Microdress

## Micro-Dress Consortium

The project brings together a multidisciplinary consortium of nine partners, of which four are SMEs, three are prominent European institutes and two are leading textile and clothing groups.

ATC · VTT · Ermenegildo Zegna · Lanificio di Tollegno · DFKI · ifth · MTS · Sension · ardeje

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**www.micro-dress.eu**


Micro-Dress project is co-funded by the EC under the FP7 Programme.

# Customised wearable functionality and eco-materials

## Extending the limits of apparel mass customisation

The main objective of Micro-Dress is to extend the limits of feasible customisation for men's and ladies' garments to include, for the first time, **user-controllable wearable functionality and user-selectable degree of supply chain eco-friendliness.**

## The Micro-Dress challenge

The challenges related to the production of such new features will be researched within a framework based on two distinct business and supply chain models. On the one hand, Micro-Dress will introduce mechanisms to expand the existing mass customisation model of a major international brand; while on the other, to extend an innovative mass-customisation model known as 'micro-factories' which targets innovative SMEs.

These two aspects can add functional value, as well as emotional value to the products of a consumer market that is currently dominated by either of two extremes: original fashion and brand, or imitation and low-cost.

It may appear at first sight that the two main ideas (eco-friendliness and wearable functionality) are somehow contradictory, or at least not converging. However, we intend to prove that ecology and wearable functionality can co-exist. This becomes even more interesting in a user-centered business scenario, where the customer is directly involved in the design/configuration process: empowered by the freedom to configure both the technology related added value (user selectable sensors, actuators, physiology monitoring devices), as well as the degree of eco-friendliness of the production processes, preserving environment and non-renewable resources.

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## Scientific and technological objectives

The scientific and technological objectives of the Micro-Dress project are:

- To develop rapid manufacturing applications including direct write onto textiles, and other innovative production methods, in order to introduce permanent and removable wearing of micro - electronic functionality with Made-to-Measure apparel.
- To derive eco-efficiency and eco-logistics-related algorithms and web-tools, allowing user-configurable eco-certification based on information relating to materials and processes along the supply chain (yarn to garment).
- To develop a new biosensor-based screening test able to revolutionise the process of screening certain garment components created to address specific issues relating to consumer health (fabrics, accessories, etc).
- To develop an e-supply chain management platform to model the sourcing of e-devices and the concept of configurable eco-certification along the two supply chains (vertical brand chain and the supply network of micro-factories).

To support the Micro-Dress vision for the two selected business models, an e-supply chain management platform will be built on the principle of Software-as-a-Service in order to maximise its usability. The results will be demonstrated via two pilot schemes, one focusing on user-configurable eco-certification, the second on customisation of wearable micro-electronic functionality.