

Meet the World's Only **OUTDOOR SECURITY ROBOT**



SMP
ROBOTICS



NO TRESPASSING

AREA PATROLLED BY
SECURITY ROBOTS

S5s

S5c

S5

www.smrobotics.com



Security Robots



Meet the world unique security robots

- Automatically follows prescribed path
- 360° video surveillance with 7 cameras
- Efficient / decrease security costs, quick ROI
- Outdoor on/off-road & indoor use
- 24/7/365 operation
- 4 navigation systems and automated obstacle avoidance
- Hundreds of applications
- Easy integration with your present security system
- Available now!

Autonomously follows the route in patrol mode

Automatic obstacle avoidance

Stops in position ideal for video surveillance

Robots location and video from cameras transferred to command center and a guards tablet PC.

Panoramic video surveillance and motion detection

Automatic target acquisition and tracking with PTZ camera

Remote video surveillance on a tablet computer, built-in DVR

Change of surveillance positions without operator assistance

Automatic battery charging

Duration of autonomous patrolling - 20 hours

Cruising range without recharging - 24 miles

All weather, day-and-night operation

Low-noise electric drive

Autonomous nighttime operations

Autonomously passing pedestrians, cars and other robots

Elements of artificial intelligence

Return to base when batteries discharged.

The emergence of security robots is a milestone in the evolution of global systems. Our latest technological developments allows the entire security industry to create and achieve new standards of security best practices. Autonomous mobile robots designed for outdoor use can dramatically improve security coverage of large facilities. Security robots are able to provide the highest level of security at a modest cost that is typically much lower than the wages of hired employees.

Technology

All security robots supplied by SMP Robotics are panoramic video surveillance systems installed on the platforms of autonomous mobile robots. Thanks to an automatic guidance system, the robot is capable of doing its rounds of secured premises completely autonomously. Depending on the tasks to be performed, security robots can be equipped with additional devices, from pan/tilt/zoom cameras to LRADs. WiFi and cellular connectivity technology is used to communicate with the robot as necessary and observe the security robot's work of performing remote video surveillance. The robot's video footage, the condition of the robot's systems, and its location on site are all displayed on a dashboard viewable from a laptop or central monitoring station. The smooth operation of wireless network at large facilities is achieved through the use of MESH technology, which uses the security robots as relay stations.

Increased safety through the use of robots

Increased safety through the use of robots Some of the security officers guarding a facility can be effectively substituted with security robots. Robots are capable of continuously patrolling the premises of a facility. Unlike people, robots do not become tired and do not require time to rest. The scorching sun or nighttime cold does not cause them any discomfort.

Robots Save Money

The most effective way to cut costs encountered from providing security services is by taking advantage of uninterrupted, round-the-clock, robotic security duty operation. Robot operating costs are substantially lower than the hourly wages of human personnel. Additionally, robots can perform additional tasks at a lower cost than humans. Ultimately joint cooperation between mobile security guard robots and security officers allows for efficiently allocating human resources only in critical situations, rather than incurring the expense and burden of managing security officers to conduct routine patrols. The robotization of patrol forces is especially effective at large facilities, where traditionally, a considerable number of human guard personnel is required to be on duty.

Unmanned security

Using robots to guard facilities allows for the creation of uniquely customized unmanned security systems. A system based on security robots can work independently throughout the facility, capture video footage, detect danger in the most remote parts of the site, and transmit information about what is happening back to the remote central monitoring station. Security officers time is utilized for more important interactions and decision-making. An unmanned robot guard force allows the most efficient utilization of expensive and limited human resources around multiple security posts or facilities. Additionally, robotic security systems have obvious

advantages when it comes to guarding areas in the desert or under other harsh climatic conditions, as well as patrolling dangerous, contaminated landfills.

Upgrade of perimeter security systems

Increasing terrorist threats compel organizations to modernize existing security systems in order to increase their reliability. The best way to confront the challenges of the new reality is by retrofitting stationary security systems with mobile robots. Their use can improve facility safety without additional staff, and therefore, without increasing fixed expenses. Security robots give a new dimension of

quality to traditional security systems and provide active resistance to intrusions. Robots equipped with non-lethal weapons are capable of physically countering threats to security without the presence of a security officer at the protected site.

Security robots are easily integrated into any modern security system that requires video surveillance, while additional functions can also be performed, including it the detection of gas leaks or reading and documenting vehicle license plates.



SECURITY ROBOT MODELS

Security Patrol Robot S5



Reliable protection for most sites implies that a security officer is conducting foot patrol rounds in secured premises. Patrolling needs to be done regularly, and the more time the premises are under surveillance, the harder it is for an intruder to commit unlawful acts. The mere presence of a security officer right in the restricted area, and not only "on duty" in a guard shack, gives warning to the illegal trespassers. However, foot patrol is often an expensive service that relies on the professionalism and commitment



ment of the personnel involved; therefore, it involves a costlier long-term investment of wages, benefits, and management efforts. Security patrol robots are able to move along foot patrol routes autonomously. Thanks to a built-in automatic guidance system, the mobile robot is able to independently take detours around obstacles and choose the optimal route to follow. The surveillance system installed on the robot transmits images of its surroundings either to the guard shack or directly to a foot patrol officer's tablet.

Applications

- Restricted areas
- Electrical substations
- Oil fields and oil wells
- Solar farms and photovoltaic power plants

Key features

- Remotely controlled long-range acoustic device
- Mobile video surveillance
- PTZ camera with 28x optical zoom

Security Guard Robot S5G



Despite perimeter fences and other site barriers, intrusion into protected areas is not uncommon. When trespassing is detected in a protected area, the main task of security is to intercept the trespasser and to prevent the commission any malicious acts. An effective solution to this challenge is the use of non-lethal weapons, for example, employing long-range, high-power acoustic devices. The Security Robot equipped with a long-range acoustic device for automatically thwarting illegal



activities without the need for the presence of a security officer in the area of intrusion.

Reliable protection for most sites implies that a security officer is conducting foot patrol rounds in secured premises. Patrolling needs to be done regularly, and the more time the premises are under surveillance, the harder it is for an intruder to commit unlawful acts. With the advent of autonomous mobile robots designed to address the challenges of patrolling and protection, reducing costs and improving the quality of restricted-area patrols is now possible.

Applications

- Patrolling perimeters
- Industrial facilities
- Manufacturing plants and ware houses
- Parking lots
- Chemical plants, oil & gas facilities
- Solar farms and photovoltaic power plants
- Physical security of critical infrastructure
- Resorts, golf courses, beach patrols, and more

Key features

- Autonomous unmanned ground vehicle
- Fully autonomous patrolling
- Automatic obstacle-avoidance function
- Panoramic video surveillance system
- Automated tracking PTZ camera
- Built-in multichannel DVR
- Low-noise electronic movement

Solar Powered Security Surveillance Robot S5s



Ensuring the safety of a protected area often involves periodically changing video surveillance positioning. The S5s solar powered autonomous mobile robot effectively meets this challenge. Along with a panoramic video surveillance system, this mobile robot comes equipped with solar panels that recharge its built-in batteries. The electric power generated by the solar panels is sufficient to power a video surveillance system round-the-clock and to transmit videos via WiFi.



In areas with many sunny days, the solar panels can sufficiently replenish energy spent by the robot's moving around. To ensure long autonomous operation without recharging from an external source, the S5s is equipped with an intelligent system that forecasts energy expenditure and the rate at which electric power is replenished.

The S5s' solar panels are installed on a rotating mechanism allowing them to track the sun as it moves across the sky and thereby obtain the maximum power possible from the sun. The Solar Powered Security Surveillance Robot is produced in two variants.

Applications

- Video surveillance for agriculture
- Farm and ranch video surveillance
- Golf course video surveillance
- Coastal and beach security
- Video surveillance of public water reservoirs
- Solar farms and photovoltaic power plants
- Chemical plants, oil & gas facilities

Key features

- Fully autonomous mobile video surveillance
- Mobile solar tracking system
- Prolonged autonomous operation
- Panoramic motion-detection video cameras
- Auto-tracking PTZ camera with 28x optical zoom lens

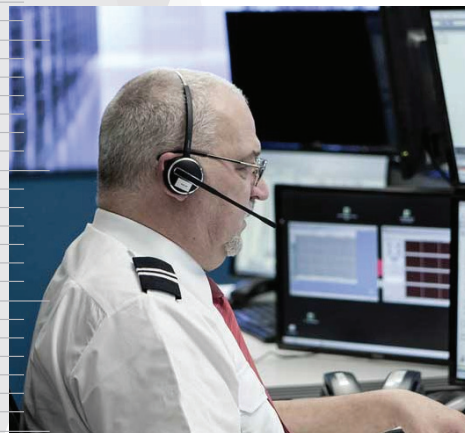




ROVER:S5

PERIMETER INTRUSION DETECTION SYSTEMS

to false alarms of an outdoor security system. A mobile security robot can significantly reduce the number of false alarms investigated by security patrols. It can automatically move to the site of a possible intrusion indicated by a triggered perimeter security sensor. by programming the robot's route accordingly, it is possible to regularly inspect the integrity of any gates, doors, and windows. For large areas of private property, it is advisable to use security patrol robots for regular inspections in order to identify and prevent incidents of trespassing. In some cases, just the fact that a mobile security system moves around the property can effectively deter potential trespassers from violating private property boundaries



Security robots for home use

SMP Robotics Systems Corp. are suitable for private use around the area of a home. The robot moves about regularly, allowing for effective video surveillance of the entire area from different positions for optimal observation. Unlike using multiple fixed cameras, using a mobile robot excludes the existence of blind spots that are otherwise inaccessible to surveil-



lance cameras. A mobile security robot can respond immediately with surveillance to record suspicious events occurring on the premises of a private home, and it can be rerouted automatically when linked stationary alarm sensors are triggered. Moreover, home users can inspect areas of suspicious activity through their robot's capabilities while directly inside of their homes or remotely from security stations by using broadband internet networks. As an additional safety benefit, homeowners can see what is happening without exposing themselves to the risk of running into any intruders.



Rural Property Security

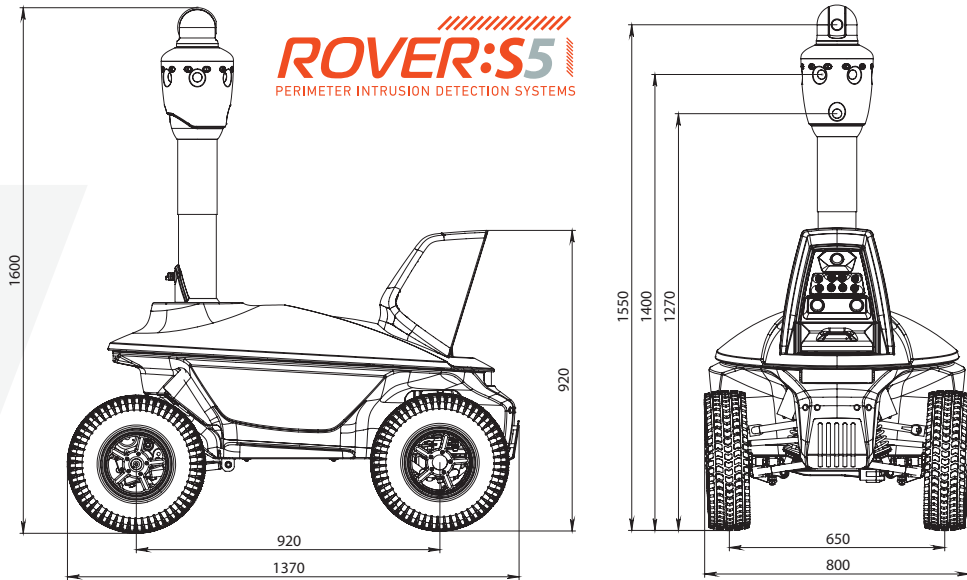
Country homes are often left with no one at home for long periods of time. Since they often remain unattended for most of the day, their security is usually provided for by a security system installed inside the house. However, using outdoor security sensors can become complicated by possible false alarms due to falling branches, movements of wild animals, and changes in weather conditions. Using them at sites where there are no security officers nearby often requires regular security patrols due



UNMANNED GROUND VEHICLE
ROVER S5



Range at +5°C (+41°F)	35 km (22 miles)
Speed (in autonomous mode in the daytime)	4-9 kph (2-6 mph)
Speed (in autonomous mode at night)	3-6 kph (2-4 mph)
Optimal width of a driving lane	1.2 m (4 ft)
Minimum curb-to-curb turning radius	3.4 m (11 ft)
Maximum degree of slope	18°
Maximum step height	14 cm (5.5 in)
Ford depth	up to 12 cm (5 in)
Dimensions, width×height×length	765×929×1369 mm (2.51×3.05×4.49 ft)
Gross vehicle weight	110 kg (242 lbs)
Nominal payload capacity	35 kg (77 lbs)
Nominal operating temperature range	-20°C...+45°C [-4°F...+113°F]



Intruder Detection

The most exciting things happen when our robot detects an intruder. We call this behavior Swarm Intelligence. Upon detection of an intruder the robot stops moving along its designated route and switches to the optimal path to the intruder. The chosen route is not simply the quickest route to the goal; its purpose is to find locations where visibility (video picture) is the best and has minimal obstructions. Target coordinates are transmitted and shared across the group of robots. The robots nearest to the intruder start looking for the intruder with their PTZ cameras. Other robots that are not involved in the response to intruder increase the interval between them and continue their regular path. The robots nearest to intruder activate the alarm, and begin transmitting video of intruders and their GPS coordinates to the central guard station and to the guards patrolling on-site. The human operators review the alarm and make decision to proceed to intercept, or to cancel the alarm. If the operator determines the target as the intruder, the robots will continue to follow the intruder until the arrival of human guards and acknowledgement of the alarm. If the operator determines that the target is not a threat, picture and video data is added to special database of 'safepass' objects. When these objects are detected by robots in the future, they will not trigger the alarm and the robots will stay on route. This experience is shared across the group of robots and is available to any robot within the group. Thus, all the robots are trained to determine their behavior in different situations and Artificial Intelligence of the swarm is growing.



ROVER S5 Security Robot is a reliable solution for assuring security of personal and business property. Mobile video surveillance system continuously patrols the secured area, greatly enhancing the level of protection and dramatically reducing the dependence on human factor, especially when patrolling areas an expanded territory.

ROVER S5 Security Robot provides automatic round-the-clock patrol and surveillance of secured areas and specific objects. It serves as a reliable assistant to security services provider. As a mobile video surveillance system, it can continuously patrol the secured objects and perform video surveillance from various points.

Artificial Intelligence

The most important element of our system is its AI-enhanced software, at the heart of which is the Multi-Agent System MAS. Each robot uses sets of sensors to receive information about the environment. The traffic control system solves the problem of building a travel pathway by processing the data coming from these multiple sensors. The primary source of data for successful travel pathway solution is a vision system capable of creating a map of alternative pathways. The vision system corrects and improves the map with every repeated passage. In the event of obstacles, the system detours and thus explores the surrounding area. Thus, the GPS navigation system becomes secondary in choosing a route.



AI Solutions

At SMP Robotics, we developed the state of the art AI solutions for the robotic swarms. Unlike some other machines on the market today, our robots are not RC operated but truly autonomous, intelligent units. Our robots are capable not only of fulfilling the tasks specific to security; they also excel in other autonomous vehicle challenges such as location, motion control, travel path optimization, proactive mobile obstacle avoidance, etc. The robotic AI constantly works to achieve the

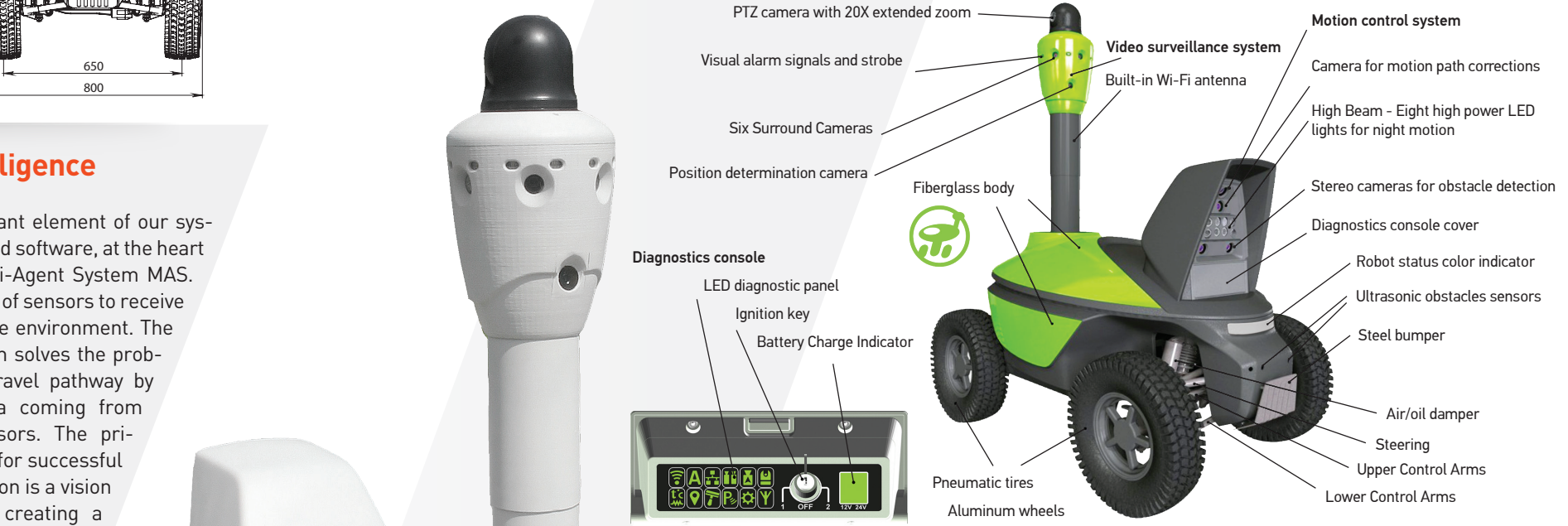
Truly Independent Robot

Our off-road unmanned ground vehicle UGV Rover S5 is fully autonomous robot with a payload capacity of 220 lbs capable of attaining speeds of over 12.5 mph and

optimum solutions. The robot's primary autopilot is programmed for routine driving scenarios. Under favorable external conditions (e.g., when there is extra time available for finding the solution) the AI is capable of introducing an element of randomization, leading to the best available decision. Under normal conditions, the robot moves along the route with minimum deviation from the path, keeping track on the energy consumption ratios to determine when the efficiency of the movement drops below optimal. When the battery charge allows it, the AI will instruct the robot to change the route in order to

traversing a variety of rugged terrains. In a security surveillance configuration, Rover-S5 chassis, outfitted with a high-power video surveillance system, will go places where humans cannot and monitor with accuracy, efficiency without interruptions.

optimize the energy consumption. When this happens with one of the robots, it will share the optimized results with the rest of the swarm. This way the AI continuously improves its programming and adds optimized solutions to the preset programming of all robots working in that particular group algorithms and reinforcement learning, along with a predetermined program of the robot.



Multi-Agent System

Upon encountering obstacles along the way, the robot's navigation system automatically decides on the detour path selecting from a variety of possible ways. Naturally, every obstacle is evaluated to determine if it is an intruder so that appropriate Standard Operating Procedures are followed. In the multi-agent (robot) system, all participating agents (robots and base servers) may access the information circulating in the system. Once one robot agent knows the information, it becomes available to every robot agent within the system. In fact, the ability of sharing information and executing group tasks is exactly what makes a group of our robots a Multi-Agent System.



MANUAL ROBOT CONTROL



Security Patrol Robot

S5



Manufacturing plants and warehouses Physical security of critical infrastructure Parking lots



Security guards working duties most commonly included an officer conducting foot patrol rounds in secured premises. Patrolling needs to be done regularly, and the more time the premises are under surveillance the harder it is for an intruder to commit malicious acts. The mere presence of a security officer right in the restricted area, and not only "on duty" in a guard shack, gives warning to illegal trespassers. However, foot patrol is often an expensive service that relies on the professionalism and commitment of the personnel involved; therefore, it involves a costlier long-term investment of wages, benefits, and management efforts. Our invention of the autonomous

Robotized Security Guard Patrol Services

Security patrol robots are able to move along foot patrol routes continuously and autonomously. Thanks to a built-in automatic guidance system, the mobile robot is able to independently take detours around obstacles and choose the optimal route to follow. The surveillance system installed on the robot transmits images of its surroundings either to the guard shack or directly to a foot patrol officer's tablet. The patrol robot is nearly silent as it moves due to its electric motors and modern high-capacity, lightweight batteries that give enough power to patrol for up to 20 hours. The robot is always present on its patrol route. Unlike human beings the robot does not need to rest, and it does not need to be supervised with any security guard patrol-tracking systems. The robots location can be automatically tracked and displayed in the security operations control room. Any idle time can be significantly reduced by setting up automatic charging stations at those places where the robot makes long stops for stationary video surveillance. A robot can be made more noticeable by activating built-in flashing lights. The security patrol robot is able to change its route in case its stationary alarm sensors are triggered. This feature is especially useful while patrolling a fence line or remote areas of the site. With a stable of robots performing continuous 24/7 patrols, the security patrol robot pays for itself

very quickly when compared to human guards performing the same patrols.

Actively patrolling officers and security robots

The benefits of using security patrol robots become readily apparent when robotic security is combined with human security. The robots are able to carry out routine tasks and compensate for any shortage of professional staff. At the same time, the security officers can detain trespassers and sensibly respond to unpredictable criminal activity. Humans and robots working together allows for more stable expense calculations, as personnel wages can be minimized, while reliable protection under conditions possibly adverse for human beings is enhanced. Robotized patrols are especially effective at large sites where premises can be divided into locally protected zones and where mobile robots can patrol while conducting video surveillance. Each robot patrols its own local area of the site, ensuring comprehensive control over its most remote parts. At the same time, a mobile unit of security officers can be available to quickly arrive at intrusion scenes in response to alarms.

Applications

- Restricted areas
- Electrical substations
- Oil fields and oil wells
- Solar farms and photovoltaic power plants

Key features

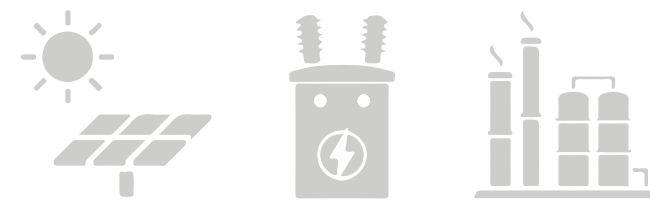
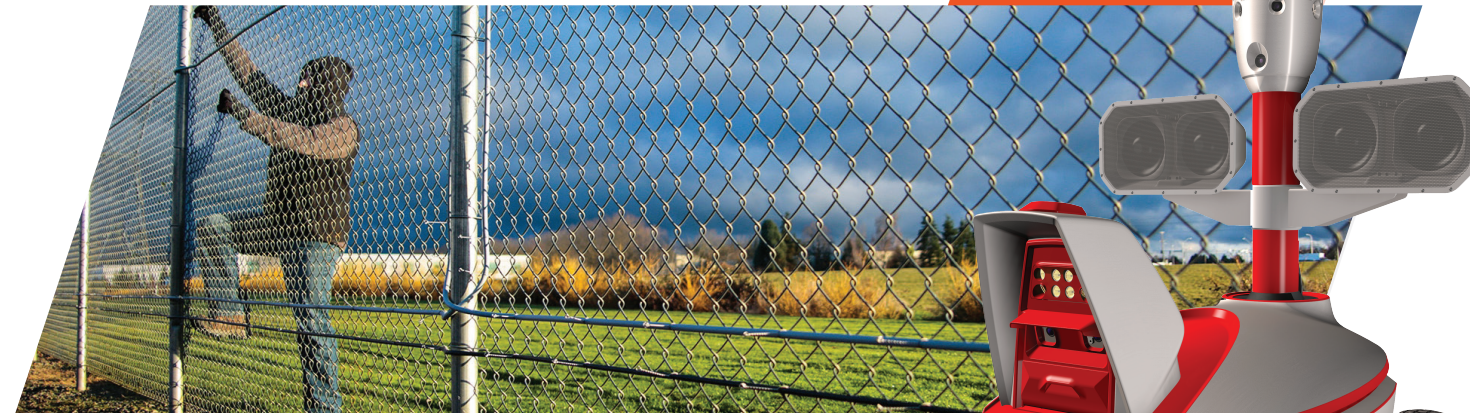
- Remotely controlled long-range acoustic device
- Mobile video surveillance
- PTZ camera with 28x optical zoom



mobile security robot is designed to address the challenges of patrolling and protection, reducing costs and improving the quality of protection for restricted-area.

Security Guard Robot

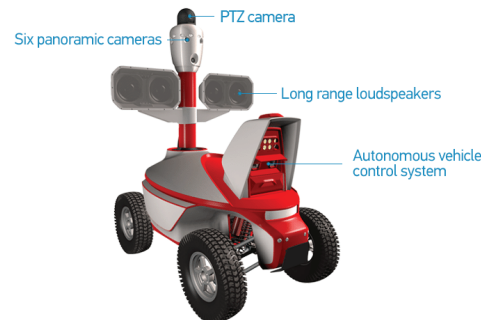
S5g



Solar farms and photovoltaic power plants Electrical substations Chemical plants, oil and gas facilities



Perimeter fences and other site access barriers are a vital part of a property protection plan and are commonly supplemented by human security guards. When trespassing is detected in a protected area, the main task of security is to intercept the trespasser and to prevent the commission any malicious acts. An effective solution to this challenge is the use of non-lethal methods. For example, employing long-range, high-power acoustic devices (LRAD). A security robot equipped with a long range acoustic device can automatically deploy to stop illegal activities, without the need for the presence of a security officer in the area of intrusion.



Long-Range Acoustic Device on a Mobile Robot

A long-range, powerful acoustic source creates sound pressure, at a considerable distance, equivalent to the pain threshold pressure for the human ear. A high level of sound pressure is achieved through a directed acoustic beam. The

acoustic impact at selected frequencies forces humans to leave the covered area. Long-range acoustic devices have already proven themselves effective at dispersing demonstrators. This type of tool can not only paralyze trespassers on site, but it can deter them from even approaching the fence line. The application of long-range acoustic devices works efficiently when a trespasser is in plain sight and there are no obstacles in the path of the sound beam that could weaken or deflect it. As a result, unique defensive capability of non-lethal acoustic weapons to protect large areas is complicated by the necessity of placing a large number of acoustic devices to cover the entire perimeter. Real-world sites, with buildings and extensive perimeters, require a significant number of stationary acoustic security devices for such protection; however, we provide a solution. The dimensions and technical characteristics of long-range acoustic devices make it possible to place them on our S5 series security robots. The S5g security guard robot allows acoustic non-lethal weapons to be moved around for operating in a fully automatic mode. The ability to promptly move protective acoustic devices around the territory of a protected site provides for an effective confrontation with intruders. The speed at which the mobile robot automatically moves and the range of the acoustic protective device ensure site protection when unauthorized trespassers are detected from distant approaches to the protected perimeter.

Robotic Security Surveillance and Physical Protection

Protection The S5g security guard robot is equipped with a video surveillance system and a long-range acoustic device. The video surveillance system consists of six cameras for 360-degree observation and a PTZ camera for long-range observation. In automatic mode, the video surveillance system directs the PTZ camera at moving objects that are distinguishable on full-range panoramic cameras. In manual mode, operators can control the camera at their discretion, and the security guard robot provides remote video surveillance via WiFi data transfer technology. If there is an intrusion into the protected area, a security officer has the ability to remotely activate the long-range acoustic device on the robot. The long-range acoustic device is mounted on a pivot mechanism that allows aiming the acoustic beam precisely at the attacker to efficiently oppose the intrusion. A focused beam produces a high-power acoustic signal that emanates up to a considerable distance from the security guard robot.

Applications

- Patrolling perimeters
- Industrial facilities
- Manufacturing plants and ware houses
- Parking lots
- Chemical plants, oil & gas facilities
- Solar farms and photovoltaic power plants
- Physical security of critical infrastructure
- Resorts, golf courses, beach patrols, and more

Key features

- Autonomous unmanned ground vehicle
- Fully autonomous patrolling
- Automatic obstacle avoidance function
- Panoramic video surveillance system
- Automated tracking PTZ camera
- Built-in multichannel DVR
- Low-noise electronic movement

Solar Powered Security Surveillance Robot S5s



Seacoast and beach patrols



Data centers



Resorts, golf courses



Ensuring the safety of a protected area often involves periodically changing video surveillance positioning as it's cost prohibitive to install cameras every place required. The S5s solar powered autonomous mobile robot effectively meets this challenge by covering an extensive amount of terrain at a fraction of the cost of installed surveillance or manned patrols. This mobile robot comes equipped with solar panels that recharge its built-in batteries in addition to a panoramic video surveillance system. The electric power generated by the solar panels is sufficient to power a video sur-

robot's moving around. To ensure long autonomous operation without recharging from an external source, the S5s is equipped with an intelligent system that forecasts energy expenditure and the rate at which electric power is replenished. Depending on the intensity of solar radiation during the day, the system calculates the distance that the robot is able to cover without its batteries becoming depleted. The S5s' solar panels are installed on a rotating mechanism allowing them to track the sun as it moves across the sky and thereby obtain the maximum power possible from the sun. The Solar Powered Security Surveillance Robot is produced in two variants. The solar panels in one variant are twice the size of those in the other variant, resulting in twice the electric power generated. The robot variant with a smaller square footage of panels is designed for video surveillance where positioning rarely changes or for work at low latitudes.

Video Surveillance Robot in Agriculture

Some areas need to be placed under video surveillance for a short time only, and therefore equipping them with stationary CCTV systems is not viable. Such challenges often arise in agricultural settings. For example, the fields might only need to be placed under video surveillance when the crops are reaching maturity. Surveillance of pastures is advantageous only while cattle are roaming around them. In addition, pastures, fields, and hills that are optimal for surveillance do not, in most cases, have a power supply. For the agricultural sector, mobile video surveillance using the Solar Powered Security Surveillance Robot is

much more efficient than setting up stationary surveillance systems. Mobile robots do not require establishing expensive infrastructure, putting up poles, or laying down cable. Conveniently, robot delivery is followed by setting up position specifications to include operational shift times. Additionally, the robots equipped with solar panels will properly perform their functions without any human intervention, while periodic automated robot relocation will create additional difficulties for potential intruders.

Farm and Ranch Security Solutions

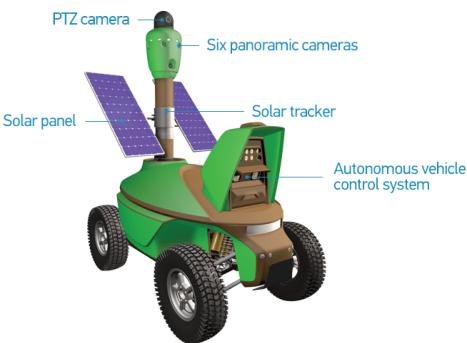
Farm and Ranch Security Solutions Videos captured from a remotely located area on a ranch or farm can be useful for incident investigations. The security robots designed for agricultural applications have a video archiving mode, allowing the user to access records when needed without having to constantly monitor camera images. S5 Security Robots are Reliable Assistants to Physical Security Traditional thinking leads us to believe that organization of large-scale facilities security requires engaging many security officers to physi-

Applications

- Video surveillance for agriculture
- Farm and ranch video surveillance
- Golf course video surveillance
- Coastal and beach security
- Video surveillance of public water reservoirs
- Solar farms and photovoltaic power plants
- Chemical plants, oil & gas facilities

Key features

- Fully autonomous mobile video surveillance
- Mobile solar tracking system
- Prolonged autonomous operation
- Panoramic motion-detection video cameras
- Auto-tracking PTZ camera with 28x optical zoom lens



veillance system round-the-clock and to transmit videos via WiFi or cellular (note that site latitude, ground cover and terrain will affect ability for continuous operation).

Solar Powered Surveillance System

In areas with many sunny days, the solar panels can sufficiently replenish energy spent by the

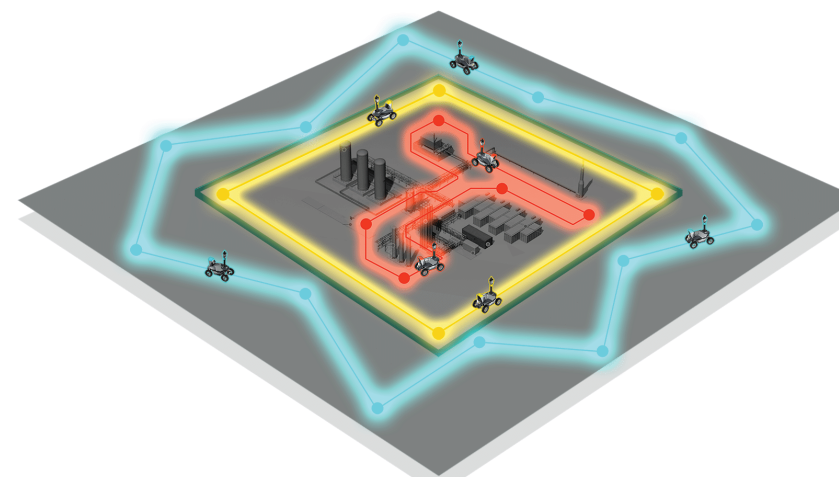
cally patrol protected areas. Innovative solutions brought about by SMP Robotics will allow large entities to decrease the number of security personnel and to propel the tasks of security organization and maintenance to a brand new level. Starting with SMP Robotics' S5 Security Robots, sites of interest can be monitored and protected day and night. Robotic Security Systems Security Robot S5 automatically moves along the patrolling route, takes video with its own surveillance system, and transmits it from any place of the site. Modifying the route and setting up new surveillance positions from the fixed video surveillance center can be done automatically by S5 Security Patrol Robot. All that the operator needs to do is to inspect the video picture obtained from the robot's cameras. Under such conditions, one operator can accurately control performance of several security robots patrolling the site along different routes. The operator will watch a map of the protected site, facility, or area, indicating each robots' location, along with video from the robots' cameras. The solar tracking system installed in the mobile robots ensures full autonomy, allowing for prolonged use on a farm or ranch. The solar powered robot cannot constantly patrol a

farm or ranch, but it is capable of stationary video surveillance without interruptions occurring from charging batteries, unlike robots that can only be charged from stationary chargers. The Solar Powered Security Surveillance Robot does not waste time moving to an external charger and spending several more hours on charging; it carries out video surveillance without interruption.

Wireless Video Surveillance

Wireless Video Surveillance The autonomous security robot is equipped with a panoramic video surveillance system consisting of six cameras for all-round observation and a PTZ camera to track motion at a large distance. The images from all cameras are transmitted over WiFi or cellular to a Central Monitoring Station or a security officer's laptop. The video surveillance system has a built-in DVR with a motion-detection feature. In automatic mode, the video surveillance system uses a 360-degree camera to look for sources of movement. In manual mode, the robot's operators can control the camera at their own discretion. The security patrol robot performs remote video surveillance using WiFi wireless data transfer technol-

ogy. When using the built-in omnidirectional antennae, the data transfer distance between the robots and the base station may reach up to more than half a mile. To transmit video at a distance of several miles, it is necessary to use a directional antenna on the receiving side in the Central Monitor Station. In the presence of obstacles between the robot and the monitor station, such as buildings or heavy vehicles, using an additional robot to relay the signal is feasible. Conditions for using the security surveillance robot entail equipping it with highcapacity batteries. Such batteries are considerably heavy, which makes it inefficient to use this type of robot for video surveillance where optimum observation positions change frequently. our security patrol robot with its lightweight, high-capacity batteries was created to meet the challenges associated with patrolling restricted areas, as it moves along its patrol route while consuming less energy. Another security guard robot is equipped with a long-range acoustic device to physically prevent intrusion into a secured premise. This type of non-lethal weapon is capable of creating unbearable conditions for those who are trying to commit unlawful acts.



Rover S5 PTZ



Rover S5



Rover S5 HD

S5 Security Robots are Reliable Assistants to Physical Security

Traditional thinking leads us to believe that organization of large-scale facilities security requires engaging many security officers to physically patrol protected areas. Innovative solutions brought about by SMP Robotics will allow large entities to decrease the number of security personnel and to propel the tasks of security organization and maintenance to a brand new level. Starting with SMP Robotics' S5 Security Robots, sites of interest can be monitored and protected day and night.

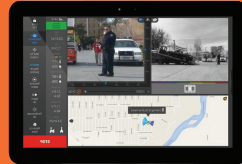
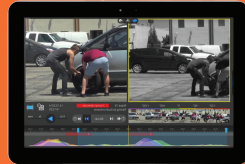
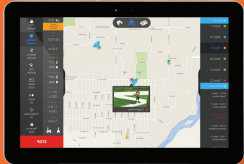
Robotic Security Systems

Security Robot S5 automatically moves along the patrolling route, takes video with its own surveillance system, and transmits it from any place of the site. Modifying the route and setting up new surveillance positions from the fixed video surveillance center can be done automatically by S5 Security Patrol Robot. All that the operator needs to do is to inspect the video picture obtained from the robot's cameras. Under such conditions, one operator can accurately control performance of several security robots patrolling the site along different routes. The operator will watch a map of the protected site, facility, or area, indicating each robots' location, along with video from the robots' cameras.



Multi Robot Control System

The "Rover S5" Robot comes with a fully loaded tablet featuring preinstalled software. The software, "Mobile Robot Rover Agent System," allows you to follow the robot's movements using a terrain map. The tablet also displays various robot diagnostics such as battery power, temperature, link capacity and power reserve.



Intuitive Touch Screen Design

The software has an intuitive interface that does not require special knowledge or skills from the user to operate.

We've changed the world of security!

Our mission is to deliver reliable, integrated robots that are easy to operate.

Our experienced field support engineers are equipped with the

knowledge and tools necessary to deliver multi-mission robots that meet the needs of today and tomorrow's market.

SMP Robotics invites porta-

ble equipment distributors and manufacturers, semiconductor chip designers, as well as mobile robot designers to contact us for partnership opportunities.

We welcome the opportunity to discuss strategic cooperation and investment options with interested parties.



391 Sutter Street, Office 303 San Francisco, CA 94108

p: +1.415.572.2316
p: +1.702.204.6388

info@smrobotics.com
www.smrobotics.com

Distributors

USA, California

Robotic Assistance Devices, Inc.
31103 Rancho Viejo Road,
Suite D2114 San Juan
Capistrano, CA 92675
877-78-ROBOT
877-78-76268
+1 949 636 7060
info@roboticassistance
devices.com

USA, California

NXT Robotics, Inc.
7254 Clairmont Mesa Blvd.
San Diego, CA 92111
+1 800 808 6097
www.nxtrobotics.com
sales@nxtrobotics.com

Singapore

SMP Robotics Singapore Pte Ltd
Block 5 Ang Mo Kio Industrial
Park 2A Tech II #06-37
Singapore 567760
+65 96866388
www.orionfive.com
www.smrobotics.com.sg
info@smrobotics.com.sg

Russia

SMP Robotics, LLC
123498, Moscow Zelenograd,
Georgiyevskiy prosp., 5
+7 (495) 974-3265
www.smrobotics.ru
office@smrobotics.ru

USA, New Jersey

Flock Free Bird Control, LLC
644 Cross St, Suite 4
Lakewood, NJ 08701
+1 732 987 5400
+1 732 987 4551
admin@flockfree.com
www.flockfree.com

USA, Texas

NXT Robotics, Texas
3149 Major Street, Suite 309
Fort Worth, TX 76112
+1 800 808 6097
www.nxtrobotics.com
sales@nxtrobotics.com

Canada

Robotic Assistance Devices, Inc.
5524 St-Patrick, suite 335
Montreal, QC H4E 1A8
+1 514-360-1363
canada.contact@roboticas-
stancedevices.com

Chile

Smart solutions ingenieria spa
Av. Apoquindo 6410 office 605
Las Condes, Chile
+56-2-2724-5772
+56-9-9627-1052
pablo.eckell@smartsolutionsing.
com

