

# Law Enforcement, First Responder, and Homeland Security Robots: Market Shares, Market Strategies, and Market Forecasts, 2015 to 2021

<https://marketpublishers.com/r/LA0AE999081EN.html>

Date: November 2015

Pages: 582

Price: US\$ 4,000.00 (Single User License)

ID: LA0AE999081EN

## Abstracts

LEXINGTON, Massachusetts (November 10, 2015) – WinterGreen Research announces that it has published a new study Law Enforcement, First Responder, and Homeland Security Robots: Market Shares, Strategy, and Forecasts, Worldwide, 2015 to 2021. Next generation civilian security robot platforms leverage better materials, more sophisticated designs, software technology, and tablet remote controls to support high quality data gathering and communications in difficult situations.

Bomb squads have need for better technology, more flexibility, better maneuverability. The robots answer those needs, they can be tuned to the specific activity in which they are being used, using modular systems. Platform robot modules are highly targeted to specific situations. Robots make police organizations more functional, improve security performance by allowing remote operation. The study has 582 pages and 257 table and figures.

The ability to use robots for law enforcement, first responder, and homeland security is a function of affordability. Many cost efficient robots have come to market, challenging those offered by some of the existing market leaders that are part of the traditional military industrial complex.

Law enforcement, first responders, and homeland security robots are mobile automated process platforms that are responsive to homeland security needs. They are emerging in the context of globalization and smart phone devices that provide connectedness. This global aspect of the first responder robots means that the devices have a presence in every part of the world. First responder robots are inherently local, they are used locally, they are needed by security personnel in particularly dangerous situations.

Systems of engagement apps are evolving as specially designed ground robot networks used to address terrorism and local law enforcement and fire department needs to support community and city safety patrol.

According to Susan Eustis, leader of the team that prepared the study, “Robot security technology is having a great affect on law enforcement, first responder, and homeland systems effectiveness. Security Robots utilize platform technology and leverage the mobility of the robot. Within the robot platform, components have been useful as organizations move to secure the safety of the officers forced to function in dangerous situations. Law enforcement organizations are able to function more effectively. Video facilitates supervisors in communicating to a deployed unit in a manner that is taking into consideration the difficulties any particular officer is having in an individual situation, paying individual attention to officers deployed in the risky situation. Risk management performance can be improved, managing any situation can be improved using robotic platform technology.”

Vendors have adopted a variety of control mechanisms and and intuitive users interfaces so robot operators are able to drive the robots easily. Vendors have been able to make them more effective and more affordable.

Market growth comes from every law enforcement organization that needs to achieve an edge over the bad guys, over terrorists, protecting the civilian populations more effectively and with less risk to the enforcement offices than has been able previously. Organizations wishing to gain performance advantage in their local situations are buying the robots. By adopting prebuilt modules of enforcement technologies and adapting them to the local situations, vendors have been able to build worldwide markets.

The evolution of security robots and devices is in the context of smart phone adoption, going to 9.5 billion by the end of the forecast period, with apps becoming more accepted. The ability to offer sophisticated robots for the police officers and lieutenants is what provides sophisticated application capabilities. Apps are further evolving to provide tracking of motion and help provide mastery of various techniques for risk management. Robots are useful for mastering some aspect of police detail work and adding to lowering the cost of premium local and national border security forces.

Law Enforcement, First Responder, and Homeland Security Robots platform technology markets at \$764 million in 2014 are anticipated to reach \$4.3 billion by 2021. Market growth comes as every law enforcement agency faces the prospect of dealing with terrorists. With technology maturity and economies of scale, price points will decline

rapidly and affordability will drive significant market growth, soon reaching billions of dollars. The companies that achieve measurable market share early in the evolution of the market are likely to maintain a strong presence in the billion dollar markets.

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. WinterGreen Research is positioned to help customers facing challenges that define the modern enterprises. The increasingly global nature of science, technology and engineering is a reflection of the implementation of the globally integrated enterprise. Customers trust wintergreen research to work alongside them to ensure the success of the participation in a particular market segment.

WinterGreen Research supports various market segment programs; provides trusted technical services to the marketing departments. It carries out accurate market share and forecast analysis services for a range of commercial and government customers globally. These are all vital market research support solutions requiring trust and integrity.

## Contents

### **FIRST RESPONDER, BORDER PATROL, AND LAW ENFORCEMENT EXECUTIVE SUMMARY**

Robots Leverage Civilian Systems of Engagement

Local Law Enforcement, Border Patrol, and First Responder Markets Entering A New Era

First Responder, Law Enforcement, Border Patrol Robot Market Driving Forces  
Robot Border Patrol

SWAT Teams Everywhere Need Law Enforcement Robots

First Responder, Border Patrol, and Law Enforcement Robot Market Shares

First Responder, Border Patrol, and Law Enforcement Robot Market Forecasts

### **1. FIRST RESPONDER, LAW ENFORCEMENT, BORDER PATROL ROBOTS MARKET DESCRIPTION AND MARKET DYNAMICS**

1.1 First Responders

1.1.1 First Responder Need for Robots

1.2 First Responder Robot Border Patrol

1.2.1 Border Patrol and Homeland Security

1.2.2 Delivering Robotic Capabilities to Border Patrol Teams

1.3 Robot Scope

1.3.1 First Responder Robot Applications

1.3.2 Types of First Responder Robots

1.3.3 Telerob Explosive Observation Robot and Ordnance Disposal

1.3.4 QinetiQ North America Talon Robots Universal Disrupter Mount

1.3.5 General Dynamics Next-Generation CROWS II Increases First Responders

Safety

1.3.6 First Responder iRobot

1.4 SUGVs

1.5 Robots Delivering Protection Capabilities

1.5.1 First Responder, Law Enforcement, Border Patrol Robots

### **2 FIRST RESPONDER, BORDER PATROL, AND LAW ENFORCEMENT MARKET SHARES AND MARKET FORECASTS**

2.1 Robots Leverage Civilian Systems of Engagement

2.1.1 Local Law Enforcement, Border Patrol, and First Responder Markets Entering A

## New Era

2.1.2 First Responder, Law Enforcement, Border Patrol Robot Market Driving Forces

2.1.3 Robot Border Patrol

2.1.4 SWAT Teams Everywhere Need Law Enforcement Robots

## 2.2 First Responder, Border Patrol, and Law Enforcement Robot Market Shares

2.2.1 Challenges That Define Modern Civilian Security

2.2.2 General Dynamics Robotic Sentry – Intruder Detection and Assessment

2.2.3 Northrop Grumman

2.2.4 Northrop Grumman

2.2.5 Northrop Grumman Cutlass

2.2.6 Northrop Grumman Mini-ANDROS II

2.2.7 QinetiQ Law Enforcement Robots

2.2.8 QinetQ TALON

2.2.9 ReconRobotics

2.2.10 SDR LT2/LT2-F

2.2.11 iRobot Surveillance Robots

2.2.12 iRobot Research/iRobot Collaborative Systems

2.2.13 iRobot Packbot

2.2.14 iRobot PackBot Scout

2.2.15 iRobot PackBot Explorer

2.2.16 Kongsberg

2.2.17 Energid/Mitsubishi Next-Generation Robot for Nuclear Power Plant Heat

## Exchanger Tube Inspection

2.2.18 Mesa Systems Development Division

## 2.3 First Responder, Border Patrol, and Law Enforcement Robot Market Forecasts

2.3.1 Application Scope

2.3.2 First Responder, Border Patrol, And Law Enforcement Market Industry Segments

2.3.3 Law Enforcement and First Responder Market Metrics

2.3.4 Law Enforcement, First Responder, Border Patrol Segment Analysis

2.3.5 Law Enforcement Segment Analysis

2.3.6 First Responder Segment Analysis

2.3.7 By 2019 Every First Responder Team In The World Will Need To Have Some

## Robotic Capability

2.3.8 Building a Culture of Preparedness

2.3.9 Discussion of Various Size First Responder, Law Enforcement, Border Patrol

## Robot Market Strengths and Challenges

2.3.10 NTIA's First Responder Network Authority ('FirstNet')

2.3.11 Civilian Security Robot Systems Roadmap

2.3.12 Border Patrol Segment Analysis

2.3.13 Border Patrol Robots

2.3.14 Throwable Robot Market Forecasts

2.4 First Responder, Border Patrol, and Law Enforcement Robot Market Analysis

2.4.1 Making Exploratory Investigation In Dangerous Or Unfolding Situation

2.4.2 Core Anti-Terrorism Technology

2.4.3 Small Mobile Robot Market Opportunity: Penetration of Fire and Police

Departments

2.5 First Responder, Border Patrol, and Law Enforcement Robot Prices and Situational Uses

2.5.1 Robots Emerge As Part Of Critical Homeland Security and Emergency

Response Infrastructure

2.6 First Responder, Border Patrol, and Law Enforcement Robot Regional Market Segments

### **3 FIRST RESPONDER, BORDER PATROL, AND LAW ENFORCEMENT PRODUCT DESCRIPTION**

3.1 iRobot

3.1.1 iRobot 110 FirstLook

3.1.2 iRobot 110 FirstLook

3.1.3 iRobot +CBRN/HazMat Within Industrial Settings

3.1.4 iRobot Check Point/Vehicle Inspections

3.1.5 iRobot in Confined Spaces

3.1.6 iRobot Persistent Observation

3.1.7 iRobot FirstLook Bomb Disposal/ Explosive Ordnance Disposal (EOD)

3.1.8 iRobot FirstLook Robots Visual Obscurants

3.1.9 iRobot 340 SUGV

3.1.10 iRoboth 310 SUGV

3.1.11 iRobot 310 SUGV Missions

3.1.12 iRobot SUGV

3.1.13 iRobot Check Point/Vehicle Inspections

3.1.14 iRobot Confined Spaces

3.1.15 iRobot Persistent Observation

3.1.16 iRobot Route/Building Clearance

3.1.17 iRobot Visual Obscurants

3.1.18 iRobot 710 KobraTM

3.1.19 iRobot 710 Kobra Missions

3.1.20 iRobot Robots Perform Missions On Land And In The Sea

3.1.21 iRobot PackBot 510 for First Responders

- 3.1.22 iRobot PackBot 510 for HazMat Technicians
- 3.1.23 iRobot 510 PackBot for EOD Swat Technicians
- 3.1.24 iRobot PackBot 510 for Border Patrol
- 3.1.25 iRobot PackBot 510 for Law Enforcement Engineers
- 3.1.26 iRobot 710 Warrior
- 3.2 Northrop Grumman
  - 3.2.1 Northrop Grumman Remotec Robotic Platforms and Sub-Systems
  - 3.2.2 Northrop Grumman Andros F6A - First Responders & SWAT
  - 3.2.3 Northrop Grumman Andros Robots
  - 3.2.4 Northrop Grumman ANDROS Hazmat
  - 3.2.5 Northrop Grumman Mark V-A1 - HAZMAT Technicians
  - 3.2.6 Northrop Grumman Andros for First Responders
  - 3.2.7 Northrop Grumman Mini Andros II Features
- 3.3 QinetiQ
  - 3.3.1 QinetiQ Tactical TALON for Homeland Security and First Responders
  - 3.3.2 QinetiQ Law Enforcement Robots
  - 3.3.3 QinetiQ Talon V
  - 3.3.4 QinetiQ C-Talon
  - 3.3.5 QinetiQ C-Talon Draper Laboratory Expertise in Action
  - 3.3.6 QinetQ TALON
  - 3.3.7 QinetiQ TALON Product Line Expansion
  - 3.3.8 QinetiQ Laptop Control Unit (LCU)
  - 3.3.9 QinetiQ Comprised Of Experts In Defense, Aerospace, And Security
  - 3.3.10 QinetiQ North America TALON Detects Deadly IEDs And Saves Lives
  - 3.3.11 QinetQ Dragon Runner
  - 3.3.12 QinetQ Dragon Runner 10
  - 3.3.13 QinetQ Robotic Applique Kit
  - 3.3.14 QinetQ Expertise in Action
  - 3.3.15 QinetQ MAARS
- 3.4 Kairos Autonomi
  - 3.4.1 Kairos RetroReach Manipulator Arm
  - 3.4.2 Kairos Autonomi Pronto4 Agnostic Autonomy System for Existing Vehicles or Vessels
  - 3.4.3 Kairos Autonomi Pronto4 Benefits
  - 3.4.4 Kairos Autonomi Pronto4 Sub-Systems
  - 3.4.5 Kairos Autonomi ProntoMimic Software Suite Functions
- 3.5 RoboteX
  - 3.5.1 RoboteX Avatar III Robot
  - 3.5.2 RoboteX Avatar III Tactical Robot



- 3.5.3 RoboteX Avatar III EOD Robot
- 3.5.4 RoboteX Avatar III Hazmat Robot
- 3.5.5 RoboteX Avatar Legion System
- 3.5.6 RoboteX Avatar LEGION System: Networks of Robots are Offered
- 3.5.7 RoboteX Avatar I
- 3.5.8 RoboteX Avatar II
- 3.5.9 RoboteX Avatar II EOD Robot
- 3.5.10 RoboteX Avatar III Security Robot
- 3.5.11 RoboteX Avatar
- 3.5.12 RoboteX Avatar Home & Office, A Personal Security Robot
- 3.5.13 RoboteX Portable Reconnaissance
- 3.5.14 RoboteX Avatar I Spec List
- 3.5.15 RoboteX Avatar I Use Cases
- 3.6 Pedsco
  - 3.6.1 Pedsco Remote Mobile Investigator (RMI)
  - 3.6.2 Pedsco RMI-9XD
  - 3.6.3 Pedsco RMI-9WT
  - 3.6.4 Pedsco RMI-10F
- 3.7 ReconRobotics Tactical, Micro-Robot Systems
  - 3.7.1 ReconRobotics Recon Scout UVI Robot
  - 3.7.2 ReconRobotics Recon Scout Throwbot LE
  - 3.7.3 Recon Robotics Recon Scout IR
  - 3.7.4 Recon Robotics Recon Scout XL
  - 3.7.5 Recon Robotics Throwbot XT
  - 3.7.6 Recon Robotics Searchstick
- 3.8 Robosoft
- 3.9 TechnoRobot
  - 3.9.1 TechnoRobot RiotBot
  - 3.9.2 TechnoRobot VisionBot
  - 3.9.3 TechnoRobot Product Set
- 3.10 General Dynamics Homeland Security
  - 3.10.1 General Dynamics Cell On Wheels
  - 3.10.2 General Dynamics Public Safety FirstNet
  - 3.10.3 General Dynamics Public Safety Access to Voice, Video, Data, Text, and Chat
  - 3.10.4 General Dynamics Public Safety Communications Module for Large Scale Community Events
  - 3.10.5 Robots Randomly Patrol Assigned Industrial Areas
  - 3.10.6 General Dynamics Robotic Sentry – Intruder Detection and Assessment
- 3.11 Google/Boston Dynamics ATLAS - The Agile Anthropomorphic Robot



- 3.12 Lockheed Martin
  - 3.12.1 Lockheed Martin's Robotic First Responder
- 3.13 Mesa Robotics
  - 3.13.1 Mesa Robotics Matilda
  - 3.13.2 Mesa Robotics Element
  - 3.13.3 Mesa Robotics Scorpion
  - 3.13.4 Mesa Robotics Acer
  - 3.13.5 Mesa Robotics G2Bot
  - 3.13.6 Mesa Robotics
- 3.14 Boz Robotics Boz I
  - 3.14.1 Boz Robotics Boz XL
- 3.15 Power Hawk Technologies
  - 3.15.1 Power Hawk N.E.R.A.T.
- 3.16 DJI Innovation
  - 3.16.1 DJI Phantom
  - 3.16.2 DJI Inspire 1
  - 3.16.3 DJI Ronin
  - 3.16.4 DJI Ronin Major Updates
- 3.17 SDR Tactical Robots
  - 3.17.1 SDR Fire and Rescue Robots
  - 3.17.2 SDR LT2/LT2-F - 'Bloodhound'
  - 3.17.3 SDR HD2-S - 'Doberman'
  - 3.17.4 SDR SuperDroid Robots in NC USA
  - 3.17.5 SDR LT2/F - 'Bulldog'
  - 3.17.6 SDR HD2 - 'Mastiff'
  - 3.17.7 SDR MLT - 'Jack Russell'
  - 3.17.8 SDR UM4 - 'Retriever'

## **4 LAW ENFORCEMENT, FIRST RESPONDERS, AND HOMELAND SECURITY ROBOT TECHNOLOGY AND RESEARCH**

- 4.1 TARDEC's Interoperability Profile (IOP) Testing
- 4.2 National Institute of Standards and Technology (NIST)
  - 4.2.1 Emergency Response Robots
- 4.3 First Responder Robot Technology Enablers
  - 4.3.1 Military Robot Logistics
- 4.4 MRAP ATV: Requirements and Contenders
- 4.5 First Responder Intel Integrated Circuit Evidence-Based Innovation
  - 4.5.1 Open Robotic Control Software

- 4.5.2 First Responder Robot Key Technology
- 4.5.3 -Bots
- 4.5.4 Visual Simultaneous Localization & Mapping
- 4.6 Advanced Robot Technology: Navigation, Mobility, And Manipulation
  - 4.6.1 Robot Intelligence Systems
  - 4.6.2 Real-World, Dynamic Sensing
- 4.7 User-Friendly Interfaces
  - 4.7.1 Tightly-Integrated, Electromechanical Robot Design
- 4.8 Field Based Robotics Iterative Development
  - 4.8.1 Next-Generation Products Leverage Model
  - 4.8.2 Modular Robot Structure And Control
  - 4.8.3 Lattice Architectures
  - 4.8.4 Chain/Tree Architectures
  - 4.8.5 Deterministic Reconfiguration
  - 4.8.6 Stochastic Reconfiguration
  - 4.8.7 Modular Robotic Systems
- 4.9 Intel Military Robot Cultivating Collaborations
- 4.10 Hitachi Configuration Of Robots Using The SuperH Family
  - 4.10.1 Hitachi Concept of MMU And Logic Space
  - 4.10.2 Robotic Use of Solid State Thin Film Lithium-Ion Batteries
- 4.11 Network Of Robots And Sensors
  - 4.11.1 Sensor Networks Part Of Research Agenda
  - 4.11.2 Light Sensing
  - 4.11.2 Acceleration Sensing
  - 4.11.3 Chemical Sensing
- 4.12 Military Robot Technology Functions
- 4.13 Carbon Nanotube Radio
- 4.14 UUVMP Vision
  - 4.14.1 Hovering Autonomous Underwater Vehicle (HAUV)
  - 4.14.2 Alliant
  - 4.14.3 ATSP is a Government-Wide Contracting Vehicle
  - 4.14.4 Quick, Efficient Contracting Vehicle
  - 4.14.5 Facilitates Technology And Insertion Into Fielded Systems
  - 4.14.6 Access to all Northrop Grumman Sectors
- 4.15 iRobot Technology
  - 4.15.1 iRobot AWARE Robot Intelligence Systems
  - 4.15.2 iRobot Real-World, Dynamic Sensing.
  - 4.15.3 iRobot User-Friendly Interface
  - 4.15.4 iRobot Tightly-Integrated Electromechanical Design.

- 4.16 Evolution Robotics Technology Solutions
  - 4.16.1 iRobot/Evolution Robotics Example Applications
  - 4.16.2 Homeland Security Robot Technology Trends
- 4.17 Classes of Unmanned Ground Vehicles (UGVs)
  - 4.17.1 Armed Robotic Vehicle (ARV)
  - 4.17.2 US BCT Unmanned Ground Vehicle Funding
  - 4.17.3 Funding Military Robots in US for 2011
  - 4.17.4 US Army's BCT Modernization Program Funding
  - 4.17.5 Efforts to Mitigate The Improvised Explosive Device Threat To Dismounted Operations
  - 4.17.6 US Joint Improvised Explosive Device Defeat Organization
  - 4.17.7 Route Mapping
  - 4.17.8 Man-Packable SUGV
  - 4.17.9 Demilitarized Zone Between South and North Korea
  - 4.17.10 Chinese Military Robots
  - 4.17.11 Western Europe
  - 4.17.12 China & the Russian Federation
  - 4.17.13 Middle East
  - 4.17.14 India & Japan
  - 4.17.15 Australia & Canada
- 4.18 Military and First Responder Robot Pricing Notes
  - 4.18.1 iRobot
  - 4.18.2 QinetiQ/Foster-Miller
  - 4.18.3 Allen Vanguard
  - 4.18.4 Northrop Grumman
  - 4.18.5 Telerob
  - 4.18.6 AB Precision (Poole) Ltd.
  - 4.18.7 Beijing Defense
  - 4.18.8 First-Response Robotics
  - 4.18.9 Mesa Associates
  - 4.18.10 re2 (robotics engineering excellence)
  - 4.18.11 ForeRunner RDV
  - 4.18.12 ReconRobotics
  - 4.18.13 TechnoRobot

## **5 LAW ENFORCEMENT, FIRST RESPONDER, AND HOMELAND SECURITY ROBOT TECHNOLOGY AND RESEARCH**

### **5.1 Robot Enabling Technologies**

- 5.1.1 Sensor Processing
- 5.1.2 Machine Autonomy
- 5.2 First Responder Robot Bandwidth
  - 5.2.1 UGV Follow-Me Capability
  - 5.2.2 Communications Bandwidth
  - 5.2.3 Battery Power
  - 5.2.4 Combination Of Batteries Linked To Onboard Conventional Diesel
- 5.3 DJI
- 5.4 General Dynamics
  - 5.4.1 General Dynamics Public Safety
- 5.5 iRobot
  - 5.5.1 iRobot
  - 5.5.2 iRobot Home Robots
  - 5.5.3 iRobot Defense and Security: Protecting Those in Harm's Way
  - 5.5.4 iRobot Role In The Robot Industry
  - 5.5.5 iRobot SPARK (Starter Programs for the Advancement of Robotics Knowledge)
  - 5.5.6 iRobot Revenue
  - 5.5.7 iRobot Acquires Evolution Robotics, Inc.
  - 5.5.8 iRobot/Evolution Robotics
  - 5.5.9 iRobot Strategy
  - 5.5.10 iRobot Technology
  - 5.5.11 iRobot Regional Revenue
- 5.6 Kairos Autonomi
  - 5.6.1 Kairos Autonomi upgrades robot conversion kit
  - 5.6.2 Kairos Autonomi Autonomy ROI
  - 5.6.3 Kairos Autonomi Upgrades Robot Conversion Kit
- 5.7 General Dynamics
  - 5.7.1 Sequester Mechanism
  - 5.7.2 General Dynamics Revenue
  - 5.7.3 General Dynamics Robotic Systems
  - 5.7.4 General Dynamics Robotic Systems (GDRS) Vision
  - 5.7.5 General Dynamics Robotic Systems (GDRS) Manufacturing
  - 5.7.6 General Dynamics Autonomous Land And Air Vehicle Development
- 5.8 Google
  - 5.8.1 Google Revenue
  - 5.8.2 Google Revenues by Segment and Geography
  - 5.8.3 Google/Boston Dynamics
  - 5.8.4 Boston Dynamics CHEETAH - Fastest Legged Robot
  - 5.8.5 Boston Dynamics Atlas - The Agile Anthropomorphic Robot

- 5.8.6 Boston Dynamics BigDog
- 5.8.7 Boston Dynamics LittleDog - The Legged Locomotion Learning Robot
- 5.8.8 Google Robotic Division
- 5.8.9 Google Self-Driving Car
- 5.8.10 Google Cars Address Vast Majority Of Vehicle Accidents Due To Human Error
- 5.8.11 Google Business
- 5.8.12 Google Corporate Highlights
- 5.8.13 Google Search
- 5.9 GoPro
  - 5.9.1 GoPro Second Quarter 2015 Highlights
  - 5.9.2 GoPro Popular Mount
  - 5.9.3 GoPro Revenue Surges 54% As It Gains Popularity Abroad
  - 5.9.4 GoPro Acquires Kolor, A Virtual Reality Company
- 5.10 Kairos Autonomi
  - 5.10.1 Kairos Autonomi upgrades robot conversion kit
  - 5.10.2 Kairos Autonomi Autonomy ROI
  - 5.10.3 Kairos Autonomi Upgrades Robot Conversion Kit
- 5.11 Kawada Industries
- 5.12 Kuka
  - 5.12.1 KUKA Dominant Customer Segment, Automotive Industry
  - 5.12.2 Kuka Revenue
  - 5.12.3 Kuka Competition
  - 5.12.4 Kuka Innovative Technology
  - 5.12.5 Kuka Well Positioned With A Broad Product Portfolio In Markets With Attractive Growth Prospects
  - 5.12.6 Kuka Strategy
  - 5.12.7 Kuka Corporate Policy
  - 5.12.8 Kuka Customers
  - 5.12.9 KUKA Acquires 51% of Reis Robotics
  - 5.12.10 Kuka Positioning in Robotics and Systems
- 5.13 Lockheed Martin
  - 5.13.1 Lockheed Martin Symphony Improvised Explosive Device Jammer Systems
  - 5.13.2 Lockheed Martin Aeronautics Revenue
  - 5.13.3 Lockheed Martin Electronic Systems
  - 5.13.4 Lockheed Martin
  - 5.13.5 Lockheed Martin Mars Atmosphere and Volatile Evolution (MAVEN)
  - 5.13.6 Lockheed Martin K-MAX
  - 5.13.7 Lockheed Martin Desert Hawk III
  - 5.13.8 Lockheed Martin Stalker UAS

- 5.13.9 Lockheed Martin Fury
- 5.13.10 Lockheed Martin VTOL Quad Rotor
- 5.14 Mesa Robotics
  - 5.14.1 Systems Development Division of Mesa Associates
  - 5.14.2 Mesa Robotics Affordable Robotic Solutions
  - 5.14.3 Mesa Robotics Revenue
- 5.15 Mitsubishi Next-Generation Robot for Nuclear Power Plant Heat Exchanger Tube Inspection
  - 5.15.1 Mitsubishi
- 5.16 Northrop Grumman
  - 5.16.1 Northrop Grumman Revenue
  - 5.16.2 Northrop Grumman Remotec
  - 5.16.3 Northrop Grumman Leading Global Security Company
  - 5.16.4 Northrop Grumman Supplies Marine Navigation Equipment
  - 5.16.5 Northrop Grumman Recognized by UK Ministry of Defense for Role in Supporting Sentry AWACS Aircraft During Military Operations in Libya
  - 5.16.6 Northrop Grumman Corporation subsidiary Remotec Inc. upgrade the U.S. Air Force fleet of Andros HD-1
  - 5.16.7 Northrop Grumman NAV CANADA Supplier
- 5.17 Pedsco
- 5.18 Power Hawk Technologies
- 5.19 QinetiQ
  - 5.19.1 QinetiQ Comprised Of Experts
  - 5.19.2 QinetiQ North America TALON Detects Deadly IEDs And Saves Lives
  - 5.19.3 QinetiQ World-Leading Products
  - 5.19.4 QinetiQ Innovation
  - 5.19.5 QinetiQ North America
  - 5.19.6 QinetiQ Revenue
  - 5.19.7 QinetiQ Vision
  - 5.19.8 QinetiQ Mission
  - 5.19.9 QinetiQ/Foster Miller
  - 5.19.10 QinetiQ/Foster Miller Financial Position
  - 5.19.11 QinetiQ North America Order for 100 Dragon Runner 10Micro Robots
  - 5.19.12 QinetiQ/Automatika
  - 5.19.13 QinetiQ Customer Base
- 5.20 ReconRobotics
  - 5.20.1 ReconRobotics Throwbot
  - 5.20.2 ReconRobotics Tactical, Micro-Robot Systems
- 5.21 Robosoft

## 5.22 Robotex

### 5.22.1 Robotex EOD Robot Assessment Results

## 5.23 TechnoRobot

## 5.24 Yamaha

### 5.24.1 Yamaha Robotics

## 5.25 Selected Military Robot Companies



## List Of Tables

### LIST OF TABLES

Table ES-1 Law Enforcement Robotics Market Factors

Table ES-2 Law Enforcement Robot Functions

Table ES-3 First Responder, Law Enforcement, Border Patrol Robots Market Driving Forces41

Figure ES-4 Law Enforcement, First Responder, and Border Patrol Robot Market Shares, Dollars, Worldwide, 2014

Figure ES-5 First Responders, Border Patrol, and Law Enforcement Markets Dollars, Worldwide, 2015-2021

Table 1-1 First Responder Robot Applications

Table 1-2 First Responder Armed Robotic Applications

Table 1-3 First Responder Robotic Systems

Figure 1-4 Telerob Explosive Observation Robot and Ordnance Disposal Unit

Figure 1-5 Telerob Explosive Ordnance Disposal EOD System For Operation In Confined Areas

Figure 1-6 QinetiQ North America TALON Robots Universal Disruptor Mount (UDM)

Figure 1-7 Next-Generation General Dynamics CROWS II

Table 2-1 Law Enforcement Robotics Market Factors

Table 2-2 Law Enforcement Robot Functions

Table 2-3 First Responder, Law Enforcement, Border Patrol Robots Market Driving Forces75

Figure 2-4 Law Enforcement, First Responder, and Border Patrol Robot Market Shares, Dollars, Worldwide, 2014

Table 2-5 Law Enforcement, First Responder, and Border Patrol, Robot Market Shares, Dollars, Worldwide, 2014

Figure 2-6 QinetQ TALON

Figure 2-7 SDR LT2/LT2-F - 'Bloodhound'

Figure 2-8 iRobot 210 Negotiator

Table 2-9 iRobot 510 Packbot Characteristics

Figure 2-10 First Responders, Border Patrol, and Law Enforcement Markets Dollars, Worldwide, 2015-2021

Figure 2-11 Law Enforcement, First Responder, and Border Patrol Market Forecasts, Units, Worldwide, 2015-2021

Table 2-12 First Responder, Border Patrol, and Law Enforcement Market Industry Segments, Dollars, Worldwide, 2015-2021

Table 2-13 First Responder, Border Patrol, and Law Enforcement Market Industry

Segments, Dollars and Units, Worldwide, 2015-2021

Figure 2-14 SWAT Team Member Readies A Robot To Enter A Home Where A Man Had Barricaded Himself in Trenton, N.J

Figure 2-15 Law Enforcement Market Forecasts Dollars, Worldwide, 2015-2021

Figure 2-16 First Responders Market Forecasts Dollars, Worldwide, 2015-2021

Figure 2-17 Border Patrol Market Forecasts Dollars, Worldwide, 2015-2021

Table 2-18 Throwbot Robot Applications

Figure 2-19 Throwable Security Robot Market Forecasts Dollars, Worldwide, 2015-2021

Figure 2-20 Robots for Exploratory Investigation Dangerous Or Unfolding Situation

Figure 2-21 Law Enforcement Needs Ability to Look Around Situations While Lowering Risk To Officers

Figure 2-22 Market Growth from Core Anti-Terrorism Technology

Figure 2-23 Small Mobile Robot Market Opportunity: Penetration of Fire and Police Departments

Figure 2-24 Types of Events Triggering Need For First Responder Robots

Figure 2-25 Rifle Mounted Robot for First Responder Situations

Figure 2-26 Law Enforcement, Border Patrol, and First Responder Robotic Regional Market Segments, Dollars, 2015

Table 2-27 Law Enforcement, Border Patrol, and Homeland Security Robot Regional Market Segments, Dollars, 2015

Figure 3-1 iRobot SUGV Carries Canister of Propane Gas

Table 3-2 iRobot First Responder, Border Patrol, And Law Enforcement Operations Support Robots

Figure 3-3 iRobot Multi-Robot Tablet Controller For First Responders

Table 3-4 iRobot uPoint Multi-Robot Tablet Controller Features

Table 3-5 iRobot uPoint Multi-Robot Tablet Controller Functions

Figure 3-6 iRobot 110 FirstLook

FIGURE 3-7 IRobot 110 FirstLookMissions Route/Building Clearance

Figure 3-8 iRobot FirstLook Used by Tactical Officers

Figure 3-9 iRobot 110 FirstLook

Figure 3-10 iRobot 110 Small, Light And Throwable FirstLook Uses

Figure 3-11 Robot 340 SUGV

Figure 3-12 Robot 310 SUGV

Figure 3-13 iRobot Bomb Disposal/ Explosive Ordnance Disposal (EOD)

Figure 3-14 iRobot SUGV

Figure 3-15 iRobot SUGV Uses

Figure 3-16 iRobot 710 Kobra™

Figure 3-17 iRobot 710 Kobra Bomb Disposal/ Explosive Ordnance Disposal (EOD)

Figure 3-18 iRobot PackBot 510 for First Responders

Table 3-18 iRobot PackBot 510 Target Markets  
Figure 3-19 iRobot PackBot 510 for HazMat Technicians  
Table 3-20 iRobot PackBot 510 Target Markets for HazMat Technicians  
Figure 3-21 iRobot 510PackBot for EOD Swat Technicians  
Table 3-22 iRobot 510 PackBot for EOD Conventional Ordnance and SWAT Missions  
Figure 3-23 iRobot PackBot 510 for Border Patrol  
Figure 3-24 iRobot PackBot 510 for Law Enforcement Engineers  
Table 3-25 iRobot 510 PackBot for Law Enforcement Engineers Tasks  
Figure 3-26 iRobot 710 Warrior  
Table 3-27 iRobot 710 Warrior Uses  
Figure 3-28 Northrop Grumman Remotec  
Table 3-29 Northrop Grumman Remotec ANDROS Law Enforcement Robots Features  
Figure 3-30 Northrop Grumman Andros F6A  
Table 3-31 Northrop Grumman Andros Robots Functions  
Table 3-32 Northrop Grumman Andros Robots Applications  
Figure 3-33 Northrop Grumman ANDROS Hazmat  
Figure 3-34 Northrop Grumman F6A with Window Breaker and Dual PAN Disrupter Mount.  
Figure 3-35 Northrop Grumman ANDROS F6A  
Table 3-36 Northrop Grumman F6A Features  
Figure 3-37 Northrop Grumman Mark V-A1  
Table 3-38 Northrop Grumman V-A1 Features  
Figure 3-39 Northrop Grumman Andros for First Responders  
Table 3-40 Northrop Grumman Mini Andros II Features  
Figure 3-41 Northrop Grumman Mini Andros II  
Figure 3-42 QinetiQ TALON V  
Table 3-43 QinetiQ TALON V Law Enforcement Robot Features  
Figure 3-44 QinetiQ C-Talon  
Figure 3-45 QinetQ TALON  
Table 3-46 QinetiQ North America's TALON Family Of Robots Features  
Table 3-27 QinetiQ North America's TALON Family Of Robots Target Markets  
Table 3-48 QinetiQ North America's TALON Family Of Robots Mission Positioning  
Table 3-49 QinetiQ TALON Product Line  
Table 3-50 QinetiQ TALON Expertise in Action  
Table 3-51 QinetiQ TALON Product Line Specific Task Expansion  
Figure 3-52 QinetiQ Laptop Control Unit (LCU)  
Table 3-53 QinetiQ's LCU features  
Figure 3-54 QinetQ Dragon Runner  
Figure 3-55 QinetQ Dragon Runner 10

Figure 3-56 QinetQ Robotic Applique Kit Transforms Bobcats into Remotely-Operated Robots

Figure 3-57 QinetQ Modular Advanced Armed Robotic System

Table 3-58 Kairos Autonomi RetroReach Manipulator Arm

Table 3-59 Kairos Autonomi RetroReach Manipulator Arm Features

Table 3-60 Kairos Autonomi RetroReach Manipulator Arm Specifications

Figure 3-61 Kairos Pronto4 Agnostic Autonomy System for Existing Vehicles or Vessels

Figure 3-62 Kairos Autonomi Pronto4 zSOLution For Truck

Table 3-63 Kairos Autonomi Software Features

Figure 3-64 RoboteX Avatar III Robot

Figure 3-65 RoboteX Avatar III Tactical Robot

Table 3-66 RoboteX AVATAR III Features

Figure 3-67 RoboteX Avatar III EOD Robot

Figure 3-68 CarbonFire 10 PAN Disrupter, Laser Sight And Disrupter

Table 3-69 RoboteX Avatar III EOD Robot Scenarios

Table 3-70 RoboteX Avatar III EOD Robot Responses

Table 3-71 RoboteX Avatar III EOD Robot Benefits

Figure 3-72 RoboteX Avatar III Hazmat Robot

Table 3-73 RoboteX Avatar Gas And Radiation Detector Functions

Figure 3-74 RoboteX Avatar Legion System

Table 3-75 RoboteX Avatar LEGION System Functions

Figure 3-76 RoboteX Avatar I

Table 3-77 RoboteX Avatar I Functions

Figure 3-78 RoboteX Avatar II

Figure 3-79 RoboteX Avatar II EOD Robot

Table 3-80 RoboteX Avatar II EOD Robot Tactical Capabilities And Benefits

Table 3-81 RoboteX Avatar II EOD Robot Support Capabilities

Table 3-82 RoboteX Avatar II EOD Robot Benefits

Table 3-83 RoboteX Avatar III Security Robot

Figure 3-84 Robotex Avatar I Tactical Robot Unmanned Ground Robots

Figure 3-85 Robotex Unmanned Ground Robots

Figure 3-86 Robotex Avatar II Tactical Robot

Table 3-87 RoboteX Portable Reconnaissance Controls

Table 3-88 RoboteX Avatar I Use Cases

Figure 3-89 Pedsco RMI-9XD

Table 3-90 Pedsco RMI-9XD Claw and Disrupter Features

Table 3-91 Pedsco RMI-9XD Camera Features

Table 3-92 Pedsco RMI-9XD Video Features

Table 3-93 Pedsco RMI-9XD Applications Features

Table 3-94 Pedsco RMI-9XD Security Features  
Figure 3-95 Pedsco RMI-9WT  
Table 3-96 Pedsco RMI-9WT Features  
Figure 3-97 Pedsco RMI-10F  
Table 3-98 Pedsco RMI-10F Features  
Table 3-99 ReconRobotics Recon Scout Applications  
Table 3-100 ReconRobotics Recon Scout Short term Applications  
Table 3-101 Recon Scout Throwbot LE Applications  
Table 3-102 Recon Scout Throwbot LE Features  
Figure 3-103 Recon Robotics Recon Scout IR  
Figure 3-104 Recon Robotics Recon Scout XL  
Figure 3-105 Recon Robotics Throwbot XT  
Figure 3-106 TechnoRobot Product Set  
Figure 3-107 Technorobot  
Figure 3-108 Technorobot Collaborations  
Table 3-109 General Dynamics Mobile Detection Assessment And Response System  
Benefits of a Robotic Sentry  
Figure 3-110 Google/Boston Dynamics ATLAS - The Agile Anthropomorphic Robot  
Figure 3-111 Mesa Robotics Matilda  
Figure 3-112 Mesa Robotics Mesa Robotics Matilda II  
Figure 3-113 Mesa Robotics Element  
Figure 3-114 Mesa Robotics Scorpion  
Figure 3-115 Mesa Robotics Acer Multi-Purpose Armored Robotic Platform  
Figure 3-116 Mesa Robotics Acer Multi-Purpose Armored Robotic Platform  
Figure 3-117 Mesa Robotics G2Bot  
Figure 3-118 Boz Robotics Boz XL  
Table 3-119 BOZ XL All Terrain Heavy Duty EOD Capabilities  
Figure 3-120 Power Hawk P-16 Rescue System  
Table 3-121 Power Hawk Car Bomb, Or Truck Bomb, Also Known As A Vehicle-Borne  
Improvised Explosive Device (VBIED) Response Capabilities  
Table 3-122 Power Hawk Terrorist attacks using Person-Borne Improvised Explosive  
Devices (PBIED) Response  
Table 3-123 DJI Products  
Figure 3-124 DJI Phantom  
Figure 3-125 DJI Phantom Series  
Figure 3-126 DJI Inspire 1  
Figure 3-127 DJI Ronin  
Table 3-128 DJI Ronin Features  
Figure 3-129 DJI Inspire 1

Table 3-130 SDR Fire and Rescue Robot Camera and Operator Control Units Applications

Table 3-131 SDR Fire and Rescue Robot Cameras

Table 3-132 SDR Fire and Rescue Robot Operator Control Unit

Table 3-133 SDR Fire and Rescue Robot Applications

Figure 3-134 SDR LT2/LT2-F - 'Bloodhound'

Figure 3-135 SDR HD2-S

Figure 3-136 SDR HD2

Figure 3-137 SDR UM4 - 'Retriever'

Figure 4-1 First Responder Robot Technology Enablers

Table 4-2 First Responder Robot Technology Characteristics

Figure 4-3 Homeland Security Robot Technology Enablers

Table 4-4 US Army Military Robot Logistics Positioning

Figure 4-5 Robot Systems Associated with Force Application Description

Figure 4-6 Robotic Performance Characteristics

Table 4-9 Military Robot Integrated Circuit-Based Innovation Functions

Table 4-10 First Responder Robot Key Technology

Table 4-11 Robot Communications Key Technology

Table 4-12 Military Robot Key Navigation Technologies

Table 4-13 Human-Robot Interaction

Table 4-14 Visual Simultaneous Localization & Mapping Functions Relevant to Robotics

Figure 4-15 Hitachi Modular Robot Configuration

Table 4-16 Military Robot Key Product Technology Factors

Table 4-16 (Continued) Military Robot Key Product Technology Factors

Table 4-17 Military Robot Technology Functions

Figure 4-19 UUVMP Vision

Table 4-20 Alliant Features

Table 4-20 (Continued) Alliant Features

Figure 4-21 iRobot/Evolution Robotics Technology Solutions

Figure 4-22 iRobot/Evolution Robotics Object Recognition

Table 4-23 iRobot/Evolution Robotics Applications

Figure 2-43 US Protection Modernization Strategy

Table 2-44 US Army Revised Military Robotics Vision

Figure 4-45 Taser, iRobot to Build Military Robot With Stun Gun

Figure 4-46 Foster Miller Talon Robot

Figure 5-1 DJI Phantom

Table 5-2 iRobot Strategy Key elements

Table 5-3 iRobot Strategy Key Common Platforms and Software elements

Figure 5-4 Boston Dynamic LS3



Figure 5-5 Boston Dynamic CHEETAH  
Figure 5-6 Boston Dynamic Atlas  
Figure 5-7 Boston Dynamic BigDog  
Figure 5-8 Boston Dynamics LittleDog  
Table 5-9 Google Autonomous Vehicles Technology  
Figure 5-10 GoPro Cameras  
Figure 5-11 Kuka Vision for Expansion of Robotic Markets  
Figure 5-12 Kuka Customers  
Figure 5-13 Kuka Regional (10) and Segment (7) Focus  
Figure 5-14 Kuka Positioning with Smart Tools  
Figure 5-15 Kuka Positioning in Robotics and Systems  
Figure 5-16 Lockheed Martin Segment Positioning  
Table 5-17 Lockheed Martin's operating units  
Figure 5-18 Lockheed Martin Aeronautics Segment Positioning  
Figure 5-19 Lockheed Martin Aeronautics Segment Portfolio  
Figure 5-20 Lockheed Martin Aeronautics C130 Worldwide Airlift  
Figure 5-21 Lockheed Martin Aeronautics Falcon Fighter  
Figure 5-22 Lockheed Martin Electronic Systems Portfolio  
Figure 5-23 Lockheed Martin Mars Atmosphere and Volatile Evolution (MAVEN)  
Table 5-24 Lockheed Martin Mars Atmosphere And Volatile Evolution Objectives  
Figure 5-25 Lockheed Martin K-MAX  
Figure 5-26 Lockheed Martin Desert Hawk III  
Figure 5-27 Lockheed Martin Stalker UAS  
Figure 5-28 Lockheed Martin Fury  
Figure 5-29 Lockheed Martin VTOL Quad Rotor  
Table 5-30 Mesa Robotics Technical Experience  
Table 5-31 Northrop Grumman Partner Of Choice  
Figure 5-32 Northrop Grumman Systems Segments  
Figure 5-33 Northrop Grumman Portfolio  
Figure 5-34 Power Hawk Rescue System  
Table 5-35 QinetiQ Vision  
Figure 5-36 QinetiQ Dragon Runner Urban Operations Rugged Ultra-Compact, Lightweight And Portable Reconnaissance Robot  
Table 5-37 QinetiQ Customer Base  
Figure 5-38 Technorobot  
Figure 5-39 Technorobot Collaborations  
Figure 5-40 UC Davis Using Yamaha Helicopter Drones For Crop Dusting  
Figure 5-41 Yamaha Crop Dusting Initiatives



## I would like to order

Product name: Law Enforcement, First Responder, and Homeland Security Robots: Market Shares, Market Strategies, and Market Forecasts, 2015 to 2021

Product link: <https://marketpublishers.com/r/LA0AE999081EN.html>

Price: US\$ 4,000.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/LA0AE999081EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:  
Last name:  
Email:  
Company:  
Address:  
City:  
Zip code:  
Country:  
Tel:  
Fax:  
Your message:

**\*\*All fields are required**

Customer signature \_\_\_\_\_

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970

