



Digital Twin

on smart manufacturing



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**Konstantinos Karampidis, Giorgos Papadourakis,
Emmanouil Garefalakis, Spyros Panagiotakis**



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The Digital
Twin Initiative:
Project
Overview

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Project Overview

This project aims to forge a strong link between current educational frameworks and the dynamic needs of the industry, preparing a new generation of technicians equipped with the skills to innovate, optimize, and revolutionize smart manufacturing processes.



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The Digital Twin Initiative: Project Overview

Project Consortium

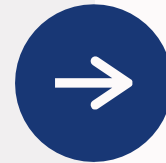
The Digital Twin project unites 11 full partners and 20 associated partners from 5 EU countries (Italy, Spain, Sweden, Greece and Bulgaria) blending VET/HVET, higher education, enterprises, chambers of commerce and SMEs to meet end-user expectations with innovative Digital Twin solutions.





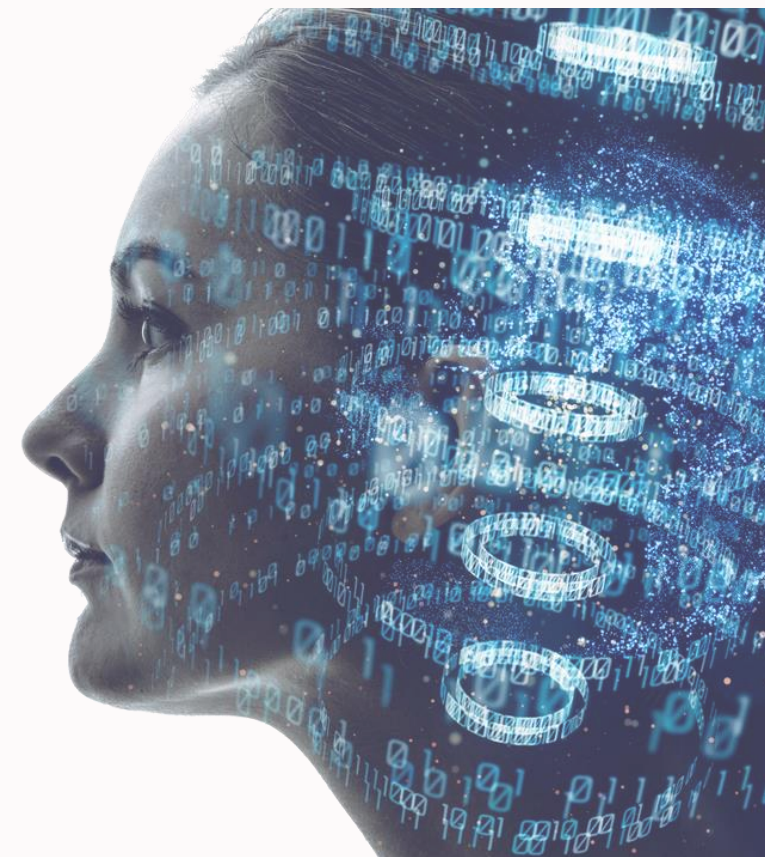
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The Digital Twin Initiative: Project Overview

Project Objectives



Digital Twin aims to aid education providers in meeting actual business needs, by providing an outstanding training offer to tailor their training programmes more closely to industry requirements.

Our approach therefore is to exploit enabling technologies such as digital twin for the virtualization of industrial systems, but also to design, test and maintain machinery according to the indications of Industry 4.0.



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The Digital Twin Initiative: Project Overview

Target Groups and Benefits

The Digital Twin project strategically targets students, workers, trainers, edu-vet providers, and companies, aiming to impart significant, lasting benefits across these groups.

- 1 FOR STUDENTS:** Enhances competences and employability, preparing them for the future job market.
- 2 FOR TEACHERS:** Provides better resources and skills to adapt teaching to the latest industry trends.
- 3 FOR WORKERS:** Increases access to Digital Twin training and knowledge, improving professional skills.
- 4 FOR EDU-VET PROVIDERS:** Strengthens their ability to satisfy industry demands and foster business collaboration.
- 5 FOR COMPANIES:** Boosts the availability of skilled technicians, enriching the industry with Digital Twin expertise.



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The Digital Twin Initiative: Project Overview

Project Outputs

The Digital Twin project will transform the sector with key outcomes like the Digital Twin Skills Index and a Self-Evaluation Tool for tailored training. It features a 450-hour e-learning course covering everything from basic to advanced skills, supported by practical labs. The project also develops a Training Methodology and a Teacher Manual, and includes national and international skills competitions to better align education with industry demands.





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The Digital Twin Initiative: Project Overview

Educational Programmes and E-Learning Course

450-Hour E-Learning Course:

- **Covers:** From Digital Twin basics to advanced cybersecurity.
- **Practical Labs:** Hands-on experience in Digital Twin technologies.
- **Micro-Credentials:** Targeted certifications to boost skills.

Accessible and Inclusive:

- Available in six languages to meet diverse learner needs.

Designed For:

- Students, professionals, and educators, aligning closely with industry demands.

This streamlined course structure ensures comprehensive skill development for Europe's manufacturing workforce, readying them for industry 4.0 challenges.



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The Digital Twin Initiative: Project Overview

Innovation and Methodology

Driving Technological Advancements:

The Digital Twin project leverages cutting-edge technologies like AI, robotics, and cybersecurity to redefine manufacturing processes. This approach not only enhances production efficiency but also addresses key industry challenges.

Training Methodology:

- **Comprehensive Framework:** Integrates face-to-face, digital, and work-based learning to provide a holistic educational experience.
- **Trainer's Manual:** Guides educators in delivering effective, industry-relevant training.

Impact on Education:

Our methodology fosters a modern learning environment that prepares technicians for future technological demands, aligning educational outcomes with industry expectations.

Collaborative Innovation:

Encourages synergy between academic institutions and the manufacturing sector, ensuring that innovations are practical and meet real-world needs.



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The Digital Twin Initiative: Project Overview

Project Insights and Industry Impact

Bridging Gaps:

The Digital Twin project aligns educational systems with manufacturing industry demands, facilitating advanced technology adoption.

Strategic Collaboration:

- Partnerships across five EU countries drive systemic innovation.
- Enhances interaction between education and industry sectors, particularly with SMEs.

Technological Advancements:

- Supports digital and sustainable transitions in manufacturing.
- Equips technicians with modern skills in AI, robotics, and cybersecurity.

Enhancing Competitiveness:

- Improves productivity and market competitiveness for companies using Digital Twin technologies.
- Closes skills gaps and prepares the workforce for future industry requirements.



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The Digital Twin Initiative: Project Overview

Expected Results and Future Implications

- 1 DIGITAL TWIN SKILLS INDEX:** Defines essential skills for Digital Twin technicians.
- 2 SELF-EVALUATION TOOL:** Tailors training to individual upskilling needs.
- 3 TRAINING COURSE:** Offers a 450-hour e-learning course with IVET & CVET modules in six languages.
- 4 DIGITAL TWIN TRAINING METHODOLOGY:** Includes a Trainer's Manual to enhance educational delivery.
- 5 DIGITAL TWIN LABS:** Provides labs for hands-on application of e-learning content.
- 6 SKILLS COMPETITIONS:** Hosts events to apply and test industry-relevant skills.
- 7 DIGITAL TWIN OCCUPATIONAL PROFILE:** Establishes a new standard with advanced, specialized skills.



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Contact Information

How to reach out

We invite stakeholders, industry professionals, and academic partners to engage with us on the Digital Twin project. Whether you're looking for information, interested in collaborating, or have insights to share, our team is ready to connect. This project spans multiple disciplines, enhancing EU's IT and OT capabilities through innovative education and practical applications.

Email Address

hello@digitaltwinproject.eu

Website

www.digitaltwinproject.eu

