

**simu** **PULSE**  
Mitral

**BEATING HEART  
SIMULATOR**  
FOR TRANSAPICAL MITRAL  
VALVE REPLACEMENT

## ADVANCED SKILLS & PATIENT LIKE TRAINING

**The simuPULSE platform simulators  
have full pulsate movement and flow**

### FOCUS

- Patient and procedural outcomes

### LEARN

- Outcomes driven implantation with flow and regurgitation
- Advanced procedural imaging protocol
- Tips and tricks

### RIGID STRUCTURES

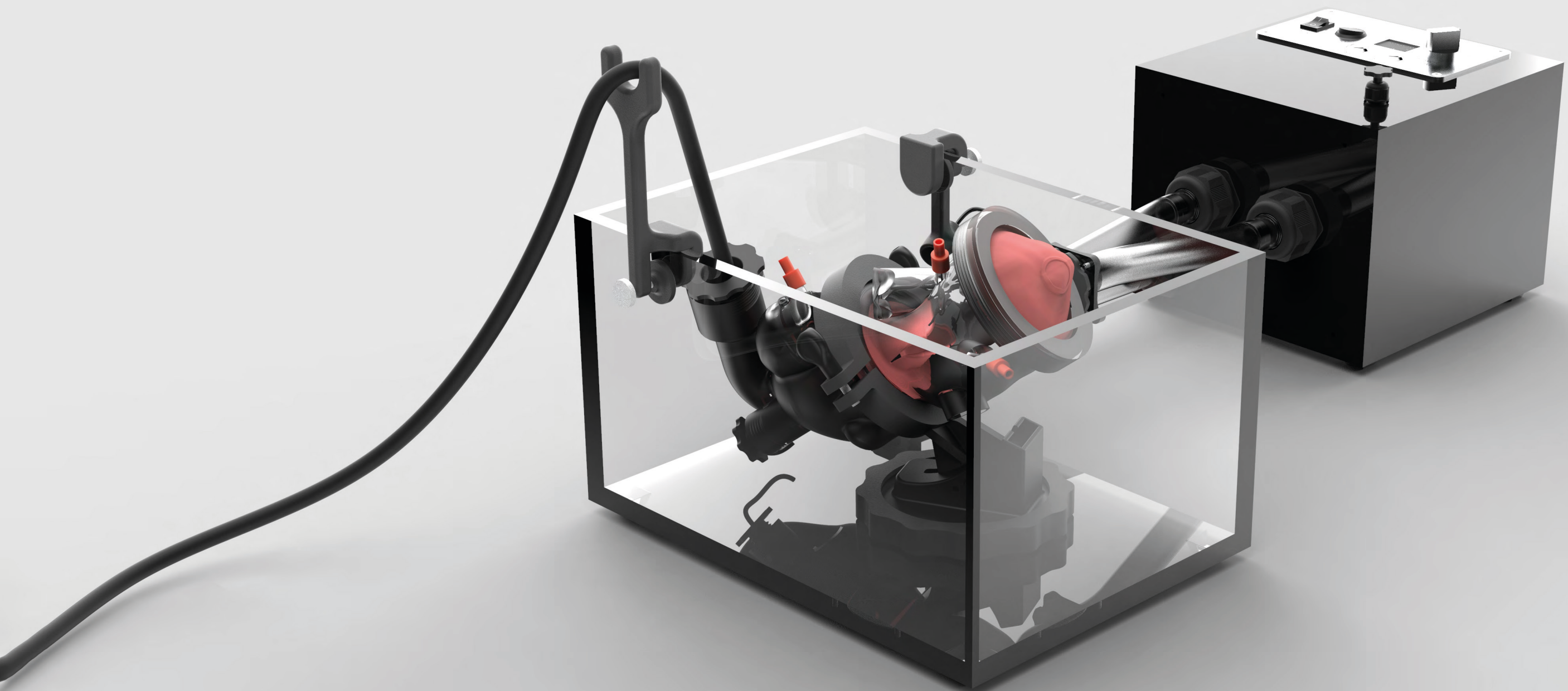
- Femoral transseptal access
- Transesophageal access
- Ventricular skeleton
- Left atrium
- Left ventricle
- Esophagus

### Landmarks representing

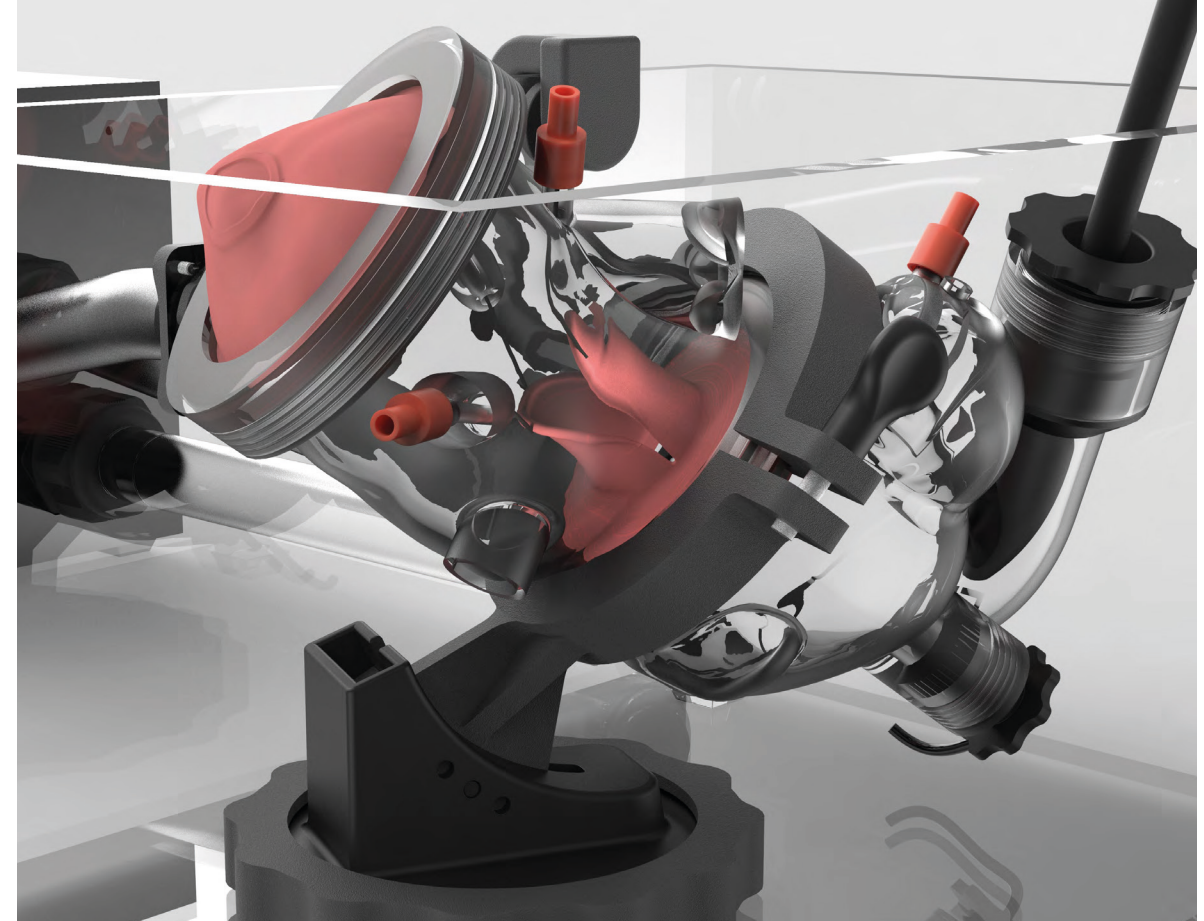
- Aortic valve
- Left atrial appendage

### SOFT STRUCTURES

- Mitral valve and chordae
- LV apex







## REAL IMAGING

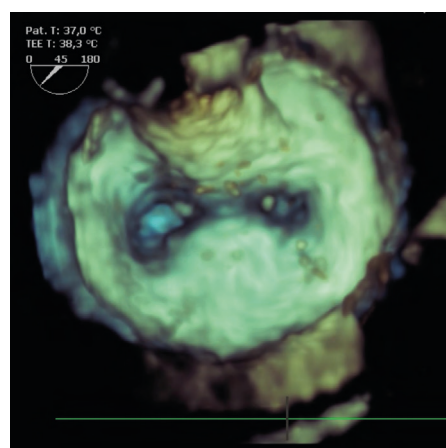
## DIRECT CAMERAS & FLUOROSCOPIC GUIDANCE



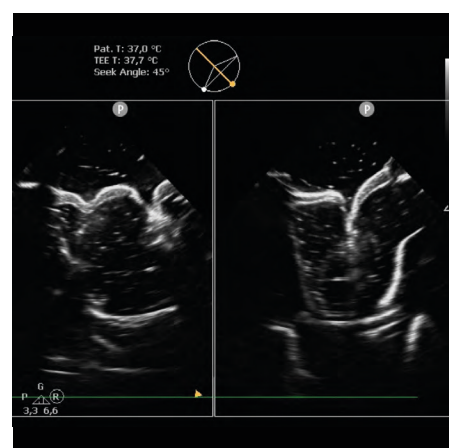
1. Lateral



2. Left Ventricular Outflow Tract (LVOT)



3D En-Face Surgical



X-Plane

## HUMAN GRADE PLATFORM

### MODULAR ANATOMICAL SYSTEM

Complete anatomical representation, human grade and tissue like tactile interaction along the entire implantation pathway.

Designed to generate pressure gradient over Mitral valve to allow realistic behavior of the device. Based on real patients CT, MRI and 3D echo datasets.

### MATERIALS

Proprietary materials enhance the pulsating physiological behavior of the Mitral valve. The leaflets treated to be visible under fluoroscopy.

'Friction-less' coating allows smooth introduction and interaction of the device with the components.

### SIMULATOR COMPONENTS

Promotes understanding of 3D anatomy from 2D displays with integrated video-camera systems and fine hand-eye coordination.

### TWO PATIENT SCENARIOS

Basic - Common Mitral valve pathologies.  
Advanced - Challenging Mitral valve anatomies and pathologies.

### PULSATILE FLOW EXPERIENCE

- Delivery system and implant maneuvering in wet environment
- Delivery system, implant functions and interaction with moving structures
- Detailed procedural steps
- Just like in real patient



## TECHNICAL FEATURES

### PULSATILE SYSTEM

- Pulsatile portable pump system for hemodynamic heart valve motion
- Self-adjustable body temperature control (36.7°C)
- Adjustable heart rate between 40-80BPM
- Rapid pacing activation mode at constant 120BPM
- Adjustable pulsatile intensity with 3-settings
- Adjustable after-load pressure by rail on aquarium

### PLUG AND PLAY

No tools required - full system setup ready in under 15 minutes. Just add warm water and it's ready for your device. Quick 2 min reset between the procedures.

### POWER SYSTEM

- 12V powered system with socket for various power cables and plugs
- Worldwide compatible with voltage from 90 to 264V at a frequency from 47 to 63 Hz

### SETUP INFO

Electronic IFU documentation with Step-by-Step simulated video user training and guide for simple assembly.

### IMAGING CAPABILITIES

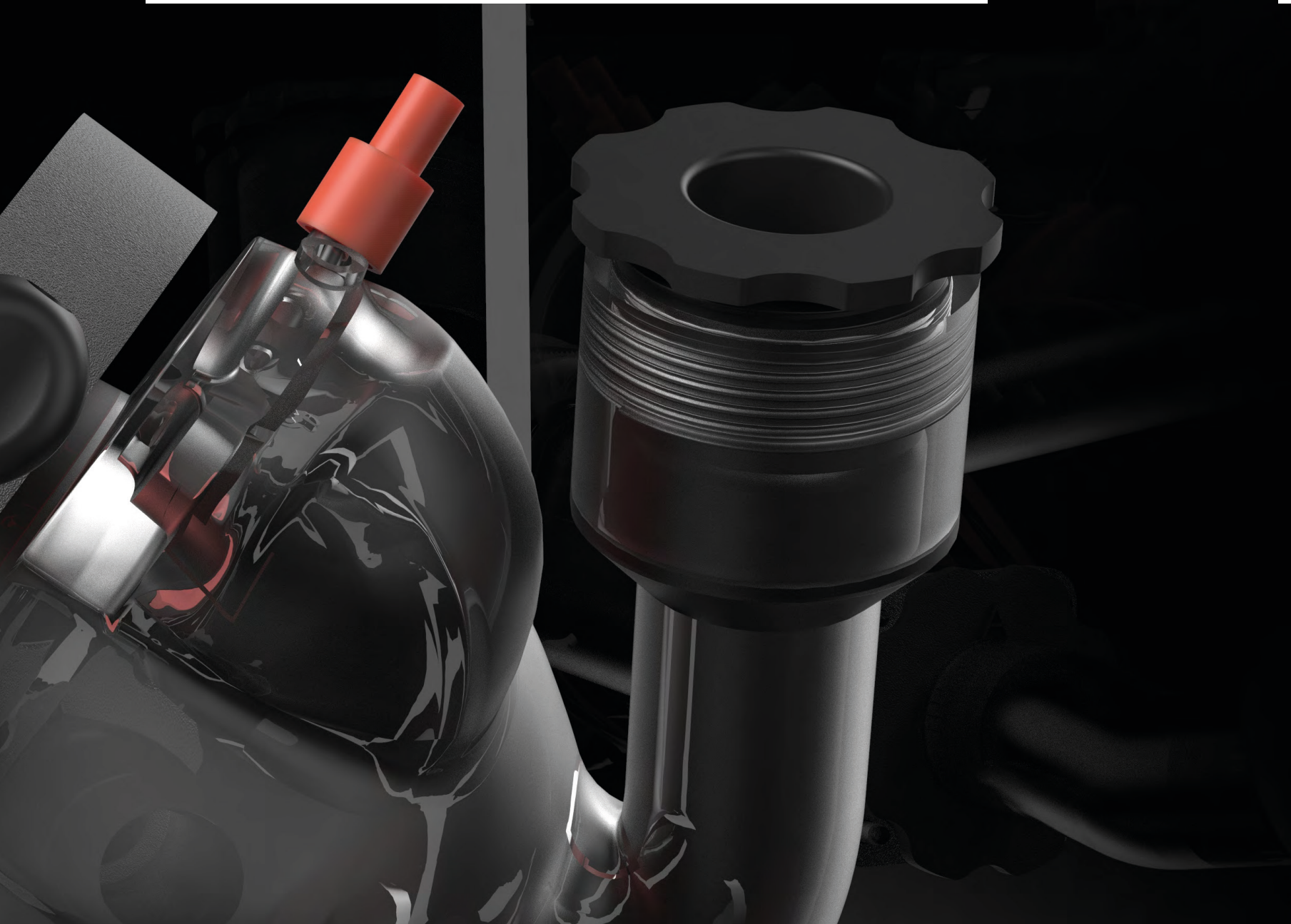
- All components can be used in the cath lab under fluoroscopy
- 2x USB waterproof endoscopic cameras for en-face and lateral view visualization
- 1x tablet with split screen capabilities for visualization and recording

### AQUARIUM

10L - quick water fill container included.

### IN THE BAG

All fits into: backpack  
Total weight: 14kg  
Dimensions: 50x40x22cm





# JOIN THE SIMULANDS REVOLUTION

Our simulator components replicate the characteristics of the human anatomy. The simulators are engineered to reproduce real life haptic interaction of the medical devices within the targeted anatomy, representing true anatomical geometries and trajectories. All of our simulators can be used under real echo and fluroscopic guidance.

## SHIFTING THE PARADIGM

From Patient and Animal testing to platforms for R&D and comprehensive Hands-On procedural training using:

Real Devices

Real Imaging

For the Real Heart Team

SIMULANDS systems designed and validated according to **all relevant ISO normative** requirements of clinical and technical equivalence to the human cardiovascular systems.

Our simulators are used for **human factor testing**, usability and ergonomics and meet required benchmarks of various competent authorities, ethics committees and notified bodies (CE, FDA, MDR).

Manufacturer:

**SIMULANDS Ltd**

Schaffhauserstrasse 611  
8052 Zürich  
Switzerland

DMISB0822

Distribution:

**MedThron LLC**

Sharjah Media City (Shams)  
United Arab Emirates

Get in touch with us  
**+971 52 969 6820**  
**+966 56 285 2013**

**contact@medthron.com**

Find out more on  
**medthron.com**



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