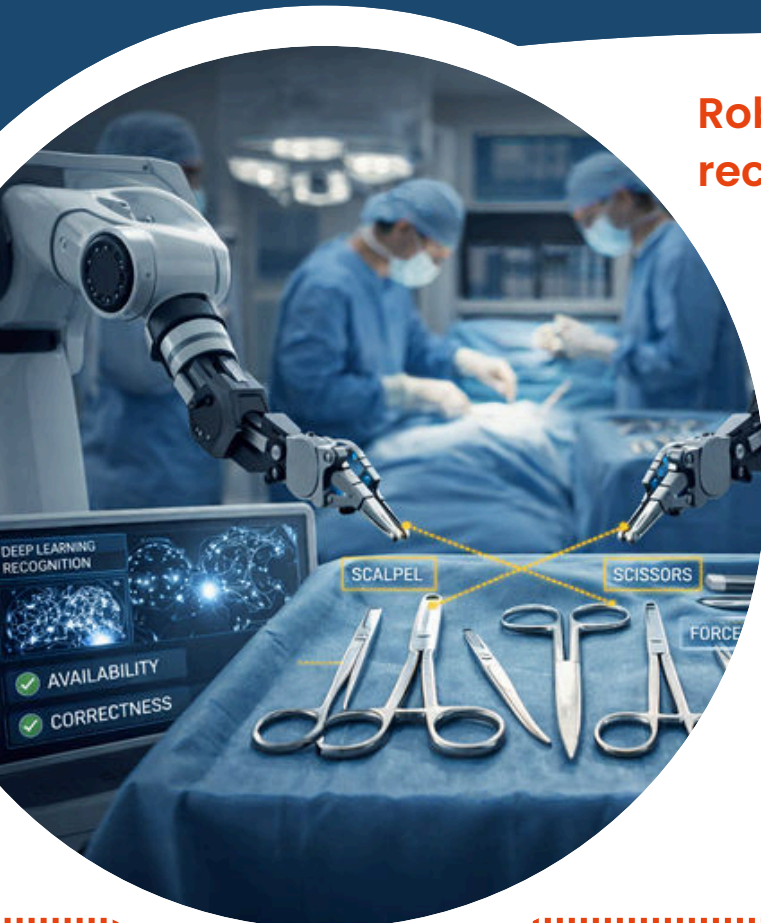


CALL FOR PARTNERS

# SURGIVISION

Partner call open until: July 15, 2026

Project start: September 1, 2026



## Robust, visual instrument recognition in the operating room

The operating room presents a particularly challenging environment for visual assistance systems. Small surgical instruments made of highly reflective metal, changing lighting conditions, complex background structures, and frequent obstructions significantly complicate reliable automatic recognition.

At the same time, the demands on digital support systems are increasing to manage instrument sets, prevent mix ups, and reliably document workflows.

To date, there has been a lack of robust computer vision solutions for autonomous or robotic assistance systems that can ensure precise and stable instrument recognition under real-world clinical conditions..

## Project Objective

The goal is to develop robust computer vision methods for AI-supported recognition, verification, and status determination of surgical instruments in the operating room. The planned visual assistance system is intended to enable autonomous service and assistance robots to reliably identify instruments, thereby improving patient safety, process stability, and digital documentation in the clinical setting.

## Partners needed

- **Medical technology and surgical assistance**
- **systems Robotics** (service and assistance robots)
- **Computer vision / deep learning Clinical partners** (surgical environment)
- **Sensors and optical systems**

## Contact person:

**Marlies Zimmermann, B.Sc.**

[marlies.zimmermann@setlabs.de](mailto:marlies.zimmermann@setlabs.de)

## Expected outcomes

- **Robust object recognition** of small and reflective instruments
- **Multimodal sensor fusion** (RGB, depth, polarization, hyperspectral if applicable)
- Domain-specific **data generation** and **simulation**
- **Explainable AI** and verification in safety-critical environments
- Integration into **robotic assistance systems**: Regulatory requirements (MDR, ISO 13485, IEC 62304)