Snake Robots: -- Markets Reach $4.9 Billion By 2021 As Robots Move into Confined Spaces

LEXINGTON, Massachusetts (October 11, 2015) – WinterGreen Research announces that it has published a new study Snake Robots: Market Shares, Strategy, and Forecasts, Worldwide, 2015 to 2021. The 2015 study has 465 pages, 206 tables and figures. Worldwide snake robot markets are poised to achieve significant growth as the next generation units provide an access and movement mechanism that is unique and useful in a variety of industries. Target markets are for confined spaces.

Confined spaces exist. A confined space exists because of a lack of ability to take apart or dismantle components. Confined spaces exist in nuclear reactors where radiation is dangerous for human, aircraft inside the wings and other small spaces that need to remain intact, the human body which likewise cannot be dismantled easily, industrial processing plants that have containers, underwater environments, ship-building, and space. Buildings, roads, pipelines and other man-made spaces all have confined spaces. The world is full of awkward confined spaces.

Snake-arm robots are self-contained portable devices and extensions to existing systems. These products build on software and hardware technology.

Snake robots used for small space access, inside airplane wing access, first responder tasks, and surgery: They are used for going where nothing else can go. Snake robots provide systems that significantly improve traditional open surgery by consolidating the number of minimally invasive access ports to one and eliminating open surgery.

The automated process revolution has come to robotics, used in surgery, industry, ships, airplanes, first responder help, and communications. Automated process is being implemented via robots. Robots are automating systems, providing significant improvement in the accuracy of surgery and penetration of spaces that were previously impenetrable.

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According to Susan Eustis, lead author of the study, "A confined space needs long smooth snake shapes to achieve access. Confined spaces exist by design (aircraft engine), by failure (collapsed building) or naturally (human body). Existing open surgery can be replaced in large part by robotic and minimally invasive surgery (MIS). Minimally invasive surgery MIS, drug therapies, radiation treatment, and emerging interventional surgical approaches complement robotic surgery techniques as a replacement for or complement to open surgery. The snake robots reduces the number of ports needed to gain access and repair the heart."

According to Susan Eustis as she continued: "The companies that get an early foothold in the market have significant strategic advantage. The robotic snake leverages a new technique for robotic movement that benefits users by providing efficient access to difficult spaces. This factor is driving demand for snake robot systems. Since robotics provide a precise, repeatable and controlled ability to perform procedures in tight spaces, they are increasingly in demand."

During a robot assisted surgical procedure, the patient-side cart is positioned next to the operating table with the electromechanical arms arranged to provide access to the initial ports selected by the surgeon. Metal tubes attached to the arms are inserted through the ports, and the cutting and visualization instruments are introduced through the tubes into the patient's body. The surgeon performs the procedure while sitting at a console, manipulating the instrument controls and viewing the operation through a vision system. When a surgeon needs to change an instrument the instrument is withdrawn from the surgical field using the controls at the console. This is done many times during an operation.

Snake robot markets are set to grow at a rapid pace. Markets at $72.5 million in 2014 are anticipated to reach $4.9 billion by 2021. The reasons for strong growth relate to the appeal that the robots have in very large number of specialized markets. The technology is proven, there are 100 successful reference accounts in a variety of industry segments, and the products serve a useful purpose.

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Snake-arm robots have a long, slender and flexible design without any protrusions. Generally they are modular with a follow me software implementation. They can effortlessly fit through small openings and maneuver around obstacles. They do not have prominent elbows that potentially snag or cause damage to sensitive equipment and they are easily maneuvered into position and retracted back without disturbing their environment.

WinterGreen Research is an independent research organization funded by the sale of market research studies all over the world and by the implementation of ROI models that are used to calculate the total cost of ownership of equipment, services, and software. The company has 35 distributors worldwide, including Global Information Info Shop, Market Research.com, Research and Markets, electronics.ca, and Thompson Financial.

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