

Category

Best Startup

Product/Solution Name

Mantis 3D Digital Loupes

Date of Approval

2022-01-20

Indications

The Mantis 3D Digital Loupes is a mixed reality digital visualization platform used for any magnified surgical procedure - including but not limited to spine, neuro-, hand, ENT, vascular, and plastic procedures.

Therapeutic Categories

MedTech Category, Startup Category

Attached Files:

- Mantis_Galien Slides.pdf

Background information and need for solution/product

The majority of procedures performed worldwide rely on magnification devices that are outdated, expensive and large. This includes both surgical microscopes and 2D endoscopes. These analog devices are in urgent need of a digital age transformation to enable software integration for exponential utility. The Mantis 3D Digital Loupes platform revolutionizes surgical vision through a combination of mixed reality, 3D camera, machine learning, and video sharing technology. Its ground-breaking visual experience “transports” surgeons into the body and enables faster, safer and more accurate visualization.

History of the development of the solution/product

Development of the Mantis platform originated in 2016 with the vision of creating a mixed reality headset that was as light-weight and comfortable as standard surgical loupes, but with visual clarity rivaling or exceeding that of a microscope. In conjunction with our key opinion leader surgeon advisors, Mantis' team of electronics, VR, software, firmware, optics, and mechanical engineers developed the technology over the course of 5 years. Simultaneously, we developed a 3D camera system, paired with the Mantis glasses, that would enable video capture by hovering above the patient.

The Mantis was beta launched in Q4 2021 and released in Q4 2022. Mantis has been used in over 1,000 procedures to-date, with a focus in spine and neurosurgery.

Why this solution/product is innovative, the broad implications for future research, and/or how it will improve the human condition

The Mantis 3D Digital Loupes is the first ergonomic, stylish, high-resolution glasses product for surgery. In the same way that the iPhone enabled the smart phone industry with its elegant design, the Mantis

Loupes is making 3D visualization exciting for surgeons with its modern look and “immersive” visual experience.

Mantis' adoption in the market has led to the accumulation of a significant library of 3D video content. This is where the Mantis software team is focusing most of its machine learning efforts - for applications in training, education, and surgical navigation. Other future product offerings will be in the areas of miniature 3D cameras, robotics, video sharing and editing through the cloud, and remote augmented reality annotations.

Please provide appropriate references (ie Pubmed links)

Since this product was recently released to market, we are engaged in several studies, but have not published any. We expect the first publications to be released in Q4 2023.

