MED-TAB™

**Introducing MED-TAB:
The First DICOM-Calibrated Tablet
for Portable Image Analysis**

IMAGE Information Solutions Launches New Medical Display Solution to Solve Portability Challenges and Boost Imaging Efficiency

The telemedicine industry continues to improve its solutions as providers seek out technologies that can assist them in lowering costs, improving efficiency and workflow and improving patient satisfaction while meeting rigorous requirements. Furthermore, radiology administrators are working toward giving their professionals better remote access to medical imaging, and it's through new teleradiology technology that they will be able to deliver this access.

Perhaps the most intriguing component of telemedicine is teleradiology. It's a technology that has its foundation in the 1980s, but has seen many advancements since that time. Today, traditional radiology and teleradiology are mentioned in the same breath, practically indistinguishable between each other. In a report published by *Transparency Market Research*, the global teleradiology market is expected to continue to grow at an annual rate of 22.3 percent from 2013-2019. However, until recently the diagnostic and medical image community didn't have a DICOM-ready tablet for image analysis. This is a tool that is required if they are to break away from standard viewing stations at hospitals and clinics and create an image analysis environment that is truly portable while also providing the level of precise image quality needed.

The Importance of Teleradiology and Telemedicine for Improved Quality of Care

Healthcare professionals are accustomed to the continuing evolution of technology, which assists them in their daily duties. A significant part of the evolution today is noticeable in telemedicine. The reasons for acquiring telemedicine solutions vary, but according to the 2014 Telemedicine Survey Report published by Foley & Lardner, LLP, around half of healthcare executives surveyed said their top reason for implementing telemedicine solutions was to improve the quality of care. Another popular answer to the question involved efforts to reach new patients.

According to the American Telemedicine Association:

- More than 50 percent of hospitals in the U.S. currently have a program related to telemedicine.
- The U.S. Congress entertained 26 bills in 2015 that could affect telemedicine systems throughout the country.
- Twenty-nine states require insurers to pay for telemedicine services.

The global telemedicine market is also set to expand dramatically. According to IHS Technology, the number of patients using telemedicine services was estimated at 350,000 in 2013. That number is expected to exceed 7 million in 2018.

## Teleradiology Evolved: Nearly 20 Percent of Total Images are Accessed by Remote

Interestingly, the teleradiology field was once considered a cottage industry. According to "Teleradiology: New Players, High Stakes Create Capital Opportunity," remote image interpretations by radiologists was once something they only did at home. However, the estimate now is that as much as 20 percent of the images across the nation will be analyzed through teleradiology systems, representing a potential $15 billion per year industry.

MED-TAB™

What's driving this trend? The answer, in part, is related to achieving autonomy and improving services. Healthcare providers are looking to teleradiology systems to increase their independence and flexibility while they strive to improve efficiency. Providers also look to teleradiology as a way to outsource and sub-specialize to avoid workflow bottlenecks while keeping standards high. A growing number of hospital administrators and professionals believe radiologists shouldn't be tied to an imaging workstation in order to effectively manage tasks associated with analyzing medical images. Teleradiology is giving them the freedom they need to do their jobs more efficiently – such as allowing imaging specialists to view medical images while on-call, rather than relying on a professional to be situated at a hospital radiology workstation.

According to the Association of American Medical Colleges, the core reasons telemedicine is becoming more dominant include:

- It eases the projected professional shortage as more patients can be assisted without tapping into staff who are assigned to a hospital workstation

- Potential cost savings are offered through telemedicine by more efficient workflow

- Consumers are demanding more flexible healthcare options, such as bedside image analysis for a large population of senior adults
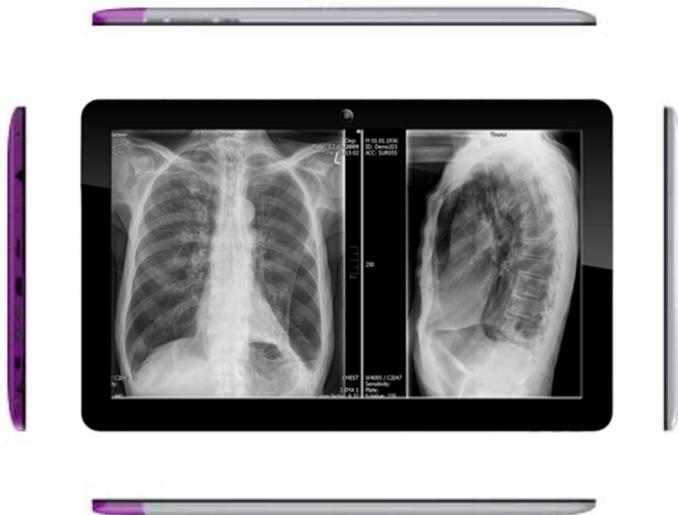
Providers Large and Small Benefit from Teleradiology

Critical access hospitals are most prevalent in rural areas, and while they are among the smallest healthcare facilities, they represent around 30 percent of all hospitals in the country, according to the Office of the National Coordinator for Health Information Technology (ONC).

ONC reported in 2014 that these small hospitals have a teleradiology adoption rate of 70 percent, the highest of any hospital group size. Furthermore, ONC says rural providers benefit from telemedicine because it promotes better patient-provider communications, patient self-management with provider feedback, health literacy, medication management, provider-provider consults, and changes in health and lifestyle behavior.

While the smaller providers are the fastest adopters of teleradiology systems, they're not the only ones benefiting from them. ONC advises that a provider of any size can gain from the services they provide. They are listening: in 2013, Mount Sinai Medical Center, which has more than 1,100 beds and consistently ranks in the top 20 medical centers in America, began a partnership with a Canadian-based teleradiology provider. Officials from the hospital, according to a new brief from ONC, implemented teleradiology solutions because they were attempting to eliminate steps related to manual workflow, and they wanted to unify disparate systems to provide more timely access to medical imaging.

MED-TAB™
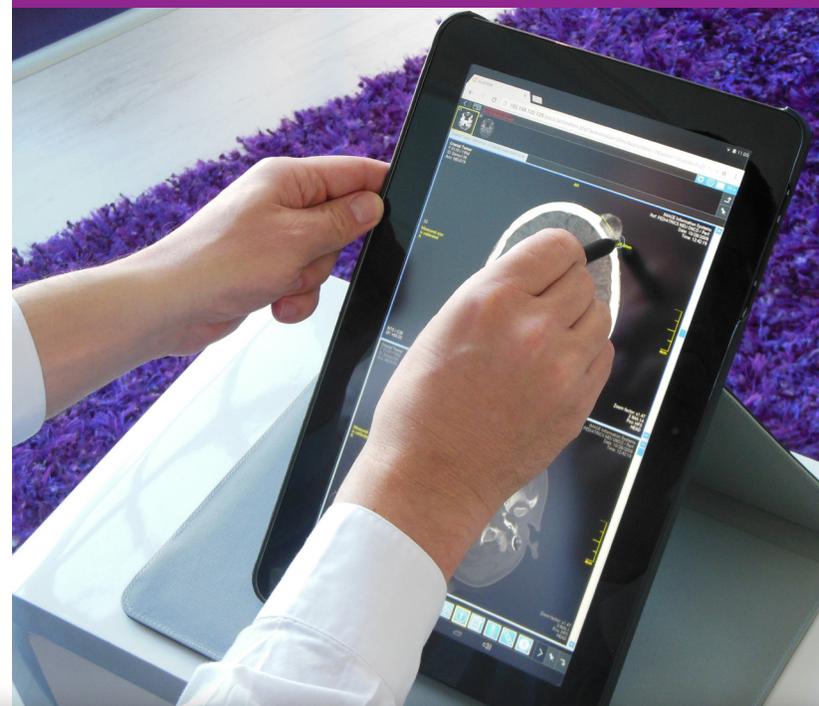
Pain Points Solved by Teleradiology and Portable Image Analysis:

Radiologists and physicians have a number of challenges with image analysis that can be resolved with the right technology. Due to the pervasive mobile market, it only makes sense to look to portable technology for a solution to resolve the pain points.

Pain points include:

- Needing a medical tablet that is both portable and DICOM-compliant

- Accuracy problems with current portable image viewing tools, such as image apps

- Ability to open and view several types of image files for medical images is needed

- Adequate grayscale quality for proper analysis of medical images is needed

- Efficient and effective imaging software and hardware are needed

- Need for a better workflow across radiology and image technology

- A quality solution is needed for rural hospitals that often have to email documents and wait long periods for an analysis, or have limited staff to man workstations

- Truly high-quality image analysis isn't currently available on a fully portable level

- Physicians and decision-makers are looking for a solution that saves time and is more convenient than traditional image methods

- Radiology administrators have challenges with staffing radiology workstations to view and diagnose images at all hours

Imaging professionals want a solution that doesn't require them to be at a radiology workstation inside a clinic or hospital in order to view a case. With a DICOM-enabled mobile viewer, they aren't limited to a specific location when they need to view an image – they can analyze and share virtually anywhere, if the right technology is in their hands.

## The Creation of the First DICOM-Calibrated Tablet for Portable Image Analysis

Dr. Arpad Bischof is a radiologist at UKSH, Germany's third largest university hospital. After 15 years of experience in reading teleradiology studies, Dr. Bischof realized he could do his job more efficiently and effectively if he had access to portable technology with the right software. Arpad and his team at IMAGE Information Systems began developing a plan that would allow him, and potentially other radiologists and imaging professionals, to study high-quality images on a DICOM-enabled tablet. The end result is the world's first medical tablet called MED-TAB™.

Introducing the MED-TAB™ Solution

Finally, healthcare providers are able to go mobile with their complex image viewing needs. IMAGE Information Systems, a global leader in image technology, has developed the first DICOM-compliant tablet for portable medical image analysis. For providers who want a true "outside the box" imaging solution, MED-TAB is the answer. It is the tool radiologists and physicians can use to view, analyze and send images from virtually anywhere at any time. For healthcare providers tied to their image workstation viewers, MED-TAB brings mobility to life with supreme quality, portability and many possibilities.

Once acquiring MED-TAB, users gain access to high-quality, incredibly precise DICOM images while they are on the go. The measurement abilities are game-changing, as engineers working for IMAGE Information Systems have integrated a unique tablet pen created just for precise measuring.

Mobility in medicine has never been more important because it is a major area where providers are seeking strategic goals for advancement. Physicians are constantly in demand and juggling numerous responsibilities. With MED-TAB, they enjoy access to seamless image analysis solutions any time from nearly any location.
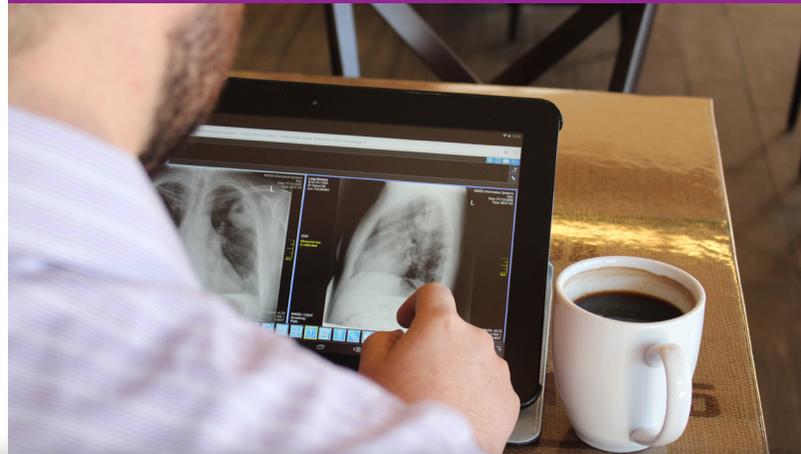
MED-TAB™

How MED-TAB Works:

MED-TAB offers user-friendly teleradiology solutions.

1) Using fingers, a mouse, a keyboard, or a Philips SpeechMike, user navigates the touch screen of the portable display.

2) User logs into a PACS via wireless LAN and simply taps images to analyze.

3) User performs reporting tasks via the digital dictation tool included in the software.

MED-TAB actually supports all major PACS vendors using HTML5 zero footprint technology or native Android Apps. The selected studies are viewed on MED-TAB's antiglare DICOM display. An ambient light sensor gives an indication of whether or not the surrounding light is suitable for image analysis and what adaptations need to be made to improve the quality.

Medical professionals will have nearly all of the usual PACS functionality, like zoom/pan, comparisons, measurements, 3D reconstruction, etc., with this DICOM-enabled tablet. Users can perform their reporting tasks via the digital dictation tool included in the software.

- Hospitals can use MED-TAB for bedside image viewing, in emergency room and intensive medical care units, and as a mobile backup PACS.

- Radiology departments can utilize MED-TAB for remote analysis, remote radiology demonstrations and for peer review.

- Because it's a portable tool, MED-TAB can be accessed via the cloud or through a web portal. On-call physicians can rely on MED-TAB for quick access to images from anywhere. Users can calibrate the display with a special USB calibration device that comes with the tablet. The product is equipped with two USB ports, which connect a mouse, network card, calibration device or keyboard.

MED-TAB is also equipped with an exclusively-selected tablet pen for accurate measurements. In fact, the pen is ten times more accurate and three times faster than using fingers on the touchscreen. The device has an HDMI port that connects it to a larger display (data projector) for peer sharing. *(Device supports full HDMI only. Built-in screen is switched off during connection.)*

SPECS
The 13.3" (29.50 cm x 16.70 cm) display allows for more accurate analysis. Users enjoy the high resolution of the 1920x1080 pixels display.

The MED-TAB package includes:

- MED-TAB Tablet
- Multi voltage Power supply including connectors for US, EU, UK and Asia
- Micro USB to USB adaptor
- USB display calibrator
- Tablet pen optimized for measurements
- DICOM Calibration software
- Weight – 2.8 lbs.
- Bluetooth 4.0 for connecting wireless headset, mouse, keyboard
- Quad Core CPU for fast operation
- Extendable storage of up to 32 GB of RAM
- 11 bit DICOM GSDF gray scale calibration @ ~300 Candela/m2
- WiFi 801.11 b/g/h

Accessories:
Protective Case
- 360 degree rotating case stand
- Anti-slip interior that provides different viewing angles
- Full access to all connectors and buttons
- Elastic closing strap for safe carrying

Optional:
- RJ45 Ethernet network adapter
- Wireless or wired keyboard
- Wireless or wired mouse
- USB GSM or LTE dongles

Warranty Periods
- Standard one year warranty
- Two-year warranty by request – 25 percent of the purchase price per device
- Three-year warranty by request – 40 percent of the purchase price per device
- Service centers in Europe, China and US offer repairs or replacements

How MED-TAB Differs from Tablets or Apps:

MED-TAB isn't just a tablet – it's a medical display with an embedded computer in tablet-size, all in one. It offers premium quality perks, including screen adaptability, an exclusive measuring pen and DICOM-compatibility. In fact, it's the only medical tablet with DICOM calibration. Users can work in a normal way from almost anywhere, using a SpeechMike device, as if they were at a typical workstation (a feature that isn't possible with a typical tablet).
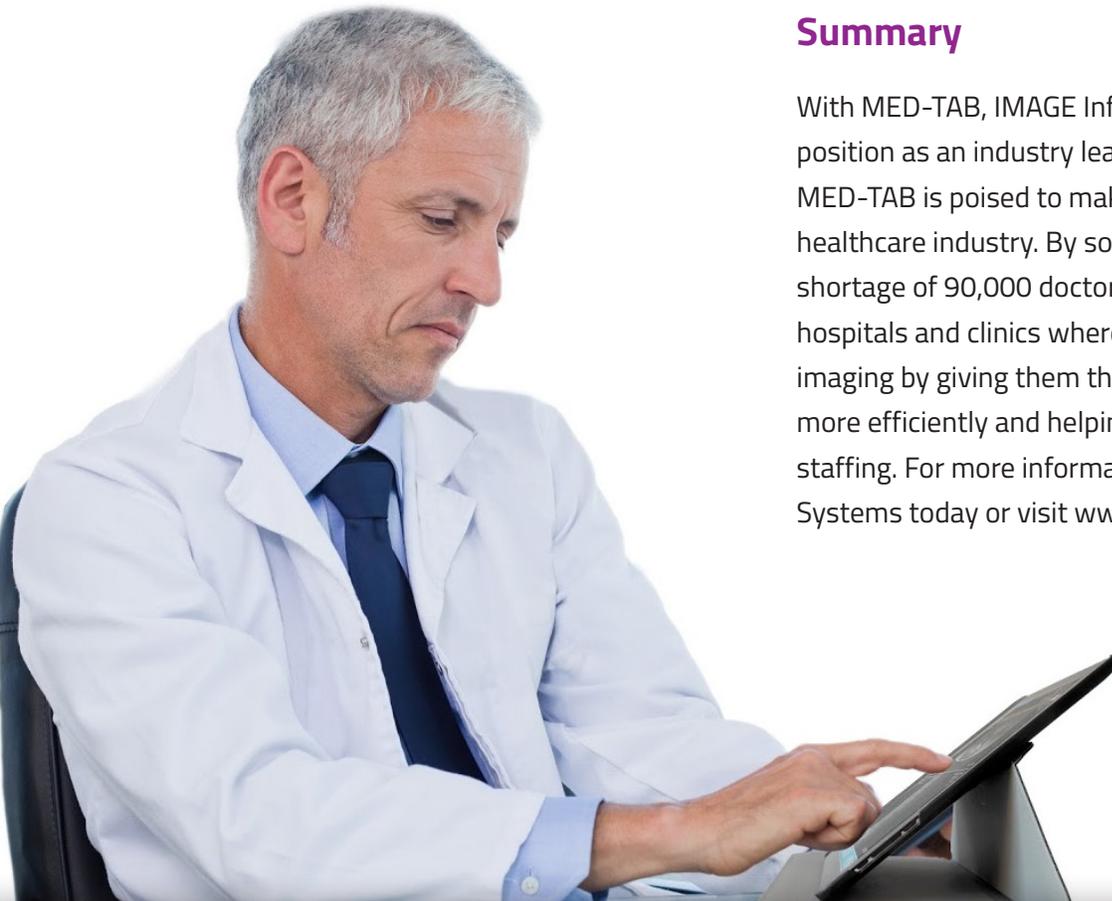
MED-TAB is the world's first radiology tablet for image analysis. It can answer the call of radiologists and physicians who want to follow the trend of increasing use of mobile devices in medicine. Providers want a quick and easy way to access medical images, but not just any medical image – the quality must be at DICOM calibration to achieve accurate analysis. With MED-TAB there is a calibration app included to adjust grayscales according to the DICOM standard and to check the calibration status. This is not possible using consumer devices.

There are additional advantages to using the MED-TAB device over other popular tablets like the iPad or Samsung Galaxy Tab 4. MED-TAB has an anti-glare display with patented 11-bit DICOM GSDF grayscale calibration, fixed calibrated brightness of ~300 Cd/m^2, and an uncalibrated maximum brightness of ~400 Cd/m2. Large organizations can save costs in related technology; organizations of all sizes can gain more quality of life with imaging freedom.

For easier image analysis, the screen is 69 percent larger than the iPad Air 2, and 67 percent larger than the Galaxy Tab 4. (The screen area similar to the new iPad PRO to be released in November 2015). MED-TAB runs with the Android 4.4 operating system.

Summary

With MED-TAB, IMAGE Information Systems retains its position as an industry leader in teleradiology technology. MED-TAB is poised to make a significant impact on the healthcare industry. By some accounts, the U.S. faces a shortage of 90,000 doctors by 2025. MED-TAB will impact hospitals and clinics where professionals perform medical imaging by giving them the technology they need to work more efficiently and helping overcome challenges related to staffing. For more information, contact IMAGE Information Systems today or visit www.med-tab.com.

MED-TAB™

med-tab.com