Interreg
CENTRAL EUROPE

InnoPeer AVM

European Union
European Regional
Development Fund

InnoPeer AVM

PEER-to-peer network of INNOvation agencies and business schools developing a novel transnational qualification programme on AdVanced Manufacturing for the needs of Central European SME

6th NEWSLETTER

Cybersecurity

Cloud

Additive Manufacturing

Industry 4.0

Robots

Simulation

Augmented Reality

Internet Of Things

Big data

System Integration

This project is supported by the Interreg CENTRAL EUROPE Programme funded under the European Regional Development Fund.

www.interreg-central.eu/Content.Node/InnoPeerAVM.html

Within this period, the dedicated tasks of the partners of InnoPeer AVM project are to promote the available Advanced courses of the project and to invite the relevant stakeholders to complete the course. Furthermore, connected to the Advanced Courses a lot of partners organized teaching case webinars and other webinars to help the participants fulfil the courses and to be able to learn more connected to the given courses. Next to the webinars, the practical aspects of the technology dimensions can be experienced in one of the three InnoPeer AVM Model Factories. Along with the ongoing pilot trainings of the InnoPeer AVM project, an accessory assessment programme for analysing the impact of AVM capacity building on participating SMEs has been implemented.

Moreover, within 3 years the partnership of the project saw many technological solutions related to Industry 4.0. And had a chance to know more about advanced manufacturing and digitalization. In the framework of the Final Conference of the project, the partners would like to share their experiences that is why they invited experts from the field of Industry 4.0.
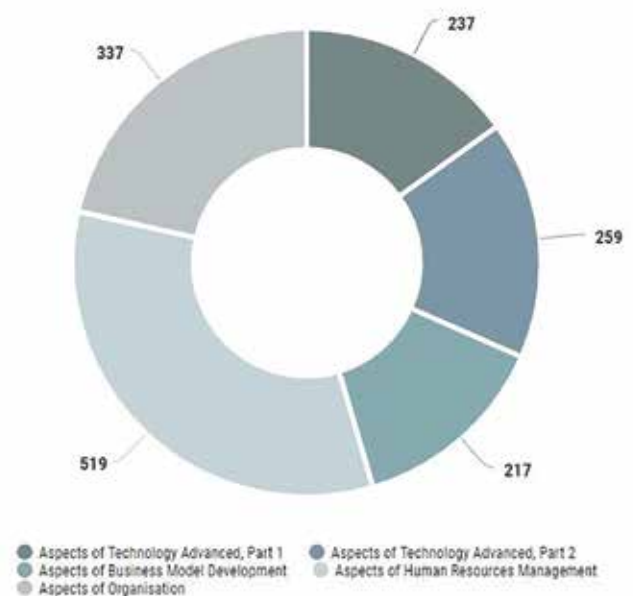
Advanced Courses of InnoPeer AVM

In the advanced trainings of the InnoPeer training programme training participants can choose between five different specialization courses that are available online on the platform Virtuelle Hochschule Bayern (VHB) and in English. Each course of the advanced training can be completed within a duration of about five hours. The advanced training is structured into five specialization courses:

(1) Human Resources Management
(2) Organisation
(3) Business Model Development
(4) Technology Part 1.
(5) Technology Part 2.

If a participant has successfully participated in the VHB online course can receive a certification connected for the successfully completed course.

Number of participants in the advanced trainings.

Webinars Connected to the Advanced Courses

InnoPeer AVM Advanced Training Webinars dedicated to Technology
Date: 27/05/2020 and 03/06/2020

Within the framework of the on-line Advanced Training Course organized by InnoPeer AVM, Democenter Foundation organized 2 webinars in Italian to recap and discuss some of the topics presented in the Course Module 'Advanced Manufacturing Technologies 2'.

In particular, the first webinar (27 May 2020) hosted Professor Marcello Pellicciari (University of Modena and Reggio Emilia) to deepen the issues of advanced simulations, virtual commissioning, and digital twin.

In the latter (3 June 2020), the experts Pietro De Nicola and Andrea Gorreri (MISTER) delved into the aspects of condition monitoring, predictive maintenance, machine learning, retrofitting of existing machines and smart sensors.

InnoPeer AVM Advanced Teaching Case Webinar connected to Organisation
(Adv. Teaching Case: Metalworking Company)

During the webinar connected to the advanced teaching case of Metal Working Company the participants realized that the case shows various external opportunities and threats as well as internal strengths and weaknesses that might affect the dynamism of Metalworking Company. Because of this the prepared a SWOT analysis based on the case information and deduced recommendations for improvement. After the swot analysis they elaborated how different contingency factors (i.e. environment, technologies and firm size) impact the dynamism at Metalworking Company.

And next to these two steps they alsoAdditionally, they answered several questions, which can help them to understand and solve the teaching case - like:
- How does Metalworking Company currently manage innovation?

- How good is the balance between exploration and exploitation and what needs to be improved in order to become more dynamic?
- How and where do explorative and exploitative activities manifest themselves in the company?

All teaching case webinars can be found in the respective InnoPeer AVM advanced courses on OPEN vhb.

Model Factories

The practical aspects of the technology dimensions can be experienced in one of the three InnoPeer AVM Model Factories. They are managed by the project partners from the Wrocław University of Science and Technology in Poland, from the Fondazione Democenter Sipe in Italy and the Fraunhofer IGCV in Germany.

Organized Model Factory by "The Model Factory at Fraunhofer IGCV

The Model Factory at Fraunhofer IGCV took place on the 7th and 8th of May as webinar. As a result of the Living Lab on the 24th of March, the topics of virtual commissioning, advanced manufacturing connectivity technologies and rapid HMI development were chosen as topics. The Model Factory webinar therefore consisted out of three parts with a duration of three hours each. In the module for virtual commissioning, the participants learned hands on how a simulation model is built-up using free simulation tools and how this simulation model is then connected and used with a PLC for virtual commissioning. In the connectivity module, the participants learned how to set up the promising OPC UA standard for a unified connection between all devices on the shopfloor. The participants learned how to set up a OPC UA Server in a PLC and how to connect to it and read out variables with generic clients. In the last module, the participants learned how to rapidly develop an interface for accessing information provided by different connectivity standards. Using node red, different dashboards were created to show values of the PLC transmitted over OPC UA so they can easily be presented and interpreted in the factory. During the modules, the participants could interact by using different methods such
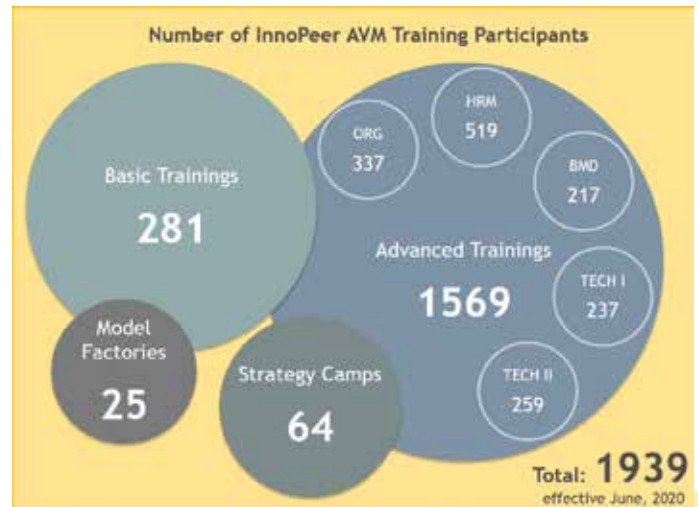
as live surveys, chats or timeslots for open discussions. After the webinar the participants can still ask questions in the forum of the advanced training on technology 1 and rewatch the recordings of the complete webinar any time.

Here are the links to the videos of the Model Factory:
https://www.youtube.com/watch?v=TiryA0OJfEE
https://www.youtube.com/watch?v=TQ0-Blj6_5g
https://www.youtube.com/watch?v=BcAeSqsGP4U

Results from the Impact Analysis of Pilot Actions

Along with the ongoing pilot trainings of the InnoPeer AVM project, an accessory assessment programme for analysing the impact of AVM capacity building on participating SMEs has been implemented. The most positive feedback was received with regard to the organisation and method of the trainings as well as to the value added to the training curriculum. High satisfaction was also achieved in terms of newly gained knowledge, the usability of knowledge and a better understanding regarding AVM-related strategies. Participants highly appreciated working with teaching cases and the CE Mega Case in order to work on real-life problems in an applied fashion. After participating in the trainings, 45% plan AVM-related changes in the field of

Number of InnoPeer AVM Training Participants

Basic Trainings 281

Model Factories 25

Strategy Camps 64

ORG 337
HRM 519
BMD 217

Advanced Trainings 1569

TECH I 237
TECH II 259

Total: 1939
effective June, 2020

strategy and business model development, followed by changes in HRM and organisation (32%) and technology (23%). We are happy to announce that 1939 people from all CE regions have participated in the InnoPeer AVM pilot trainings.

Final Video Conference

"Innovation is the ability to see change as an opportunity - not a threat." (Steve Jobs)
This quote describes well the InnoPeer AVM project. Within 3 years the partnership of the project saw many-many technological solutions related to Industry 4.0. And had a chance to know more about advanced manufacturing and digita-lization. In the framework of the Final Confe-rence of the project, the partners would like to share their experiences that is why they invited experts from the field of Industry 4.0.

Access here to the whole Final Video Conference

InnoPeer AVM Final Video Confernce
with more than 80 participants

Final Video Conference

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(If you would like to see the whole Final Confe-rence click here.)

Other Events

The Automotive Revolution: Autonomous Driving, Smart Mobility and New Value Chains Digital Round Table

Date: 15/05/2020
Place: Motor Valley Fest, Modena

MOTOR VALLEY

FEST DIGITAL

On Friday 15 May 2020, within the framework of the Motor Valley Fest in Modena, Democenter Foundation organized a digital round table dedicated to the rise of new value chains in the automotive sector able to grab the business opportunity connected to autonomous driving.

The event was dedicated to discuss the challenges and the changes requested to the automotive sector in general and the Italian companies in particular in order to reinvent their business models. Special attention was dedicated to explore the role collaborative innovation approaches like the one promoted by the InnoPeer AVM's Strategy Camps can play in favouring the transformation of the automotive companies in Italy and the meeting of actors with different interests and specializations.

The round table hosted experts coming from diverse sectors, who represented the different actors who should collaborate to make autonomous driving a reality. Among them, there was: Aldo Bonomi (sociologist, Director of Aaster), Davide Comunello (journalist, Quattroruote.it), Stefano Lai, (Director, Eccelenze d'Impresa and former Chief Communication Officer of Ferrari S.p.A.), Roberto Maldacea (CEO, I-Mobility Garaga/Navya Italia), Pier Francesco Maran (City Planning Assessor, City of Milan), Gianluca Marchi (Vice-Chancellor, University of Modena and Reggio Emilia).
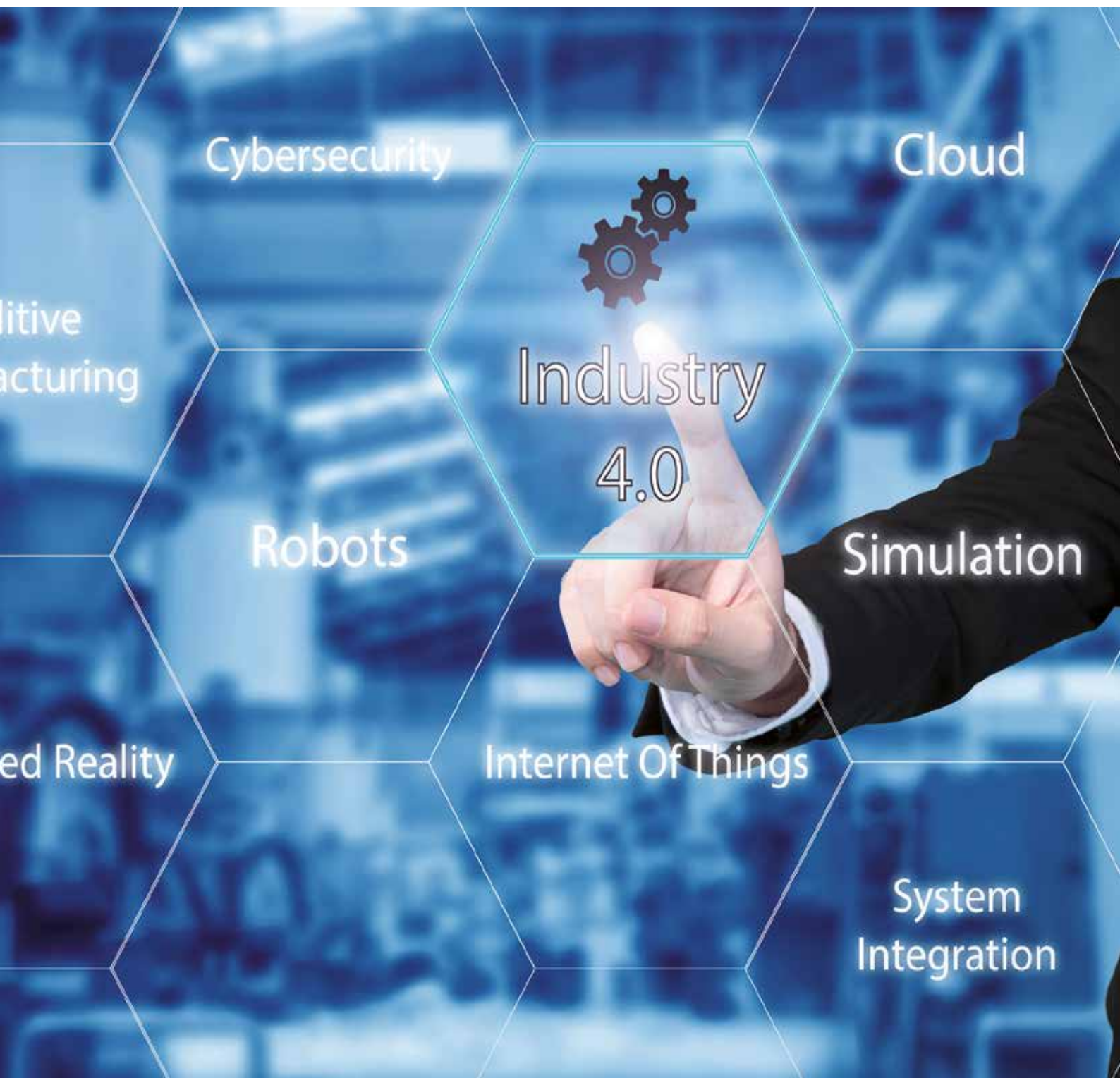
Knowledge is power

In the framework of the InnoPeer AVM project – educational videos had been crated to present different kinds of Industry 4.0 solutions. The six educational video main themes are the following:

1.Custom product development
Design of an adapter fitted to an aerosol bottle, according to customer requirements, and creation of a functional prototype with additive manufacturing.
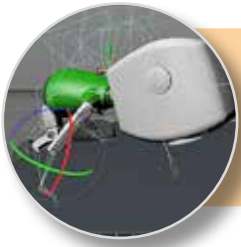
2. Business animation (CGI)
According to the basic concept, a 3D character is created (with Cinema 4D and SolidWorks software) and then a storyboard is created. The scenes are then filmed by a professional film crew, and the character is aligned with the real video footage in the form of animations. For this (also used in Hollywood) innovative technologies and cinematic solutions are used.

3.Communication of various robotics devices for automated tasks
Control of two robotic arms (UR3, Franca Emica Panda) and MIR100 from a program that allows joint and automated work. The devices cannot be controlled directly, there is only a limited possibility to send the data, so a state machine had to be implemented in each machine, which processes the received command and the machine performs the task belonging to the given command. Careful planning of programs is required, especially in handling errors. The program must be written in parallel on the control computer and the devices.

4. Automated drone for inventory
The goal is to implement an indoor logistics solution that will allow a drone to autonomously inventor the desired storage area, which will be accomplished by recognizing the QR codes used in the storage system. The drone creates a live video from take-off to landing, which is transmitted to a server where the program recognizes the various QR codes in real-time from the video stream.

5. Sensory product development
During the development, the goal is to create a sensory supplement connected to a foot-moving mechanism of an existing premium product, which is widespread in the furniture industry, to interrupt the movement of the product (armchair) if any obstacle detected in the footwell.
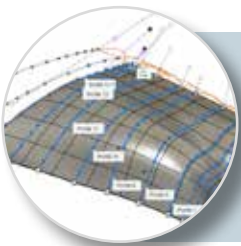
6. 3D scanning
Three-dimensional scanning and modelling of an aircraft part., where in the preparational phase, a masking spray had been used to minimize the light reflection. A point cloud had been created from the collected digital 3D coordinates and from that, a 3D model had been created - as a three-dimensional template- which can be exported to an interpretable format by a wide range of CAD / CAM programs.

All the six educational video can be reach in the InnoPeer AVM project Youtube channel.

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https://www.facebook.com/InnoPeer-AVM-142695166341360/

LinkedIn:
https://www.linkedin.com/in/innopeer-avm-94392014b/

Twitter:
https://twitter.com/InnoPeerAVM

Access here to the InnoPeer AVM Handbook

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