

EXPERIENCE GUIDANCE LIKE NEVER BEFORE

VIRTUTRAX™ NEEDLE TRACKING SYSTEM
EXPANDING THE POSSIBILITIES OF ULTRASOUND INTERVENTIONS



Accurate Guidance. Confident Outcomes.

CIVCO's VirtuTRAX™ is a breakthrough technology that enables virtual needle tracking to expand the capabilities of ultrasound interventions.

VirtuTRAX allows users to clearly visualize the location and orientation of the interventional device as it advances toward the anatomical target of intent. By attaching a reusable sensor to the VirtuTRAX Instrument Navigator, the device offers a 3D anatomical roadmap to help physicians accurately navigate through delicate tissues by providing continuous device visualization for greater confidence.

Recent clinical research demonstrates the benefits of VirtuTRAX.

"Indeed, we have found that the VT (VirtuTRAX) system, because it is able to track the RF electrode active tip independently of US visualization of the RF electrode path, has great potential to provide more accurate and radical RF ablation in several situations."

– Giovanni Turtulici, MD et al.
Ospedale Evangelico Internazionale



VirtuTRAX Needle Tracking provides accurate real-time navigation for a range of clinical interventions.

CLINICAL VERSATILITY

Like never before, VirtuTRAX converts rigid interventional devices into accurate navigational tools to access difficult targets for confident outcomes during an ultrasound-guided procedure.



VirtuTRAX is an intuitive device allowing physicians to more precisely track the tip of any rigid instrument.

Clinical experience using VirtuTRAX supports:

- Accurate navigation
- Needle location visualization
- Confident outcomes

In addition to ablations, other diagnostic and therapeutic interventions can be considered, such as biopsy, FNA and injections. A growing evidence base describes the utilization of VirtuTRAX technology for a range of clinical applications:

- Breast^{2,3}
- Liver^{2,4,5}
- MSK⁶
- Soft Tissue⁸
- Thyroid^{1,2,7}

Discover how leading physicians are using VirtuTRAX today.



ACCURATE NAVIGATION

Evidence suggests a high level of accuracy and safety when using VirtuTRAX.

Accurate in-plane and out-of-plane targeting.⁸

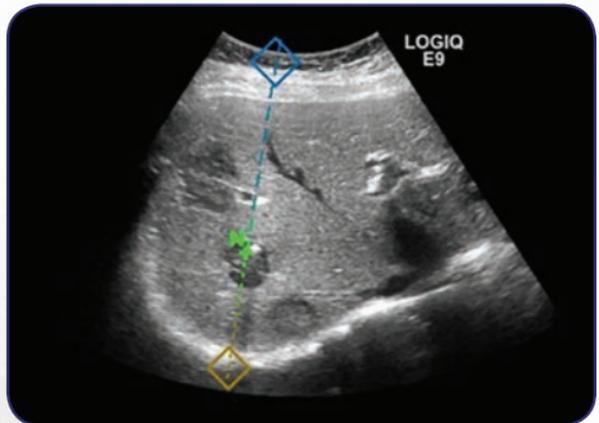
*"Despite the good accuracy of standard US-guided procedures, this new technique **allows the clinician to reach difficult targets with the most practical percutaneous approach**, even when the needle is not clearly visible (e.g. out-of-plane approach)."*⁸

Continuous visualization of projected needle path.

*"The possibility to plan the most practical approach to reach the target from any angle relative to the transducer, whether in- or out-of-plane, and to **monitor the position and advancement of the needle even if it does not lie in the scanning plane**, can be helpful in daily practice, especially for less-experienced operators."*²

VirtuTRAX allows real-time visualization to overcome anatomical limitations to reaching the target.

– Image courtesy of GE Healthcare

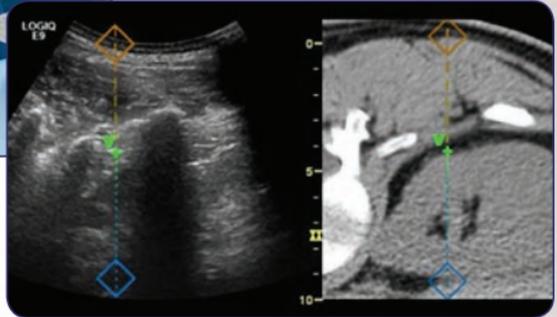


NEEDLE LOCATION VISUALIZATION

Clinical studies demonstrate VirtuTRAX aids access to targets normally difficult to visualize under conventional ultrasound.



When fusing ultrasound with other modalities such as CT, VirtuTRAX helps access targets not visible under conventional ultrasound.



— Image courtesy of GE Healthcare

Improved needle visualization in spite of image artifacts.

*“The virtual tracking system is **useful in cases where the needle tip is obscured** due to surrounding liver conditions or when multiple punctures are necessary because the ablation artifact is obscuring the needle tip.”⁵*

*“The Virtual Tracking allows us to easily perform RFA of nodules using US needle guidance and **provides clear visualization** of the virtual needle tip and shaft, even if the real needle is not visible due to the ablation artifact.”⁷*

Access targets not visible under conventional ultrasound.

*“After a short learning curve, US needle guidance (VirtuTRAX) with MR or CT fusion assistance allows **quick, safe and effective injections for treatment** of degenerative facet joint disease **without the use of ionizing radiations.**”⁶*

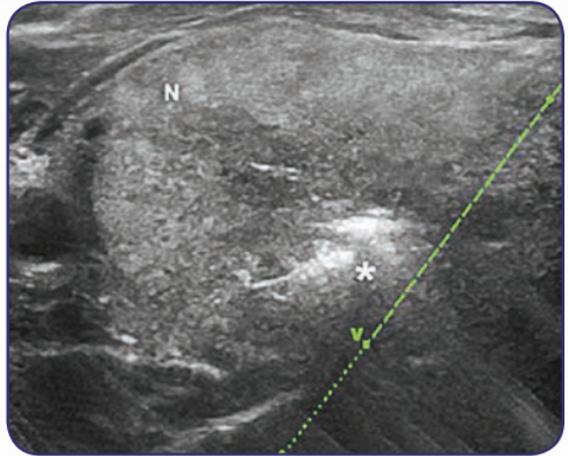
VirtuTRAX has shown clinical utility and improved clinical outcomes.

Effective treatment modality.

*"The results of our study confirm that **RF ablation is an effective treatment modality** for benign thyroid nodules. The VT system was used successfully in all procedures, providing guidance that allowed all procedures, even in challenging cases, to be **performed with a single puncture.**"¹*

VirtuTRAX can be utilized during radiofrequency (RF) ablation to clearly visualize the needle even when obscured by gas.

– Image courtesy of Dr. Giovanni Turtulici



Safe interventions.

*"The **excellent level of safety** provided by the Virtual Tracker allows to perform RFA with **high confidence achieving a shortening of the learning curve** and granting a significant increase in the nodule area of ablation."⁷*

Increased physician confidence.

*"It (Virtual Biopsy Tool) represented a **valuable tool for improved practical confidence.** The confidence is even increased by the possibility to monitor in real-time the tissue stiffness with elastosonography and the hemodynamics of the lesion and surrounding areas using Doppler technologies."¹*

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