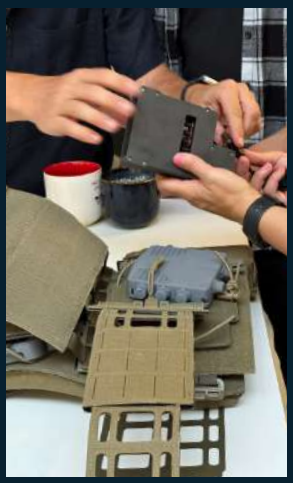
ARMETISS

NEWSLETTER

ISSUE #2 - 2026

GENERAL ASSEMBLY AND STEERING COMMITTEE,
– NETTETAL, GERMANY, DECEMBER 2025



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Editorial

Two years into its journey, ARMETISS has made significant progress in the design and development of its modular soldier system. Building on the foundations established during the first year, the consortium has advanced the system architecture, refined module designs, and initiated prototyping and integration activities, bringing each innovations together into a coherent solution.

This progress represents more than a series of technical achievements. It demonstrates the strength of a collaborative European consortium, combining expertise from defence, advanced textiles, digital technologies, human factors, and system engineering. Through close cooperation, partners have translated operational requirements into practical solutions supporting the needs of the modern soldier.

As the European defence landscape continues to evolve due to rapidly changing technological development and new geopolitical threats world-wide, key priorities remain at the forefront: interoperability, technological sovereignty, data security, and the ability to adapt capabilities to changing mission requirements. ARMETISS addresses these challenges through a modular and scalable approach, enabling innovative technologies to be integrated.

As the project enters its third and final year, design activities continue alongside prototype development, integration, and verification efforts. The coming period will focus on validating technologies and assessing how individual innovations work together as a unified system, bringing ARMETISS closer to delivering practical capabilities for future European soldiers.

Joanna Lejk
NFM Group
ARMETISS project coordinator

ABOUT ARMETISS

Harnessing the potential of smart textiles to enhance soldier systems

ARMETISS is a European project with the ambition to identify, integrate and optimise state-of-the-art smart textile technologies, in an effort to build the modular soldier protection gear of the future. ARMETISS aims to design, prototype and test modular soldier system based on smart and functional textile improving safety, comfort and performance on the field.

Assembling 6 functional modules to meet tomorrow's soldier protection challenges

ARMETISS PARTNERS

A European value chain, built for impact

The ARMETISS consortium brings together 18 partners from 8 European countries, selected for their complementary expertise across the entire development chain of modular, textile-based soldier systems.

DEFENCE AND SOLDIER SYSTEMS INTEGRATION KEY PLAYERS

At the heart of the project are leading defence and system integration companies, including NFM Group, Rheinmetall Electronics, Rheinmetall Protection Systems, Safran Electronics & Defense, and Larimart. They ensure solutions meet both technical and operational military requirements.

RESEARCH AND TECHNOLOGY ORGANISATIONS (RTO)

A strong network of RTO provides scientific and technical know-how expertise to the project. Fraunhofer, SINTEF, FFI, INEGI, AITEX, ENSAIT and CITEVE contribute with cutting-edge knowledge including E-textile integration, physiological monitoring, thermoregulation, testing.

TEXTILE INNOVATORS

Key contributions come from textile industry leaders. Chamatex experience in high performance textile production ensure comfort, durability, and protection. Clim8 offers smart thermoregulating solutions collaborating with Applycon for active heating, while Jonathan & Fletcher brings a unique skillset in the design and integration of textile garments. NFM group manufactures full combat clothing from underwear to combat jackets. As a textile innovation cluster, Techtera helps to strengthen collaboration, visibility and the project's long-term impact.

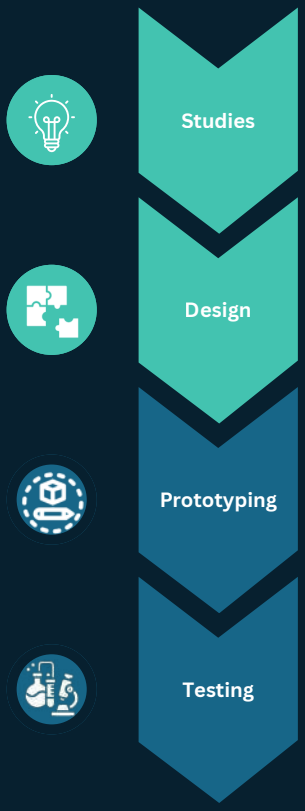
SPECIALISED SMEs WITH ELECTRONICS CAPABILITIES

The project relies on the expertise of specialised SMEs and technology developers. Applycon and Mokka bring their expertise in electronics, connectors, data management and software engineering, supporting the development and integration of the project's solutions.

TWO YEARS INTO ARMETISS

Designing to enable rapid prototyping

This last year, activities focused on design to define the soldier system architecture and to develop the modules that will be integrated into the demonstrators. The work ensured interoperability between components while addressing key functionalities such as body and armour monitoring, localisation, communication and energy management, with attention to weight, ergonomics and operational effectiveness.



Completed activities

OVERALL SYSTEM DESIGN

LED BY RHEINMETALL

The overall system design results in the structure of the ARMETISS system and its system elements. Newly developed ARMETISS functionalities integrate with and extend the capabilities of the baseline Dismounted Soldier System (DSS).
This architecture represents a vision for a modular and expandable soldier system, whose capabilities can be selected according to mission requirements. This activity translated high-level system requirements into detailed, implementable technical designs.

KEY RESULTS

- A central interface box was elaborated to serve as a central integration and evaluation tool for the ARMETISS modules, enabling GOSSRA* compliant integration with the soldier system.
- Internal and external power and data interfaces were specified to efficiently connect the soldier system's wired core infrastructure to its (partially wireless) expansion modules, as well as to the electronics-to-textile interfaces.
- The six core functional modules were defined in a module specification and module requirements.

TECHNICAL WORKSHOP, RHEINMETALL – BREMEN, GERMANY, MARCH 2026

*Generic Open Soldier System Reference Architecture (GOSSRA) received funding from the European Union's Preparatory Action on Defence Research under grant agreement No 800783.

MODULES DESIGN

LED BY NFM GROUP

This activity aimed to implement the specifications, from overall system design into functional modules able to address the main challenges of the soldier of the future, while taking into account the previously defined requirements. Module design will be followed by overall system integration, bringing together developed multifunctional solutions into a single integrated system.

KEY RESULTS :

- Design and development of a smart textile-based sensor module capable of monitoring physiological parameters, processing and managing sensor data, enabling data transfer, and ensuring connectivity with external interfaces.
- Developement of wearable solutions for heating and cooling, incorporating enabling technologies to support thermal comfort and operational performance.
- Development of integrated monitoring capabilities for body armour elements, enabling continuous assessment of armour condition and performance when exposed to environmental factors and external impacts.
- Design of wearable electronic systems and textile-integrated cabling solutions for efficient energy harvesting, conversion, storage, and distribution across the ARMETISS system.
- Design of wearable modules providing positioning and localisation functionalities to enhance soldier navigation capabilities and situational awareness in operational environments.
- Design of textile-based touch-sensitive and haptic technologies enabling fast interaction with electronic equipment and reducing soldier's cognitive load.

Photo credit : NFM Group ©

COLLABORATIVE WORKSHOPS TO DESIGN THE NEXT SOLDIER GEAR

Building on the outcomes of last year's creativity session and recent results, the consortium organised a series of dedicated workshops. These workshops aimed to further enhance cross-activity collaboration, while supporting the advancement of the design and integration of both the individual modules and the overall ARMETISS system.

WORKSHOP ON TESTING HEXONIA HEADQUARTERS

– NETTETAL, GERMANY, DECEMBER 2025

During the General Assembly, a workshop was held to plan the testing activities for the design of the different modules. The objective was to define a common testing approach, align methodologies, and establish a shared framework for validating each module throughout its development. The workshop enabled participants to clarify requirements, exchange expertise, and ensure consistency across all workstreams. Based on the outcomes of these collaborative sessions, we are now planning and developing the tests associated with each module design.

TECHNICAL WORKSHOP RHEINMETALL

– BREMEN, GERMANY, MARCH 2026

Rheinmetall organised a technical workshop bringing together the technical leads from the different project activities. The purpose of the workshop was to ensure alignment across all workstreams, review the overall system readiness for the upcoming integration phase, and address any cross-activity dependencies or interface issues. It also provided an opportunity for the team to share progress, identify potential risks, clarify technical questions, and agree on the actions required to support a smooth and successful system integration.

WORKSHOP
CROSS WORK PACKAGE
COLLABORATION
APPLYCON,
– PILSEN, CZECH REPUBLIC, APRIL 2026

The workshop brought together project partners to align technical approaches, strengthen collaboration between work packages, and prepare the next stages of module development. The discussions and outcomes from this event now serve as a foundation for the ongoing prototyping activities.

Photo credit : NFM Group ©

These workshops helped review design concepts, coordinate module interfaces, and harmonise technical decisions, consolidating a shared system vision and integration strategy.

By the end of this second year, module design had reached a high level of maturity, with detailed specifications and validated architectural choices paving the way for prototyping, integration, and testing.

Next activities: from integration to prototyping and testing

With the finalisation of the design phase, ARMETISS progresses to the prototyping stage, marking a crucial transition from the design of individual modules to the development of integrated demonstrators. These prototypes will be used to verify and validate the design choices made during the previous phases, ensuring that the developed solutions meet the project requirements.

OVERALL SYSTEM INTEGRATION

LED BY NFM

The first step consists of implementing the overall ARMETISS system design specifications by integrating the functional modules into demonstrators that will enable the verification and validation of the proposed integration approaches. These demonstrators will serve as the foundation for the prototyping activities and will address the key technical challenges and operational requirements of future soldier systems. Particular attention will be given to deliver effective communication and interoperability between the different modules, which is essential for successful system integration.

PROTOTYPING OF MULTIFUNCTIONAL SOLUTION

LED BY APPLYCON

Next is the manufacturing of prototypes incorporating all functional blocks of both the inner and outer layers as defined during the design phase. This activity builds upon and implements the results of the system integration activities, ensuring close coordination and consultation among the partners involved in the final development tasks. The outcome of this work package will be a set of representative prototypes of the final system, which will serve as the basis for the subsequent testing, validation, and performance assessment phase.

VERIFICATION

LED BY FFI

ARMETISS made steady progress in establishing the basis for testing and verification of the project's technologies. A shared verification approach has been developed across all activities, supported by a common Verification Management System which, enables strong collaboration between partners. In parallel, work has progressed on planning, preparing, and initiating verification of individual modules in collaboration functional modules design work. Preparations for human trials have also progressed. Detailed test protocols for both laboratory and field trials have been developed and aligned with module and system requirements. Ethics applications have been submitted, marking a step towards the execution phase of the trials. Overall, the project is well positioned to continue with the planned testing and validation activities under representative conditions.

ARMETISS VOICES

RHEINMETALL

Friederike BITTNER, Technical Manager for Clothing, Protection, Load and Carriage Equipment - Rheinmetall Electronics

Can you present Rheinmetall Electronics (RME) and briefly explain your role in the ARMETISS project?

Rheinmetall Electronics is a system integrator for dismounted soldier systems and is supplying the German armed forces with the latest version of RMEs GLADIUS soldier system for NATO Very High Readiness Joint Task Forces (VJTF).

The IdZ-VJTF system includes C4I (Command, Control, Communications, Computers & Intelligence) , load carriage and protection equipment and features a role-defined modular configuration. The C4I equipment is used as the base and platform for the module integration in ARMETISS.
Rheinmetall is part of the Core Team in ARMETISS and is supporting the vision of a coherent system integration including the implementation of the GOSSRA architecture (www.GOSSRA.net).

What are the main technical challenges RME is addressing within ARMETISS, and how is your team approaching them?

The challenge in ARMETISS is to apply innovations and new developments in smart textiles and technological capabilities to the military context. RME coordinates and supports the partners in the design and integration of the modules to enable their integration into the soldier system.

As many of the ARMETISS technologies are currently not present in today's soldier systems, interfaces (connectors, software, …) are missing for integration. RME's role is to address the software interfaces and support partners in the connector development. To ensure these are incorporated into the standard and made available to other EDF projects like "ACHILE" to consolidate them for the GOSSRA update.

What innovations developed during ARMETISS do you believe will have the greatest long-term impact on industry?

First and foremost, the integration of modules into the soldier system through a standardized data format. Furthermore, working with a development tool that enables the consolidation of sensor data within an open system and facilitates integration into a Battle Management System while ensuring collaboration and transparency.
Looking at Ukraine and the vast amount of wounded soldiers in short periods of time, we deem the Physiological Monitoring as the most crucial technology as it can improve rescue chains and allow remote triage.

How does collaboration with industrial and academic partners in ARMETISS strengthen the research outcomes compared to working independently?

Bringing together partners from different backgrounds, including the defence sector, companies, and research institutes, who have varying expertise, different expectations for the project, and distinct working styles, it is a challenging opportunity to gain new knowledge in various disciplines and strengthen a close cooperation. The collaboration broadens one's horizons and fosters creativity in how we interact with one another to work together to achieve the aim of ARMETISS project.

Looking beyond ARMETISS, what opportunities do you see for continuing the work after the project, and what have been your key takeaways so far?

The main goal is to further develop the GOSSRA standard by adding new interface descriptions and proofing the proposed design.
Many of the smart textile functions are only useful in combination of soldier systems. Hence, the functions they provide can be seen as an enabler to increase the awareness on soldier-system benefits.

DISSEMINATING THE ARMETISS PROJECT

Collaboration with ACHILE

The second year of ARMETISS Project was marked not only by significant progress in its technical modules, but also by strengthened collaboration with the ACHILE Project (www.linkedin.com/company/achile-ngdss/)

This cooperation between the two European Defence Fund supported projects enabled valuable exchanges on methodologies, technical developments, and innovation priorities, reinforcing synergies and contributing to a more integrated European defence research ecosystem.

Several joint events were held between ARMETISS Project and ACHILE Project, creating regular opportunities for coordination and exchange.

ARMETISS AT ACHILE STEERING COMMITTEE & WORKSHOP

–SEEHEIM, GERMANY, FEBRUARY 2026

Overall, the workshop contributed to building a more connected European defence R&D ecosystem, with continued interest in collaboration and joint development moving forward. In addition, both projects include overlapping consortium members, which further facilitates coordination, alignment of activities, and smoother exchange of expertise across the two initiatives.

ARMACHILE MEETING AT EUROSATORY

–PARIS, FRANCE, JUNE 2026

At Eurosatory 2026, a joint "ARMACHILE" meeting brought together ARMETISS Project and ACHILE Project to strengthen collaboration and coordination.
The discussion focused on leveraging ACHILE results, especially modular architecture and integration standards to support ARMETISS developments in soldier textile systems, while reinforcing interoperability and knowledge sharing.
Both projects also agreed to align communication efforts to jointly showcased at the ACHILE demonstration event in October 2026.

DISSEMINATING THE ARMETISS PROJECT

Key highlights from major industry events

In its second year, ARMETISS continued to place dissemination at the core of its strategy, building on the visibility established during the project's initial phase and focusing on showcasing tangible progress and emerging results. As the project entered the prototyping and module development stages, dissemination activities evolved to highlight technical achievements, strengthen engagement with key stakeholders, and foster collaboration across the European defence and textile innovation ecosystems. Partners actively promoted the project's advancements through targeted events, workshops, and communication activities, ensuring that ARMETISS remained visible.

During this second year of dissemination, members of the consortium represented ARMETISS all over Europe.

Throughout the year, ARMETISS continued to be represented at national and international events dedicated to defence, advanced textiles, protective equipment, and innovation. These activities strengthened the project's network, facilitated exchanges with potential end-users and stakeholders, and contributed to share results positioning ARMETISS as a key initiative supporting the development of next-generation protective solutions.

FORO 2E+I EJÉRCITO 35, TOLEDO (ES) - OCT 2025

SIDEC, CELJE (SI) OCT 2025

A+A, DÜSSELDORF (DE) - OCT 2025

AMBITION EUROPE DAY, LYON (FR) - NOV 2025

MILIPOL, PARIS (FR) - NOV 2025

E-TEXTILES CONFERENCE, LILLE (FR) -NOV 2025

NEDS, ROTTERDAM (NL) - NOV 2025

INOVARMY , OEIRAS (PT) NOV 2025

FORUM INNOVATION DEFENSE, PARIS (FR) - NOV 2025

ENFORCE TAC, NÜRNBERG (DE) - FEB 2026

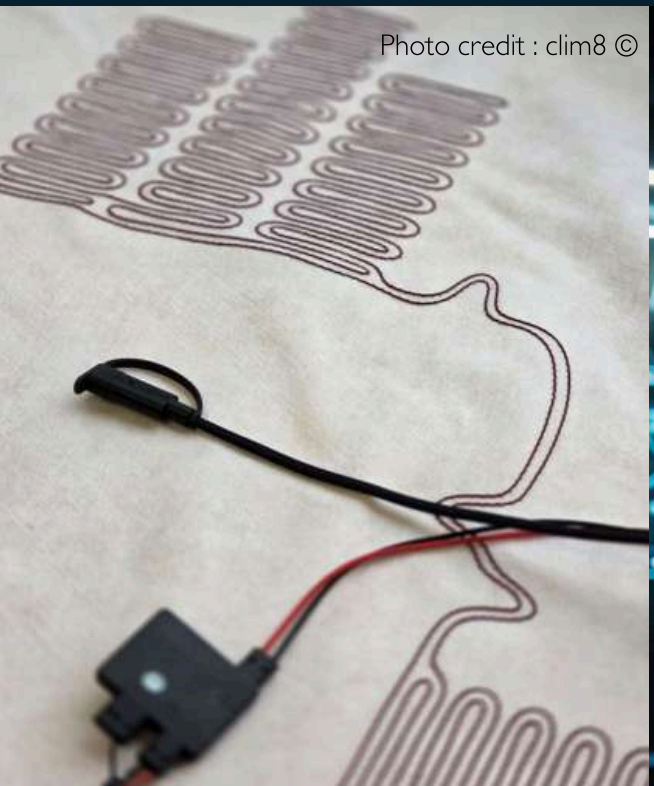
TECHTEXTIL, FRANKFURT AM MAIN (DE) - APR 2026

CEMTEX, OEIRAS (PT) - MAY 2026

EUROSATORY, PARIS (FR) - JUNE 2026

MEET ARMETISS PARTNERS AT UPCOMING EVENTS

- 21-22 October 2026 – Techblick Berlin – Berlin, Germany
- 1-4 November 2026 – MEDICA 2026 – Düsseldorf, Germany
- 17-19 November 2026- ITMC 10th Edition – Villeneuve d'Ascq, France
- 19 November 2026 – NEDS 2026 – Rotterdam, Netherlands
- 24-26 November 2026 – E-Textiles Conference 2026 – Pilsen, Czech Republic
- 26-27 November 2026 – ADD-ITC 2026 – International Conference on Advanced Textile Materials and Technologies – Dresden, Germany



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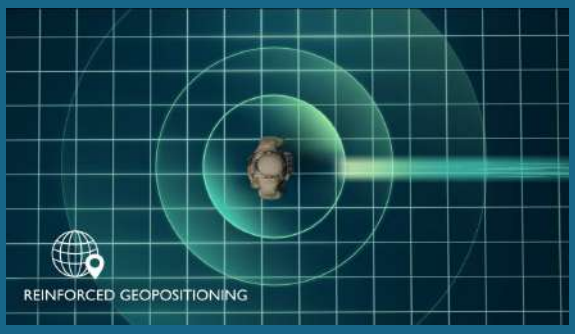
DISSEMINATING ARMETISS PROJECT

A new video introducing ARMETISS to the public



This past year, ARMETISS completed one of its key dissemination activities: the production and publication of a project presentation video. The objective of this video is to present the project to a broader audience, increase its visibility on the international stage, and strengthen its position within the European defence landscape. By showcasing the project's objectives, innovations, modules, and expected impacts, the video contributes to raising awareness among stakeholders and promoting the project's achievements.

A particularly ambitious aspect of this dissemination activity was the creation of a realistic 3D representation of the next-generation soldier system envisioned by the project. Developing this model required translating complex technical concepts and future capabilities into a visually accurate and coherent digital environment.

The use of 3D visualisation allowed ARMETISS to communicate innovative technologies that are still under development, making them more accessible and understandable to a wide range of audiences. This approach significantly enhanced the impact of the video, providing an engaging and forward-looking illustration of the project's vision and expected outcomes.

WATCH THE FULL VIDEO

ARMETISS

armetiss.nfmgroup.org

/armetiss-project

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EUROPEAN DEFENCE AGENCY

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