

# INTERNATIONAL WORKSHOP

in conjunction with  
**the 20th International Conference  
on Advanced Robotics (ICAR 2021)**

**December 7th, 2021**



**EMBODIED AI  
IN ROBOTIC  
SURGERY:  
OUTCOMES OF  
THE EU FUNDED  
SARAS PROJECT**

[www.saras-project.eu](http://www.saras-project.eu)



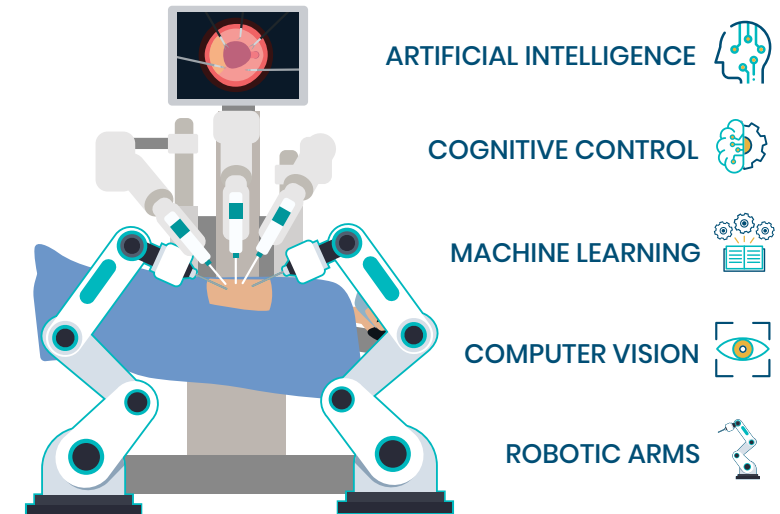
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 779813 (SARAS).

## SARAS AT A GLANCE

The aim of the SARAS project is to explore the next generation of surgical robots allowing a single surgeon to execute (Robotic) Minimally Invasive Surgery without the need of an expert assistant surgeon, by executing tasks in an autonomous way.

## SARAS TECHNOLOGY

- 1.** Two assistive robotic arms designed to implement the tasks currently done by the assistant surgeon in (R) MIS, by holding off-the shelf laparoscopic instruments.
- 2.** A perception module to recognize the action of basic surgical tasks and to detect organs.
- 3.** A cognitive module, collecting the outputs of the perception module and planning collision-free trajectories of the SARAS arms, to execute surgical tasks like cutting tissues and threads, holding and moving organs.



## WORKSHOP OBJECTIVES

In this workshop we will present the outcomes of the SARAS project in terms of experience, results of the research, new findings and platforms developed.

## MORNING SESSION

SARAS Consortium partners will present the challenges faced and the solutions merged into a working prototype of an autonomous assistant surgeon. External speakers will also introduce the current state of research and future perspectives of surgical robotics.

## AFTERNOON SESSION

This session will be dedicated to the stakeholders of surgical robotics, with a specific perspective on surgeons, including a round table to discuss on the state of the practice, open challenges and the opportunities in this field.