

# 6DOF haptic interface for controlling telerobotic surgery equipment and microsurgical devices

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## OVERVIEW

Stanford researchers have developed a new input device with force feedback (haptics) for controlling robotic surgery equipment and microsurgical devices. This device provides high-frequency feedback updates to the operator, while having low inertia to promote fine movements, and taking up less space than current state-of-the-art devices. The system includes a stylus that the user operates by hand to provide input; the stylus is supported by two parallel arms, each with actuators to provide feedback force. The design balances a wide range of motion, ideal stiffness to allow precise and controlled movements, and low inertia to reduce overshoot and any resistance to starting and ending input movements. These characteristics make this invention ideally suited for your products in tele-robotic surgery, microsurgical procedures including sinus surgery, ear surgeries such as stapedotomies, and medical procedure simulation.

## Applications

- Tele-robotic surgery
- Microsurgery
- Medical procedure simulation
- Sinus surgery
- Stapedotomies
- Simulation of dental or cranial surgeries
- Interactive gaming
- CAD design input

## Advantages

- Low inertia
- Takes up less work space than state-of-the-art technologies
- Balances optimal stiffness, low inertia, and a large range of motion
- High frequency feedback updates (high bandwidth haptics)
- Similar inertia to common microsurgical tools

## Publications

- US Issued Patent 8,924,009: [Haptic device for telerobotic surgery](#)

## Related Web Links

## HIGHLIGHTS



### Inventors

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### Tags

[Six Degrees Of Freedom](#)  
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### Resources

[View at our website](#)

- [Prof. Ken Salisbury Profile](#)
- [Salisbury Research Group](#)

## Patent Status

- Issued: 8,924,009(USA)

## Keywords

instrumentation: robotics, medical devices: surgical navigation, medical robotics, robotic surgery, surgical navigation, haptic systems, medical instruments, surgical instruments, Surgical tool, instrumentation, medical devices, 08-057, haptics, haptics: robotics, haptics: surgical & biopsy

## Stanford Reference

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