

WG5 TEXTILES IN SPORTS AND WEARABLES

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1. OBJECTIVES OF THE MEETING

Aims of the working session:

- Knowing the participants and their competences better for further project ideas and collaboration opportunities.
- Brainstorming to identify new project ideas.
- Establishing a roadmap for longterm actions of the Working Group.

2. PROJECT IDEAS

Quality and stability of the systems

- Electronics adapting to textiles (not the other way round)
- Quality of smart textiles
- Reliable interconnections joining technologies for electronics and textiles
- Stability of flexible sensors

Energy harvesting

- Energy harvesting in smart textiles
- Energy concepts for wearables

Environment and sustainability

- LCA in smart textiles: guidelines for optimization
- Smart and ecofriendly clothes

Towards industry: from what happens in the school (research) to the industry)

- Filling the gap between the prototype and the industrial environment
- From lab to industry: scale and economy of production
- From the idea/design to the production (better definition of yarns, structures...)
- Simulation of interaction of smart textiles with humans
- Design and simulation of smart textile antenna

Design

- Customization (fit) of sportswear (anthropometrics)
- Freely-confeccionable, mass-customizable, energy-harvesting sport clothes
- Integration technologies for durable integration of electronics with good user comfort
- Mapping of user needs

Single topics that focus in different technological issues and functionalities

- Micro-/nano- sensors in smart textiles
- Antibacterial properties in natural fibers
- Thermoregulation textile
- Soft-rigid connections, continual soft-working systems
- The implementation of location sensors in smart textiles
- User interfaces: developing relevant scenarios for sports
- Integration of 3D printing processes in sport smart garments
- Metallic components on printing materials not allowed on fashion industry
- Smart textiles: only electronics and software ?
- Textile with integrated ECG (biking, medical grade...)
- Electrodes for EMS integrated in clothing (forefoot running)
- Cooling capability of sportswear

Other

- Personalization
- Legislation
- Multiple sensors
- Comfort

To bring all WG5 Context partners and other actors (industries, associations, ...) together it is relevant to identify a topic that connects all these actors and offer true benefit (economy, scale of production, industry, expertise,...) when it comes to smartness and textile in sport. These topics are 'multiple sensors' and 'comfort'.

3. ROADMAP

Short term roadmap 'comfort'

WHO?

All WG5 Context partners and other actors (industries, associations)

WHY?

- Objectives/topics:
 - Temperature
 - Color
 - Energy (production, storage)
 - 3D body scanning (fit , individualized production)
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- What is comfort, define comfort
 - Physiological
 - Cooling
 - ...

WHAT?

- In existing projects
- STSMs
- Via ISPO or Performance days?