

WHY?

By participating in this study you are helping us design robots and control algorithms that are safe and intuitive for surgeons. There is no direct benefit to you apart from a first-hand experience of using one of the surgical robots of the future. Your participation is voluntary and you can stop at any point during the experiment. Contacting us does not mean that you will register for the study but only that you are interested in receiving further information.

CONTACT

STUDY INVESTIGATORS

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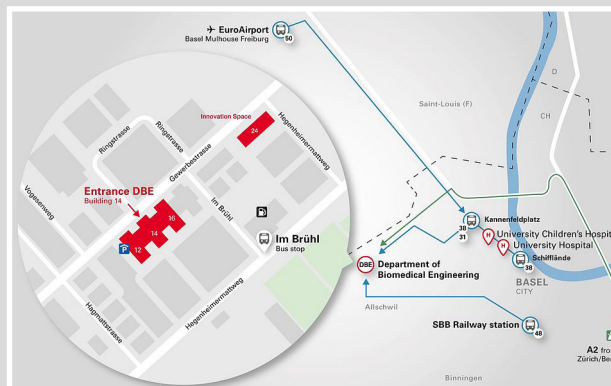
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BIROMED-Lab
Medical Robotics and Mechatronics



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ADMITTANCE CONTROL STUDY



Surgical robots are typically teleoperated, where surgeons are far away from the patient. For some phases of the surgery direct interaction with the robot (hands-on control) could be easier, faster and perhaps more intuitive. At the BIROMED-Lab, we are designing interfaces and control algorithms to make interaction with the robot intuitive for surgeries. We believe that our technology can aid to bring technology to operating rooms, and help surgeons.

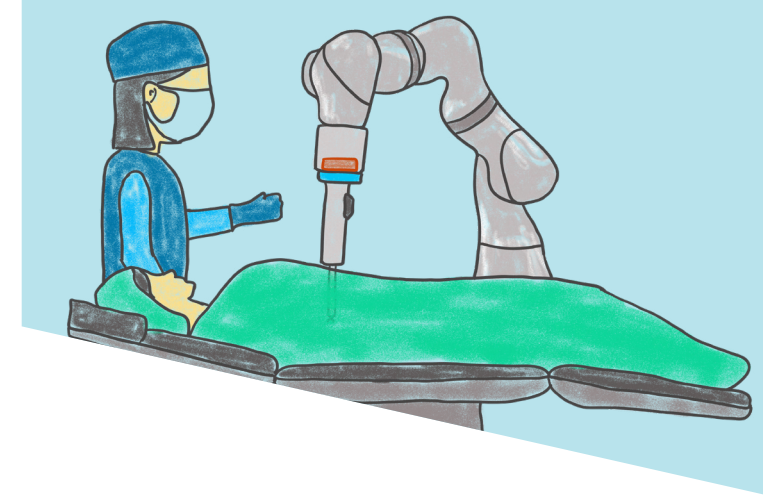
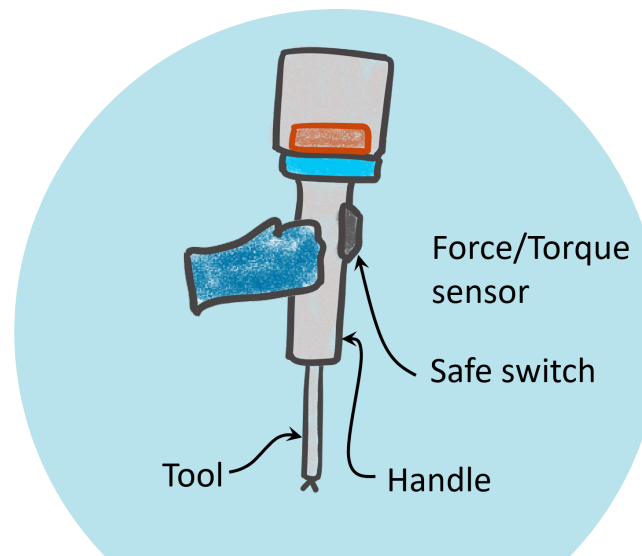
MIRACLE, short for Minimally Invasive Robot-Assisted Computer-guided Laserosteotomy, aims to develop a robotic endoscope to perform contact-free bone surgery with laser light. MIRACLE is planned to be applied in the fields of orthopedics, cranio-maxillofacial surgery, neurosurgery, otolaryngology, traumatology, and spinal column surgery.

REQUIREMENTS

We are looking for healthy participants between 20 and 65 years age for the study. Furthermore, you should not have any injury, illness in the upper extremity. You should also not have prior experience in hand-guiding robots. Contact us if you are interested to participate in our study.

STUDY DESCRIPTION

In this study we are interested in finding which control mode is most intuitive to hand guide a robot. We use an off-the-shelf robot that is approved for safe use in human robot interaction tasks. We had previously completed a short study to identify a suitable handle design, and using the findings we designed and manufactured a new handle. In this study, we test four different control modes: one provided by the robot manufacturer, and three that we developed. Identifying the one which is easy and intuitive to use is important to understand if the robot controller is user-friendly and intuitive.



STUDY PROCEDURE

We will first provide you with detailed information about the study process, and fill a form that confirms your participation. You perform eight robot positioning tasks with each of the five control mode conditions. At the end of each mode, you would fill out a short questionnaire. If you are interested, we will send you the results of the study after its completion.

The study has no impact on your health. It takes about 60 minutes, and you will get a chance to interact with a surgical robot. You will help us make better robot designs and controllers.