



REVOLUTIONIZING SURGICAL NAVIGATION WITH ATLAS MEDICAL TECHNOLOGIES AND KINOVA

Case study



KINOVA

About Atlas Medical Technologies

Atlas Medical Technologies GmbH, based in Bochum, Germany, specializes in developing and distributing navigation robotics for medical professionals. With a focus on interventional radiology and orthopedics, Atlas is committed to advancing precision and efficiency in medical procedures. Under the leadership of CEO Dr. Kruger, the company has established itself as an innovator in surgical navigation systems.

Initial Challenges and Evolution

Atlas began its journey with the Amido 3D system, an early iteration of navigation robotics. Mounted on the ceiling and flipped down in front of the CT scanner, the system featured a laser robot moving along an arc around the patient. However, the ceiling-mounted design posed significant obstacles, particularly during demonstrations and customer engagement.

To overcome these limitations, Atlas underwent a transformation with a new leadership vision. The company reimaged the navigation concept, creating a mobile and more flexible solution called the Atlas-4D system. This new version maintained the arc-shaped design but moved to a rolling stand for easy mobility and positioning in front of the CT scanner. The transition marked a major step forward in usability and demonstration capabilities.



Breakthrough with the Laser Robot Arm (LRA)

Continuing its commitment to innovation, Atlas recently introduced the Laser Robot Arm (LRA), integrating the Kinova Gen3 robot arm to mount a camera and laser at the robotic arm's head. The LRA is connected to the CT-scan and a computer, offering real-time patient tracking and trajectory guidance. Using a tracker mounted on the patient's back, the system precisely maps the patient's position. Physicians then steer the robot via tablet to mark injection sites and target masses and define trajectories, including the insertion depth for needles.

Before Atlas, surgical navigation systems were limited to assisting surgical interventions in virtual space. Atlas is the first navigation system extending navigational guidance into physical space. The LRA system is pioneering the transfer of trajectory planning directly onto the patient, offering a real-time visual guide that indicates the entry point, insertion angle, and required needle depth. This breakthrough enhances precision and reduces cognitive workload for surgeons.



The Kinova arm proved to be the ideal match for our navigation system. With its slim, lightweight design and 7 Degrees of Freedom, which provide exceptional flexibility to cover the entire procedure area.

- Wolfgang Urbild, VP Sales & Marketing at Atlas Medical Technologies GmbH

Key benefits of the LRA system

- **User-Friendly and Efficient**

Quick, intuitive setup significantly reduces procedure time.

- **Enhanced Precision**

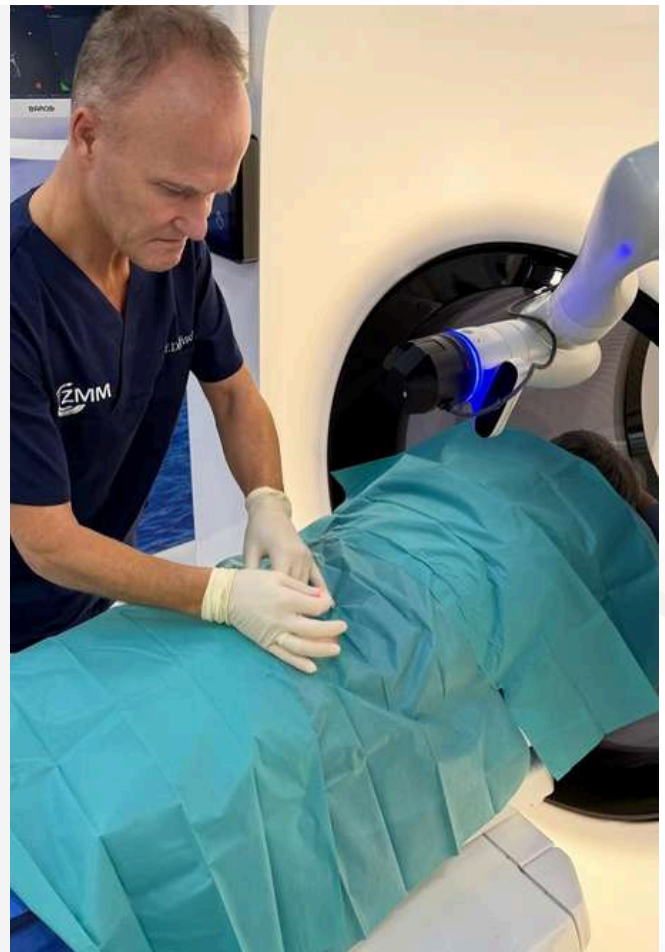
Real-time laser guidance improves procedure consistency and confidence.

- **Versatile and Flexible**

The robotic arm's mobility covers the entire patient length, from neck to hip, allowing for a broader range of procedures.

- **Compact and Mobile Design**

The Kinova Gen3 arm's slim and ergonomic build minimizes space usage in crowded intervention rooms, while LRA system mobility allows it to be easily shared across multiple procedure rooms for greater efficiency and flexibility.



Medical applications

The LRA system is particularly effective in the following medical interventions:



Orthopedics

Facilitating peri-radicular therapy (PRT), platelet enriched plasma (PRP), and epidural injections.



Interventional Radiology

Performing ablations or biopsies on organs such as the liver, pancreas, and lungs.



New Applications

The LRA's mobility and flexibility allow easy access to complex anatomical sites, like the iliolumbar joint. This enable procedures before challenging.

Future Vision

Atlas aims to expand the adoption of the LRA system internationally, targeting markets in Canada and the United States. Two systems have already been delivered, and more are to come in the next few weeks. Atlas is planning to convert the older 3D models to the new LRA system. The company envisions broader applications and continued innovation. Atlas is also preparing for upcoming conferences and trade shows to demonstrate the system's capabilities.

Conclusion

Kinova and Atlas have redefined surgical navigation with the LRA system. By combining Kinova's versatile Gen3 robotic arm with Atlas cutting-edge navigation technology, we are setting a new benchmark in precision and efficiency. This collaboration is not just advancing medical robotics—it is transforming patient care. As both companies continue to innovate, the future of interventional medicine is being reshaped before our eyes.



Through our collaboration with Atlas Medical Technologies, we're enhancing surgical navigation with a blend of advanced robotics and a clever clinical interventional approach. Kinova's technology paired with Atlas' innovative navigation system is transforming interventional medicine, making patient care more precise and adaptable

- Francois Boucher, Vice-President Strategic growth at Kinova

ATLAS medical technologies GmbH is a young German company that develops and distributes navigation systems for medical doctors in the field of interventional radiology and orthopedics.

Kinova is a global leader in designing and manufacturing robot arm for various applications in the Industrial, Professional, Academic and Medical markets and for Assistive technologies. We have for mission to provide humanity with robots that empower them to achieve the extraordinary everyday.

