

HUB FOR EU DEFENCE INNOVATION (HEDI)

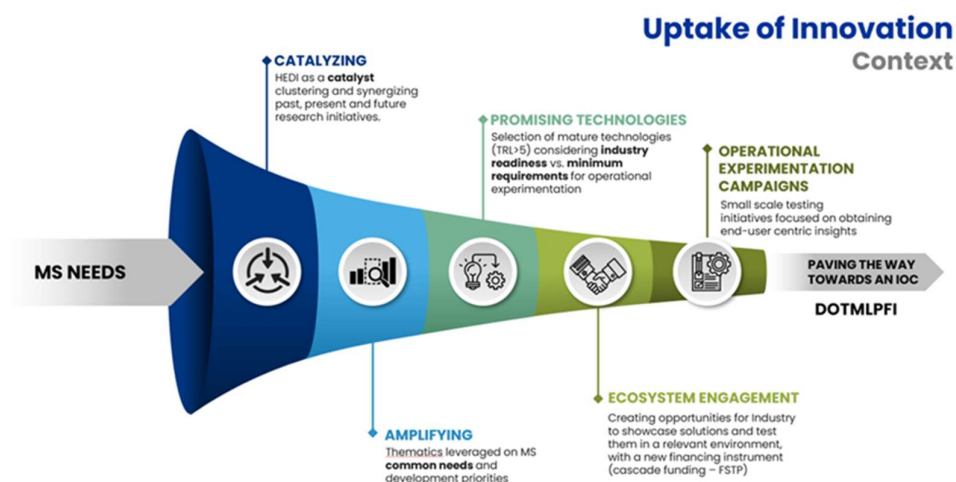
Uptake of Innovation – Autonomous Systems for Cross-domain Logistics – Operational Experimentation

FACTSHEET

1. Introduction: Uptake of Innovation

The Uptake of Innovation service falls under the portfolio of the HEDI and is aimed at organizing operational experimental campaigns with emerging technologies. It considers various dimensions (**Doctrine, Organization, Training, Material, Leadership and Education, Personnel, Facilities and Interoperability**) to identify capability development blueprints.

Methods like Concept Development Experimentation and Concurrent Design are used to align promising technological innovations with the priorities of Member States. The Hub takes insights coming from Member States and from other EDA initiatives to focus on user-led experimentation with mature technologies.



2. Operational Experimentation - Autonomous Systems for Cross-domain Logistics (Air and Land)

In order to align with the shared interests expressed across various Member States and Associated Countries, EDA launched the first **European Defence Innovation Operational Experimentation (OPEX) Campaign** focusing on **Autonomous Systems for Cross-domain Logistics (Air and Land)**.

This effort reflects the collective prioritization of defence innovation while creating synergies between several efforts already ongoing at the Agency, such as CapTechs' Strategies Research and Innovation Agendas (SRIAs), EDA Action Plan on Autonomous Systems (APAS) and Emerging Disruptive Technologies (EDTs) Capability-Driven Action Plan.

Unmanned Aerial Systems (UAS) and Unmanned Ground Systems (UGS) are pivotal in cross-domain logistics, enhancing efficiency and effectiveness in challenging environments. Their role in modern military tasks is not just supplementary but increasingly integral, revolutionizing the approach to operations and logistical support.

EDA draws on existing knowledge of use-cases and scenarios already discussed with Member States (MSs) at the EU level (last mile resupply and CASEVAC). Additionally, these are being refined and developed through a dedicated expert working group (EWG) that was established specifically to support the operational experimentation.

After going through an evaluation process to select the Host MS where the Operational Experimentation Campaign will take place, the *Centro Polifunzionale di Sperimentazione dell'Esercito* (CEPOLISPE) was selected as the main hosting entity, together with the support of the Italian Army. Due to the complex nature of the Experimentation Campaign, a second site was selected to allow more diversified testing opportunities for the systems, especially for simulating advanced scenarios and contested environments, in the *Ufficio Tecnico Territoriale Armamenti Terrestri di Nettuno* (UTTAT).

3. Description of Lots

A critical aspect of this initiative is its collaborative engagement with the technological service providers (defence and dual-use), which will not solely drive further technological advancements but also offering participants significant benefits through extensive operational experimentation, interaction with experts, exposure to new emerging scenarios and use cases, and potential for future collaborations.

The call for tenders was launched in July 2024 and it was divided into seven lots. The services sought after UAS and UGS solutions, applicable payloads, ground stations, command, control and communication architecture, necessary supplies, spare parts, qualified personnel with expertise to deploy, operate, manage, and maintain them. The contracts have been awarded in December 2024.

3.1. LOT 1 – Low Cost Attritable Unmanned Aerial Systems (UAS)

This lot aims to field test innovative UAS Class I MICRO and/or MINI solutions, focusing on the concept of using low-cost, attritable platforms collaboratively to support distributed logistical supply concepts for the mass delivery of small payloads (under 10 kg). The lot envisions using multiple platforms to overcome the limitations of transporting smaller payloads.

The company who was awarded with LOT 1 is **BEYOND VISION**, a UAS system provider from Portugal.

3.2. LOT 2 – Vertical Take-Off and Landing (VTOL) Unmanned Aerial Systems (UAS)

This lot aims to field test innovative UAS Class I MINI and/or SMALL solutions, focusing on the concept of using multiple platforms capable of transporting payloads up to 50 kilograms per platform. These platforms should feature Vertical Take-Off and Landing (VTOL) capabilities, designed to support a low to medium logistical footprint. The primary objective is to maintain operational flexibility with a light and agile footprint (i.e., equipment carried by dismounted soldiers or by light vehicles) while still being able to transport effective payloads.

The company who was awarded with LOT 2 is **ALTUS LSA**, a UAS system provider from Greece.

3.3. LOT 3 – Heavy Lift Vertical Take-Off and Landing (VTOL) Unmanned Aerial Systems (UAS)

This lot aims to field test innovative UAS Class II and/or Class III solutions, focusing on the concept of using heavy lift platforms that feature Vertical Take-Off and Landing (VTOL) capabilities, capable of transporting payloads above 50 kilograms per platform. The primary objective is to transport heavy payloads effectively while maintaining operational flexibility with a medium logistical footprint (with some ground supporting equipment deployed). This includes, if possible, the use of UAS in CASEVAC (Casualty Evacuation) scenarios.

The company who was awarded with LOT 3 is **SCHIEBEL AIRCRAFT**, a UAS system provider from Germany.

3.4. LOT 4 – Low Cost Attritable Unmanned Ground Systems (UGS)

This lot aims to field test innovative UGS SMALL solutions, focusing on the concept of using low-cost, attritable platforms collaboratively to support distributed logistical supply concepts for the mass delivery of small payloads (under 100 kg). The lot envisions using multiple platforms to overcome the limitations of transporting smaller payloads. The locomotion types of the platforms can be either biomimetic, wheeled or tracked.

The company who was awarded with LOT 4 is **ALYSIS DIGITAL**, a UGS system provider from Spain.

3.5. LOT 5 – Medium Wheeled Logistical Unmanned Ground Systems (UGS)

This lot aims to field test innovative UGS MEDIUM WHEELED solutions, focusing on the concept of agile land platforms capable of transporting payloads between 100 and 1000 kilograms per platform. The primary objective is to transport heavy payloads effectively while maintaining operational flexibility with a moderate logistical footprint. This includes, if possible, the use of UGS in CASEVAC (Casualty Evacuation) scenarios.

The company who was awarded with LOT 5 is **PIAP**, a UGS system provider from Poland.

3.6. LOT 6 – Medium Tracked Logistical Unmanned Ground Systems (UGS)

This lot aims to field test innovative UGS MEDIUM TRACKED solutions, focusing on the concept of agile land platforms capable of transporting payloads between 100 and 1000 kilograms per platform. The primary objective is to transport heavy payloads effectively while maintaining operational flexibility with a moderate logistical footprint. This includes, if possible, the use of UGS in CASEVAC (Casualty Evacuation) scenarios.

The company who was awarded with LOT 6 is **ARX Robotics**, a UGS system provider from Germany.

3.5. LOT 7 – OPEX Support Team

EDA awarded a single Framework Contract (FWC) to a service provider to support EDA and EU Hosting MS in the design, execution and evaluation of a military

operational experimentation campaign. The specific objectives of this FWC comprise the delivery of the following elements:

- Develop a methodology to assess the capability maturity of products/prototypes.
- Develop an experimental design that clearly articulates the objectives, hypotheses, and methodologies, in close cooperation with EDA and MS representatives.
- Support in the planning and execution of the experimental campaign in close cooperation with EDA, the Host Member State and the industries involved.
- Collected data during the experimentation, analyse them and assess the experimental observations to derive reliable, actionable insights on the DOTMLPFI implications of future integration in capabilities of the products that participated in the OPEX.
- Support EDA and the Host Member State in the organization of a VIP demonstration day to showcase the experimental outcomes to high-ranked stakeholders.

The company who was awarded with the FWC from LOT 7 is **EXTENSEE**, a consortium from France.