

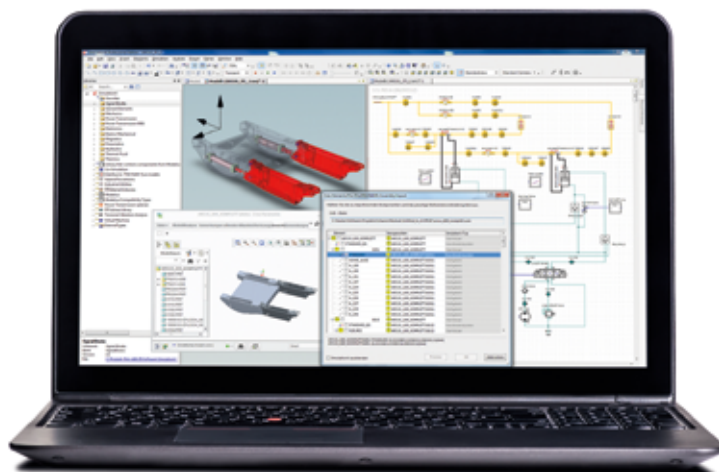


## Designing safe and reliable medical apparatus for flawless operation

**For the safety and reliability of diagnostic and operative apparatus as well as assistive devices, SimulationX offers engineers a vast range of possibilities for modeling, analyzing and optimizing virtual prototypes already during the development.**

Imaging devices must comply with steep requirements for stability and low levels of

vibration from their electric drives in order to obtain accurate values. The same holds for surgical devices operating directly on the patient, such as the operating table or endoscopy robots. Machinery for manufacturing special materials and components for prostheses must meet the highest standards in the same way as any life support equipment and assistive technology like incubators or wheelchairs.



# Simulating vital device functions

**The broad spectrum of included libraries and external interfaces in SimulationX accounts for the continuum between mechanical engineering, precision instruments and medical technology as such by allowing comprehensive analyses of technical systems and their physical interactions them.**

Elements from mechanics, electronics and fluid technology provide the basis for models of electric and hydraulic drive components as well as environmental systems. Control engineering and real-time interfaces to PLCs enable optimal layouts for process automation. This efficient approach of virtual prototyping promotes systematic optimization and helps to lower the financial impact a great deal by reducing the number of actual prototypes and the amount of time spent on development in general.

**Multi-physics system simulation** | Increasing understanding for technical systems through modeling complex structures with respect to all physical domains and the interactions between them.

**Safety and reliability** | Ensuring operational safety for patients and personnel through virtual testing.

**Dynamics** | Analyzing machine behavior and all forces involved throughout the system.

**Efficiency** | Developing and optimizing medical apparatus without the need for actual prototypes.

**Integration** | Facilitating the integration into existing environments through proven interfaces.

**“SimulationX helps us shorten design cycles while developing reliable and safe products.”**

**C. Zaugg,  
HEAD RESEARCH AND  
DEVELOPMENT  
SCHAERER MEDICAL AG,  
SWITZERLAND**



**Learn More:**

**[esi-group.com/products/system-simulation](https://esi-group.com/products/system-simulation)**