



Press release

## **KUKA Innovation Award 2022: These are the finalists of the “Robotics in Healthcare Challenge”**

**Augsburg, 15.03.2022 – Promoting maternal health, healing serious skin wounds, or assisting with arthritis examinations, brain surgery or rehabilitation: five teams have made it to the finals of the KUKA Innovation Award with their innovative robotics ideas.**

This year’s KUKA Innovation Award, which is endowed with 20,000 euros, is centered on medicine and health. That is because new technologies are playing an increasingly important role in healthcare and will be virtually indispensable in the future.

Researchers, developers and young entrepreneurs submitted their concepts for the “Robotics in Healthcare Challenge”. An international panel of experts evaluated the concepts and selected five finalists. In addition to KUKA experts, the panel members include renowned professors and specialists in the field of robotics as well as experts from the medical technology sector.

“Intelligent robotics offers great opportunities, especially in healthcare, with new concepts and efficient and high-quality treatment options – for the benefit of patients,” says Dr. Kristina Wagner, Senior Vice President of the KUKA Technology and Innovation Center.

“We received innovative concepts from all over the world, from which we selected the five most promising. We look forward to accompanying the finalist teams as they develop their ideas further over the coming months.”

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## These are the finalists for the 2022 KUKA Innovation Award

### Team Ligō

The Ligō device is a novel 3D bioprinting platform that supports the functional healing of skin tissue following acute skin wounds such as extensive burns. It is being developed in Australia by the Sydney-based start-up *Inventia Life Science* together with renowned skin surgeon Professor Fiona Wood and Professor Gordon Wallace's bioprinting research group. The Ligō robot, whose code name comes from the Latin word meaning "to bind", prints tiny droplets containing the patient's skin cells and optimized biomaterials into the wound directly in the operating room using the KUKA LBR Med and Inventia's patented 3D bioprinting technology. In this way, tissue-guided regeneration is stimulated, allowing the body to heal itself and restore healthy skin that improves the quality of life for skin injury survivors.

### Team AROKI

Maternal health remains a major challenge, particularly in developing countries. Many health centers in developing countries lack basic facilities for prenatal ultrasound examinations and qualified professionals to perform them. The AROKI team from IIT Madras in India aims to achieve a significant improvement in the quality of maternal healthcare and prenatal care using robotic solutions. The platform integrates the KUKA LBR Med to enable autonomous scanning, 3D ultrasound reconstruction and teleoperation with immersive virtual reality for visualization, monitoring and diagnosis.

### Team Brubotics

Robots will play an increasingly important role in rehabilitation in the future, as rehabilitation robots can provide frequent and repetitive training as well as ergonomic working conditions for the therapist. However, new rehabilitation strategies are also required to improve the functional outcomes of robotic therapy. The team from the *Vrije Universiteit Brussel* and *imec* addresses these challenges using the KUKA LBR Med in combination with a soft-sensorized physical interface. Using integrated multimodal sensors, the team is able to add extra layers of safety and comfort and capture user intention in order to develop more flexible rehabilitation robots.

### Team ROPCA

ROPCA has a vision to develop a variety of application platforms for robots to help clinics increase the productivity and quality of their daily work. The first product is ARTHUR – an



ARTHritis Ultrasound Robot. The application consists of an automated ultrasound platform for the examination of patients with rheumatoid arthritis. The patient can interact directly with the platform and the physician saves time in consulting the patient, as the ultrasound images for diagnosis are already available.

## Team cortEXplore

cortEXplore develops neuronavigation technologies for planning, simulating and performing brain surgery. In this project, the team plans to implant neural interfaces with robotic assistance. Specifically, the robot will be guided by the surgical plan in order to implant microelectrodes into the brain. Such operations can be used to implement brain-computer interfaces or to study neural mechanisms of the brain.

## **KUKA Innovation Award 2022: What happens next?**

In the next step, the finalists implement their ideas with a KUKA LBR Med – the first collaborative robot specifically certified for integration into a medical device. To this end, the teams will be provided, for at least six months and free of charge, with the KUKA robot and a vision system from the Munich-based company Roboception, consisting of an rc\_visard 3D stereo sensor and associated rc\_reason software modules. This system allows robots to see and understand, enabling them to be used flexibly in a very wide range of applications.

Furthermore, the finalists will receive hardware and software training and coaching from KUKA experts throughout the competition. The final of the Innovation Award will be held at the MEDICA medical trade fair in November 2022. There, the finalist teams will present their applications to a large professional audience from industry and research as well as media representatives and investors. The winning team can look forward to a prize of €20,000.

## **KUKA**

KUKA is a global automation corporation with sales of around 2.6 billion euro and roughly 14,000 employees. The company is headquartered in Augsburg, Germany. As one of the world's leading suppliers of intelligent automation solutions, KUKA offers customers everything they need from a single source: from robots and cells to fully automated systems and their networking in markets such as automotive, electronics, metal & plastic, consumer goods, e-commerce/retail and healthcare. (As at 31 December 2020)