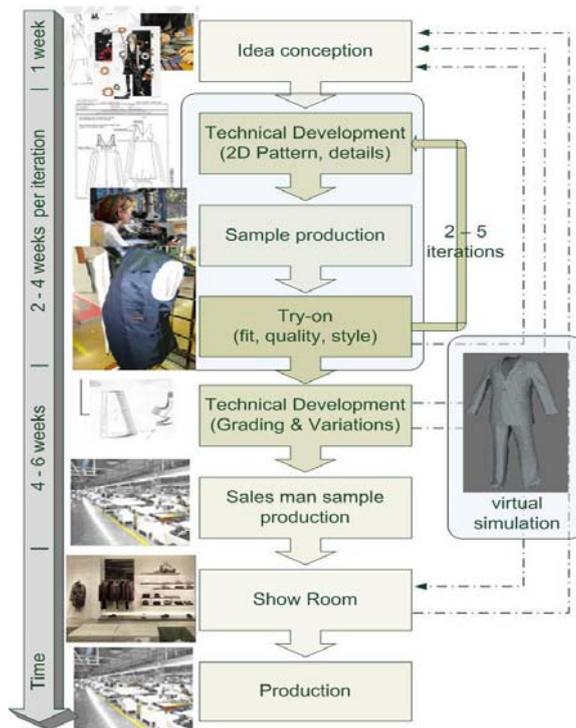


FFD

Key innovation

To stay successfully in business, textile and clothing companies nowadays need to be able to issue new fashion collections in a short time. However, the product development represents a bottleneck, since several physical samples have to be developed to judge the design. This is costly and time consuming.



Virtual prototyping (VP) can significantly reduce the number of physical samples which are necessary in the development process. However, its diffusion and efficient use in the industry is still low due to the inherent complexity of garment simulation. In addition, the whole chain cannot be completely represented virtually today, making it necessary to acquire data from physical samples.

As seen in the diagram, VP can only show its full potential if it represents the full development process chain. Thus, the main goal of the project is to develop a new business

and production workflow to represent the whole development process virtually leading to an innovative VP solution for the textile and clothing companies. The FFD business model will offer drastic improvements in product development efficiency (reduced number of physical samples from 20% to 100%, time-to-market reduced by several weeks, intensified collaboration between fabric and garment producers), services at low-cost (open, vendor independent and scalable platform), while opening new market opportunities to vendors of CAD and PDM/PLM systems.

Contract number

285026

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Project website

www.future-fashion-design.eu (active 1.1.2012)

Community contribution to the project

2.5 Mio. Euro

Project start date

01.10.2011

Duration

36 months

Technical approach

In detail, the project targets several challenging aspects of current VP solutions. The companies assyst (apparel CAD) and ScotCad (fabric CAD), which are already offering state-of-the-art VP solutions, will focus on improving the simulation accuracy to enable a purely virtual prototyping solution from the weave pattern to the final garment.

Fraunhofer IGD will develop a massively parallel textile simulation engine based on multicore architectures to speed up current simulation approaches. This will also provide additional computing resources to enhance the accuracy of the simulation and the textile rendering in all phases.

ATC, an ICT company with expertise in web integration, will develop a Collaborative Design and Prototyping platform (CDP) for enhancing distributed development based on these new, purely virtual prototyping technologies. One additional result of this project will be a new business and production workflow.

Demonstration and Use

These newly developed business and production workflows will be evaluated and tested by two end-user companies. These are Piacenza, a manufacturer of fine woollen fabrics and Consitex S.A., the manufacturing division of the Ermenegildo Zegna Group. Their task in FFD is to integrate the VP platform in joint product development processes and to evaluate and demonstrate its efficiency and impact. Presentations and Demonstrations will be held on different exhibitions. The focus will be on the new development process, the new virtual prototyping system and collaborative aspects of the project.

Scientific, Economic and societal Impact

FFD will grant deep insights into the complexities and the mechanics necessary to build full scale virtual prototyping systems covering the whole garment design process, allowing researchers to get a better understanding of what is needed in the industry. Through the reduction of necessary samples for production the textile and clothing companies will have a higher competitiveness in the market, while the system will open new market opportunities to vendors of CAD and PDM/PLM systems. Since the new process chain will provide higher flexibility, companies can more easily agree to special interests issued by the customer, granting a higher customizability.

Project partners	Country
Fraunhofer IGD	DE
ATHENS TECHNOLOGY CENTER SA	GR
ASSYST GMBH	DE
SCOTCAD TEXTILES LIMITED	UK
FRATELLI PIACENZA S.P.A.	IT
Consitex SA	CH

Key Features

- [Purely virtual prototyping from fabric to garment](#)
- [Close to real-time interaction with high-quality simulation](#)
- [Integrated, collaborative design and development](#)