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Surgical robots - innovative support in the operation room

Background

A revolution in microsurgery with products that unconditionally comply with surgeons, intelligently support them, and thus optimize surgical procedures - that was the visionary goal of BHS Technologies GmbH. The RoboticScope was CE certified in March 2020 and has since been approved as a Class I medical device in the EU for use in surgery. BHS has managed to achieve international reputation within 3 years and received the Tyrolean Innovation Award even before the product approval, as well as the Future Zone Award, which recognized them as the best start-up in 2019. In Germany, the RoboticScope was first used in an OR in 2020 and is the winner of the German Innovation Award 2021.

Innovations in the OR

The progress of technology in medical technology is impressive and remains exciting to watch. The innovative power of this industry seems insatiable. More and more new, efficient products are establishing themselves on the market and often they are small, unknown companies or start-ups that have only been participating in the market for a few years. About 1/3 of the total turnover of the MedTech industry is generated by products and treatments that are not older than 3 years.

A new, promising trend is the use of robots or robotic assistance systems. Medical robots and surgery-assisting robotic systems account for the largest share, with a market share of just under 50%. The IFR expects a further increase in the global market potential by 2022 and estimates the generated sales at 11.3 billion US dollars.

Survey results from an international study by PwC show that around 50% of participants would give their consent to be operated on by a robot. Another study illustrates that 35% of Germans already believe that robots can operate better than a human doctor and 65% are convinced that in 20 years at the latest, robots will be far superior to their human counterparts. Thus, the future is already within reach.

Austrian company BHS Technologies has made a breakthrough into international operating rooms with its RoboticScope product. The technology enables fully digital, enhanced visualization during microsurgical procedures. On the one hand, the robotic visualization system offers the surgeon increased image quality and, at the same time, unrestricted freedom of operation, as the hands can be left in the operating area without interruption. The microscope is controlled by head movements. The mode of operation is comparable to a combination of exoscope and microscope. The eyepiece (image composition) and the 3D camera, which is guided by a highly



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accurate robotic arm, are separated from each other. The surgeon wears a head-mounted display through which he receives a 3D image through 2 eyepieces. By means of microsensors, the surgeon intuitively controls the robotic arm or the camera system to control the surgery fully digitally.

Robotic assistance systems offer multiple benefits for hospitals and surgeries, such as improved ergonomics for the surgeon, more mobility with better imaging, higher precision and staying power during longer, complicated surgeries. Furthermore, surgical outcomes for patients are optimized and risks are reduced. Experiences show less need for pain medication, a shortened recovery process and faster gains in patient mobility.

You find robotics-assisted systems exciting and would like more information? We would be happy to put you in touch with the company! Just contact us with your request. arcoro CONNECT links technologies, companies and people - personally and directly.

COMPANY	LOCATION	WEBSITE	FIELD OF EXPERTISE
BHS Technologies GmbH	Austria	https://www.bhs-technologies.com/?lang=de	Surgical robots
Intuitive Surgical	USA (CA)	https://www.intuitive.com/en-us	Surgical robots
Medrobotics Corporation	USA (MA)	https://medrobotics.com/	Surgical robots
Avatera Medical GmbH	Germany	https://www.avatera.eu/home	Surgical robots
Robocath Inc	France	https://www.robocath.com/fr/	Surgical robots
Procept BioRobotics Corporation	USA (CA)	https://www.procept-biorobotics.com/	Surgical robots
Siemens Healthineers AG	Germany	https://www.siemens-healthineers.com/de/angio/endovascular-robotics/precision-vascular-robotics	Surgical robots
CMR Surgical	UK	https://cmrsurgical.com/	Surgical robots
UVD Robots	Denmark	https://uvd.blue-ocean-robotics.com/robots	Disinfection robots

Would you like to know even more and contact experts in the field of robotics directly? We have selected a few experts for you who are passionately and experienced in the field of medical robotics. Feel free to get an overview yourself or contact us. We are happy to assist you and connect you with international opinion leaders!



INDUSTRY EXPERT	JOB POSITION	FIELD OF EXPERTISE
PD Dr. Hans Fuchs	Head of robot-assisted surgery at the University Hospital Cologne	Surgical robots
David Leo Fischel	Chairman & CEO at Stereotaxis	robotic technologies
Catherine Mohr	VP of Medical Research (Robotics)	surgical robots

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