

The DiFac project goal:
The development of an innovative collaborative manufacturing environment for the next generation of Digital Factory in order to support SMEs competitiveness.

Digital Factory for Human-Oriented Production System

Partners:

ITIA-CNR (I), MASA (F), SZTAKI (H), UNOTT (UK), LMS (GR), IPA (D), TTS (I), WPCS (RO), V-FAB (D), METAIO (D), PRIMA (I), PPS (GR)

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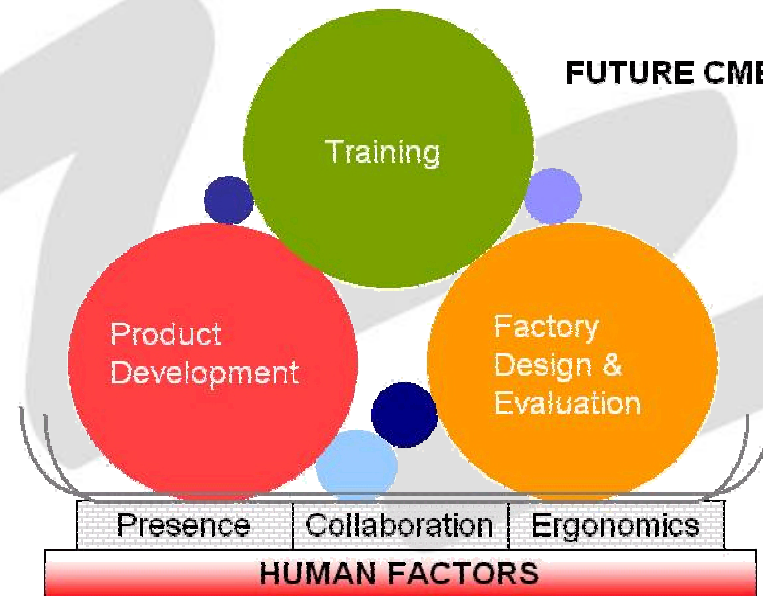
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A **digital factory** is a persistent community where a rich virtualized environment, representing a variety of factory activities, will facilitate the sharing of factory resources, manufacturing information and knowledge and help with the simulation of collaborative design, planning, production and management among different participants and departments.

The DiFac project aims at the development of an innovative **Collaborative Manufacturing Environment (CME)** for next generation digital manufacturing. The DiFac CME will be used as a framework to support group work in an immersive and interactive way, for concurrent **product design, prototyping and manufacturing**, as well as **worker training**. It will provide support for data analysis, visualization, advanced interaction and presence within the virtual environment, ergonomics analysis, and collaborative decision-making.



DiFac strategic impact and benefits

Why DiFac

In the future, manufacturing plants will be distributed, collaborative working environments which will require seamless and natural collaboration amongst workers, machines, suppliers and customers.

Virtual Reality (VR) technologies are leading to remarkable breakthroughs in enhancing the manufacturing collaboration, from the development of digital mock-ups and virtual prototypes, to production simulation, maintenance and training.

As the future digital manufacturing focuses on distributed group work and individual collaboration, ***core collaborative services and assisting tools in the context of group presence, visualization, interaction, decision-making and knowledge management are strongly needed to support collaborative manufacturing activities among work groups and individual workers.***

The target is to provide a tool that will be able to support collaboration among different places and users during design, prototyping and manufacturing through an interactive environment with the aim to meet the challenge of delivering better quality products and services. This technology will definitely ***reinforce competitiveness of the European industry*** and help ***solve societal problems*** since it will provide the following benefits:

- ***Increased Efficiency.*** Team members will be able to collaborate anytime, making faster decisions and gaining approvals instantly.
- ***Reduction in Complexity.*** The employees will be able to seamlessly work together, and extend communication and collaboration beyond their organizational boundaries.
- ***Reduction of Physical Mock-ups.*** The DiFac environment will allow testing ideas on digital (virtual) configurations, employing advanced paradigms of immersive interaction and collaborative work without having to rely on large numbers of physical mock-ups or experiments. This will also result in a significant reduction on materials and processes necessary for the physical prototypes production, thus reducing their impact on the ***environment***.
- ***Enhanced Organizational Intelligence.*** The information will be collected and organized in a single place. New members will be able to start working with the other members in less time, improving productivity.
- ***Stronger Relationships.*** The project will be an opportunity to improve cooperation and to develop strong relationships between SMEs, research centres, universities, software vendors, the business community and the general public.
- ***Highly Skilled Employment.*** The novel methods and tools to be used in the DiFac environment will require highly qualified jobs that will support the intelligent design procedures, the high-end simulation technology and knowledge-based approaches to decision making, instead of semi-empirical methods and physical testing.
- ***Better working conditions.*** Employees will have the opportunity to work with advanced supporting tools that will make their lives easier and safer.