TECHSOMED
CUSTOMER
STORY

TechsoMed is a medical device company bringing disruptive improvement to thermal ablation procedures through real-time AI and image analysis.

The Challenge: Accuracy in a Second

Thermal ablation is the process of removing early-stage tumors through tissue destruction by applying intense heat during minimally or non-invasive procedures.

Currently, when patients undergo a thermal ablation procedure, the practitioner can only treat an estimated target area, and has no live knowledge of the effectiveness of the procedure until up to 24 hours later, once results can be attained.

Clinical experience indicates a significant mismatch between the expected and real lesion size, leaving radiologists to work with bad information. This leads to reduced survival rates due to over-treatment with severe injuries or under-treatment with tumor recurrence.

Addressing this challenge, TechsoMed has introduced reliable real-time monitoring and control for efficient, safe execution, and verification of successful treatment.

The ability to have real-time feedback during the operation completely revolutionizes the procedure and will effectively provide:

» Shorter hospital stays
» Faster recovery
» Fewer potential complications
» More complete ablation of tissue
» No damage to surrounding healthy tissue

The BioTrace™ Solution

Using image data from commercially available ultrasound devices, the BioTrace system performs real-time and continuous monitoring and analysis during the thermal ablation procedure. This technology tracks the biological response of the tissue itself, providing instant feedback to practitioners during the procedure, ensuring accurate and complete results for patients.

TECHSOMED
BioTrace iO

1 SECOND
is all it takes to capture & analyze 1000s of candidates & features extraction

97% MATCH
to pathological examination

1,000,000
new incidences each year

>>>
faster recovery

52
successful human cases

Human
eyes can see
30 shades of **gray**

TechsoMed
uses **65,000** levels of gray

Lenovo™

nVIDIA.

HOW LENOVO WORKSTATION TRANSFORMED THEIR PROCESS

ThinkStation

TechsoMed needed to be able to view higher-quality 3D ULS (ultrasound) images and then analyze these in real-time, creating 4D ULS imaging. In addition, standard images are viewable on a 255-point grayscale, which is the spectrum visible to the human eye. However, TechsoMed increased this spectrum to 65,000 individual layers of gray. This meant real-time 4D ULS reconstruction and visualization through streaming 3D ULS data.

The massive increase in the number of images and the complexity of the grayscale meant a true demand for additional computational power. And to capture those images and then also analyze them in real-time, TechsoMed needed to run advanced AI algorithms to process the data instantly. This has reinforced their simulations, showing how higher resolution and real-time results dramatically improves accuracy and predicts damage with minimal latency.

In order to address these challenges they decided to use the powerful **ThinkStation P900 Series**.

Lenovo ThinkStation P900 Series

- Improved Accuracy
- Improved Streaming
- Higher Resolution

"With the renowned performance and reliability of Lenovo ThinkStations, algorithm and AI developers at TechsoMed gain access to previously unattainable workflows, enabling them to have full control over customizable algorithmic firmware to address current and future challenges in the field of real-time medical imaging technologies."

– Yossi Abu
CEO & Founder TechsoMed

» **Processor:** Dual Intel® Xeon® Scalable Processors
» **Graphics:** Dual NVIDIA® Quadro RTX™ 8000 with NVLink™ for AI acceleration
» **Memory:** 64GB ECC RDIMM (4 x 16GB)
» **Storage:** 512GB M.2 PCIe SSD
» **Operating System:** Windows 10 Pro for Workstations

NVIDIA

Lenovo™

VIRTUALIZATION ISOLATES REAL-TIME CODE

Lenovo enables TechsoMed to run multiple OS on multiple virtual machines, which reduces the risks, the run-time, and avoids software rewrites.

Virtual Machine 1	Virtual Machine 2
Safety-critical diagnostic imaging applications	Other applications, e.g. image rendering
Real-time operating system	General purpose operating system

Virtual Machine Monitor (VMM) software

Intel® processor with multi-core technology

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