Spanish SME is looking for partners to develop an AI surgery robotic system for ambulatory procedures under the upcoming EUROSTARS call for proposals

Summary

Profile type	Company's country	POD reference
Research & Development Request	**Spain**	**RDRES20250821015**
Profile status	**Type of partnership**	**Targeted countries**
PUBLISHED	**Research and development cooperation agreement**	**• World**
Contact Person	**Term of validity**	**Last update**
Enrico FRANZIN	**21 Aug 2025** **21 Aug 2026**	**21 Aug 2025**

General Information

Short summary

A Madrid-based company founded in 2019 and specialized in the aerospace, healthcare and agrotechnology sectors is looking for partners to participate in the Eurostars programme (deadline 4th September 2025) for the development of an autonomous robotic system for ambulatory surgery (current TRL 5-6, expected TRL 8). The company offers robotic systems and AI software products and services and is looking for SMEs, research institutions or other elegible partners for the upcoming Eurostars call.

Full description

Project: A robotic surgery system designed for minor outpatient procedures will include autonomous guidance to enhance safety and decrease the duration and cost of surgeries. The system uses sensors, such as a stereo camera and a Near Infra Red camera, to assist with guidance and the procedure. AI software will be developed to support the navigation of the robotic system.

Context: Healthcare sector. The robotic system will comprise robotic arms, haptic controls, monitors, and an electrical system for use in outpatient clinics.

Technology: Multi-layer AI-driven Digital Software System that models and predicts: Identification, characterisation,

measurement, and assessment of tissues to support surgical procedures. A new robotic system identifies tissues through 3D, NIR sensors, supporting robotic surgery.
Macro-level orchestration of surgical workflow and the micro-level dynamics of tissue manipulation in robotic surgery.

Methodology:
The system will incorporate commercial and validated components within the health sector. The AI will provide clinical and surgical support, accessible on any computer or mobile device, and will guide the robotic surgical system. We develop AI navigation and control software, as well as robotic arms adapted for outpatient clinics and minor surgeries, and we integrate sensors and surgical tools. The project will include testing and validation in a real environment.
Suturing is one of the main tasks in advanced laparoscopic surgery, but limited degrees of freedom, 2D vision, the fulcrum and the pivoting effect make it difficult to perform. Robotic systems provide corresponding solutions as a three-dimensional (3D) view, intuitive motion and additional degrees of freedom. A review evaluates these benefits for their impact on suturing in experimental and clinical studies. In the Medline database, a total of 1150 references were found and further limited to "suturing" for experimental evaluation. In experimental studies, current robotic systems have proven their superior suturing capabilities compared to conventional techniques, mainly attributed to 3D visualisation and full seven degrees of freedom. In clinical studies, these benefits have not yet been sufficiently reproduced. Robotic systems must demonstrate the benefits shown in experimental studies for suturing tasks in clinical applications. Robotic devices shorten the learning curve of surgical procedures. (Kenngott HG, Muller-Stich BP, Reiter MA, Rassweiler J, Gutt CN.) Robotic suturing: technique and benefit in advanced laparoscopic surgery. Minim Invasive Ther Allied Technol. 2008;17 (3):160-7. doi: 10.1080/13645700802103381. PMID: 18609002.)

The programme: Innovation Programmes. Eurostars call for projects – September 2025.
https://eurekanetwork.org/programmes-and-calls/eurostars/eurostars-september-2025/

The partnership: Roles: Robotics system integrators, AI software developers, sensor and surgery tools integration, a health institution or a company for requirements and testing, and health certification consultants.
Timescales:
Official deadline for the call: 4 September 2025, 2:00 PM CEST
Anticipated duration of the project: 36 months

Advantages and innovations

Advantages:
- Performances:
  - Reduce the time and cost of the surgery procedures
  - Reduce the unsafe conditions.
- Access to the technology.
  - Availability in remote areas.
- Patients
  - Precision technology to reduce the time of recovery and scars in patients.
- Health Sector
  - Robotic devices shorten the learning curve of surgical procedures.
  - Reduce time for Health validation (CE Marking and FDA)
  - Reduce the time and cost of conventional surgical procedures.

Competitors or existing systems
1. Symani Surgical System: It is the first robot approved by the FDA (April 2024) specifically for microsurgery, which is costly and not suitable for minor, low-cost surgeries.
2. STAR (Smart Tissue Autonomous Robot): Records autonomous soft tissue suturing, in models such as the intestine (intestinal anastomosis), without direct human intervention. Applicable to laparoscopy and still in development, it is more for advanced research.
3. micro-STAR: A fully autonomous system for vascular anastomosis in small-diameter vessels. It uses 3D imaging and coherence optics to guide sutures with high precision, requiring minimal human intervention (it completed 90% of sutures without assistance). Vascular anastomosis, Prototype; more complex for minor surgery.
4. da Vinci / Versius / Hugo: Surgeon-assisted systems used in minimially invasive surgery, but not standalone.

Technical specification or expertise sought

To complete the consortium, the company is looking for robotics system integrators, AI software developers, sensor and surgery tools integration, a health institution or a company for requirements and testing, and health certification consultants.

Stage of development

Lab tested

Sustainable Development goals

- **Goal 1: No Poverty**
- **Goal 17: Partnerships to achieve the Goal**
- **Goal 8: Decent Work and Economic Growth**
- **Goal 10: Reduced Inequality**
- **Goal 3: Good Health and Well-being**
- **Goal 9: Industry, Innovation and Infrastructure**

IPR Status

Secret know-how

IPR Notes

IPR Notes

Partner Sought

Expected role of the partner

The type of partner sought is: industry, academic, research organisation.

The tasks to be performed by the partner sought: Robotics system integrators, AI software developers, sensor and surgery tools integration, a health institution or a company for requirements and testing, and health certification consultants.

Multiple types of partners and partnerships can be considered. The tasks to be performed by the partner sought should be consistent with the type(s) of partnership discussed in the summary, the description and other profile fields.

Type of partnership

Research and development cooperation agreement

Type and size of the partner

- **SME <=10**
- **SME 11-49**
- **SME 50 - 249**
- **R&D Institution**
- **University**

Call Details

Framework program

Eureka

Call title and identifier

Innovation Programmes. Eurostars call for projects – September 2025.

Submission and evaluation scheme

https://eurekanetwork.org/programmes-and-calls/eurostars/eurostars-september-2025/

Anticipated project budget

Coordinator required

750k-1.2M€

No

Deadline for EoI

3 Sep 2025

Deadline of the call

4 Sep 2025

Project duration in weeks

144

Web link to the call

https://eurekanetwork.org/programmes-and-calls/eurostars/eurostars-september-2025/

Project title and acronym

AI Surgery Robotic for Ambulatory Procedures

Dissemination

Technology keywords

- **01001001 - Automation, Robotics Control Systems**
- **06001017 - Surgery**
- **01004001 - Applications for Health**
- **01003003 - Artificial Intelligence (AI)**

Market keywords

- **05007007 - Other medical/health related (not elsewhere classified)**
- **02007012 - Medical/health software**
- **02004001 - OCR (optical character recognition)**
- **02007016 - Artificial intelligence related software**

Targeted countries

- **World**

Sector groups involved