

A European Innovation Strategy for Advanced Technical Textiles for the Protection, Defence and Aerospace Markets

Purpose of the Initiative

Europe is in a period of profound geopolitical and industrial transformation. Growing security challenges, disrupted supply chains and increasing dependency on non-EU suppliers are coinciding with structural changes in Europe's industrial base. This impacts the **European technical textile industry which suffer from fierce non-European competition and stagnating end markets** in areas like automotive, industrial and construction. At the same time, demand is accelerating for advanced, high-performance textile solutions in **protection, defence and aerospace** sectors that are central to Europe's resilience, safety and strategic autonomy.

The purpose of this initiative is to create a **European Innovation Strategy for Advanced Technical Textiles** across these three strategic end markets, which will be aligned with an **Industrial Policy Strategy** developed in parallel **under leadership of EURATEX**. The initiative aims to give the European high-performance textile ecosystem a **strong collective voice** and **ensure that EU industrial and innovation policies and programmes provide support to the high-performance technical textile sector**. SmartX provides a structured space where industry, research, clusters and public stakeholders can meet, identify innovation opportunities and **initiate collaborative projects**.

Why Now?

The timing of this initiative is critical. Europe is facing a convergence of pressures and opportunities:

- Geopolitical instability and hybrid threats are highlighting the importance of secure, reliable industrial supply chains.
- Traditional technical textile markets most notably automotive are stagnating or declining, pushing companies to seek higher-value, more strategic applications.
- At the same time, new European programmes and instruments in defence, security and aerospace are emerging, offering significant opportunities for innovation, scaling and deployment.

Without coordination, the technical textile sector remains fragmented and underrepresented in EU policies and programmes, while European manufacturing capacities, specialised skills, know-how are disappearing at a fast pace. This initiative responds to that urgency by creating a shared framework to act collectively and proactively.

Three Strategic End Markets

PERSONAL & CIVIL PROTECTION (WORKWEAR & PPE SYSTEMS)

DEFENCE TEXTILE & SYSTEMS

AERONAUTICS & SPACE APPLICATIONS

Personal & Civil Protection (Workwear & PPE systems)

Workwear & PPE systems are evolving toward lighter, stronger and smarter materials and components, more breathable and ergonomic wearable systems that deliver high levels of thermal, mechanical and chemical protection. Advances in material engineering, surface technologies and fibre blends are improving safety while enhancing comfort and usability under changing contexts (emerging risks, new regulations, climate change etc.). Replacement of conventional hazardous finishes/coatings such as PFAS while maintaining protective properties are of high priority. In parallel, smart textile functionalities and circular approaches, particularly the recycling of flame-resistant materials, are emerging as strategic differentiators for future protection systems.

Defence Textiles & Systems

Textile materials and components have become core elements of modern defence systems, enabling both human protection and functional structures through lightweight, multifunctional materials. They support protection, thermal management, camouflage and integrated functionalities while increasingly interfacing with digital defence platforms. Maintaining sovereign European manufacturing capability across the entire value chain from fibres to end products, including advanced and recyclable high-performance fibres, is essential to ensure resilience, operational readiness in emergency situations and strategic autonomy.

Aeronautics & Space Applications

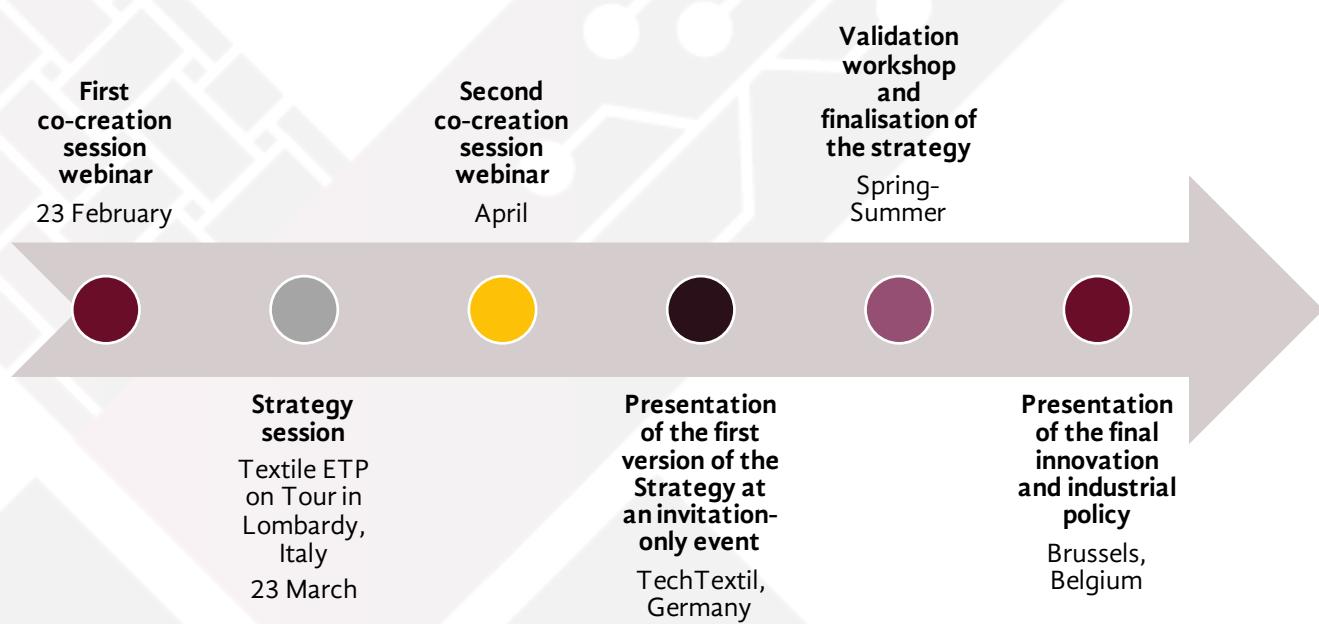
Aeronautics and space represent high-value growth areas for advanced textiles. Lightweight flexible materials and composites, fire protection, filtration, insulation and deployable structures rely increasingly on fibre and textile-based solutions. As the public and private space economy expands, smart and functional textiles capable of monitoring performance, regulating temperature or withstanding extreme environments are gaining strategic importance. These applications offer diversification opportunities for textile companies able to meet demanding certification and reliability standards.

Objectives and Expected Outcomes

The initiative is designed to deliver concrete value for participants while contributing to Europe's broader strategic goals. Its objectives include:

- Defining a **shared Strategic Innovation Agenda** for advanced textiles in protection, defence and aerospace.
- Identifying priority technologies, industrial capability vulnerabilities and gaps and cross-sector **innovation opportunities**.
- Improving access to and understanding of **relevant EU funding instruments**.
- Creating **strategic alignment** between innovation opportunities, industrial capacity and end market needs including **public procurement**.
- Increasing the **visibility** of the advanced technical textile sector in innovation policy and strategy discussions.

Timeline



How to Join & Collaborate

EU-based companies, technology and research organisations can directly sign up to the SmartX Innovation Hub, where 3 annual subscription levels are offered, depending on number of company experts involved (expert – 750 €, team – 1250 €, corporate – 2000 €).

Learn more and sign up at <https://www.textile-platform.eu/innovation-hub-smartx>

