necessary for professional engineers to build up additional knowledge in the area of data engineering, interface development, programming and optimization algorithms. For this, additional training is necessary which can be provided by Universities and system providers to a broad range of candidates.	Education Case

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DigiLit	Digital Literacy - Enabling Workforce for Industry 4.0	The trend towards digitalisation and automation is one of the most important driving factors for the transformation of the manufacturing industry. For a successful transition into the digital age, manufacturing companies need a savvy workforce with a forward-thinking mindset and the appropriate skills. While most employees today have deep domain knowledge, digital skills such as computational thinking and coding, are increasingly in short supply. This project aims to develop a professional training to address the digital skills gap in the manufacturing industry. The proposed training is aimed at professionals in the manufacturing industry who have broad practical knowledge but need to improve their digital skills. The training will be based on a design thinking approach and a gender-sensitive, hands-on didactic method tailored to the needs of working professionals. To maximize the learning experience, the training will combine two established learning platforms: Robotino and NEPO.	Education Case
ROS4DEV	Flexible learning for ROS developers	ROS4DEV is a flexible learning package for ROS solutions development in companies, startups, SMEs using opensource robotic software for manufacturing or robotics services. Manufacturers needs to have smarter, flexible, digitalized & collaborative facilities. ROS4DEV proposes flexible trainings on advanced topics of ROS solutions developments with frugal AI (low latency and low power processing), supervised learning, learning by demonstration, cybersecurity software engineering methodologies (testing & deployment strategies). The trainees will complete an on-line program adapted to their needs and participate to a flexible hands-on training organized around their real use cases and problematics that ROS4DEV intend to solve with them. The end-user trainees are integration engineers in manufacturing industry, ROS solution developers & graduates from the EROS4PRO activity as the learning outcome skillset of the proposed blended programme involves intermediate & advanced level ROS topics.	Education Case
DIGIMAN	aDvanced studIes in DigItalisation of MANufacturing	We are at a time where all businesses across all sectors, and even all individuals, have been going through a digital transformation process. The COVID-19 outbreak and the necessary measures to contain its spread accelerated a digital transformation that was already bound to happen over the next decade. The importance of digital transformation is highly recognized in Europe under the "digitisation of EU industry" strategy and by the "Digitising European Industry initiative". The competitiveness of industry is highly dependent on the knowledge, skills, competencies and creativity of its workforce. This activity will follow up on the 2021 activity with the following objectives: - 2nd semester of the course in digitalization in manufacturing. - recognition of the course by the partner universities; this course will be offered by the universities in 2022. - organization of a Summer school (with a condensed version of the course). - asynchronous offer of the course (in short modules).	Education Case

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LeNuWAs	Digital Learning Nuggets for Knowledge Transfer on Worker Assistance Systems	The idea behind this project is the creation of learning nuggets for companies interested in training their shopfloor managers and workers on the topic of worker assistance systems in assembly and production environments, provided on the EIT Guided Learning Plattform. The Learning Nuggets that are created within this project will help shopfloor managers, innovation officers, technology officers and decision makers but also workers to get an overview on existing worker assistance systems. The learning nuggets will help identifying promising application possibilities in production processes as well as manufacturing environments. In addition, the nuggets will provide implementation strategies for an independent introduction of assistance systems. The graphical user interface as well as the learning content will address several user groups and correspond to a didactic concept.	Education Case