LYNRED launches SPIRIT, a strategic European project to prepare the next generation of sovereign Infrared detectors

Funded by the European Union under the frame of the European Defence Fund, the SPIRIT project brings together 15 partners from 9 European countries. Its objective: develop a fully European supply chain for high-resolution infrared detectors to support the European Sovereignty. The project is scheduled to start at the end of 2026 and will run for four years.

With a total estimated cost of €39.16 million, SPIRIT will receive a maximum EU contribution of nearly €29 million, complemented by co-funding from Ministries of Defense and partners' self-contribution.

Grenoble, France, May 26, 2026 - Access to the most advanced technologies required to design next-generation infrared detectors has become a critical issue for Europe. High development costs, low production volumes and the complexity of industrial processes make it a real challenge and require expertise and investment to be pooled at European level.

Against this backdrop, LYNRED, AIM and EXOSENS, Europe's three leading suppliers of infrared detectors, have decided to join forces under the SPIRIT project, a strategic European initiative designed to further develop the fundamental technology building blocks for the next generation of infrared sensors.

Coordinated by LYNRED, a global leader in infrared imaging technologies, the project brings together 15 entities from 9 countries, including 8 large companies, 3 SMEs, 2 MidCaps and 2 RTOs. Together, they cover the entire value chain, from ROIC design to camera demonstration.

“SPIRIT will enable AIM to continue the development of advanced CMOS Read-Out Integrated Circuits (ROIC) based on European Silicon CMOS technology. The ROIC will be integrated in an IR-Sensor to make it usable for our customers to build advanced IR Systems,” said **Rainer Breiter, vice-president, IR-Module programs, at AIM.** *“The availability of high-performance CMOS Read-Out Integrated Circuits (ROIC) is a key enabler for enhancing the performance of next generation IR-Sensors,” “We are looking forward to continue our successful work together with our existing and new partners on high-performance CMOS ROICs. The SPIRIT project will bring this technology to a new level and will demonstrate the capabilities of this advanced technology for IR-Sensors.”*

“This project is the result of a structured, long-term coopetition within EDF’s portfolio of programmes. It provides the final push that enables European IR manufacturers to deliver state-of-the-art detectors for a range of infrared sensitive materials and 2D/3D CMOS architectures, backed by a robust European supply chain,” said **Pierre Jenouvrier, Chief Officer of the Cooled-Products Unit at LYNRED.** *“Access to an advanced CMOS node is essential for every IR-sensor maker. Collaboration in this technology domain was absolutely necessary; the workload could not be shouldered by a single company.”*

SPIRIT, the natural follow-up of previous HEROIC and ECOSYSTEM projects

The success of SPIRIT relies on technological breakthroughs delivered by the HEROIC and ECOSYSTEM projects, both conducted under the European Defence Fund framework. The objective is to bring these innovations to the final stage: raising Technology-Readiness Level by producing and testing demonstrators that are built from the technological bricks developed in the two preceding projects. .

SPIRIT proposes to build and deliver the first three infrared detectors using an advanced CMOS foundry for high performance ROICs (≥3 megapixels with a pixel pitch below 7 µm) supported by a fully sovereign EU-based supply chain.

“As a key contributor to the project, EXOSENS will leverage its expertise in advanced detection and imaging technologies to support the transition from research to industrial readiness. Over the next four years, SPIRIT will bring breakthrough innovations to operational maturity including the development of advanced semiconductor components, integration of multiple IR materials, and delivery of fully operational detector systems and camera prototypes tested in real-world environments. A core objective is to establish a fully European, end-to-end supply chain, from semiconductor design to camera systems, reducing reliance on external technologies and enabling faster deployment across defense platforms.”

These detectors will be integrated into four camera prototypes that will be tested by partners at Electro-Optic system level under real operating conditions, for applications including missile detection, drone detection, naval applications and camouflage detection.

Thanks to SPIRIT, the three leading European IR-detector manufacturers will be able to offer a broad portfolio of demonstrators covering a wide range of infrared wavelength bands—extended SWIR, MWIR T2SL and MCT—as well as a variety of video format and pixel pitch resolutions. These innovations will unlock new operational capabilities for European defense forces: extended detection ranges, real-time feedback, increased detectability of drones / extended range of c-UAS systems, versatility and ease of upgrade.

LYNRED, project coordinator leading a European coopetition approach

This project is part of a shared “coopetition” approach: pooling resources and costs to provide a European supply chain capable of producing advanced infrared sensors for future European defense platforms. This approach aims to strengthen European competitiveness, accelerate innovation and ensure European sovereignty. It will also facilitate the emergence of European standards that will promote interoperability and speed up product development.

Coordinator of SPIRIT, LYNRED will play a central role in steering the consortium and will mobilize its experts from detector manufacturing and packaging to the performance evaluation of advanced infrared sensors.

“LYNRED, as the leader of this consortium, has shown it can meet the long-term needs of future defense systems,” added Pierre Jenouvrier. *“We are proud to take part in this game-changing initiative that strengthens European industrial sovereignty, and we look forward to unveiling our multi-megapixel sensor in the coming years.”*

Funded by the European Union. Views and opinions are however those of the author(s) only and do not necessary reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.

About the partners

LYNRED (France)
LYNRED, alongside its subsidiaries LYNRED USA, and New Imaging Technologies (NIT), is a global leader in designing and manufacturing high quality infrared technologies for aerospace, defense and commercial markets. It has a vast portfolio of infrared sensors that covers the entire electromagnetic spectrum from near to very far infrared. Its products are at the center of multiple military programs and applications and are key components in many top brands in commercial thermal imaging equipment sold across Europe, Asia and North America. LYNRED is the leading European manufacturer for IR detectors deployed in space.

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AIM (Germany)
AIM Infrarot-Module GmbH develops, manufactures and sells premium infrared detectors and thermal sights as well as Stirling cooling engines required for the operation of detectors at cryogenic temperatures. The combines all necessary core competencies such as electronic engineering, microelectronics, semiconductor technology including crystal growth, optics and precision engineering under one roof. AIM products are in service with the German Bundeswehr and different countries, especially within the NATO. They are also utilised in research, industrial processes, safety & security technologies and environmental protection. Space applications constitute an important segment.

EXOSENS (France/Belgium)
Exosens is a high-tech company, with more than 85 years of experience in the innovation, development, manufacturing and sale of high-end electro-optical technologies in the field of amplification, detection and imaging. Today, it offers its customers detection components and solutions such as travelling wave tubes, advanced cameras, neutron & gamma detectors, instrument detectors and light intensifier tubes. This allows Exosens to respond to complex issues in extremely demanding environments by offering tailor-made solutions to its customers. Thanks to its sustained investments, Exosens is internationally recognized as a major innovator in optoelectronics, with production and R&D carried out on 12 sites, in Europe and North America and with over 2,000 employees.

FALCONERS (Estonia)
Falconers is an Estonian SME specializing to sensor AI research and development, contributing to multiple EDF, EDA and ESA projects. Current research domains include drone/satellite sensors and AI processing for environmental, defense and security missions. Falconers team is actively engaged in the Estonian Aerospace and Defence Industry Association and is the Industry representative in EDA CapTech Space and Optronics.

CEA (France)
CEA-Leti, a technology research institute at CEA Tech, pioneers micro and nanotechnologies, tailoring differentiating applicative solutions that ensure competitiveness in a wide range of markets. The institute tackles critical challenges such as healthcare, energy, transport and ICTs. Its multidisciplinary teams deliver solid expertise for applications ranging from sensors to data processing and computing solutions, leveraging world-class pre-industrialization facilities.

MLT (Greece)
Miltech Hellas provides state-of-the-art products that address the modern needs of the defense and civilian domains. These include thermal imagers, radio accessories and multi-function displays for avionics. The company is located 20km east of Athens and is housed in a 10,000 m² building with cutting-edge technological equipment.

INTEGRATED DETECTOR ELECTRONICS AS – IDEAS (Norway)

IDEAS develops full-custom- integrated circuits, ROICs and systems for of radiation detection and imaging in space and on Earth. Several products have extensive flight heritage demonstrating reliable, high-performance operation in challenging high-radiation environments across numerous missions with all major space agencies around the world.

INDRA ESPACIO and INDRA SISTEMAS (Spain)
Indra Group is Spain’s leading multinational company and one of Europe’s major players in defense, aerospace and advanced technologies. The company holds a leading position in the areas of defense, space, air traffic management, mobility and Information Technologies through Minsait, while integrating its sovereign AI, cybersecurity and cyberdefense capabilities under IndraMind.

Indra Group promotes a safer and more connected future through innovative solutions, trusted relationships and top talent. Sustainability is embedded in both its strategy and corporate culture, enabling the company to address current and future social and environmental challenges. At the end of fiscal year 2025, Indra Group reported revenues of €5.457 billion, maintained a local presence in 46 countries and conducted business operations in more than 140 countries worldwide.

EM&E Group (Spain)
EM&E Group is a leading Spanish group specialising in the engineering and manufacture of complex defence and security systems. It is renowned for its investment in innovation, dual-use technologies and artificial intelligence. Its solutions include remote stations, guidance systems, optronic sensors, robotics, 6x6 vehicles, mortar carrier systems and C-UAS capabilities. It also has a subsidiary, EM&E Electronics, which focuses on the development of electronic components and photonics.

E4D (Spain)
Thanks to EM&E Group's continuous investment in research, innovation, development of new technologies, facilities and human capital, E4 Defence Systems has been established as a center exclusively dedicated to carry out activities and execute EM&E Group's R&D&I projects. E4D is dedicated to the study, research, design and execution of EM&E Group's European and national technology projects, as well as projects for disruptive technologies and artificial intelligence, focused on improving the capabilities of EM&E Group's systems and equipment in the security and defense sectors.

LEONARDO (Italia)
Leonardo is a global company that develops multi-domain operational capabilities in the Aerospace, Defence and Security sector, with an integrated offer of high-technology solutions for military and civil applications. Leonardo is the leading Italian industrial company and one of the major Aerospace, Defence and Security players in the world. The Company has a solid industrial base, a global commercial network, strategic partnerships and collaborations in the most important international programmes.

KONGSBERG (Norway)
Kongsberg specializes in developing advanced technologies to provide extreme performance for extreme conditions. Working together as a global team, it has created an integrated portfolio of solutions, for businesses, partners and nations operating from the depths of the sea; to outer space; to the digital frontier.

PCO (Poland)
PCO S.A, Poland’s largest producer of optoelectronic devices with laser, night vision or thermal vision technologies, offers a wide range of optoelectronic observation and targeting devices to military personnel and uniformed services.

CSL (Belgium)
Created by the University of Liège, the Centre Spatial de Liège (Liège Space Center) is a research center focused on space instrumentation with an environmental test facility serving the European Space Agency (ESA), the space industry and regional companies.