
Military Robots Use Embedded Software to Improve Functionality

Picture by Susie Eustis

Mountains of Opportunity

WinterGreen Research, Inc.
Lexington, Massachusetts

www.wintergreenresearch.com

REPORT # SH24281615 513 PAGES 190 TABLES AND FIGURES 2010
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Sensor Network
Search And Rescue
Robot Navigation
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Military Robots Market Segments
Low Power Military Robots

Guns Mounted on Robots
Military Robots
Auto Assault-12 (AA-2)
Remote-Controlled Weapons
Neural Robotics
Robotex
Folding Transport Military Robots
Robotics
Robot
Common Operator Control Unit
Radio Control Modules
LEXINGTON, Massachusetts (January 22, 2010) – WinterGreen Research announces that it has a new study on Military Ground Robots and unmanned vehicles. The 2010 study has 513 pages, 190 tables and figures. Worldwide markets are poised to achieve significant growth as the military ground robots and unmanned vehicles are used globally. Growth comes as the nature of combat changes in every region while the globally integrated enterprise replaces nationalistic dominance.

Military robot automation of the defense process is the next wave of military evolution. As automated systems and networking complement the Internet, communication is facilitated on a global basis. The military charter is shifting to providing protection against terrorists and people seek to maintain a safe, mobile, independent lifestyle. Much of the military 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 Military Robots is dependent on budget constraints. The use of Military 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 military.

Robots are automating military ground systems, permitting vital protection of soldiers and people in the field, creating the possibility of reduced fatalities. 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.
What is good for a robotic unmanned ground vehicle is also good for an unmanned vehicle. 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 military services. This is a phenomenon that will have a major impact on the way we run the military and police societies.

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 battlefield create a better, more flexible, more cost efficient military.

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. Military robots have evolved from units used in the field to manage different situations that arise. Robots save lives.

Defense security systems have an emphasis on causality reduction during combat. This has resulted in investment in robotics technology that is useful. Robotic research is on the fast track for government spending. Congress passed a law making it an Army goal that by 2015, one-third of the operational ground combat vehicles are unmanned. The US Navy and Marines have similar initiatives underway.

Military 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. Military 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 $831 million in 2009 are anticipated to reach $9.7 billion by 2016.
OPPORTUNITY ABOUNDS

WinterGreen Research, Inc.
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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. Military Robot Company Profiles
QinetiQ North America / Foster-Miller
Robotic Technology Inc.
Versa / Allen-Vanguard
American Reliance Inc. (AMREL)
Gostai
VIA Technologies
Selected Manufacturers of Military Robots
Government Agencies and Other Organisations
Using Military Robots
Report Methodology

This is the 428th 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 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.
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 reference 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.
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


Table of Contents

Military Robots Executive Summary

MILITARY GROUND ROBOT EXECUTIVE SUMMARY ES-1
Military Ground Robot Market Driving Forces ES-1
Future Combat System (FCS) Program Transitions to ES-2
Army Brigade Combat Team Modernization ES-2
Robots Operate Independently 5
Military Robots Market Driving Forces ES-6
Military Ground Robot Market Shares ES-7
BAE Systems Ant Size Robot ES-8
Military Ground Robot Market Forecasts
Military Robots Market Description And Market Dynamics

1. MILITARY ROBOTS MARKET DESCRIPTION AND MARKET DYNAMICS 1-1
1.1 Delivering Robotic Capabilities to Combat Teams 1-1
1.2 Military Robot Scope 1-2
1.2.1 Military Robot Applications 1-3
1.3 Army's G8 Futures office 1-6
1.3.1 Delivering Capabilities to the Army's Brigade Combat Teams 1-8
1.3.2 Transition Between The Current Market And Where The Market Is Going 1-9
1.3.3 Different Sizes of UGVs 1-10
1.4 Types of Military Robots 1-12
1.4.1 Telerob Explosive Observation Robot and Ordnance Disposal Universal Disrupter Mount 1-12
1.4.2 QinetiQ North America Talon® Robots 1-15
1.4.3 General Dynamics Next-Generation CROWS II Increases Soldiers Safety 1-17
1.4.4 Soldier Unmanned Ground Vehicle from iRobot 1-18
1.5 UGV Enabling Technologies 1-19
1.5.1 Sensor Processing 1-20
1.5.2 Machine Autonomy 1-21
1.6 Military Robot Bandwidth 1-22
1.6.1 UGV Follow-Me Capability 1-22
1.6.2 Communications Bandwidth 1-23
1.6.3 Battery Power 1-23
1.6.4 Combination Of Batteries Linked To Onboard Conventional Diesel 1-24
1.7 SUGVs 1-25
1.7.1 Mid-Size Category UGV 1-25
1.7.2 Large UGV 1-26
1.7.3 U.S. Army Ground Combat Vehicle 1-27
1.7.4 TARDEC 1-28
1.7.5 Tacom 1-29

Military Robots Market Shares And Market Forecasts

2. MILITARY GROUND ROBOT MARKET SHARES AND FORECASTS 2-1
2.1 Military Ground Robot Market Driving Forces 2-1
2.1.1 Future Combat System (FCS) Program Transitions to Army Brigade Combat Team Modernization 2-2
2.1.2 Robots Operate Independently 2-2
2.1.3 Military Robots Market Driving Forces 2-5
2.2 Military Ground Robot Market Shares 2-6
2.2.1 General Dynamics Robotic Systems 2-9
2.2.2 Northrop Grumman Remotec Andros 2-10
2.2.3 Northrop Grumman / Remotec 2-10
2.2.4 Northrop Grumman Remotec UK Wheelbarrow Robots 2-12
2.2.5 iRobot Government & Industrial Robots 2-12
2.2.6 QinetiQ / Foster-Miller 2-15
2.2.7 Qinetiq / Foster-Miller TALON EOD robots 2-16
2.2.8 NAVEODTECHDIV Funds QinetiQ /
## Military Robots Product Description

### 3. MILITARY ROBOTS PRODUCT DESCRIPTION 3-1

#### 3.1 iRobot 3-1

- **3.1.1** iRobot® PackBot® 510 with EOD Kit 3-2
- **3.1.2** iRobot® PackBot® 510 with First Responder Kit 3-3
- **3.1.3** iRobot® Warrior™ 700 3-4
- **3.1.4** iRobot® PackBot® 500 with RedOwl Sniper Detection Kit 3-5
- **3.1.5** iRobot® PackBot® 510 with FasTac Kit 3-8
- **3.1.6** iRobot® PackBot® 500 with ICx Fido® Explosives Detection Kit 3-8
- **3.1.7** iRobot® PackBot® 510 with HAZMAT Detection Kit 3-10
- **3.1.8** iRobot® SeaGlider 3-11
- **3.1.9** iRobot® Ranger 3-12
- **3.1.10** iRobot Aware 2.0 Robot Intelligence Software 3-13

#### 3.2 Northrop Grumman 3-14

- **3.2.1** Andros HD-1 : Compact, Lightweight Platform 3-14
- **3.2.2** Northrop Grumman Vehicle Data / Communication Links 3-17
- **3.2.3** Northrop Grumman F6A - Versatile Platform 3-17
- **3.2.4** Northrop Grumman Vehicle Data / Communication Links 3-20
- **3.2.5** Northrop Grumman Mark V-A1 - Highly Versatile, Robust, All-Terrain Platform 3-20
- **3.2.6** Northrop Grumman V-A1 Features 3-22
- **3.2.7** Northrop Grumman Vehicle Data / Communication Links 3-23
- **3.2.8** Northrop Grumman Mini-ANDROS II - Compact,
Capable, Two-Man-Portable Platform 3-23
3.2.9 Northrop Grumman Mini Andros II Features 3-25
3.2.10 Northrop Grumman Vehicle Data / Communication Links 3-26
3.2.11 Northrop Grumman Wolverine - Outdoor, All-Terrain Workhorse 3-26
3.2.12 Northrop Grumman Wolverine 3-28
3.2.13 Northrop Grumman Vehicle Data / Communication Links 3-29
3.3 General Dynamics 3-30
3.3.1 General Dynamics Next-Generation CROWS II Increases Soldiers Safety 3-31
3.4 Kongsberg 3-33
3.4.1 Kongsberg CrowsII Military Robot System 3-33
3.4.2 Kongsberg Addresses Underwater Diver Incursion 3-34
3.4.3 Kongsberg Norwegian Mine Reconnaissance Program 3-34
3.5 BAE Systems 3-36
3.5.1 BAE Systems Ant Size Robot 3-36
3.5.2 BAE Personal Robots 3-38
3.5.3 BAE Systems Large UGV 3-39
3.6 Lockheed Martin 3-39
3.6.1 Lockheed Martin Multifunction Utility/Logistics and Equipment Vehicle (MULE) 3-40
3.6.2 Lockheed Martin Large NUWC Manta UUV 3-42
3.6.3 Lockheed Martin Large NUWC Manta UUV For The Offshore Oil Industry 3-44
3.6.4 Lockheed Martin AN/WLD-1 Remote Minehunting System (RMS) 3-44
3.7 QinetiQ North America TALON® Robots 3-48
3.7.1 QinetiQ North America Talon® Robots Universal Disrupter Mount 3-50
3.7.2 Qinetiq / Foster-Miller 3-52
3.7.3 Foster-Miller TALON Family of Military Robots 3-53
3.7.4 Foster-Miller New: Two-Way Hailer 3-54
3.7.5 Foster-Miller TALON Responder 3-54
3.7.6 Foster-Miller EOD Robots 3-56
3.7.7 Foster-Miller SWORDS Robots 3-58
3.7.8 Foster-Miller CBRNE/Hazmat Robots 3-60
3.7.9 Foster-Miller TALON SWAT/MP 3-61
3.7.10 Foster-Miller MAARS Robot 3-62
3.7.11 Foster-Miller Dragon Runner Field Transformable SUGV 3-64
3.7.12 Foster Miller TALON GEN IV Engineer 3-65
3.7.13 Foster Miller TAGS-CX Unmanned Vehicle 3-66
3.7.14 QinetiQ TAGS-CX Unmanned Vehicle 3-67
3.7.15 Combat Engineer Route Clearance Robot 3-70
3.7.16 Talon MAARS™ Robots 3-75
3.8 Telerob 3-78
3.8.1 Telerob - EOD / IEDD Equipment, EOD Robots and Vehicles 3-78
3.8.2 Telerob TEO Dor Heavy Duty Explosive Ordnance Disposal (EOD) Robot 3-80
3.8.3 Telerob Telemax High-Mobility EOD Robot 3-81
3.8.4 Telerob EOD / IEDD Service Vehicles 3-81
3.9 Versa / Allen Vanguard 3-86
3.9.1 Allen Vanguard VANGUARD® ROV 3-88
3.9.2 Allen Vanguard Defender Robot/ROV 3-97
3.9.3 Allen Vanguard ROV-Track CBRNE 3-102
3.10 Boston Dynamics 3-106
3.10.1 Boston Dynamic LittleDog - The Legged Locomotion
Learning Robot 3-107
3.10.2 Boston Dynamic PETMAN - BigDog gets a Big Brother 3-109
3.10.3 Boston Dynamic RHex Devours Rough Terrain 3-110
3.10.4 Boston Dynamic RiSE: Climbing Robot 3-112
3.11 Robotic Technology 3-115
3.11.1 RTI Military Memetics (Information Propagation, Impact, and Persistence – Info PIP) Project 3-116
3.11.2 RTI Humanoid And Legged Robots 3-116
3.12 Fujitsu Service Robot (enon) 3-118
3.13 Gostai SOS 3-119
3.14 Kairos Autonomi 3-121
3.15 Scripps Bluefin Robotics Spray glider UUV 3-122
3.15.1 Scripps Bluefin Robotics Spray Glider Sensors, Navigation, and Communications 3-123
3.16 Boeing’s AN/BLQ-11 Long-term Mine Reconnaissance System (LMRS), 3-129
3.17 Boeing Advanced Information Systems 3-133
3.18 Sonatech 3-135
3.19 BAE Systems Underwater Systems 3-135
3.20 Gunsmith Jerry Baber 3-136
3.21 IVTT Program Intelligent Vehicle Robot Hops Over Walls 3-137
3.21.1 Robotic Technology Precision Urban Hopper 3-139
3.21.2 Robotic Technology Robot 3-139

Military Robots Technology

4. MILITARY ROBOT TECHNOLOGY 4-1
4.1 Military Robot Enabling Technology 4-1
4.2 Intel Integrated Circuit Evidence-Based Innovation 4-3
4.2.1 Open Robotic Control Software 4-5
4.2.2 Military Robot Key Technology 4-6
4.2.3 PC-Bots Visual Simultaneous Localization & Mapping 4-10
4.3 Advanced Robot Technology: Navigation, Mobility, And Manipulation 4-11
4.3.1 Robot Intelligence Systems 4-11
4.3.2 Real-World, Dynamic Sensing 4-12
4.4 User-Friendly Interfaces 4-12
4.4.1 Tightly-Integrated, Electromechanical Robot Design 4-13
4.5 Field Based Robotics Iterative Development 4-14
4.5.1 Next-Generation Products Leverage Model 4-15
4.5.2 Modular Robot Structure And Control 4-15
4.5.3 Lattice Architectures 4-16
4.5.4 Chain / Tree Architectures 4-16
4.5.5 Deterministic Reconfiguration 4-16
4.5.6 Stochastic Reconfiguration 4-17
4.5.7 Modular Robotic Systems 4-17
4.6 Intel Military Robot Cultivating Collaborations 4-18
4.7 Hitachi Configuration Of Robots Using The SuperH Family 4-18
Hitachi Concept of MMU And Logic Space 4-19
Robotic Use of Thin Film Lithium-Ion Batteries

4.8 Network Of Robots And Sensors
4.8.1 Sensor Networks Part Of Research Agenda
4.8.2 Light Sensing
4.8.3 Acceleration Sensing
4.8.4 Chemical Sensing

4.9 Military Robot Technology Functions

4.10 Carbon Nanotube Radio

4.11 Military Robot Funded Programs
4.11.1 Future Combat System (FCS) Program
Transitions to Army Brigade Combat Team Modernization
4.11.2 XM1216 Small Unmanned Ground Vehicle (SUGV)
4.11.3 UUV Sub-Pillars
4.11.4 Hovering Autonomous Underwater Vehicle (HAUV)
4.11.5 Alliant
4.11.6 ATSP is a Government-Wide Contracting Vehicle
4.11.7 Quick, efficient contracting vehicle
4.11.8 Facilitates Technology And Insertion Into Fielded Systems
4.11.9 Access to all Northrop Grumman sectors

4.12 iRobot Technology
4.12.1 iRobot AWARE Robot Intelligence Systems
4.12.3 iRobot User-Friendly Interface
4.12.4 iRobot Tightly-Integrated Electromechanical Design.

4.13 Evolution Robotics Technology Solutions
Evolution Robotics Example Applications

4.14 NASA Exploratory Robots
4.14.1 NASA Spirit Robot
4.14.2 NASA's Mars Exploration Rover Spirit
Sample NASA Spirit Sol-By-Sol Summary:
4.14.3 Opportunity Update
4.14.4 NASA Opportunity Sol-By-Sol Summary
4.14.5 NASA Opportunity Robot

4.15 Remote Controlled Robot Missions
4.15.1 Auto-Navigation System Takes Pictures
Of The Nearby Terrain
4.15.2 Mars Robotic Rovers Spirit And Opportunity

4.16 Self-Reproducing Machines
4.16.1 M-TRAN Modular Transformer
4.16.2 Attitude Control In Space By Control Moment Gyros

5. MILITARY ROBOT COMPANY PROFILES
5.1 American Reliance Inc. (AMREL)
5.1.1 Amrel Field Expedient Robot Controls Interoperability
5.1.2 Amrel Small-Footprint, Highly Integrated,
Rugged Mobile Computing Solutions
5.2 BAE Systems

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5.2.1 BAE Systems Ant Size Robot 5-3
5.2.2 BAE Personal Robots 5-5
5.2.3 BAE Systems Large UGV 5-5
5.3 Boston Dynamics 5-5
5.4 Doosan Infracore / Bobcat Company 5-6
5.5 General Dynamics 5-7
5.5.1 General Dynamics Combat Autonomous Mobility System (CAMS) 5-7
5.5.2 General Dynamics $60 Million Contract by U.S. Air Force for Mission Operations Support 5-8
5.5.3 General Dynamics Revenue 5-9
5.5.4 General Dynamics Business Group Revenue 5-10
5.5.5 General Dynamics Combat Systems Awards 5-13
5.5.6 General Dynamics Land Systems $24 Million Contract To Supply Commanders Remote Operated Weapons 5-13
5.5.7 General Dynamics Canadian Government’s LAV III Upgrade Program 14
5.5.8 General Dynamics U.S. Military Vehicle Business 5-15
5.6 Gostai 5-16
5.7 iRobot 5-16
5.7.1 iRobot Home Robots 5-17
5.7.2 iRobot Government and Industrial Robots 5-17
5.7.3 iRobot Locations 5-17
5.7.4 iRobot Military Programs 5-17
5.7.5 iRobot Revenue 5-19
5.7.6 iRobot Geographic Information 5-25
5.7.7 iRobot Significant Customers 5-25
5.7.8 iRobot Description 5-25
5.7.9 iRobot Industry Segment, Geographic Information and Significant Customers 5-27
5.7.10 iRobot Home Robots 5-27
5.7.11 iRobot Government and Industrial 5-27
5.7.12 iRobot Geographic Information 5-32
5.7.13 iRobot Home Robot Division Revenue And Units Shipped 5-33
5.7.14 iRobot Government And Industrial Division 5-34
5.7.15 iRobot Strategy 5-36
5.7.16 iRobot Government and Industrial Products 5-38
5.7.17 iRobot Home Robots 5-42
5.7.18 iRobot Government & Industrial Robots 5-42
5.7.19 iRobot Partners and Strategic Alliance 5-43
5.7.20 iRobot / Boeing Company 5-43
5.7.21 iRobot / Advanced Scientific Concepts 5-43
5.7.22 iRobot / TASER International, 5-44
5.8 Kongsberg 5-44
5.8.1 Increased Scope of Kongsberg CROWS II Framework Agreement 5-45
5.8.2 Kongsberg Ownership 5-45
5.8.3 Kongsberg Manufacturing locations 5-46
5.8.4 Kongsberg Operations Revenue 5-47
5.8.5 Kongsberg Employees 5-47
5.9 Lockheed Martin 5-48
5.9.1 Lockheed Martin Defense Department Positioning 5-49
5.10 Northrop Grumman 5-53
5.10.1 Northrop Grumman Remotec Robots 5-54
5.11 Qinetiq / Foster-Miller 5-55
5.11.1 QinetiQ UK MOD and the US DoD provide target markets 5-56
5.12 QinetiQ North America / Foster-Miller 5-75
  5.12.1 QinetiQ North America / Foster-Miller 5-77
  5.12.2 QinetiQ Common Robotic Controller (CRC) 5-77
  5.12.3 QinetiQ North America World-Class Technology 5-78
  5.12.4 QinetiQ North America Technology Solutions Group 5-79

5.13 Robotic Technology Inc. 5-79
  5.13.1 RTI Energetically Autonomous Tactical Robot (EATR) Project 5-80
  5.13.2 RTI Intelligent Vehicle Technology Transfer (IVTT) Program 5-81
  5.13.3 Robotic Technology Precision Urban Hopper 5-84
  5.13.4 Robotic Technology Robot 5-85

5.14 Telerob 5-85
  5.14.1 Telerob - EOD / IEDD Equipment, EOD Robots and Vehicles 5-86
  5.14.2 TEDQor Heavy Duty Explosive Ordnance Disposal (EOD) Robot 5-87
  5.14.3 Telerob Telemax High-Mobility EOD Robot 5-88
  5.14.4 Telerob EOD / IEDD service vehicles 5-88
  5.14.5 Telerob’s Electrical Force-Reflecting-Manipulators (FRMs) 5-91
  5.14.6 American Crane and Equipment Corp and Telerob Partnership 5-92

5.15 Versa / Allen-Vanguard 5-93
  5.15.1 Allen Vanguard Trading Suspended on Stock 5-94
  5.15.2 Allen Vanguard HAL® EOD / IEDD / Search Tasks Hook and Line System 5-96
  5.15.3 Versa / Allen Vanguard Equinox I 5-99
  5.15.4 Versa / Allen Vanguard Field Test Set 5-100
  5.15.5 Allen-Vanguard Revenue 5-100

5.16 VIA Technologies 5-103
  5.16.1 VIA Technologies Complete Platform Provider 5-104
  5.16.2 VIA Technologies Market Leadership 5-104
  5.16.3 VIA Technologies Global Operations 5-105
  5.16.4 VIA Technologies Meeting the Market Challenge 5-106
  5.16.5 VIA Technologies Dynamic Fabless Business Model 5-107

5.17 Selected Manufacturers of Military Robots 5-107
5.18 Government Agencies and Other Organisations
Using Military Robots 5-111
  5.18.1 RTI Intelligent Vehicle Technology Transfer (IVTT) Program 5-114

Military Robots Contracts

6. MILITARY ROBOT CONTRACTS 6-1
6.1.1 SPAWAR 6-2
6.1.2 Navy Explosive Ordnance Disposal 6-3
6.1.3 Future Combat Systems Program Cuts
6.1.4 U.S. Army Small Unmanned Ground Vehicle (SUGV)
6.2 GCV Created Due To Termination Of The Future Combat Systems And Its Former Manned Ground Vehicles
6.2.1 Army To End Robotic Vehicle, Aircraft Efforts
6.2.2 MULE Termination
6.2.3 Armed Robotic Vehicle Assault (Light) Continuation
6.2.4 Robotic Systems Chartered by JPO
6.2.5 U.S. Army Small Unmanned Ground Vehicle
6.3 Selected US 2010 Military Budget for Robotics
6.3.1 Defense Advanced Research Projects Agency, DARPA Tactical Teams
6.3.2 Predator Drones
6.3.3 DARPA Budget for Robust Robotics, 2010
6.3.4 Robust Robotics FY 2008 Accomplishments
6.3.5 Robust Robotics FY Accomplishments 2009
6.3.6 Robust Robotics FY 2010 Plans: Accomplishments
6.3.7 Cognitive Networking Use of Military Robotics
6.3.8 Local Area Network Droids (LANdroids)
6.3.9 Brood of Spectrum Supremacy (BOSS) Effort
6.3.10 Situation-Aware Protocols in Edge Network Technologies (SAPIENT)
6.3.11 Local Area Network droids (LANdroids)
6.3.12 Brood of Spectrum Supremacy (BOSS)
6.3.13 Recognize Improvised Explosive Devices and Report (RIEDAR)
6.3.14 Crosshairs
6.3.15 Counter Improvised Explosives Laboratories (CIEL)
6.3.16 Vulcan
6.3.17 BioRobotics and BioMechanics
6.3.18 Front-end Robotics Enabling Near-term Demonstration (FREND)
6.4 Military and First Responder Development Programs
6.4.1 Multi Dimensional Mobility Robot (MDMR) Spending
6.5 Customers For Government Robotic Products, And Research And Development Contracts:
6.5.1 General Dynamics Land Systems $24 Million Contract To Supply Commanders Remote Operated Weapons
6.5.2 Kongsberg and General Dynamics co-producing CROWS and CROWS II
6.5.3 General Dynamics Awarded $24 Million to Provide Remote Weapon Systems That Protect Tank Commanders
6.5.4 Kongsberg
6.5.5 Vulcan Unmanned Maritime Vehicle (UMV) And Unmanned Ground Vehicle (UGV) Programs
6.5.6 DARPA End-To-End Unmanned Vehicle System Solution
6.5.7 Unmanned Vehicles UMV and UGV Submarkets
6.5.8 Allen-Vanguard Spares For Symphony Electronic Counter Measures (ECM) Program
6.6 Military / Government and University Agencies
6.7 Military Robots Contracts
6.7.1 Talon 6-50
6.7.2 American Reliance Solution Found for Battlefield Robot Control Problem
6.7.3 QinetiQ NA Ships First-Responder Robots to Navy
6.7.4 iRobot Wins $3.75M Army Contract to Develop Warrior Robot
6.7.5 iRobot Wins $286 Million U.S. Army Contract
6.7.6 Counter Radio-Controlled Improvised Explosive Device Electronic Warfare Spiral 3 systems ("CREW3"
6.7.7 U.S. Army Has Agreed To Buy Up To 7,500 Electronic Bomb Jammer Systems From Its Partner Lockheed Martin Allen-Vanguard
6.7.8 Jan. 31, 2008 Allen-Vanguard Confirms U.S. Department of Defense Intent To Establish an IDIQ Contract For Up to 7,500 Symphony IED Countermeasure Systems
6.7.9 iRobot
6.7.10 iRobot Order for Six Seagliders™ from the University of Western Australia
6.7.11 iRobot Corp. (Nasdaq: IRBT) Order Totaling $16.8 million from the U.S. Army Program Executive Office for Simulation, Training, and Instrumentation (PEO STRI)
6.7.12 General Dynamics Combat Autonomous Mobility System (CAMS)
6.7.13 Robotic Technology Robot

List of Tables and Figures

Military Robots Executive Summary

Table ES-1
Military Robots Market Driving Forces
Figure ES-2
Military Ground Robots Market Shares, Dollars, Worldwide, 2009
Figure ES-3
BAE Military Robot in Development
Figure ES-4
Total Military Robot Market Forecasts, Dollars, Worldwide,
2010-2016

Military Robots Market Description And Market Dynamics

Table 1-1
Military Robot Applications
Table 1-1 (Continued)
Military Robot Applications
Table 1-2
Military Armed Robotic Applications
Table 1-3
What the Soldier Wants In Robotic Systems
Figure 1-4
Telerob Explosive Observation Robot and Ordnance Disposal Unit
Figure 1-5
Telerob Explosive Ordnance Disposal EOD System For
### Military Robots Market Shares and Market Forecasts

<table>
<thead>
<tr>
<th>Table/Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 2-1</td>
<td>2-5</td>
</tr>
<tr>
<td>Military Robots Market Driving Forces</td>
<td>2-6</td>
</tr>
<tr>
<td>Figure 2-2</td>
<td>2-6</td>
</tr>
<tr>
<td>Military Ground Robots Market Shares, Dollars, Worldwide, 2009</td>
<td>2-7</td>
</tr>
<tr>
<td>Table 2-3</td>
<td>2-7</td>
</tr>
<tr>
<td>Military Ground Robot Market Shares, Dollars, Worldwide, 2009</td>
<td>2-7</td>
</tr>
<tr>
<td>Figure 2-4</td>
<td>2-9</td>
</tr>
<tr>
<td>Next-Generation General Dynamics CROWS II</td>
<td>2-9</td>
</tr>
<tr>
<td>Figure 2-5</td>
<td>2-10</td>
</tr>
<tr>
<td>Northrop Grumman Remotec HD-1</td>
<td>2-12</td>
</tr>
<tr>
<td>Figure 2-6</td>
<td>2-12</td>
</tr>
<tr>
<td>iRobot Strategic Alliances</td>
<td>2-14</td>
</tr>
<tr>
<td>Figure 2-7</td>
<td>2-14</td>
</tr>
<tr>
<td>iRobot® PackBot® 510 with EOD Kit</td>
<td>2-16</td>
</tr>
<tr>
<td>Figure 2-8</td>
<td>2-16</td>
</tr>
<tr>
<td>Foster-Miller TALON SWAT/MP</td>
<td>2-19</td>
</tr>
<tr>
<td>Figure 2-9</td>
<td>2-19</td>
</tr>
<tr>
<td>BAE Military Robot in Development</td>
<td>2-20</td>
</tr>
<tr>
<td>Figure 2-10</td>
<td>2-20</td>
</tr>
<tr>
<td>Telerob Heavy-Duty EOD Robot Product</td>
<td>2-22</td>
</tr>
<tr>
<td>Figure 2-11</td>
<td>2-22</td>
</tr>
<tr>
<td>Robotic Technology Robot Goes Over the Fence</td>
<td>2-25</td>
</tr>
<tr>
<td>Figure 2-12</td>
<td>2-25</td>
</tr>
<tr>
<td>Military Ground and First Responder Robots Market Shares, Dollars, Worldwide, 2009</td>
<td>2-26</td>
</tr>
<tr>
<td>Figure 2-13</td>
<td>2-26</td>
</tr>
<tr>
<td>Military Ground and First Responder Robots Market Shares, Dollars, Worldwide, 2009</td>
<td>2-27</td>
</tr>
<tr>
<td>Figure 2-14</td>
<td>2-27</td>
</tr>
<tr>
<td>Total Military Robot Market Forecasts, Dollars, Worldwide, 2010-2016</td>
<td>2-28</td>
</tr>
<tr>
<td>Figure 2-15</td>
<td>2-28</td>
</tr>
<tr>
<td>Total Military Robot Market Forecasts, Units, Worldwide, 2010-2016</td>
<td>2-29</td>
</tr>
<tr>
<td>Figure 2-16</td>
<td>2-29</td>
</tr>
<tr>
<td>Total Military Robot Market Forecasts, Dollars, Worldwide, 2010-2016</td>
<td>2-30</td>
</tr>
<tr>
<td>Figure 2-17</td>
<td>2-30</td>
</tr>
<tr>
<td>Mid Range Military Robot Market Forecasts, Units,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Military Robots Product Description

Figure 3-1 3-2
iRobot® PackBot® 510 with EOD Kit
Figure 3-2 3-3
iRobot® PackBot® 510 with First Responder Kit
Figure 3-3 3-4
iRobot® Warrior™ 700
Figure 3-4 3-5
iRobot® PackBot® 510 with FasTac Kit
Figure 3-5 3-6
iRobot® PackBot® 500 with Mapping Kit
Figure 3-6  
iRobot® PackBot® 510 with Engineer Kit  
Figure 3-7  
iRobot® PackBot® 510 with FasTac Kit  
Figure 3-8  
iRobot® PackBot® 500 with ICx Fido® Explosives Detection Kit  
Figure 3-9  
iRobot® PackBot® 510 with HAZMAT Detection Kit  
Figure 3-10  
iRobot® SeaGlider  
Figure 3-11  
iRobot® Ranger  
Figure 3-12  
Northrop Grumman Remotec HD-1  
Table 3-13  
Northrop Grumman HD-1 Features  
Figure 3-14  
Northrop Grumman F6A - Versatile Platform  
Table 3-15  
Northrop Grumman F6A Features  
Figure 3-16  
Northrop Grumman Mark V-A1 - Highly Versatile, Robust, All-Terrain Platform  
Table 3-17  
Northrop Grumman V-A1 Features  
Table 3-18  
Northrop Grumman Vehicle Data / Communication Links  
Figure 3-19  
Northrop Grumman Mini-ANDROS II  
Table 3-20  
Northrop Grumman Mini Andros II Features  
Table 3-21  
Northrop Grumman Vehicle Data / Communication Articulating Tracks Links  
Figure 3-22  
Northrop Grumman Wolverine - Outdoor, All-Terrain Workhorse  
Table 3-23  
Northrop Grumman Wolverine Features  
Table 3-24  
Data Links For Operator Control Of The ANDROS Vehicle IN Marshes, Swamps And Snow  
Figure 3-25  
Next-Generation General Dynamics CROWS II  
Figure 3-26  
Kongsberg HUGIN 1000 Autonomous Under Water Vehicle - AUV  
Figure 3-27  
BAE Military Robot in Development  
Figure 3-28  
Lockheed Martin Multifunction Utility/Logistics and Equipment Vehicle (MULE)  
Table 3-29  
Lockheed Martin MULE models: Armed Robotic Vehicle - Assault (Light), Transport and Countermine.  
Figure 3-30  
Lockheed Martin Large NUWC Manta UUV  
Figure 3-31

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Lockheed Martin AN/WLD-1 Remote Minehunting System (RMS)
Table 3-32
3-51
QinetiQ North America Talon® Robots Universal Disrupter Mount Close-up
Figure 3-33
3-54
Foster-Miller Talon Responder
Figure 3-34
3-56
Foster-Miller EOD Robots
Figure 3-35
3-58
Foster-Miller Swords Robots
Figure 3-36
3-60
Foster-Miller CBRNE/Hazmat Robots
Figure 3-37
3-61
Foster-Miller TALON SWAT/MP
Figure 3-38
3-62
Foster-Miller MAARS Robot
Figure 3-39
3-64
Foster-Miller Dragon Runner Field Transformable SUGV
Figure 3-40
3-65
Foster Miller TALON GEN IV Engineer
Figure 3-41
3-66
Foster Miller TAGS-CX Unmanned Vehicle
Table 3-42
3-68
TAGS-CX Unmanned Vehicle Payloads
Figure 3-43
3-69
QinetiQ Talon TAGS-CX Unmanned Vehicle
Figure 3-44
3-70
QinetiQ Talon Combat Engineer Route Clearance Robot Unmanned Vehicle
Figure 3-45
3-71
QinetiQ Talon TAGS-CX Unmanned Vehicle
Figure 3-46
3-72
QinetiQ Generation IV Talon Robot Inspecting Vehicle
Figure 3-46 (Continued)
3-73
QinetiQ Generation IV Talon Robot Inspecting Vehicle
Figure 3-47
3-74
QinetiQ Generation IV Talon Robot
Figure 3-48
3-75
MAARS Talon Robot
Figure 3-49
3-76
QinetiQ Foster-Miller Talon Military Robot
Figure 3-50
3-77
QinetiQ Foster-Miller Talon Military Robot Modular CBRNE
Table 3-51
3-79
Telerob’s Key Business Areas
Figure 3-52
3-80
Telerob Heavy-Duty EOD Robot Product
Figure 3-53
3-82
Telerob TeleMAX Small Bomb Disposal EOD Heavy-Duty Robots
Figure 3-54
3-83
Telerob teleMAX
Figure 3-55
3-84
Telerob Bomb Disposal Vehicles
Figure 3-56 3-85  
Telerob Bomb Disposal Vehicle Interior  
Table 3-57 3-87  
Allen Vanguard Equipment Applications  
Figure 3-58 3-88  
Allen Vanguard VANGUARD® ROV  
Table 3-59 3-90  
Allen Vanguard® ROV Key Features  
Table 3-59 (Continued) 3-91  
Allen Vanguard® ROV Key Features  
Table 3-60 3-92  
Allen Vanguard VANGUARD® ROV Command Console Key Features  
Table 3-61 3-93  
Vanguard Rov Physical Characteristics:  
Figure 3-62 3-97  
Allen Vanguard Defender Robot/ROV  
Table 3-63 3-99  
Allen-Vanguard Defender Standard Equipment  
Table 3-64 3-100  
Allen Vanguard Defender Technical Data:  
Table 3-64 (Continued) 3-101  
Allen Vanguard Defender Technical Data:  
Figure 3-65 3-102  
Allen Vanguard ROV-Track CBRNE  
Table 3-66 3-103  
Allen Vanguard ROV-Track CBRNE  
Table 3-67 3-104  
ROV-Track CBRNE Remote Response System Features  
Figure 3-68 3-106  
Boston Dynamic BigDog - Advanced Rough-Terrain Robot  
Figure 3-69 3-107  
Boston Dynamic LittleDog - The Legged Locomotion Learning Robot  
Figure 3-70 3-109  
Boston Dynamic PETMAN - BigDog gets a Big Brother  
Figure 3-71 3-110  
Boston Dynamic RHex Devours Rough Terrain  
Figure 3-72 3-112  
Boston Dynamic RiSE: Climbing Robot  
Figure 3-73 3-113  
Boston Dynamic SquishBot - Advanced Chemistry Robot that Inches, Climbs and Deforms  
Figure 3-74 3-119  
Gostai SOS  
Figure 3-75 3-122  
Scripps Bluefin Robotics Spray Glider  
Table 3-76 3-124  
Spray Swimming Robot  
Table 3-77 3-125  
Spray Swimming Robot Navigation Positioning  
Table 3-78 3-126  
Spray Swimming Robot Navigation Applications
Military Robots Technology

Table 4-1  Military Robotics Enabling Technology  4-2
Table 4-2  Military Robots Development Challenges  4-3
Table 4-3  Military Robot Integrated Circuit-Based Innovation Functions  4-4
Table 4-3 (Continued)  4-5
Table 4-4  Military Robot Integrated Circuit-Based Innovation Functions  4-6
Table 4-5  Military Robot Key Technology  4-7
Table 4-6  Robot Communications Key Technology  4-8
Table 4-7  Military Robot Key Navigation Technologies  4-9
Table 4-8  Human-Robot Interaction  4-10
Table 4-9  Visual Simultaneous Localization & Mapping Functions Relevant to Robotics  4-20
Figure 4-10  Hitachi Modular Robot Configuration  4-22
Table 4-10  Military Robot Key Product Technology Factors  4-23
Table 4-10 (Continued)  4-24
Table 4-11  Military Robot Key Product Technology Factors  4-27
Table 4-11 (Continued)  4-28
Table 4-12  Military Robot Technology Functions  4-34
Table 4-12 (Continued)  4-35
Table 4-13  Missions (UUV “Sub-Pillars”) In Priority Order  4-35
Figure 4-14  UUVMP Vision  4-36
Table 4-14  Alliant Features:  4-37
Table 4-14 (Continued)  4-38
Alliant Features:  4-39
Table 4-15  Evolution Robotics Technology Solutions  4-40
Evolution Robotics Object Recognition

Evolution Robotics Applications

Sprit Robot On Mars.

Spirit's Winter Panorama

Opportunity Maneuvers Around Steeper Slopes in "Victoria Crater"

Remote Controlled Robot Missions Technologies of Broad Benefit

Military Robots Company Profiles

BAE Military Robot in Development

iRobot Robots Dangerous Tasks Performed

iRobot Home Robots vs, Military and First Responder Robots

Kongsberg Military Robot Market Segments

Lockheed Martin F35B In-Flight STOVL Operations

Lockheed Martin Linking Legacy Radio Waveforms Into AMF JTRS

Lockheed Martin C-139 J Cargo Plane

Lockheed Martin Next Generation Identification Systems

Lockheed Martin Linking Legacy Radio Waveforms to AMF JTRS

QinetiQ North America Technology Solutions Group Capabilities

QinetiQ 2009 Positioning

QinetiQ Highlights During 2009:

US Target Market Overview
### Military Robots Contracts

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-1</td>
<td>6-1</td>
</tr>
<tr>
<td>Table</td>
<td>6-2</td>
</tr>
<tr>
<td>Military Robot Research and Development Projects</td>
<td></td>
</tr>
<tr>
<td>Figure 6-2</td>
<td>6-2</td>
</tr>
<tr>
<td>iRobot Government Agencies Served</td>
<td></td>
</tr>
<tr>
<td>Figure 6-3</td>
<td>6-8</td>
</tr>
<tr>
<td>Lockheed Martin Multifunction Utility Logistics Equipment UGV -- MULE</td>
<td></td>
</tr>
<tr>
<td>Figure 6-4</td>
<td>6-10</td>
</tr>
<tr>
<td>JPO Robotic Systems</td>
<td></td>
</tr>
<tr>
<td>Figure 6-5</td>
<td>6-12</td>
</tr>
<tr>
<td>Army Modernization Aims</td>
<td></td>
</tr>
<tr>
<td>Table 6-6</td>
<td>6-14</td>
</tr>
<tr>
<td>DARPA Budget for Robust Robotics, 2010</td>
<td></td>
</tr>
<tr>
<td>Table 6-7</td>
<td>6-17</td>
</tr>
<tr>
<td>DARPA Budget for Cognitive Networking, 2010</td>
<td></td>
</tr>
<tr>
<td>Table 6-8</td>
<td>6-25</td>
</tr>
<tr>
<td>DARPA Budget for Recognize Improvised Explosive Devices and Report (RIEDAR), 2010</td>
<td></td>
</tr>
<tr>
<td>Table 6-9</td>
<td>6-26</td>
</tr>
<tr>
<td>DARPA Budget for Crosshairs Program, 2010</td>
<td></td>
</tr>
<tr>
<td>Table 6-10</td>
<td>6-27</td>
</tr>
<tr>
<td>DARPA Budget for Counter Improvised Explosives Laboratories, 2010</td>
<td></td>
</tr>
<tr>
<td>Table 6-11</td>
<td>6-29</td>
</tr>
<tr>
<td>DARPA Budget for Vulcan, 2010</td>
<td></td>
</tr>
<tr>
<td>Table 6-12</td>
<td>6-30</td>
</tr>
<tr>
<td>DARPA Budget for BioRobotics and BioMechanics, 2010</td>
<td></td>
</tr>
<tr>
<td>Table 6-13</td>
<td>6-32</td>
</tr>
<tr>
<td>DARPA Budget for FREND, 2010</td>
<td></td>
</tr>
<tr>
<td>Table 6-14</td>
<td>6-33</td>
</tr>
<tr>
<td>Joint IED Task Force Spending</td>
<td></td>
</tr>
<tr>
<td>Table 6-15</td>
<td>6-43</td>
</tr>
</tbody>
</table>
Unmanned Vehicles UMV and UGV Submarkets
Table 6-16  6-44
Unmanned Ground Vehicles (UGVs) Leading Technologies
And Subsystems
Table 6-17  6-45
UUV Programs
Table 6-18  6-46
Military / Government and University Agencies
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