

Holographic Displays



NPS JIFX 21-2

March 3rd, 2021



Avalon Holographics – Proprietary & Confidential



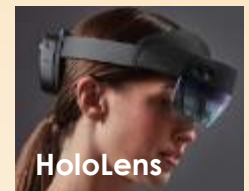
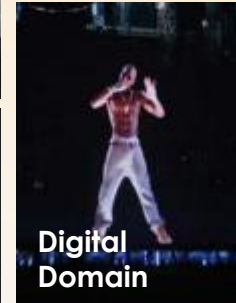
Holographic Displays: What's Next



What is NOT a Holographic Display?

- S3D, AS3D, VR, AR
- **Half Parallax**
- “Magic Light Sources”
 - CGI trumps physics

Tricks
Better Tricks
Object Images!
Not Real



What IS a Holographic Display?

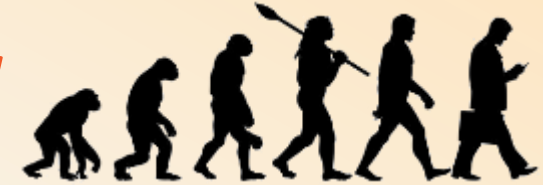
- Greek: *holos* for “whole” and *grafe* for “drawing”
 - Reconstruct light rays diverging from a point (to represent an object)
- *Can't break frame!*
 - ***No floating light***
- A Natural 3D display:
 - Forms real optical images
 - Like an open window
 - Natural spatial, depth cues



So What???

(Beyond the “Cool! Wow!” factor)

- *Light fields are what humans evolved to see!*



- If you only remember **two** things about holographic displays...

Reduce Cognitive Load by 20%-50%+



Comfortable

No head-gear:



No side-effects:

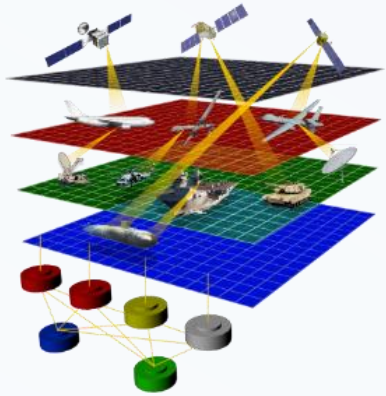


Ask Yourself...

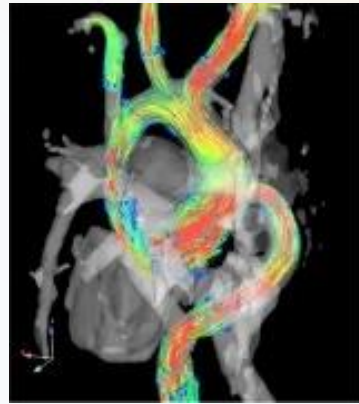
- How often do I use 3D visualization?
 - ***Why not more?***
- What problems do my current 3D displays cause?
 - ***How could they be better?***
- How would better, more comfortable 3D displays help me?
 - ***What's my ideal solution?***

Common Holographic 3D Interests, By Market

Defense



Medical



Industrial

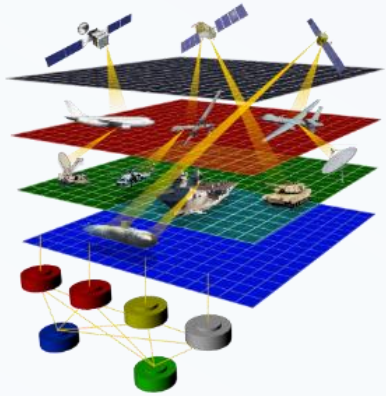


Common Interests

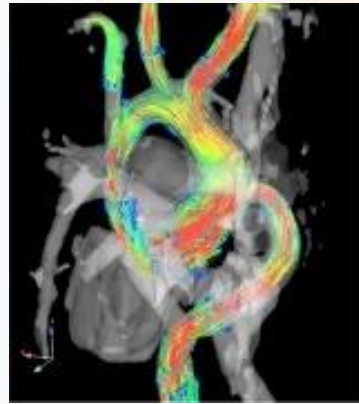
- Data is Inherently 3D
- Don't Want Headgear
- Long Use with No Side-Effects
- Group Communication
 - Including with Non-Experts

Common Holographic 3D Use Cases, By Market

Defense



Medical



Industrial

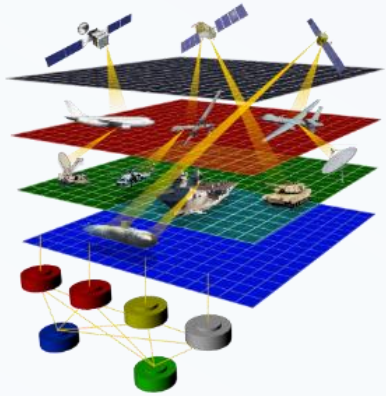


Common Use Cases

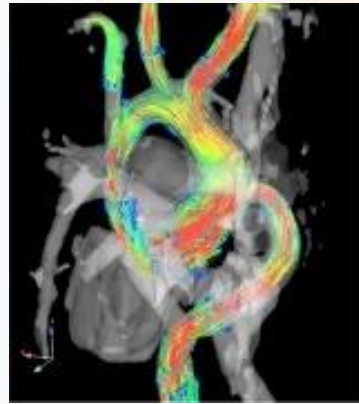
- Real-Time Decision “Battlespace”
- Big Data Analysis & Fusion
- Both Operations & Training
- Remote Control, Robotics
- CAD, Modelling & Simulation

Common Holographic 3D Benefits, By Market

Defense



Medical



Industrial



Common Benefits

- Cognitive Performance (20%-50%+)
 - ***Faster, Better Decisions***
 - ***Faster Learning, Better Retention***
 - ***Alertness, Stamina***
- 3D Perception (Spatial)
- 3D/Multi-D Analysis (Non-Spatial)

Avalon: Holographic Displays – Natural 3D

- Solve the “3D Problem”
 - Light Field Display
- Natural 3D display
 - No accessories (wearables)
 - No eye-tracking (unlimited viewers)
 - No side-effects (nausea, fatigue, etc.)
- Displayed Reality:
 - **“Window to the World”**
 - Spatial data – as you evolved to see it



HoloPanel™ Model: New Display Type



Video demos available

Holographic Map Table

How Can Holograms Help You?

- Decision Making: Faster, More Accurate, Higher Quality
- Win Battles!
 - Adversaries Include: Nation States, Human Biology, Time/\$\$\$...
- Save Time, Money and Possibly Lives
 - Collaborate naturally
 - Stop fighting with inferior 3D technologies

Thanks!

Questions?

Want to learn more?

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