



## Conflict of Interest - Disclosure

Within the past 24 months, I or my spouse/partner have had a financial interest/arrangement or affiliation with the organization(s) listed below

### 1. Employment or Leadership Position

Research Scientist at Fraunhofer MEVIS

### 2. Advisory Role or Expert Testimony

No

### 3. Stock Ownership

No

### 4. Patent, Copyright, Licensing

No

### 5. Honoraria

No

### 6. Financing of Scientific Research

BMBF funded project NavEVAR (13GW0228)

### 7. Other Financial Relationships

No

# Visual assistance for endovascular procedures showing a virtual angiography at HoloLens

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**Evidence-based  
Gefäßmedizin –  
personalisiert.**

34. Jahrestagung der Deutschen Gesellschaft  
für Gefäßchirurgie und Gefäßmedizin  
17. – 20.10.2018 World | Conference Center | Bonn

# Project NavEvar

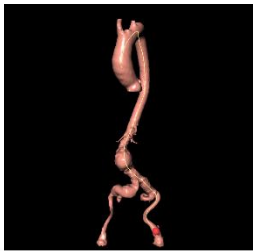
GEFÖRDERT VOM



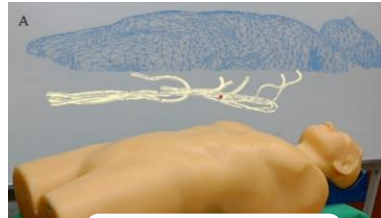
Bundesministerium  
für Bildung  
und Forschung

Goal: reducing the use of contrast agent & X-ray  
and improving the visualization

## Anatomical model



Vessel anatomy



Body model

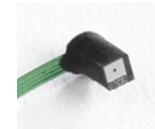
## Imaging and visualization



Virtual Angioscopy



Microsoft HoloLens

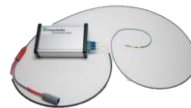


Micro camera

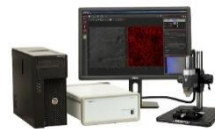
## Navigation



EM - Tracking



Optical fiber



OCT - Imaging



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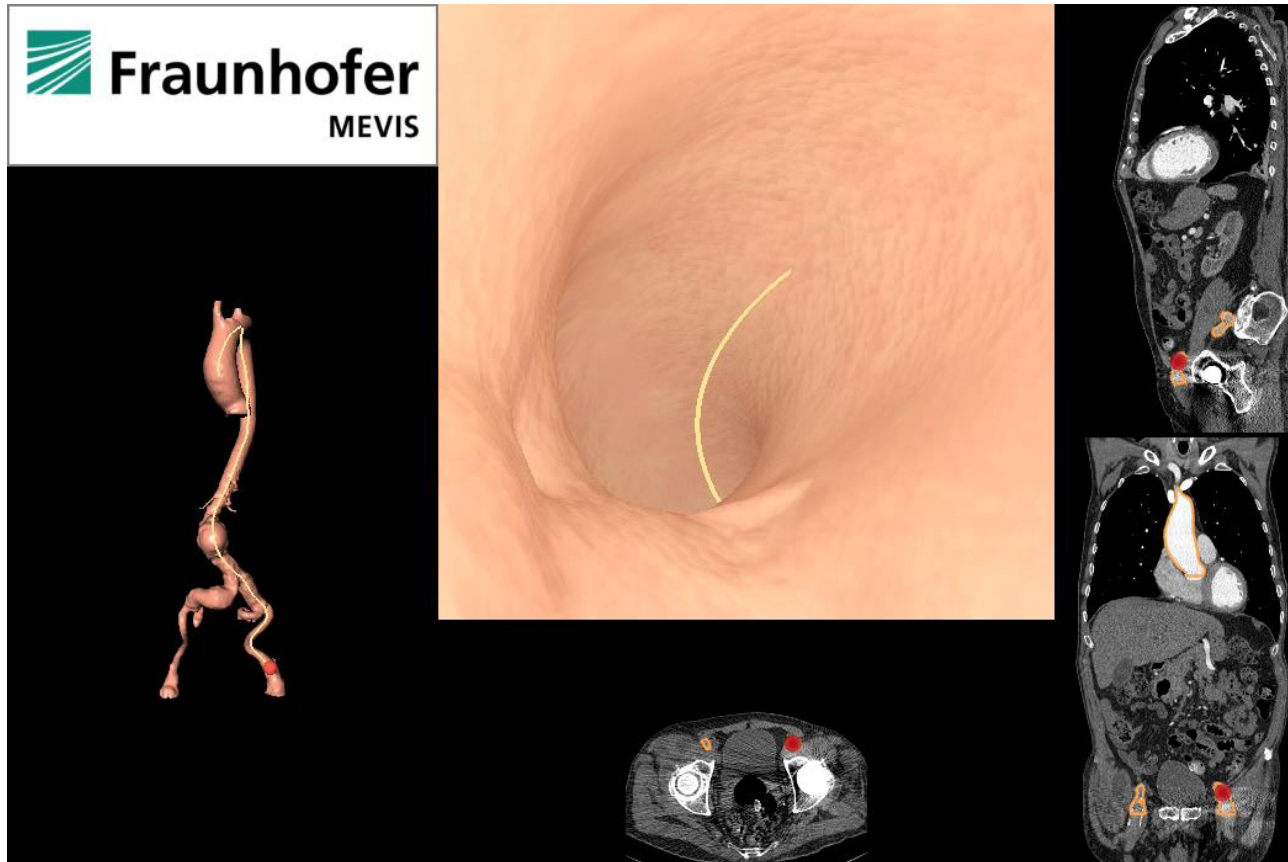
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# Virtual Angioscopy



# Visualization with HoloLens



# CONCLUSIONS

- Virtual angiography
  - based on CTA
  - no further techniques needed
- HoloLens
  - suitable for sterile environment
  - easy usage
- Future work
  - Combination it with catheter navigation

