Website address:
https://www.gesundheitsindustrie-bw.de/en/article/press-release/future-operating-theatre-will-be-part-team

In future, the operating theatre will be part of the team

The "Digital Integration and Innovation in Surgery" (Digitale Integration und Innovation in der Chirurgie, DIIC) project aims to promote the transfer of new findings and research results into practice. It is set to receive five million euros over the next four years under the "innovation community" pilot funding scheme run by the Federal Government's German Agency for Transfer and Innovation (DATI). The School of Informatics at Reutlingen University will work together with Furtwangen University, BioMedTech e.V., University Hospital Tübingen and other stakeholders from STERN BioRegion to examine how intelligent digital assistance systems can contribute to improved patient care during surgical procedures. Companies that are interested in participating in this project can now apply to develop appropriate devices and methods.

Dim the lights, please," is a request that is heard frequently when certain endoscopic surgical devices are being used, as low light enables the surgeon to see the procedure better on the screen. What if an intelligent operating theatre system were able to recognise automatically that the endoscopic mode had been started and the light should be dimmed, rather than the surgeon having to give that instruction to a human assistant? This is just one of many questions occupying the mind of Prof. Oliver Burgert, Dean of the School of Informatics at Reutlingen University and project leader of the DIIC Innovation Community during this project. While it may sound straightforward, it is very complicated in practice. Lights and endoscopic devices must have the correct interfaces so that they can be integrated into the operating theatre's cloud, regardless of manufacturer. "We can demonstrate open system networking in surgical settings in our university's teaching and research operating theatre. We show how individual devices interact with each other, what the device interfaces look like and how the system contributes towards improved patient care," Burgert explains, adding that this is on the condition that an intelligent operating theatre will make clinical life easier in the future rather than more complicated. "Doctors shouldn't even notice that the system is working – the light simply goes on or off at the correct time."

Virtually simulated operations are being run round the clock at data level on the platform of the university's intelligent operating theatre. Companies can integrate their products into this platform and test the systems in a safe environment. "If it works with us – we can't carry out actual operations, after all – then this platform will be duplicated in the Institute of Clinical Anatomy in Tübingen," Burgert says. Project partner Prof. Bernhard Hirt, Director of the Institute of Clinical Anatomy and Cell Analysis, will then assess the processes on an anatomical specimen, and thus provide support for the first step into clinical testing. In addition, Prof. Martin Haimerl and his team at Furtwangen University are ensuring that the key regulatory issues regarding the interoperability of devices and the interaction between humans and machines are taken into account.

The research project has the explicit goal of promoting the transfer of research into industry. This is why companies that want to benefit from technological innovation are to be brought on board at an early stage. "Many companies have no idea that these open operating theatre networking opportunities exist. As part of this project, we are therefore creating an interdisciplinary exchange platform with workshops and meetings," says Prof. Burgert.

Networking in operating theatres is therefore a topic that repeatedly comes up in the "Incisions - Insights" workshop series that BioRegio STERN Management GmbH and BioMedTech e.V. are involved in, and that is designed to promote biotechnology and medical technology in clinical anatomy. As Chairman of the Board of BioMedTech e.V., Dr. Steffen Hüttner, Executive Director of HB Technologies AG in Tübingen, is also a partner in the DIIC project. "The combination of clinical application expertise from University Hospital Tübingen, application-oriented research at Furtwangen University and Reutlingen University, and the medtech landscape in Baden-Württemberg represented by BioMedTech e.V. will plug a gap in medical device development," he promises.

In total, the project, which was launched on 1 January 2025, will have access to five million euros over the next four years. The majority of this – around 3.5 million euros – will flow into the community projects. Companies from any sector can apply if they focus on integration and innovation in operating theatres. They therefore don't necessarily need to come from the medtech sector. "It might be questions such as, 'What do I need to consider in terms of regulations?', 'How do I design a user interface?', or 'How do I integrate an AI solution?' The projects should still be research-based and not solely involve product development, but they can be application-oriented in design," Burgert explains.
In the long term, the project aims to improve patient care, optimise clinical working conditions, cut costs for hospitals, and give German medtech companies a competitive edge. "It is a networking project and therefore fully in line with what we do," explains Dr. Klaus Eichenberg, Managing Director of BioRegio STERN Management GmbH. "The idea is to bring people and

ideas together."

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Further information

Press contact:
BioRegio STERN Management GmbH
Dr. Klaus Eichenberg
Friedrichstraße 10
70174 Stuttgart, Germany
Phone: +49 (0)711 870354 0
E-mail: eichenberg(at)bioregio-stern.de

Editorial department:
Zeeb Kommunikation GmbH
Anja Pätzold
Alexanderstraße 81
70182 Stuttgart, Germany
Phone: +49 (0) 711 6070719
E-mail: info(at)zeeb.info

- BioRegio STERN Management GmbH
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