EUROPEAN UNION

EDF 2024

EUROPEAN DEFENCE FUND

SPADER PROJECT
NEWSLETTER 04

Latest SPADER News

SPADER PROJECT

SPADER is a project selected for funding under the EDF 2024 call. Its mission is to develop an innovative space debris removal system that uses concentrated solar rays to alter the thermal and kinetic energy of targeted debris particles.

Space debris includes any man-made objects, or fragments of such objects, that continue to orbit Earth without any form of ground-based control. As the number of space missions grows - driven by more countries launching or participating in space programs - the amount of unmanaged debris in orbit increases as well.

Because there is no natural mechanism in space that removes this material, the debris remains in orbit. Over time, the overall number of these objects grows at an accelerating rate, adding to the long-term accumulation of space clutter and it poses significant risks to ongoing and future space operations

The SPADER project introduces the concept that is based on a dual catoptric optical system that concentrates solar radiation and directs it precisely through a final optical element toward the selected object. By applying intense solar energy, the system aims to significantly modify the debris particle's physical state, enabling controlled removal or trajectory alteration.

The project will guide research and technological development toward a laboratory-scale model, which will be tested to deliver a Proof-of-Concept. This work will pave the way for future deployment of SPADER in space debris clean-up missions and other advanced space applications.

KICK-OFF MEETING 3 - 4 NOVEMBER 2025

On 3 - 4 November, SPADER partners gathered in Tallinn, Estonia, for the Kick-Off Meeting hosted by VAAL Airships. Discussions covered project management, technical planning, dissemination, ethics and security, establishing the foundation for successful project implementation.

Find **out more**



SPADER Kick-Off Meeting, 3 & 4 November 2025, Tallinn, Estonia

SPADER FIRST PLENARY MEETING 4 - 6 MAY 2026, ATHENS

From 4 - 6 May 2026, the SPADER consortium held its first plenary meeting in Athens, marking an important milestone for the European space debris removal initiative. Coordinated by VAAL AIRSHIPS and hosted by SKYLD, GEORING and NTUA/CCIS, the meeting gathered partners from six European countries to review progress and align future activities. Technical achievements across ongoing work packages were presented, while due deliverables were reviewed and submitted. A representative from the European Commission's DG DEFIS provided guidance on project management, reporting and funding procedures. The next plenary meeting will be hosted by the Romanian partners in October 2026.

Find **out more**



SPADER 1st Plenary Meeting, 4 - 6 May 2026, Athens, Greece

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Meet the SPADER Consortium

VAAL Airships - Beneficiary - ESTONIA (EE)

VAAL Airships builds and operates High Altitude Platform Stations (HAPS), also known as High Altitude Pseudosatellites.

👉 Visit VAAL Airships

INCDT COMOTI - Beneficiary - ROMANIA (RO)

COMOTI - National Research and Development Institute for Gas Turbines is the only unit in Romania specialized in development and integration of scientific research, constructive and technological design, manufacturing, experimentation, testing, technological transfer and innovation in the field of aviation turbine engines, gas turbine industrial machines and high speed blade machines.

👉 Visit INCDT COMOTI

SKYLD Ltd - Beneficiary - CYPRUS (CY)

SKYLD is focusing in the fields of Security and Defence domain, including European, International, and nationally funded Research projects and tenders and its personnel has extensive experience in managing complex ICT projects at the respective domains.

👉 Visit SKYLD Ltd

EU3STAR B.V. - Beneficiary - THE NETHERLANDS (NL)

EU3STAR B.V. is built in the 3-star business domain, the aerospace, the defense, and the maritime sectors.

👉 Visit EU3STAR B.V.

MGM - Beneficiary - ROMANIA (RO)

MGM STAR Construct is a Romanian private company specialized in physical and chemical vacuum deposition (PVD, CVD). Lithography technology, optical manufacturing, manufacturing of mechanical parts, construction works in civil area and activities for a wide range of industrial applications.

👉 Visit MGM

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Meet the SPADER Consortium

ICPEST SRL - Beneficiary - ROMANIA (RO)

ICPEST SRL specializes in manufacturing new and reconditioned mechanical parts, producing prototypes, and designing complex assemblies, devices, and molds. The company also conducts advanced research and development activities in precision engineering and processing technologies.

👉 Visit ICPEST SRL

PLUS ETHICS - Beneficiary - SPAIN (ES)

PLUS ETHICS provides expert support for European-funded projects, ensuring compliance with GDPR, ethics, fundamental rights, and legal standards through specialized research, management, and training.

👉 Visit PLUS ETHICS

ICCS - Beneficiary - GREECE (EL)

The Institute of Communication and Computer Systems (ICCS) is a leading non-profit research organization of the National Technical University of Athens (NTUA), advancing scientific excellence in computational science and engineering. Its interdisciplinary work spans AI, smart systems, communications, energy, climate, biomedical engineering, photonics, and advanced hardware–software technologies.

👉 Visit ICCS

GEORING - Beneficiary - GREECE (EL)

GEORING Services is the initiator of a system for On-Orbit Servicing Named HERMES, aiming to kick-start the On-Orbit Servicing (OOS) industry in Europe. GEORING has invented and is pursuing deployment of a 5 element system to enable efficient deployment and delivery of a series of services on orbit. Some of these services apply to existing satellites but the full spectrum to the future satellites.

👉 Visit GEORING

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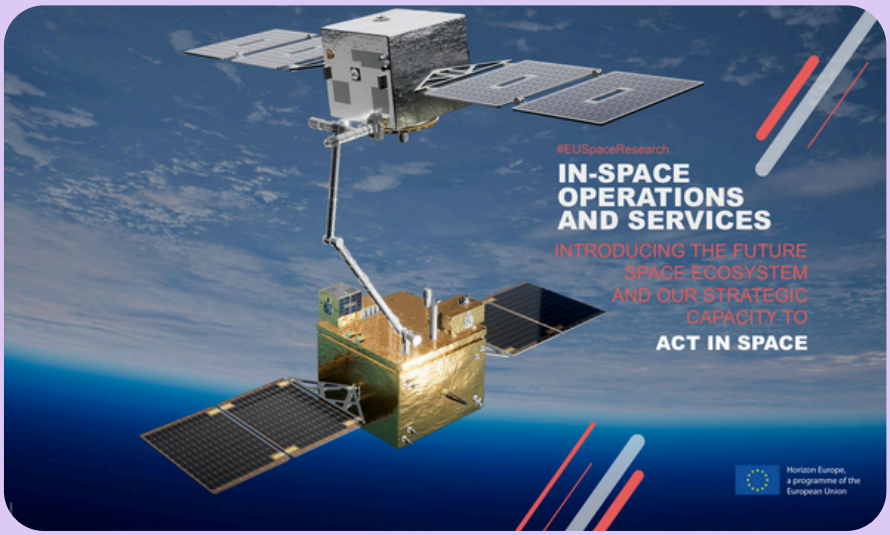
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OTHER SPACE NEWS

Europe Advances Strategic In-Space Operations and Services

The European Commission is advancing In-Space Operations and Services (ISOS) to improve the performance, resilience and sustainability of European space assets. ISOS covers satellite servicing, in-orbit assembly and manufacturing, removal, recycling and logistics, supporting both commercial development and protection of critical space infrastructure. Key enabling technologies include autonomous robotics, artificial intelligence and electric propulsion.

An EU pilot mission will demonstrate technologies and services while supporting the development of an on-demand in-space ecosystem. Through Horizon Europe, the EU is also investing in servicing, logistics, warehousing, disassembly, reuse and recycling technologies, strengthening Europe's ability to act autonomously and sustainably in space.



👉 Find out more



Photo: ©SpaceX

Defence and Tactical Space Reshape the Global Launch Market

Starburst highlights a major transformation of the global launch market, driven by evolving satellite architectures and growing defence demand.

While super-heavy launchers are becoming strategic orbital infrastructure, the commercial outlook for micro-launchers is weakening as satellites grow larger and more capable. Intermediate launchers are emerging as an attractive segment for sovereign constellations and dedicated missions.

Defence applications are becoming an important growth driver, particularly for responsive launch, tactical space, hypersonic testing, and air and missile defence.

For Europe, developing sovereign launch capabilities and strengthening the intermediate launcher segment could reduce strategic dependencies, while longer-term investment in heavier launch systems may reinforce Europe's autonomy and competitiveness in an increasingly contested space domain.

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OTHER SPACE NEWS

Ariane 6 Launches Europe's Advanced MTG-I2 Weather Satellite

On 27 August 2026, Europe's Ariane 6 successfully launched the MTG-I2 weather satellite from Europe's Spaceport in French Guiana.

The satellite will strengthen European weather forecasting with advanced imaging and continuous lightning monitoring, supporting faster warnings for severe weather and air traffic safety. MTG-I2 is part of Eumetsat's Meteosat Third Generation constellation, expected to generate at least 50 times more data than its predecessor.

The mission marked Ariane 6's ninth launch, its first flight to geostationary transfer orbit and its farthest mission to date.



Ariane 6 lifts off from Europe's Spaceport in French Guiana. Photo: © ESA

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ESA Open Days 2026: Explore Europe's Space Activities



The European Space Agency (ESA) is preparing its 2026 Open Days, offering the public an opportunity to discover Europe's space programmes, missions and technologies. Visitors will be able to explore ESA facilities, meet space professionals and learn more about ongoing activities in areas ranging from Earth observation and exploration to satellite technologies and space science. The events provide a unique opportunity for space enthusiasts, families and students to experience Europe's space sector first-hand and better understand ESA's contribution to European innovation and space capabilities.

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OTHER SPACE NEWS

SpaceX Completes 100th Orbital Mission of 2026

On 21 August 2026, SpaceX completed its 100th orbital launch of the year, with a Falcon 9 deploying another batch of Starlink satellites from California. The milestone highlights the company's exceptionally high launch cadence and the growing role of reusable rockets in supporting large satellite constellations. SpaceX's rapid launch tempo continues to reshape global access to orbit and expand the scale of commercial space infrastructure.



A Falcon 9 rocket lifts off from Space Launch Complex 4
Photo: ©SpaceX

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ClearSpace-1 Advances Toward Active Space Debris Removal

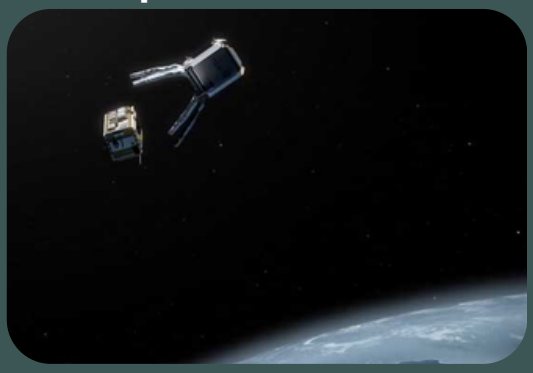


Photo: ©ClearSpace

Swiss startup ClearSpace has achieved key environmental testing milestones for ClearSpace-1, an active debris removal mission. The spacecraft successfully completed vibration and thermal vacuum tests designed to verify its ability to withstand launch and orbital conditions. ClearSpace-1 is designed to use four robotic arms to capture a 112 kg Vega payload adapter in orbit before both objects are safely deorbited and burn up in the atmosphere. The mission represents an important step toward demonstrating practical European capabilities for removing hazardous debris from increasingly congested orbits.

👉 Find out more

China's Abandoned Rockets Are Turning Low Earth Orbit Into a Debris Hazard

A LeoLabs analysis cited by Breaking Defense finds China abandoned 51 spent rocket stages above 650 km in low Earth orbit between 2021 and 2025, more than doubling the prior five-year total and accounting for 86% of all such abandonments worldwide. The mass of discarded Chinese rocket bodies tripled to 305,000 kg, dwarfing the US (four bodies) and Russia (one). Several of these derelicts still carry leftover propellant, risking mid-orbit explosions and fragmentation, and three Chinese rocket bodies have already broken apart in recent years. Some stages from China's megaconstellation launches will remain in orbit over 25 years, violating international debris-mitigation guidelines and raising long-term collision risks for satellites.



Photo: © NASA

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