Navigating the Body without Radiation
iGuide CAPPA takes Needle Guidance one Step further

iGuide CAPPA is comparable to a GPS for the human body; the new solution supports interventional radiologists during minimally invasive needle procedures. By combining an Artis **zee** angiographic C-arm system with the iGuide CAPPA electromagnetic navigation system, a new method was developed that enables needle navigation without applying radiation. The method uses electromagnetic tracking and facilitates complex percutaneous interventions such as vertebroplasties, radiofrequency ablations or drainages.

For a number of years Siemens has been working together with physicians on navigation solutions that support interventional radiologists during minimally invasive needle procedures as well as improve patient treatment. The innovation iGuide CAPPA is part of the comprehensive needle guidance solution by Siemens. For more than one year, the system has been used successfully by several hospitals. "iGuide CAPPA allows for precise placement of electrodes or biopsy devices even in regions that are difficult to evaluate with conventional fluoroscopy," explains Dr. Martin Skalej, neuroradiologist at the University Hospital in Magdeburg, Germany. He uses the system primarily for different spinal interventions, e.g., for spinal radiofrequency ablations and for discographies or kyphoplasties. "No further imaging is necessary during the intervention. This greatly reduces the X-ray exposure compared to previous interventions performed in the CT."
Dr. Meyer of the Charité Hospital in Berlin, who uses the system for abdominal needle procedures such as drainages

"The combination of *syngo* DynaCT MPR views and a schematic ring figure makes hand-eye coordination very intuitive".

Dr. Meyer, Charité - Universitätsmedizin Berlin, Germany

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Prof. Dr. Martin Skalej, neuroradiologist at the University Hospital in Magdeburg, Germany

Different needle sizes are available: 11G/14G/18G, varying from 50 mm to 200 mm in length, including a dedicated vertebroplasty* needle set.

* Not available in the USA

and biopsies, is convinced about iGuide CAPPA.

The principle is a simple one: prior to inserting the needle, the Artis **zee** C-arm with *syngo* DynaCT generates a 3D soft tissue image of the anatomy to be treated, which is used for orientation by the physician. A sensor in the tip of the needle is tracked in an electromagnetic field created via a field generator. This information is transferred in real time to the iGuide CAPPA system which shows the position of the needle tip on a monitor and superposes it with the previously generated three-dimensional data set of the anatomy. This provides the physician with both the necessary anatomical information as well as the exact position of the needle, so he can confidently perform the needle procedures. This method is especially suitable for lengthy and complex interventions by providing improved spatial orientation and hence faster and safer navigation to the actual target. Additionally, the required radiation dose is greatly reduced.

Minimally invasive needle procedures are increasingly performed in interventional radiology for the spine (vertebroplasties, kyphoplasties), the liver (radiofrequency ablations, biopsies, drainage) or the thorax. With iGuide CAPPA different sets of needles are available for the various interventional needle procedures. iGuide CAPPA is approved in the US and Europe* and available on the market, effective immediately.

* Not available in France

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