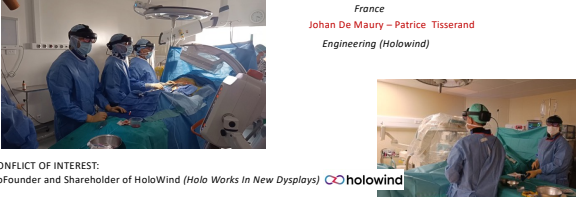



Update On Holographic Guidance Of Endovascular Procedures

(With Augmented Reality Goggles And No Screen):
How Does It Work and Clinical Experience: What Is Possible And What Is Not.

Claude Mialhe M.D.
CH. Antibes – Clinique St Jean. Cagnes sur Mer
France

Johan De Maury – Patrice Tisserand
Engineering (HoloWind)




CONFLICT OF INTEREST:
CoFounder and Shareholder of HoloWind (Holo Works In New Displays) 

Interventional Holography

What is the Story ?

« INTERVENTIONAL HOLOGRAPHY CONCEPT »



Holographic Imaging with the HoloLens Mixed Reality System to Enhance Angio Suite Ergonomics During an Endovascular Procedure.
Mialhe C, Pellerin J, Lenoir F. Eur J Vasc Endovasc Surg. 2021 May;61(5):648-655. doi: 10.1016/j.ejvs.2021.01.028. Epub 2021 Feb 22

Interventional Holography

What does it mean ?

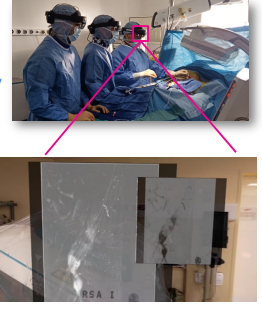
Video streams imported as holograms in Augmented Reality Headset

Direct vision of live operative imaging

Individual setting of up to 3 holograms selection

Practical advantages:

- * independency of screens location
- * free movements around the operating table



Interventional Holography

What is Already Done ?

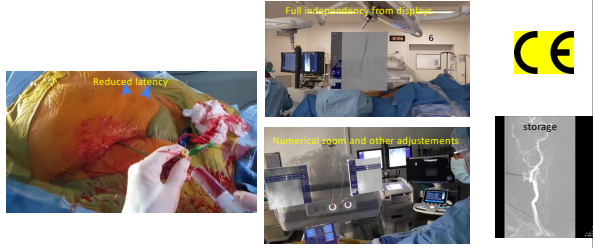
Robust clinical experience: > 350 consecutive procedures

Full independency from HoloLens

Reduced latency

Personalized screen and other adjustments

storage



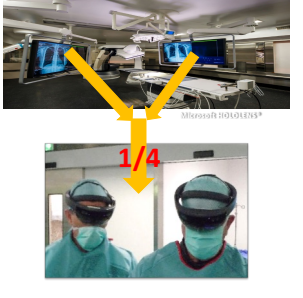
Interventional Holography

Performances

Vision cost reduction
Price divided by 3 to 4 compared to large displays

Suitability for all radiological equipments
Ready to use (1 minute)

Unique software brick
Holograms from multi video sources
Live display with reduced latency
Holograms customizable in real time (size and location)



Interventional Holography

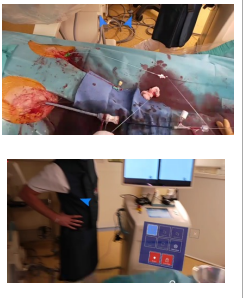
Today's Limits

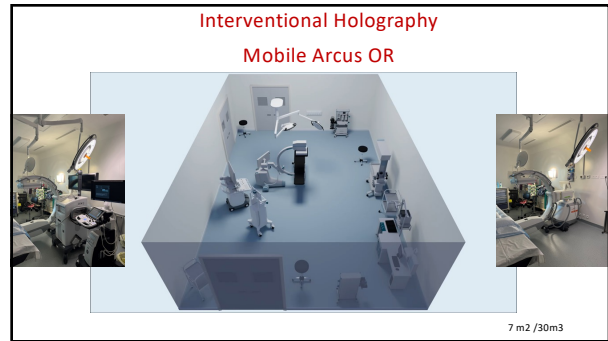
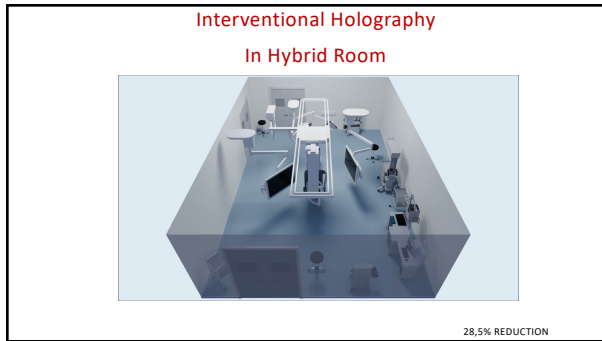
Latency time
To be reduced down to 60ms (video game reference)
For better accuracy of very quick handling

Brightness filtration
To minimize surrounding dazzling light


Images quality improvement
Depending on HoloLens technology

Porting to new holographic platforms





**Interventional Holography
Conclusion**

- Routine Use in Endovascular Surgery
- Certification 
- Available on the European Market
- Cost Effectiveness
- Screenless Operating Room / Theater

