

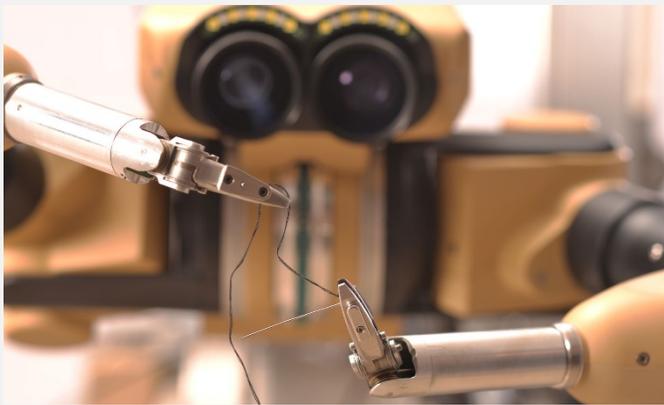
# SRI Taurus:

*This small robot is reaching new heights and solving once-thought impossible challenges*

*Six reasons why you should consider this robot for remote operations*

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*Taurus, created by SRI International, is a small and lightweight tele-operated robot system that provides remote precision manipulation.*

How does Taurus do it? Two independently controlled robot arms, each equipped with graspers and seven joints that replicate the human arm, and a vision system that combines a stereoscopic high-definition cameras and 3D immersive display, combine to provide Taurus' with its unprecedented fine manipulation capabilities. The user interface allows for quick adoption and requires minimal training for users to become proficient.

Taurus was created by the developers of the original [DaVinci surgical](#) robot, which is used around the world in complex lifesaving medical treatments. The Taurus robotic system employs many of the innovations that enabled the success of robotic assisted surgery.

Since its creation, Taurus has also been adopted for a variety of applications to negate the need for human presence for conditions or tasks that are hazardous or dangerous. This little robot has performed in demanding environments, defused bombs, and is being adapted for emergency field surgery.

SRI is enhancing Taurus to provide other solutions to assist or replace human intervention to perform tasks once-thought impossible for a robot arm.

### **Go where was once thought impossible**

A big benefit of Taurus is not just its intuitive movement, but its lightweight, modular design, which allows users to customize the system to address their operational needs.

The remote telemanipulation of Taurus allows controllers to work from a distance. The robot can operate in hazardous environments, with dangerous chemicals, and in cleanrooms and sterile manufacturing lines. Remote operation can eliminate the need to travel to distant locations to perform maintenance and troubleshooting, reduce the risk of contamination, and remove the risk to workers operating in potentially hazardous conditions.

### **Precise and delicate manipulation that can thread a needle**

While incredibly sensitive and capable, human hands have a limited range of movement. Taurus can provide “beyond human” range of motion, while allowing the operator to remain well within comfortable ergonomic parameters.

The system’s highly dexterous telemanipulation and built-in-motion scaling allows Taurus to perform precise operations such as recovering a mobile phone SIM card, threading a sewing needle, obtaining remote chemical samples, and operating remote equipment and controls. To show off the systems capabilities, SRI has demonstrated the ability to tie shoes, disassemble a cell phone, elegantly open packages and other challenging disassembly and assembly applications.

## **Out in the field? Taurus can be controlled where you need it, when you need it**

Taurus can be equipped with multiple tools and swap them as needed to perform a vast number of tasks. Today, the system has a wide variety of powered and manual tools, including; screwdrivers, wrenches, electronic test and measurement instruments, a ‘handheld’ camera that can be inserted into small spaces. Additional custom tools can be easily integrated into the system.

## **Adapt to your user and your environment**

Taurus’s software is highly flexible and can be applied to robots other than the Taurus, allowing it to scale based on the types of jobs that are required. The resulting intuitive and dexterous robot system can also be quickly adopted with minimal training and easily learned virtual reality-based interface. One future adaptation of Taurus will someday fly in space as a key part of [Genesis Engineering](#)’s Single Person Spacecraft, designed to perform remote repair and servicing operation at the Lunar Gateway, NASA’s planned space station supporting future moon missions.



## **Robust performance**

Taurus can be mounted on a variety of platforms including third-party mobile robots that can transport Taurus to where it needs to be. As an example, SRI worked in collaboration with Enaex, where the Taurus robot software is the behind [RoboMiner](#)<sup>®</sup>, remotely performing delicate explosive implanting, wiring and other mining activities.

## **Reduce operation time**

Taurus is equipped with stereo vision that is streamed to the operator, allowing them to see 3D in real-time. This technology provides the operator with the depth-sense necessary for confident and error free remote operation. Taurus's vision system can add additional information, such as a map of overall location, repair manuals, and other data, to the virtual screen to provide an augmented reality operator environment.

SRI's Taurus robot can provide a compact, precise and reliable customized solutions to go where humans can't or shouldn't go, making once impossible remote tasks a reality.

To find out more about how SRI's Taurus can help your business, submit an inquiry on [sri.com](https://www.sri.com).