



VisAR

TRANSFORMATIVE AUGMENTED REALITY
SURGICAL GUIDANCE SYSTEM

PRECISION IMAGING & GUIDANCE FOR PRECISION HEALTHCARE

Precision prevents errors, reduces operating room times and improves the patient's experience and outcome. VisAR from Novarad® is an FDA-cleared augmented reality surgical navigation system that increases surgical accuracy and confidence. Like a surgical GPS, VisAR enables physicians to find and reach their target destination more quickly - without the expense, footprint and set up time of conventional navigation systems and robots.

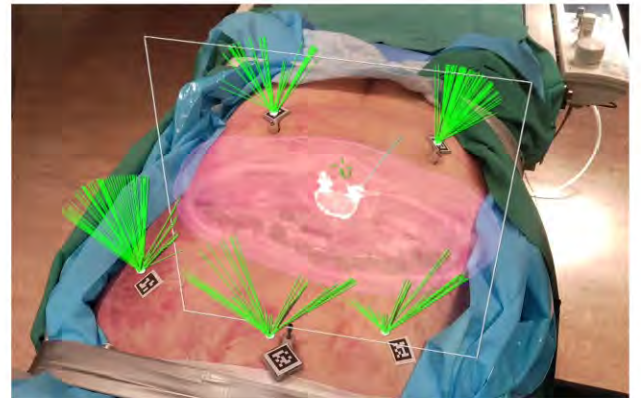
ADVANCED RENDERING

VisAR renders 2D, 3D, and 4D digital images from any modality into a highly detailed hologram in real-time using the Novarad Graphics Engine. Using patented virtual tool technology with an integrated targeting system, the hologram is overlaid directly and accurately onto a patient's body.



PRECISE REGISTRATION

- Optical tags
- Precise registration
- Free-hand
- Continuous registration
- Registration status indicator



INTEGRATED VIRTUAL TARGETING SYSTEM

- Virtual tools, guide
- Dynamic alignment
- Virtual distance read-out
- Reticule for precise alignment



MINIMAL OR FOOTPRINT

Using optical code alignment, cameras, and sensors, VisAR maps both the patient and the surrounding environment from above, to the side, behind or even underneath the patient using the hands-free, untethered headset of the Microsoft HoloLens 2. OR footprint is the surgeons head.



ADVANCED PREOPERATIVE PLANNING

* Operative FDA clearance pending

- Colorize target organs or annotate pathology to create semitransparent holograms of targeted anatomy. This allows for precise planning and execution of the procedure, even around difficult anatomy.
- Place virtual incisions on the holographic images for precise surgery thus reducing time under anesthesia and healing.
- Navigate with knowledge. Mark virtual surgical guide entrance point, trajectory and location for endoscope or needle placement, extract a foreign body, or place a pedicle screw. Procedures can be done both under open surgery and percutaneously.

VisAR ADVANTAGES

	Traditional Navigation Systems	VisAR	VisAR Advantage
Size	Large, cumbersome system that requires a monitor	Simple, untethered headset, no monitor required	Easier to use Smaller IT footprint
Cost	Often more than \$1.5 M	\$60K - \$300K set up \$5K monthly fee	Costs significantly less
Set up time	At least 45 minutes,	2 minutes, no need for line of sight to instruments from IR transmitter	Less time in OR, less time patient is under anesthesia
Mobility	Limited utility, one patient at a time	Can be used in multiple ORs and departments simultaneously	Faster ROI
Versatility	Often sits in a closet	Can be used by Neuro, Ortho, Interventional Radiology, etc.	Cost spread across many uses
Scalability	1	Dozens	Easy to expand use

VisAR LEADS THE MARKET

- Predecessor technology (OpenSight®) was First AR surgical system to receive FDA clearance
- Advanced 2D/3D/4D rendering without tethering
- AI-enhanced advanced 3D image segmentation
- Patented or patent pending innovations
 - Optical Tag Registration
 - Surface Shell Registration
 - Virtual tools for incision, markers, needles, trocars and more
 - Viewing AR images in a 3D volume over patient
 - Optical encoding of login, password and image retrieval
 - Virtual Annotations
- Anatomic labeling, pathologic markup
- Dynamic virtual targeting system for tracking lesions and trocar placement
- Enterprise Imaging, HIPAA logging, LDAP logins, data encryption, auto-routing

VisAR LEADS THE MARKET WITH MANY FIRSTS



*WIP: Work in Progress. Not FDA cleared.

Learn more | Download the VisAR demo at the Microsoft App store at <https://www.microsoft.com/en-us/p/visar/9nh2399k92jw>



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