

SATURN PROJECT:

a solid approach to
MV transcatheter replacement

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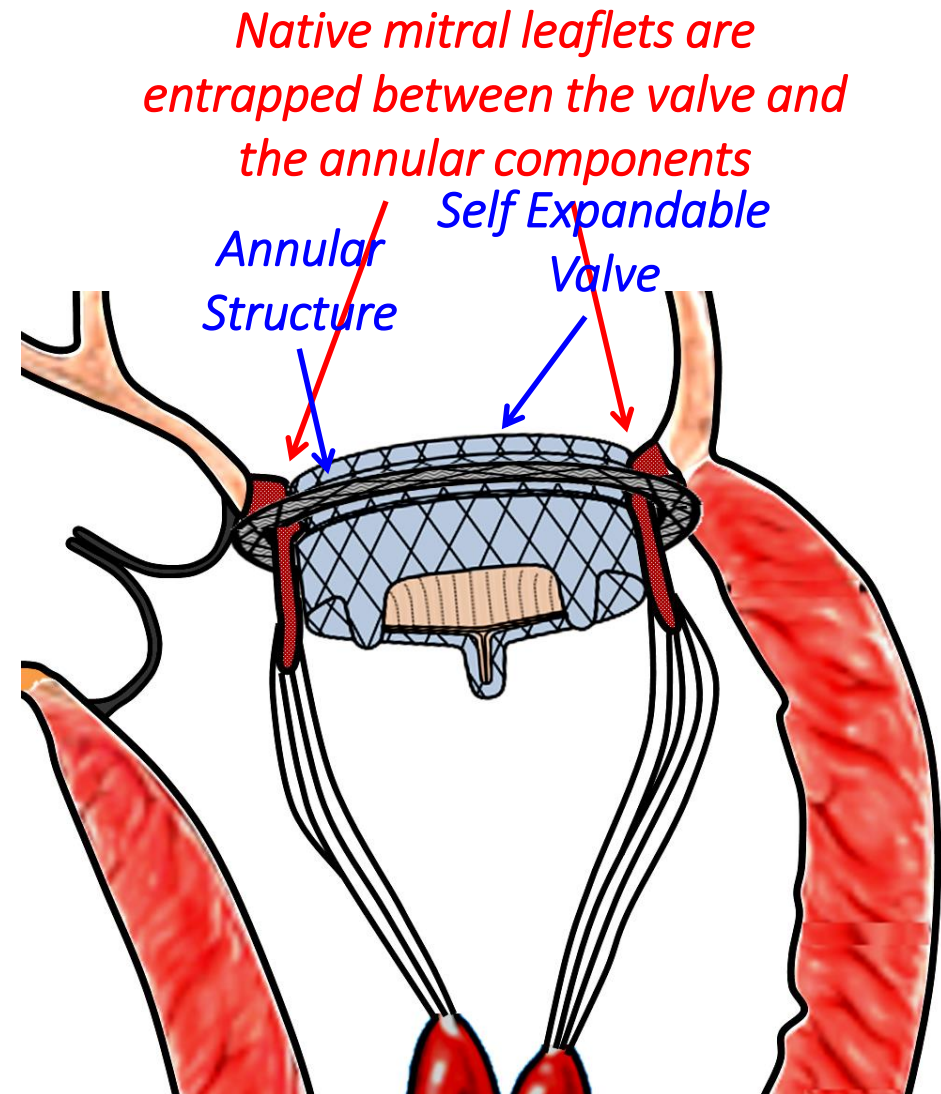
Potential conflicts of interest

Paolo Denti is:

- Consultant for Valtech Cardio, Abbott, 4tech Cardio and InnovHeart

Saturn Technology: think mitral!

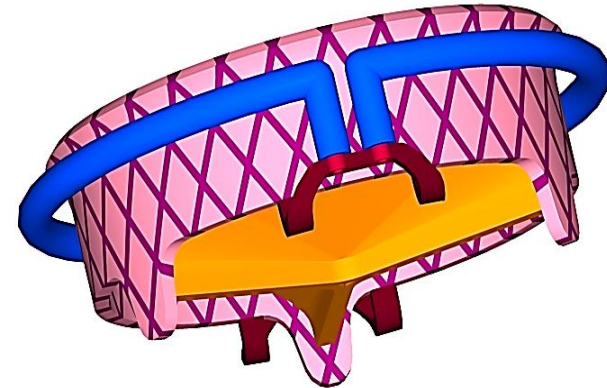
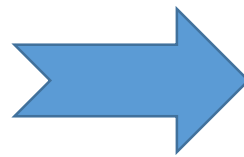
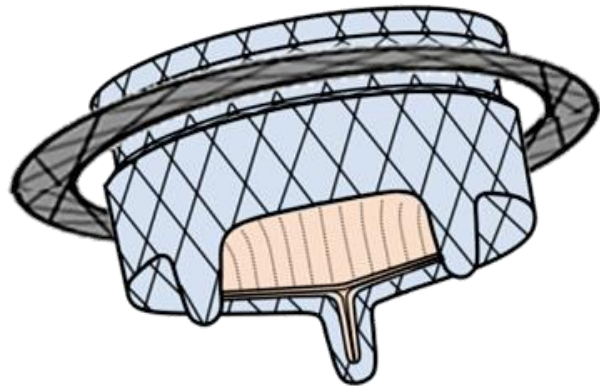
- An **annular structure** is positioned behind the leaflets, in contact with the annulus.
- The **valved central element** is expanded inside the mitral orifice, to lock the native leaflets in between.



Saturn Technology: think mitral!

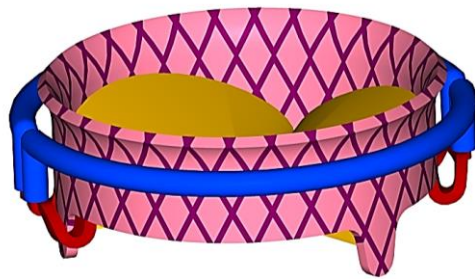
Because of the need of **appropriate anchorage** and **appropriate seal**

from a **“two components system”** to a **“single piece / multifunctional parts”**



Saturn Technology: think mitral!

Saturn Design – single piece / multifunctional parts

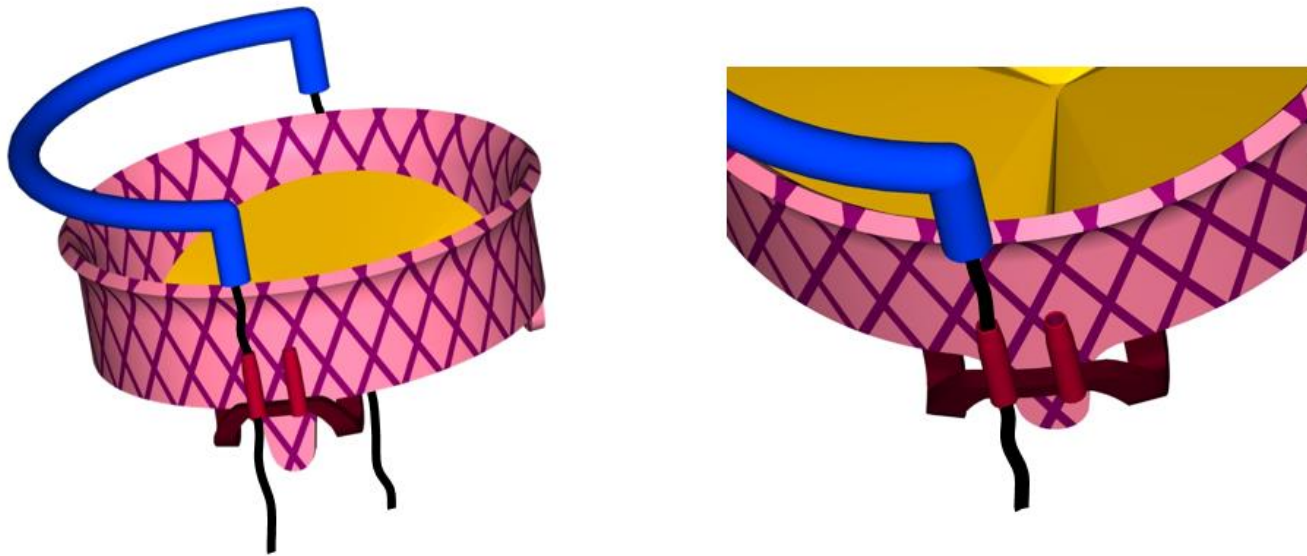


suitable for intracardiac reassembling of the prosthesis
before final release

Saturn Technology: think mitral!

Safe to the Target: based on Guidewires

Implant procedure (including intra-cardiac reassembling) is led by GuideWires

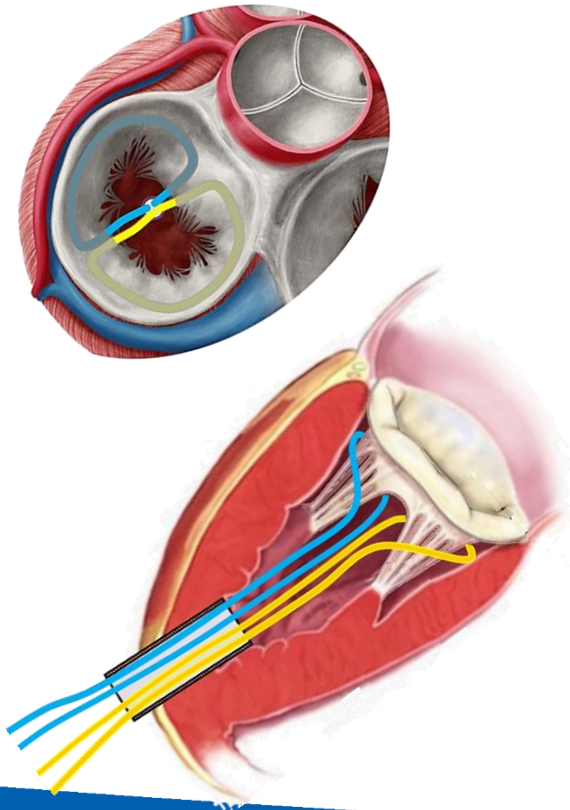


connecting arms and annular segments are compatible with over-the-wire technics

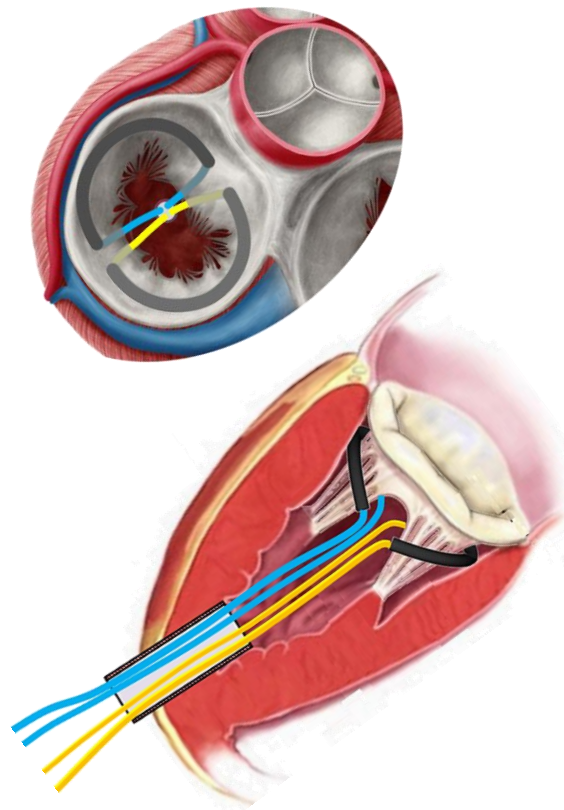
Saturn Technology: TA - Implant Procedure

Three Steps Procedure

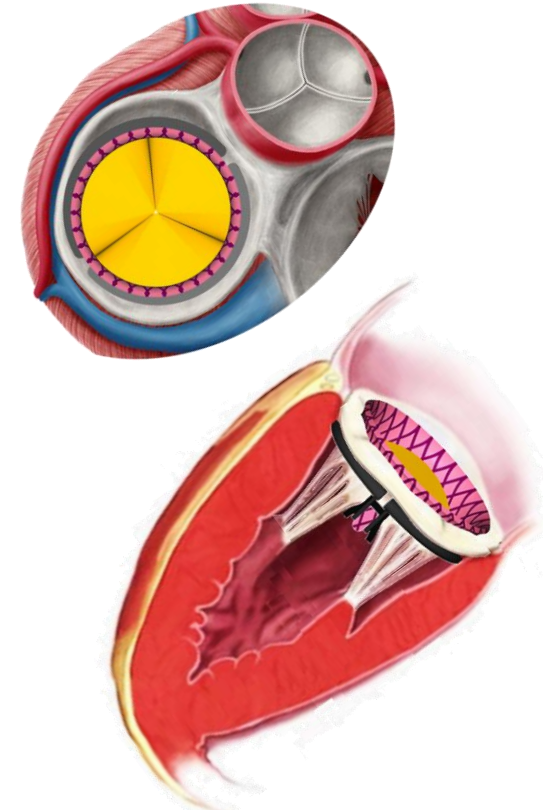
1) Placement of a pair of guidewires to embrace the native mitral valve



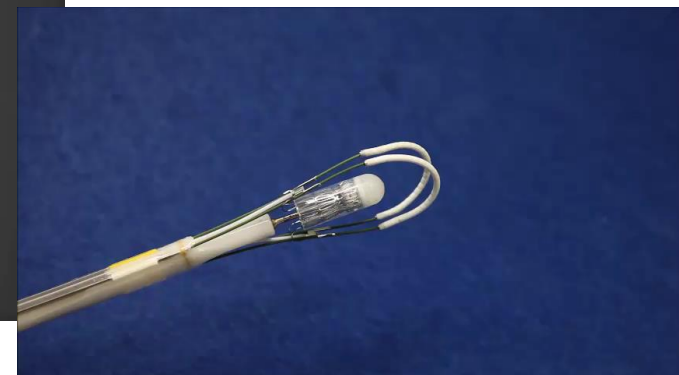
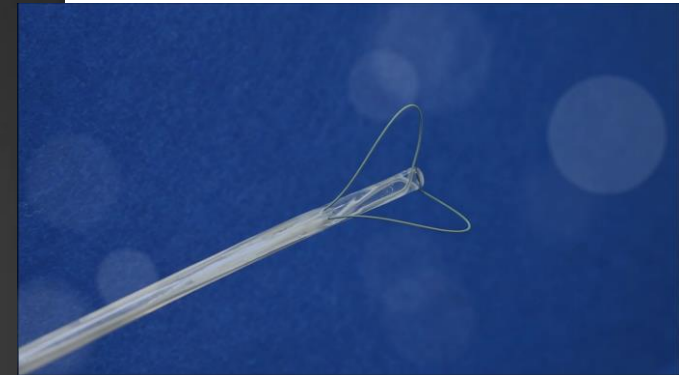
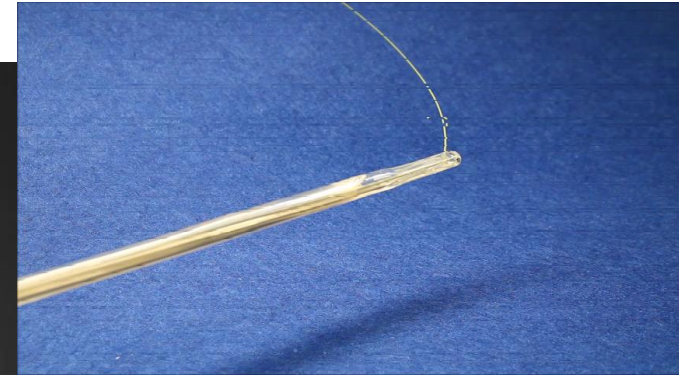
2) Over the wire introduction and positioning of the annular segments



3) Introduction of the central valve body, intracardiac reassembling and release

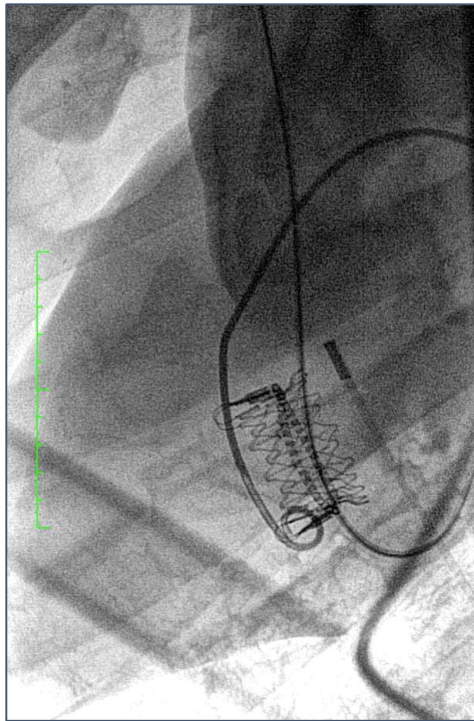


Saturn Technology: TA - Implant Procedure

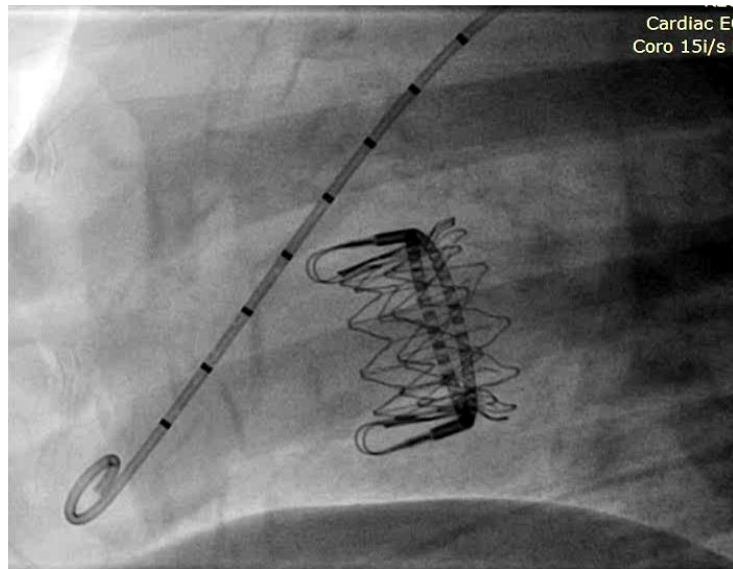


Saturn Technology: TA - Implant Procedure

pig heart

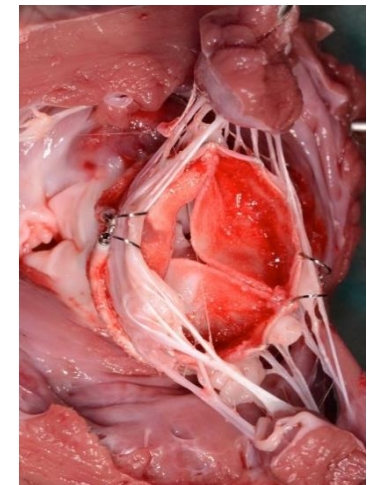
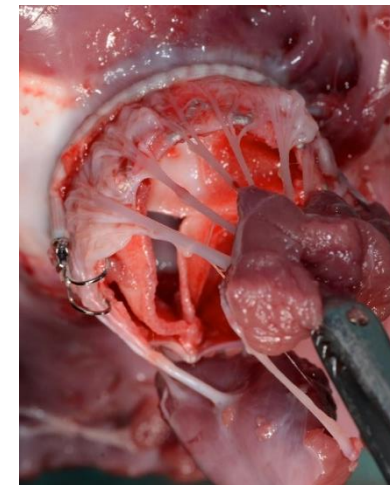


sheep heart



- **Transapical procedure already validated in chronic animal models**
- **GLP in-vivo preclinical trial start Q1-2018**

ventricular view of explanted pig heart

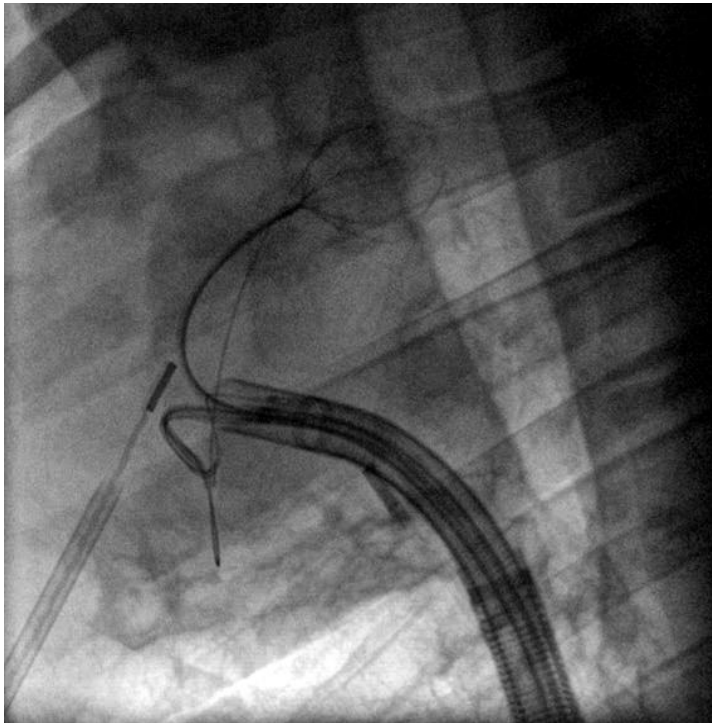


Saturn Technology: TS Implant Procedure

Trans-femoral trans-septal procedure under development

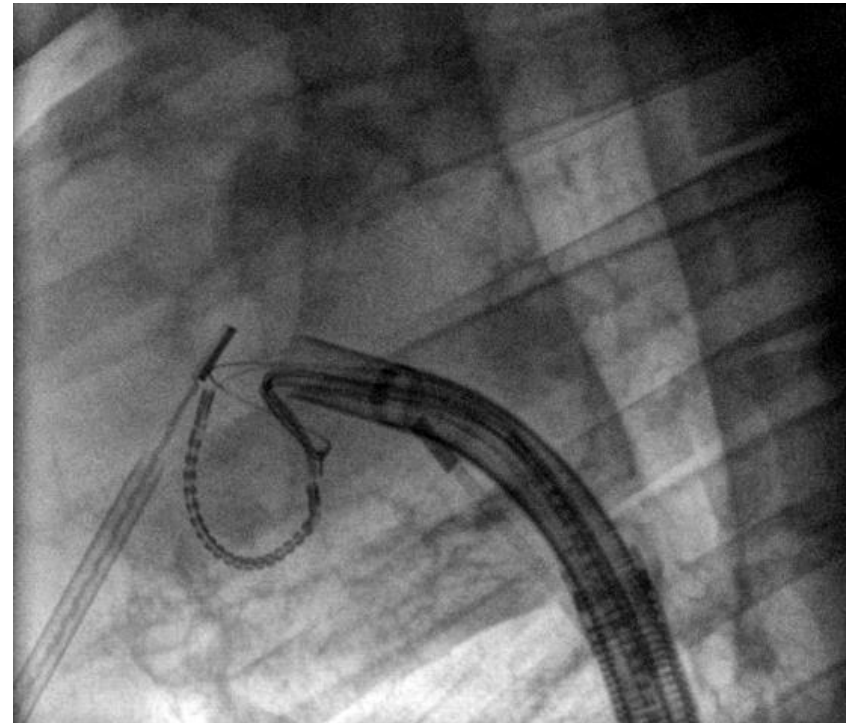
STEP 1

Placement of a pair of guidewires to embrace the native mitral valve



STEP 2

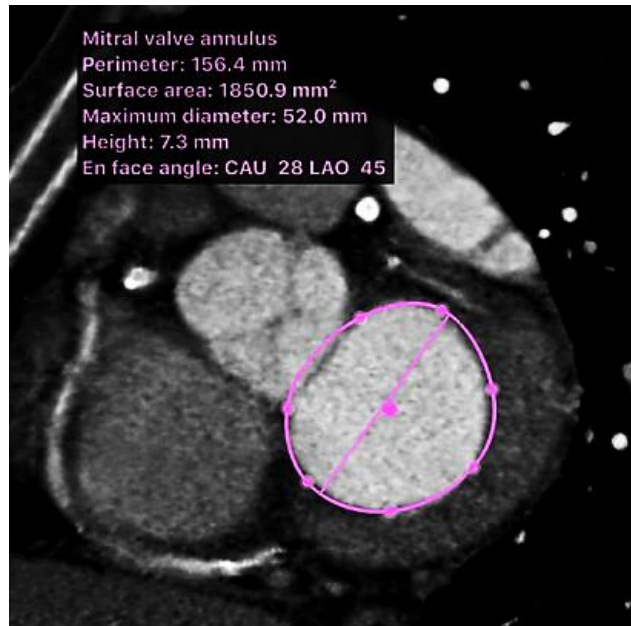
Over the wire introduction and positioning of the annular segments



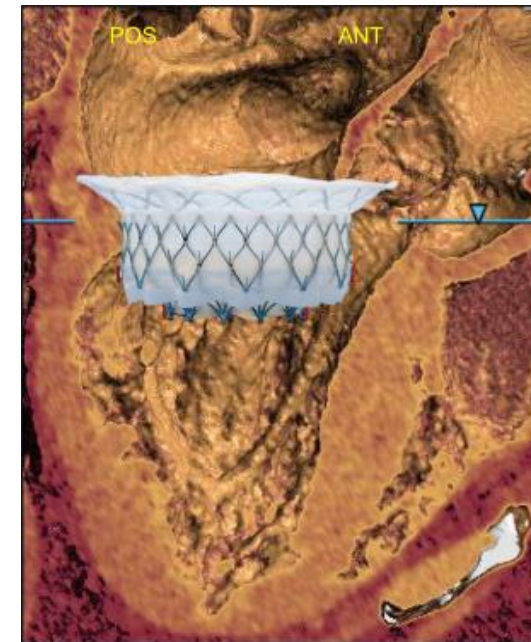
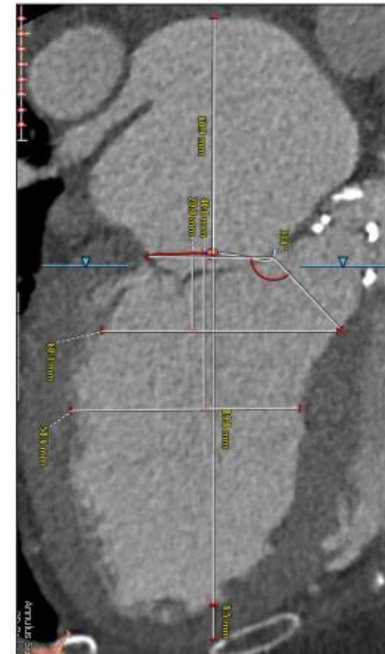
Saturn Technology: Strengths

PATIENTS SCREENING: TWO MAJOR LIMITING FACTORS

Native Annulus Size



Risk of LVOT Obstruction (direct and SAM)



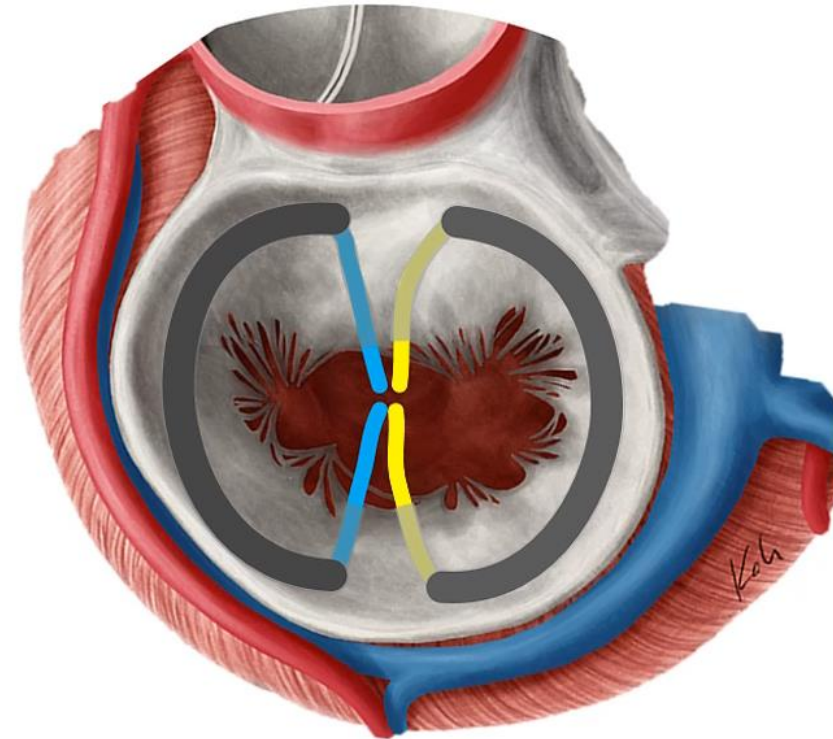
Saturn Technology: Strengths

An Effective Solution to address Native Annulus Size Challenge

- **Inverse Remodeling of the Mitral Annulus**
Size reduction – Annuloplasty-like

Additional benefits from small size prostheses

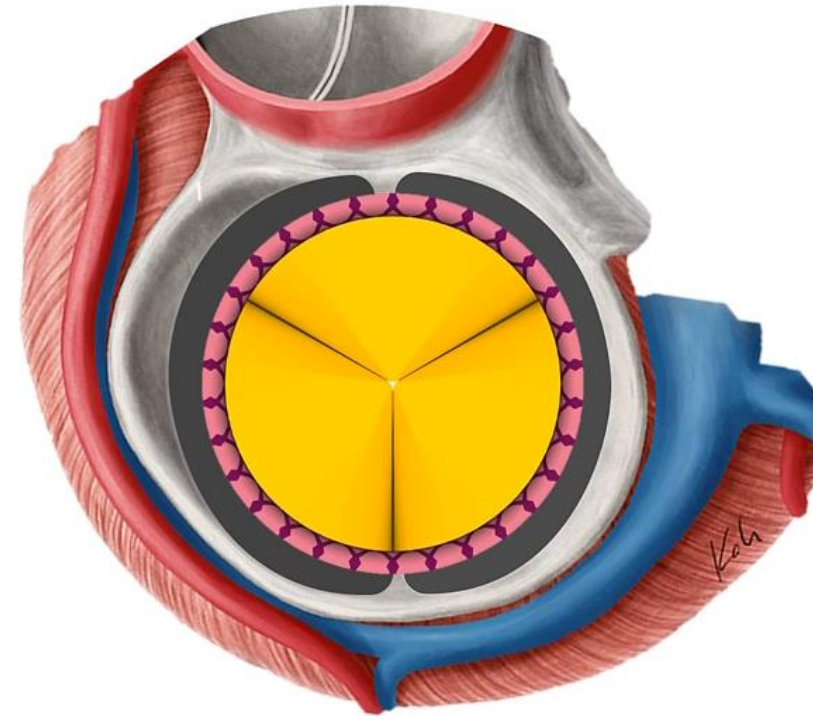
- ✓ **BETTER CRIMPABILITY**
lower profile delivery systems
- ✓ **LONGER DURABILITY**
less stress on the prosthesis (applied force increases with the square of the diameter)



Saturn Technology: Strengths

An Effective Solution to address Native Annulus Size Challenge

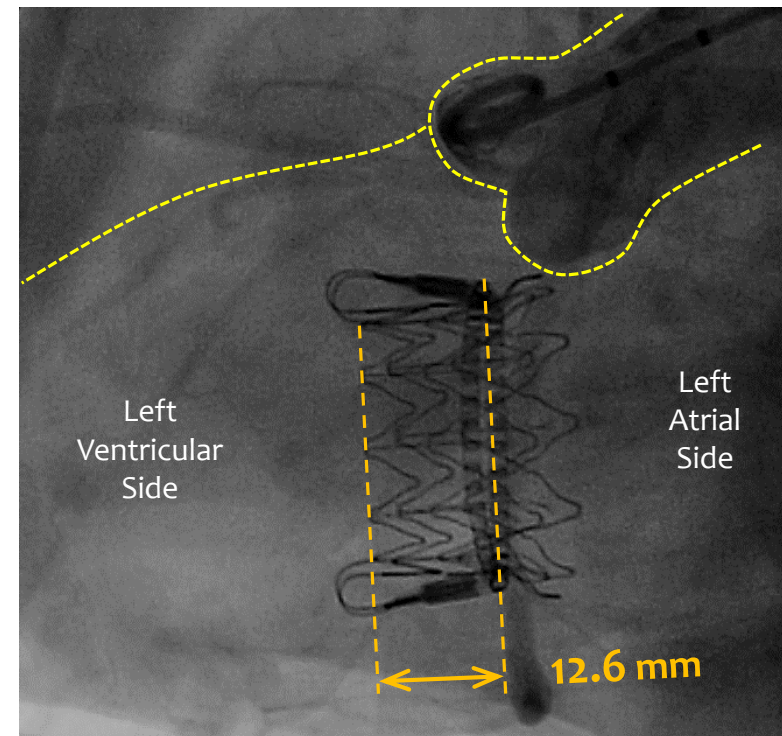
- **Inverse Remodeling of the Mitral Annulus**
Size reduction – Annuloplasty-like
- **Stabilization of the Mitral Annulus**
Surgical-like anchoring to the annulus



Saturn Technology: Strengths

An Effective Solution to address Risk of LVOT Obstruction

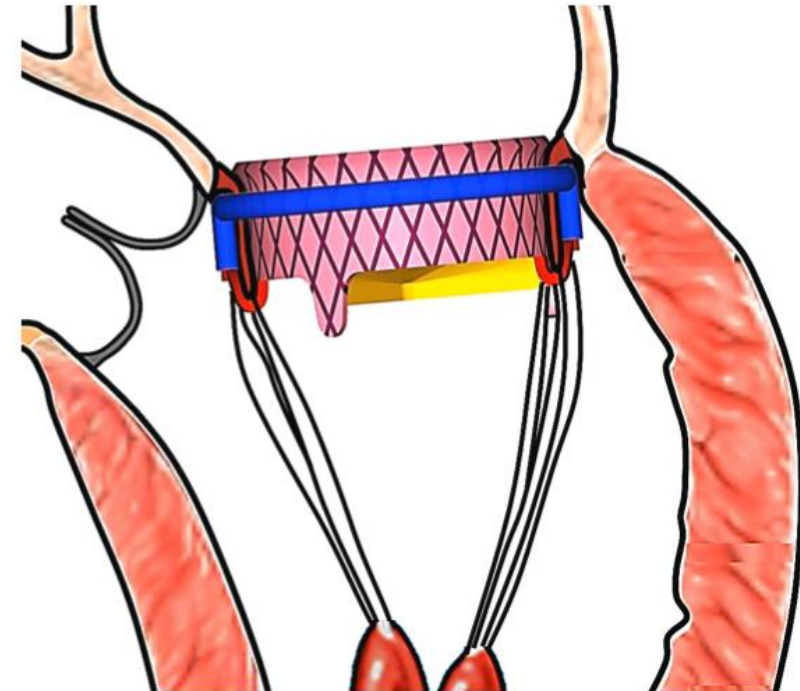
- **Low Profile Prosthesis**
Reduced risk of LVOT



Saturn Technology: Strengths

An Effective Solution to address Risk of LVOT Obstruction

- **Low Profile Prosthesis**
Reduced risk of LVOTO
- **Anterior Leaflet gripped by Connecting Arm**
Reduced risk of SAM



Saturn Technology: Think Mitral!

- Simple and accurate implant, based on daily used cathlab GuideWires
- Surgical-like anchoring to the mitral annulus, structure stabilization
- Annular size reduction, immediate remodeling
- Low profile prosthesis, low LVOT Obstruction risk
- No SAM risk

