



New R&D Initiative Puts Canadian Company at Forefront of Robotic Surgery

Quanser's sophisticated haptic technology to advance 'minimally-invasive' surgery techniques

Tuesday, September 25, 2007: Canada's Quanser Inc. announces the start of a new research and development partnership to advance robotically-assisted surgery. The initiative, a joint effort between Canadian Surgical Technology and Advanced Robotics (C-STAR) and Ontario Centres of Excellence (OCE), supported by Quanser and its cutting-edge Haptic Technology, puts Canada at the forefront of developing next-generation medical robotic technology.

Led by CSTAR, this \$750,000 research project will build upon Quanser's work in the area of haptics and advanced robotic technology, with the ability to add a realistic 'sense of touch' to surgical robotic tools. Ontario-based Quanser is a leader in the emerging field of haptics and has previously integrated its expertise and equipment into medical training simulators and surgical robotic prototypes. Quanser's haptic technology and research tools will provide integral components for the new project, which is aimed at improving techniques for 'minimally-invasive surgery' (MIS).

"We're designing robotic tools to enhance surgical capabilities, allowing the surgeon to transcend the limitations of conventional technology and work in a less invasive environment," says Quanser CEO Paul Gilbert. "As we continue to make advancements, we will see a widening in the range of surgical procedures for which robotically-assisted surgery is suited...from brain-microsurgery to surgery over long distances."

Robotically-assisted surgery allows precision robotic tools to act as a surgeon's arms, hands and fingers with greater reach, accuracy and effectiveness – and without the need for large incisions. The benefits are many: less trauma, pain and blood loss; fewer complications; minimal scarring; faster recovery times and shorter hospital stays; and less strain on overburdened healthcare systems.

In the past, the drawback has been that the surgeon would lose the all-important sense of touch. Quanser's haptic technology resolves this quandary using complex mathematical computer models to convey realistic sensory feelings back to the surgeon. This 'sense' of touch allows the surgeon to check for calcification, to feel the 'pop' when a needle pokes through tissue, to feel resistance when suturing, or to feel the forces on a scalpel. The technology also eliminates natural tremors and prevents accidental movements from being transmitted to the robotic tools.

Dr. Rajni Patel, Director of Engineering at C-STAR says, "The need for medical robotic technology is growing exponentially, and haptic-enhanced robotic surgical systems will become the staples of the hospitals and operating rooms of the future." He adds, "The technology and ideas are right here in Canada, through companies like Quanser, with the potential to dramatically improve health care delivery all over the world."

The global medical robotic market continues to expand dramatically and Ontario Centres of Excellence, who are partnering with Quanser on a number of projects, were quick to realize the huge potential and ready market for this technology. Gilbert says, "Without OCE's support for this groundbreaking research and development, we would not be able to invest the time and resources necessary to explore these new and important applications for haptic technology."

The new initiative, entitled 'Haptics-Enabled Robotics-Assisted Minimally Invasive Surgery,' is supported by more than half-a-million dollars in up-front cash investment, including \$247,000 in funding from OCE. Quanser's investment in this project is valued at \$300,000, which includes a financial contribution of almost \$70,000 and engineering services and technical support worth approximately \$230,000. Additional funding for this project was provided by Natural Sciences and Engineering Research Council Canada (NSERC).



This initiative is a compelling example of Canadian ingenuity leading the charge to revolutionize in-demand technology. With the support of funding programs such as OCE, innovative companies like Quanser can take advanced concepts from design to manufacturing, thus positioning Canadian technology to meet growing worldwide demand.

About Quanser

Founded in 1990, Quanser is a world leader in the innovation and development of advanced control systems for industry, education and research. Quanser provides flexible, real-time solutions for complex control problems – from design to manufacture to OEM implementation – taking concepts, products and research to the leading edge. Quanser's flexible state-of-the-art control technology is currently employed worldwide in a diverse range of applications, including aerospace, robotics, medical assistive devices and the emerging field of haptics.

About Canadian Surgical Technologies & Advanced Robotics (C-STAR)

CSTAR (Canadian Surgical Technologies & Advanced Robotics) is Canada's national centre for developing and testing the next generation of minimally invasive surgical and interventional technologies and techniques, including robotics. CSTAR trains the surgeons of the future and shares expertise around the world. Building on world and national firsts pioneered by surgeons in London, CSTAR was launched in December 2001. CSTAR is a collaborative research program of London Health Sciences Centre (LHSC), Lawson Health Research Institute (Lawson), The University of Western Ontario (Western) and St. Joseph's Health Care, London (St. Joseph's).

About Ontario Centres of Excellence (OCE) Inc.

The Ontario Centres of Excellence is the pre-eminent research-to-commercialization vehicle in Ontario. Ontario Centres of Excellence (OCE) Inc. drives the commercialization of cutting-edge research across key market sectors to build the economy of tomorrow and secure Ontario's global competitiveness. In doing this, OCE also fosters the training and development of the next generation of innovators and entrepreneurs, and is a key partner with Ontario's industry, universities, colleges, research hospitals, investors and governments. Celebrating 20 years of innovation in 2007, OCE's five Centres work in communications and information technology, earth and environmental technologies, energy, materials and manufacturing, and photonics.

For more information, visit Quanser's new web site at www.quanser.com or contact:

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