CATHIS® SMART

The Truly Portable Endovascular Simulator System

CATHI We care.

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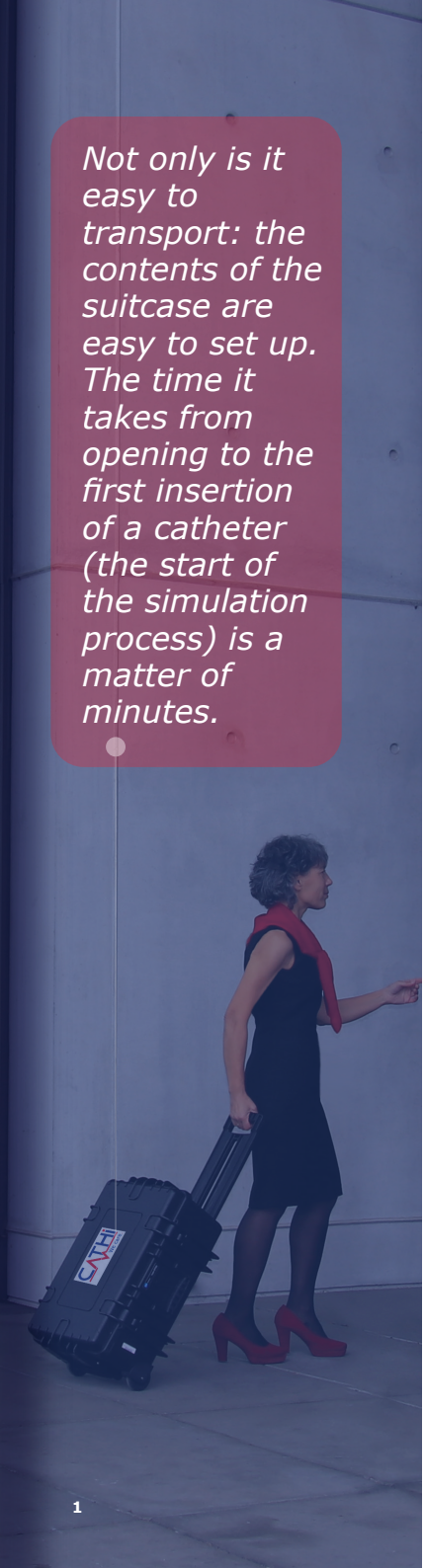
CATHI We care.



Not only is it easy to transport: the contents of the suitcase are easy to set up. The time it takes from opening to the first insertion of a catheter (the start of the simulation process) is a matter of minutes.

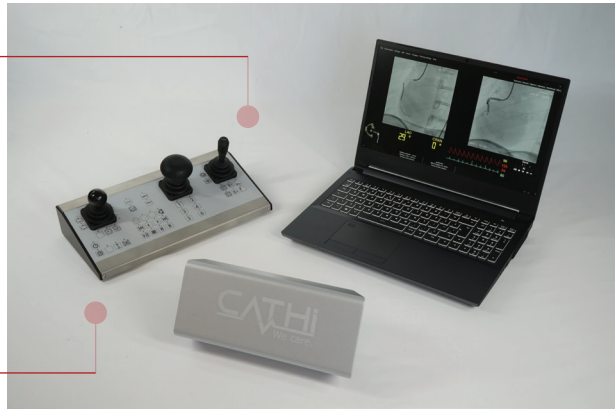
The Truly Portable Endovascular Simulator System

The number of minimally invasive interventions has significantly increased over the last few years, while at the same time related complications have risen. Endovascular simulation enables skill training in a safe environment, which leads to significantly higher success rates, improved efficiency and reduced patient harm.

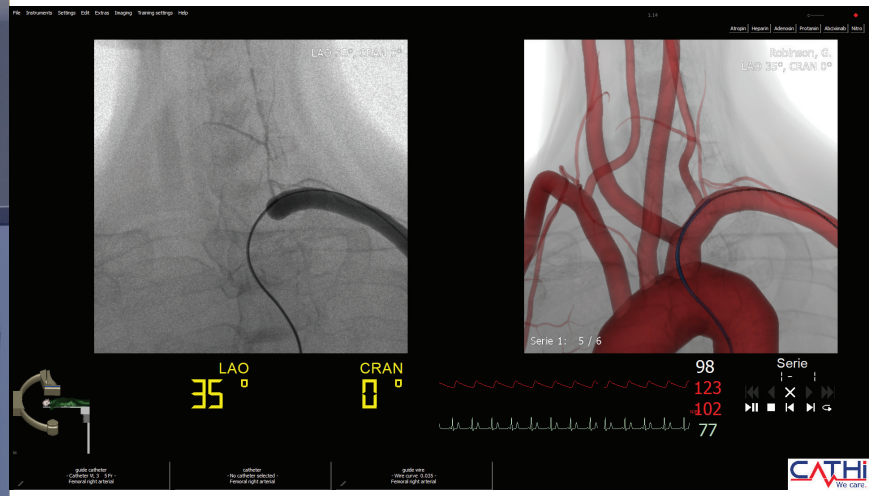
Our highly realistic CATHIS® endovascular simulators are completely based on German engineering expertise, enabling training to the highest standard which results in obvious skills improvement and better management of stressful and challenging clinical situations.

Being the size of a laptop, CATHIS® Smart is a truly transportable simulator.

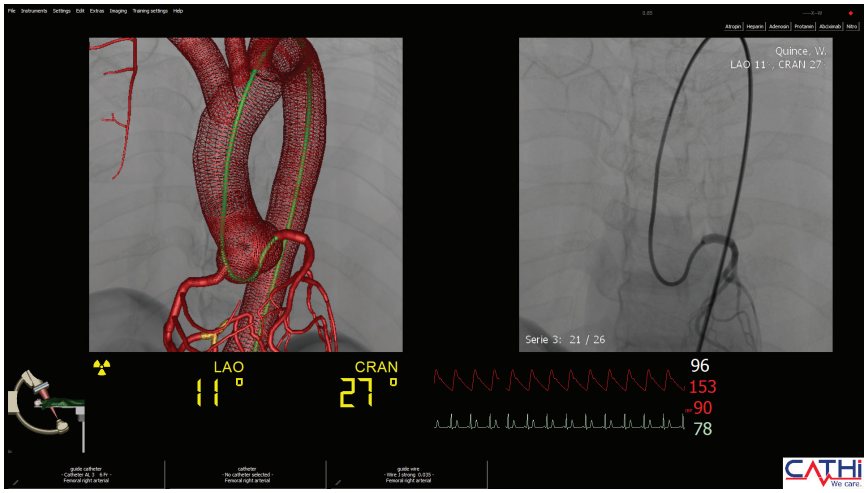
Together with all the components required for the simulation of interventional procedures, the module fits in a standard-sized suitcase.



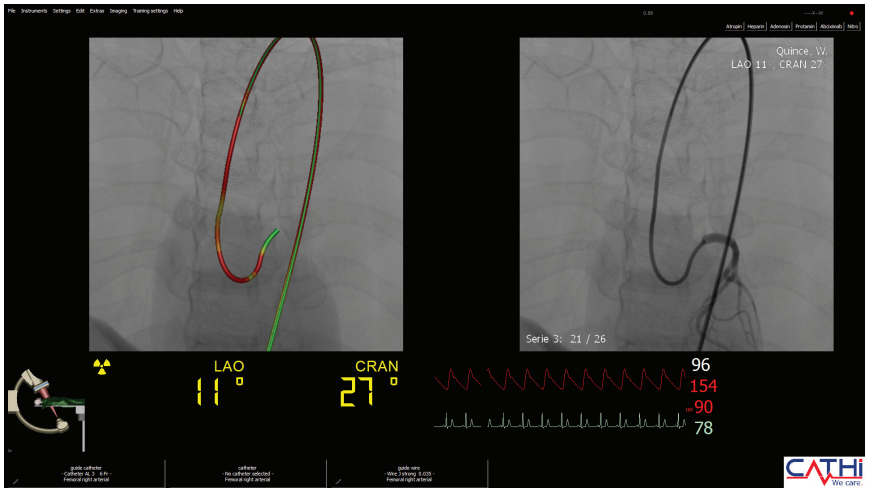
The contents of the suitcase are easy to set up.



Despite its compact dimensions, CATHIS® Smart has all the features of a classical simulator, handling every type of endovascular interventions, however complex and challenging they may be. It is compatible with any instrument or med tech device, whether branded or generic. The optional display of 3D projection parallel to the x-ray image fosters spatial understanding and assessment of vessel anatomy, thus enabling a significantly easier and improved handling of catheters. A highly specific software even enables the 3D display of pressure intensity that is being applied to vessels via the catheter as well as the control of catheter contortion.



Visualization of catheter contortion required to control instrument movement, using intensity of colour



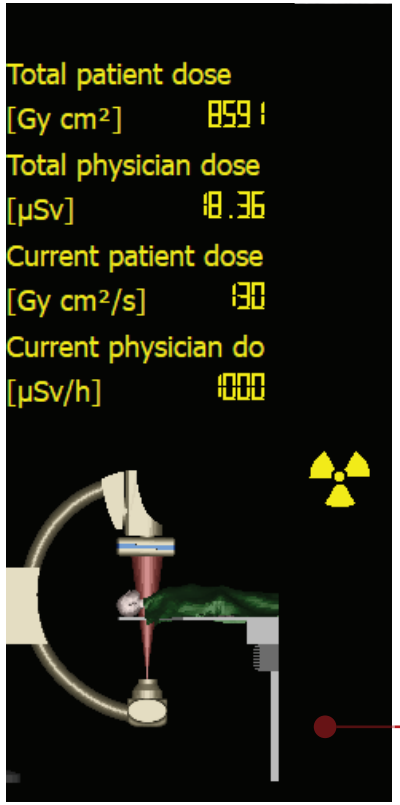
Force from an instrument on the inner side of the vessel, visualised in 3D via intensity of colour

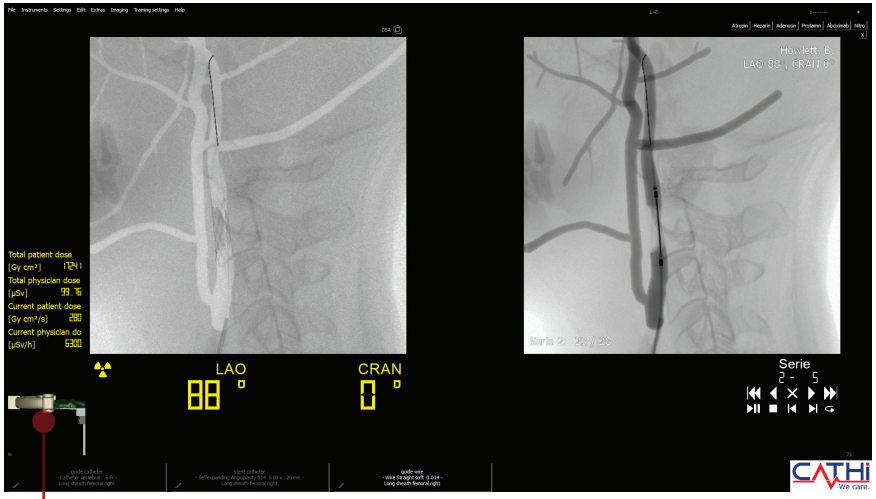
Managing X-Ray Hygiene

Working interventionally means a certain level of exposure to x-rays, for the patient as well as for the physician.

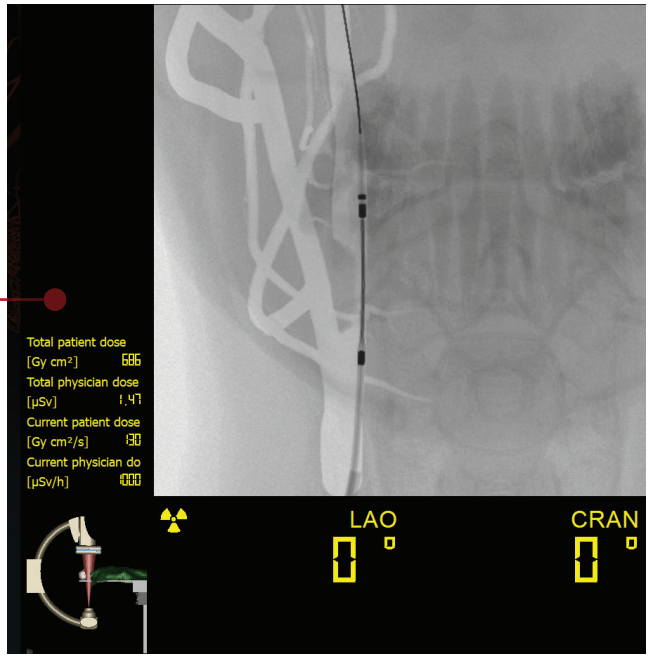
One of the key ways for the physician to minimize this exposure is the use of simulated training: it provides an extremely realistic environment under relatively safe conditions – including virtually no x-ray exposure.

Our software can also help to reduce levels of x-ray exposure in the cath lab itself: it can display x-ray levels at any given time to both patient and physician, as well as totalling the cumulative dose that each has been exposed to. This enables the physician to be continually aware of how high overall x-ray exposure is, thus enabling them to minimise this exposure and ensure a safer environment for both their patient and themselves.





Positioning of a self-expanding stent in the carotid artery and opening under roadmap



Applications

CATHIS® Smart is suitable for use in all medical specialties, including neuroradiology, cardiology, radiology, angiology and pneumology and even provides the display of complex procedures such as coronary complication, right heart catheterization and more. It is particularly appropriate for medical technology and pharmaceutical companies, who may want to give simplified yet high fidelity demonstrations of complex devices or products to sales teams and customers.

CATHIS® Smart is also a very suitable educational tool for medical students. They can benefit from simple-to-follow step-by-step procedures to achieve a basic understanding of both vessels' anatomy and handling of instruments.

Technical Details

The CATHIS® Smart simulator allows the injection of contrast agents and facilitates the deployment of liquids, thus providing effective training skills in an environment which is close to reality.

It provides all the necessary features such as navigation of an instrument, force feedback and use of inflation devices.

CATHIS® Smart provides a high-end graphic interface, excellent haptic and immediate system response.

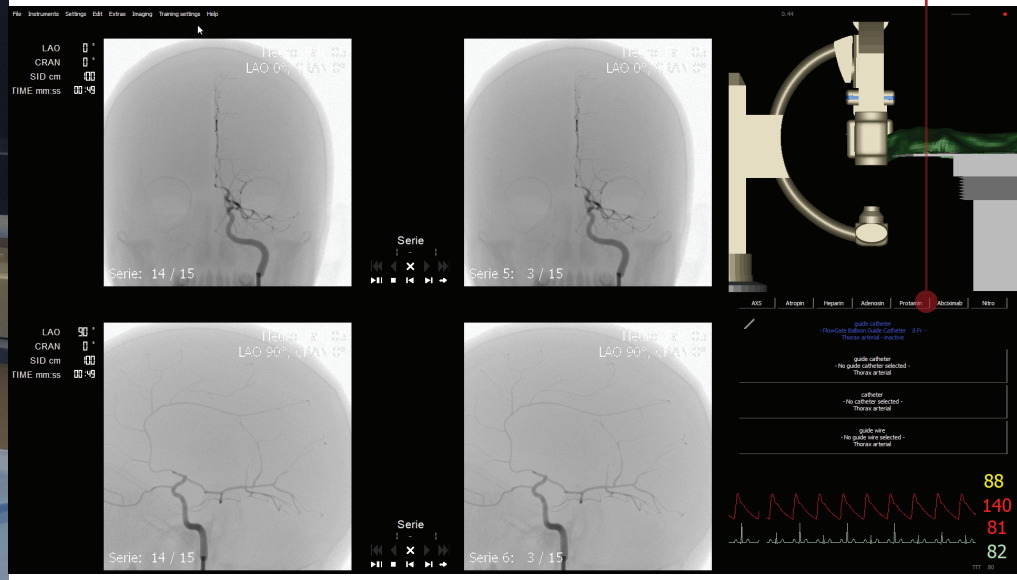
The capabilities of the simulator can be extended with the attachment of selected CATHIS® devices that enable specific additional applications.

CATHIS® Smart is compatible with any kind of wire or catheter (branded or generic), plus relevant instruments. The simulator is also connectable with all types of med tech device, following suitable preparation.

CATHIS® Smart enables adjustment of shutters for the training of x-ray hygiene, including the display of radiation exposure of both patient and trainee.

It also enables biplane display of simulation (simultaneous, independent use of C-arms and table movement).

The documentation of learning history and the export of training data in Excel for evaluation allows the progress of training to be accurately assessed.



Biplane projection full screen

Addition of Other CATHIS® Devices

CATHIS® Control Unit

The CATHIS® Control Unit is the highly realistic lab-like control unit that enables the management of the virtual angio machine and provides exactly the same functionalities as in a real cath lab or angio suite (movement of the table, C-arm, all types of shutters, DAS, roadmap and more).

It is a component of the simulation set and available in two versions.

CATHIS® Control Unit Monoplane

This control unit is the classical one for management of the angio machine. Via key-controlled functions it allows control of the C-arm and table movements, shutters or customized angle settings.

CATHIS® Control Unit Biplane

Based on specific software the CATHIS® Control Unit Biplane provides simulation that enables biplane projection as in real angio suites (using two C-arms simultaneously and facilitating the display of four monitors plus table movement from both perspectives with two live monitors simultaneously).

Combination with the Instructor Cockpit

Combination of the CATHIS® Smart with the innovative Instructor Cockpit enables the trainer to control the entire simulation remotely in real time and to impact the simulation process to challenge the trainee during the ongoing intervention, encouraging even better training results.

In this way the trainee can focus on specific training sequences while the instructor manages the angio machine, C-arm, selection of instruments and hemodynamics remotely. The instructor can even trigger the occurrence of unexpected complications such as an embolization, dissection or perforation at any time.

The Instructor Cockpit is available in two versions, the tablet fullscope version for experts and a smaller edition with 15 buttons with pre-programmed functionalities. Furthermore, the device can be entirely customised to meet any specific individual requirement.

CATHI is a family-owned, German technology driven company that has been dedicated to developing highly innovative, breakthrough endovascular simulation technologies for 20 years. This has been based on long-lasting cooperation with academia, covering all types of interventions in any medical field, however complex and challenging they may be.

Our high performance products are entirely designed and developed in house and undergo intensive testing. It is our ambition to be the number one choice for endovascular simulation.

2020 | 2021
INNOVATIVE THROUGH RESEARCH
Awarded by the Stifterverband
CAT6397MAN

Mitglied der
DGSiM
Deutsche Gesellschaft zur Förderung der Simulation in der Medizin e.V.

CATHI has received the German Innovation Award several times and is member of the German Association of Simulation DGSiM