

**First Responder, Homeland Security, and Law Enforcement
Robots Market Shares, Strategies, and Forecasts, Worldwide,
2010 to 2016**

**Homeland Security Robots Use Embedded Software to
Improve Functionality**



Picture by Susie Eustis

MOUNTAINS OF OPPORTUNITY

**WinterGreen Research, Inc.
Lexington, Massachusetts**

www.wintergreenresearch.com

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CHECK OUT THESE KEY TOPICS

Homeland Security Robot Market Shares
First Responder Robot Market Shares
Homeland Security Robots Market Forecasts
First Responder Robot Market Forecasts
Law Enforcement Robot Market Forecasts
Robot Dexterity
Robot Emergency Response
Robot Grasp
Robot Manipulation
Ground Robots
Robot Sensors
Maneuverable Robot
Robot Sensor Network
Search And Rescue Robot
Robot Navigation
First Responder Robot
Battery for Homeland Security Robot
Robot Drive Control
Robot Electronics
First Responder Robots Market Segments

Low Power Homeland Security And First Responder Robots

Guns Mounted on Robots
Homeland security and first responder Robots
Auto Assault-12 (AA-2)
Remote-Controlled Weapons
Neural Robotics
Robotex

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**Robots Security Monitoring
Explosives Bomb Detection
Networks of Sensors
Border Patrol Robots
Common Operator Control Unit
Radio Control Robot Modules
Operator Control Units**

OPPORTUNITY ABOUNDS

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2010-2016**

LEXINGTON, Massachusetts (January 22, 2010) – WinterGreen Research announces that it has a new study on first responder, law enforcement, and homeland security ground robots. The 2010 study has 460 pages, 165 tables and figures.

Worldwide markets are poised to achieve significant growth as the first responder and homeland security ground robots are used globally. Growth comes as the border patrols and law enforcement agencies use robots to achieve broader security in a less expensive manner, delivering the promise of automated process in yet another industry. First responder robots bring changes in every region while the globally integrated enterprise replaces nationalistic dominance, creating broader cooperative police actions that replace nationalistic wars. These police actions are aimed against the bad guys.

This cost is creating resistance among the agencies to spend such a large amount for what is seen as a device that gives little return in comparison to what a person can do all year. Costs of robots are expected to decrease rapidly in the next year, creating a much larger market than exists now. The current market at \$203 million does provide a significant base for solid growth.

Vendors of homeland security and first responder robots have positioned to provide a common framework through which federal, state, local, and tribal governments can address emergencies. US federal first responder agencies are negotiating agreements with state and local government law enforcement groups to share equipment. First responder robots cost \$50,000 and up, the cost of a person for one year.

Whereas a person can patrol and investigate, a first responder robot able to sniff for explosives is not justified in high quantity. A few shared units go a long way in detecting explosives.

The challenge for vendors is to find applications where the robot is used 24x7 365 days per year. Then there is payback. An exception is an airport and a border patrol crossing point where there is continuous need to sniff for explosives.

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First responder and homeland security robots are useful as patrol units. Just as foot police and patrol cars look for dangerous situations, so also a first responder robot can patrol an area with cameras and chemical sensors.

First responder and homeland security robot automation of the defense process is the next wave of first responder and homeland security evolution. As automated systems and networking complement the Internet, communication is facilitated on a global basis. The first responder and homeland security charter is shifting to providing protection against terrorists and people seek to maintain a safe, mobile, independent lifestyle. Much of the first responder and homeland security mission is moving to adopt a police force training mission, seeking to achieve protection of civilian populations on a worldwide basis.

According to Susan Eustis, the lead author of the study, "the purchase of First responder and homeland security Robots is dependent on budget constraints. The use of First responder and homeland security Robots is based on providing a robot that is less expensive to put in the field than a trained soldier. That automation of process has appeal to those who run the first responder and homeland security.

Robots are automating first responder and homeland security ground systems, permitting vital protection of police officers and people in the field, creating the possibility of reduced fatalities in this profession. Mobile robotics operate independently of the operator.

The innovation coming from all the vendors is astounding. No one innovation is more significant than another. One vendor, BAE Systems has an ant size robot useful for reconnaissance and networking robots in development. As soldiers take up secure positions behind a wall, they deploy a small reconnaissance team. The initial deployment is poised to be a very, very small reconnaissance team. Some hopping, some flying, the stealthy autonomous reconnaissance squad vanishes into a suspicious building for several minutes, then relays the all-clear back to its partners outside when that is the case.



Source: BAE.

Multiple technological, logistical, political and market forces share a quantum singularity that has brought mobile robotics to the point where robots are useful to every arm of the first responder and homeland security services. This is a phenomenon that will have a major impact on the way we run the first responder and homeland security and police.

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Use of remote-control toys in Iraq started as improvised robots to check out possible roadside bombs. There has since been a flurry of activity on the robotic explosive ordnance disposal (EOD) front since that early beginning. Deliveries of smaller and cheaper Bots are anticipated.

The emergence of a market for intelligent, mobile robots for use in the field and the confined areas of city fighting presents many opportunities. Units used in public spaces and on the border create a better, more flexible, more cost efficient first responder and homeland security.

Technology is used to actuate the disparate robot types. Core robotics research and advances in robotic technology can be applied across a variety of robotic form factors and robotic functionality. Advances feed on and off of each other. With each new round of innovation, a type of technological cross pollination occurs that improves existing robotic platforms and opens up other avenues where intelligent mobile robots can be employed, effectively creating new markets.

Roboticists are more advanced in their training and in the tools available to create units. First responder and homeland security robots have evolved from units used in the field to manage different situations that arise. Robots save lives..

Robotic security systems have an emphasis on causality reduction during law enforcement activities. This has resulted in investment in robotics technology that is useful. Robotic research is on the fast track for government spending.

First responder and homeland security ground robot market forecast analysis indicates that vendor strategy is to pursue developing new applications that leverage leading edge technology. Robot solutions are achieved by leveraging the ability to innovate, to bring products to market quickly. First responder and homeland security purchasing authorities seek to reduce costs through design and outsourcing. Vendor capabilities depend on the ability to commercialize the results of research in order to fund further research. Government funded research is evolving some more ground robot capability.

Markets at \$203.1 million in 2009 are anticipated to reach \$3.7 billion by 2016.

Keywords: first responder robots, law enforcement robots, sensor networks, bomb detection robots, robot drive control, robot batteries, <http://wintergreenresearch.com/reports/First%20Responder%20Robots.htm>

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Companies Profiled

Market Leaders

BAE Systems
General Dynamics
iRobot
Kongsberg
Lockheed Martin
Northrop Grumman
QinetiQ / Foster-Miller
Telerob

Market Participants

5. First Responder Robot Company Profiles
QinetiQ North America / Foster-Miller
Robotic Technology Inc.
Versa / Allen-Vanguard
American Reliance Inc. (AMREL)
Gostai
VIA Technologies
Thermo Fisher Scientific / Ahura Scientific
Selected Manufacturers of Military Robots
Government Agencies and Other Organisations
Using Military Robots

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Homeland Security First Responder, and Law Enforcement Robot Market Shares, Strategies, And Forecasts, Worldwide, 2010 to 2016

Report Methodology

This is the 435th report in a series of primary market research reports that provide forecasts in communications, telecommunications, the Internet, computer, software, telephone equipment, health equipment, and energy. Automated process and significant growth potential are a priorities in topic selection. The project leaders take direct responsibility for writing and preparing each report. They have significant experience preparing industry studies. Forecasts are based on primary research and proprietary data bases.

The primary research is conducted by talking to customers, distributors and companies. The survey data is not enough to make accurate assessment of market size, so WinterGreen Research looks at the value of shipments and the average price to achieve market assessments. Our track record in achieving accuracy is unsurpassed in the industry. We are known for being able to develop accurate market shares and projections. This is our specialty.

The analyst process is concentrated on getting good market numbers. This process involves looking at the markets from several different perspectives, including vendor shipments. The interview process is an essential aspect as well. We do have a lot of granular analysis of the different shipments by vendor in the study and addenda prepared after the study was published if that is appropriate.

Forecasts reflect analysis of the market trends in the segment and related segments. Unit and dollar shipments are analyzed through consideration of dollar volume of each market participant in the segment. Installed base analysis and unit analysis is based on interviews and an information search. Market share analysis includes conversations with key customers of products, industry segment leaders, marketing directors, distributors, leading market participants, opinion leaders, and companies seeking to develop measurable market share.

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Over 200 in depth interviews are conducted for each report with a broad range of key participants and industry leaders in the market segment. We establish accurate market forecasts based on economic and market conditions as a base. Use input/output ratios, flow charts, and other economic methods to quantify data. Use in-house analysts who meet stringent quality standards. Interviewing key industry participants, experts and end-users is a central part of the study. Our research includes access to large proprietary databases. Literature search includes analysis of trade publications, government reports, and corporate literature.

Findings and conclusions of this report are based on information gathered from industry sources, including manufacturers, distributors, partners, opinion leaders, and users. Interview data was combined with information gathered through an extensive review of internet and printed sources such as trade publications, trade associations, company literature, and online databases. The projections contained in this report are checked from top down and bottom up analysis to be sure there is congruence from that perspective.

The base year for analysis and projection is 2009. With 2009 and several years prior to that as a baseline, market projections were developed for 2010 through 2016. These projections are based on a combination of a consensus among the opinion leader contacts interviewed combined with understanding of the key market drivers and their impact from a historical and analytical perspective. The analytical methodologies used to generate the market estimates are based on penetration analyses, similar market analyses, and delta calculations to supplement independent and dependent variable analysis. All analyses are displaying selected descriptions of products and services.

This research includes referencde to an ROI model that is part of a series that provides IT systems financial planners access to information that supports analysis of all the numbers that impact management of a product launch or large and complex data center. The methodology used in the models relates to having a sophisticated analytical technique for understanding the impact of workload on processor consumption and cost.

WinterGreen Research has looked at the metrics and independent research to develop assumptions that reflect the actual anticipated usage and cost of systems. Comparative analyses reflect the input of these values into models.

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The variables and assumptions provided in the market research study and the ROI models are based on extensive experience in providing research to large enterprise organizations and data centers. The ROI models have lists of servers from different manufacturers, Systems z models from IBM, and labor costs by category around the world. This information has been developed from WinterGreen research proprietary data bases constructed as a result of preparing market research studies that address the software, energy, healthcare, telecommunications, and hardware businesses.

YOU MUST HAVE THIS STUDY

First Responder Robots Market Shares, Strategies, and Forecasts, Worldwide, 2010-2016

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ABOUT THE COMPANY

WINTERGREEN RESEARCH, HAS A UNIQUE RESEARCH STRATEGY THAT RELATES TO IDENTIFYING MARKET TRENDS THROUGH READING AND INTERVIEWING OPINION LEADERS. BY USING AUTOMATED ANALYSIS OF SOCIAL NETWORK MATERIALS, BLOGS, AND ELECTRONIC ANALYTICS, THE MARKET TRENDS ARE IDENTIFIED. ANALYSIS OF THE ELECTRONIC EQUIVALENT OF 50,000 FEET OF PAPER PERMITS WINTERGREEN RESEARCH SENIOR ANALYSTS TO LEARN A LOT MORE ABOUT MARKETS, A LOT FASTER. THINKING ABOUT MARKET TRENDS IS A HIGH PRIORITY AT WINTERGREEN RESEARCH. AS WITH ALL RESEARCH, THE VALUE PROPOSITION FOR COMPETITIVE ANALYSIS COMES FROM INTELLECTUAL INPUT.

WINTERGREEN RESEARCH, FOUNDED IN 1985, PROVIDES STRATEGIC MARKET ASSESSMENTS IN TELECOMMUNICATIONS, COMMUNICATIONS EQUIPMENT, HEALTH CARE, INTERNET AND ADVANCED COMPUTER TECHNOLOGY. INDUSTRY REPORTS FOCUS ON OPPORTUNITIES THAT EXPAND EXISTING MARKETS OR DEVELOP MAJOR NEW MARKETS. THE REPORTS ASSESS NEW PRODUCT AND SERVICE POSITIONING STRATEGIES, NEW AND EVOLVING TECHNOLOGIES, AND TECHNOLOGICAL IMPACT ON PRODUCTS, SERVICES, AND MARKETS. MARKET SHARES ARE PROVIDED. LEADING MARKET PARTICIPANTS ARE PROFILED, AND THEIR MARKETING STRATEGIES, ACQUISITIONS, AND STRATEGIC ALLIANCES ARE DISCUSSED. THE PRINCIPALS OF WINTERGREEN RESEARCH HAVE BEEN INVOLVED IN ANALYSIS AND FORECASTING OF INTERNATIONAL BUSINESS OPPORTUNITIES IN TELECOMMUNICATIONS AND ADVANCED COMPUTER TECHNOLOGY MARKETS FOR OVER 30 YEARS.

THE STUDIES PROVIDE PRIMARY ANALYTICAL INSIGHT ABOUT THE MARKET PARTICIPANTS. BY PUBLISHING MATERIAL RELEVANT TO THE POSITIONING OF EACH COMPANY, READERS CAN LOOK AT THE BASIS FOR ANALYSIS. BY PROVIDING DESCRIPTIONS OF EACH MAJOR PARTICIPANT IN THE MARKET, THE READER IS NOT DEPENDENT ON ANALYST ASSUMPTIONS, THE INFORMATION BACKING THE ASSUMPTIONS IS PROVIDED, PERMITTING READERS TO EXAMINE THE BASIS FOR THE CONCLUSIONS.

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ABOUT THE PRINCIPAL AUTHORS

ELLEN T. CURTISS, TECHNICAL DIRECTOR, CO-FOUNDER OF WINTERGREEN RESEARCH, CONDUCTS STRATEGIC AND MARKET ASSESSMENTS IN TECHNOLOGY-BASED INDUSTRIES. PREVIOUSLY SHE WAS A MEMBER OF THE STAFF OF ARTHUR D. LITTLE, INC., FOR 23 YEARS, MOST RECENTLY AS VICE PRESIDENT OF ARTHUR D. LITTLE DECISION RESOURCES, SPECIALIZING IN STRATEGIC PLANNING AND MARKET DEVELOPMENT SERVICES. SHE IS A GRADUATE OF BOSTON UNIVERSITY AND THE PROGRAM FOR MANAGEMENT DEVELOPMENT AT HARVARD GRADUATE SCHOOL OF BUSINESS ADMINISTRATION. SHE IS THE AUTHOR OF RECENT STUDIES ON WORLDWIDE TELECOMMUNICATIONS MARKETS, THE TOP TEN INTERNET EQUIPMENT COMPANIES, THE TOP TEN CONTRACT MANUFACTURING COMPANIES, AND THE TOP TEN TELECOMMUNICATIONS MARKET ANALYSIS AND FORECASTS.

SUSAN EUSTIS, PRESIDENT, CO-FOUNDER OF WINTERGREEN RESEARCH, HAS DONE RESEARCH IN COMMUNICATIONS AND COMPUTER MARKETS AND APPLICATIONS. SHE HOLDS SEVERAL PATENTS IN MICROCOMPUTING AND PARALLEL PROCESSING. SHE HAS THE ORIGINAL PATENTS IN ELECTRONIC VOTING MACHINES. SHE HAS NEW PATENT APPLICATIONS IN FORMAT VARYING, MULTIPROCESSING, AND ELECTRONIC VOTING. SHE IS THE AUTHOR OF RECENT STUDIES OF THE REGIONAL BELL OPERATING COMPANIES' MARKETING STRATEGIES, INTERNET EQUIPMENT, BIOMETRICS, A STUDY OF INTERNET EQUIPMENT, WORLDWIDE TELECOMMUNICATIONS EQUIPMENT, TOP TEN TELECOMMUNICATIONS, DIGITAL LOOP CARRIER, WEB HOSTING, WEB SERVICES, AND APPLICATION INTEGRATION MARKETS. MS. EUSTIS IS A GRADUATE OF BARNARD COLLEGE.

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