

PathFinder: A Slide Navigation System for Digital Pathology

ID: 04530

Featured Innovators: Tom Pearce, MD/PhD and Michael Landau, MD

Digital Pathology has advanced significantly over the last several years. Whole slide imagers can now scan pathology slides at high resolution quickly, and data storage costs have plummeted. In 2017, a major vendor received the first FDA approval for its system to be used for primary pathology diagnosis, and other players are expected to follow soon. Adoption of digital pathology by pathologists, however, is still slow. One of the most important reasons for the slowness of adoption by pathologists is that navigating a virtual image with a computer mouse or other generic user interface devices is less efficient and less ergonomic than the user interface of a physical microscope. This system converts a mobile device into a virtual microscope stage that mimics the experience of navigating a physical slide with a microscope, to increase pathologists' adoption of digital pathology.

Technology Description

The invention is a software system that enables intuitive and ergonomic navigation of digital pathology slides using a mobile device and a separate PC and computer monitor. The mobile device displays a movable image of the unmagnified slide and interfaces with a separate PC that displays on a computer monitor the magnified field of view corresponding to the position and zoom level of the virtual slide. Movement of the virtual slide is controlled by finger dragging movements on the tablet screen, while zoom is controlled by pinching movements. The system mimics the experience of navigating a physical slide with a microscope, enabling pathologists to easily transition to digital pathology and improving the marketability of digital pathology systems.

Advantages

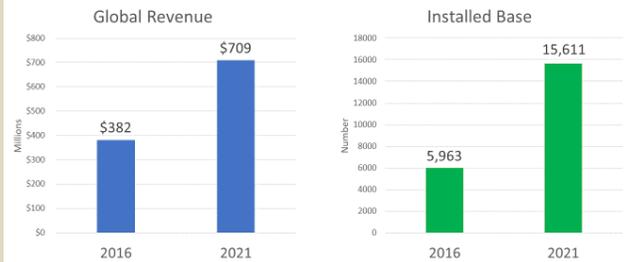


	PathFinder	Mouse or Trackball, with Monitor	Touchpad, with Monitor	SlideDriver (3DHistech), with Monitor	Tablet viewers	Microscope
Feels like a microscope stage	✓	✗	✓	✗	✗	✓
Visual-spatial feedback	✓	✗	✗	✗	✓	✓
Pinch zoom	✓	✗	✓	✗	✓	✗
No need to look through eyepieces	✓	✓	✓	✓	✓	✗
Large field of view	✓	✓	✓	✓	✗	✓

Applications

- To improve the experience of digital pathology for pathologists, thus increasing adoption of digital pathology
- Examination of High-Resolution Satellite and Drone Images

Digital Pathology Market



Frost & Sullivan, 2018.

The digital pathology market is estimated to grow to about \$700 million by 2021, with an installed base of about 15,000.

Stage of Development

Software Prototype and Hardware Concept

IP Status

Invention Disclosure filed through the Innovation Institute