

# Computational simulations for structural heart devices

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## Organisation

**Name of the organisation** FEops

**Department** R&D

**Country** Belgium

**Geographical Area** Flemish Region

## SCOPE OF THE METHOD

<b>The Method relates to</b>	Human health
<b>The Method is situated in</b>	Regulatory use - Routine production, Translational - Applied Research
<b>Type of method</b>	Other: Virtual

## DESCRIPTION

### Method keywords

Streamlining and accelerating R&D

### Scientific area keywords

Structural heart interventions

### Method description

In the early phases of the design cycle of structural heart devices, choosing which prototype to develop can be complicated. There are a lot of unknowns to contend with. FEops' simulation technology helps fill in these blanks. It gives product developers computational simulations that let them evaluate the performance of

multiple prototypes in terms of radial strength, crimpability, fatigue safety, deployment behavior in validated virtual human and animal patients, provided by the customer or selected from the large FEops proprietary database including both pathological and healthy patients. FEops has developed unique, proprietary simulation technology that uses multi-phase, preoperative CT data to predict and investigate realistic loading conditions of any cardiac device. This enables experimental chambers to be designed for fatigue and durability tests able to clone the *in vivo* cyclic load experienced by the device implanted in the actual patients.

### **Lab equipment**

Computer computational infrastructure

### **Method status**

Published in peer reviewed journal

## **PROS, CONS & FUTURE POTENTIAL**

### **Advantages**

This method is faster, cheaper and reduces the number of animal testing.

## **REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION**

### **Links**

[Optimization of a Transcatheter Heart Valve Frame Using Patient-Specific Comput...](#)

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