MAJOR

Maintenance, Joining, and Repair innovation in multidomain defence

Cascade Funding Call# 1 Awardee

MJR1-120

Project Acronym: MIRAGE

Project Title: Advanced Radar Wave Absorption for Defence and Dual - Use Applications

Abstract

The project aims to develop and validate a new class of ultra-thin electromagnetic materials based on microfluidic architectures, enabling high-performance radar wave absorption across multiple frequency bands. The objective is to advance this technology from laboratory validation to demonstrators in representative environments, addressing key defence and dual-use challenges in electromagnetic signature management and radar interference mitigation.

The project will deliver a series of demonstrators, from laboratory-scale prototypes to coatings integrated on representative structures. These demonstrators will validate multi-band absorption performance, selective behaviour, robustness and compatibility with real-world integration constraints, both for retrofit and integration during manufacturing.

The innovation lies in the use of microfluidics to structure matter at the microscale, enabling precise control of electromagnetic interactions. This approach allows a single ultra-thin and lightweight coating to achieve performance levels that typically require thick and complex multi-layered materials. It also enables seamless integration without modification of existing systems or industrial processes.

Overall, the project will demonstrate a scalable, sovereign and cost-efficient solution capable of enhancing stealth capabilities and reducing radar interferences, paving the way for industrial deployment in defence and dual-use applications.

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Company description

Lodinn Technologies, also known as “Kyneon”, is a deeptech company developing advanced electromagnetic materials to address critical challenges at the intersection of energy transition and strategic infrastructures. The company originates from fundamental research in physics and focuses on translating scientific breakthroughs into industrial applications.

Key facts

Company	Lodinn Technologies
Country	France
Topic	Hybrid Structures for Defence Platforms: Multi-Material Design, Joining & Reversible Interfaces
Start date	01/09/2026
End date	28/02/2027
Budget/ Grant	EUR 59,803

Contact

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