Security Robot Tral Patrol is Reliable Assistant to Physical Security

It is traditionally recognized that organization of large-scale facilities security requires engaging a good many security officers to physically patrol protected areas. Innovative solution will allow to decrease the number of personnel and to propel the task of security organization and maintenance to a brand new level. For this purpose it is proposed to monitor protected sites day and night with the help of Tral Patrol mobile robots.

Security robot Tral Patrol automatically moves along the patrolling route, takes video by its video surveillance system and transmits it from any place of the site. It is possible to modify the route and to set new surveillance positions from the fixed video surveillance center. Robot will do all this automatically. All that remains to the operator 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. In front of the operator the map of protected site, facility or area will be displayed, indicating location of every of the robots along with video from their cameras.

Security robot transmits highly informative picture of surrounding environment, taken by six cameras providing all-round video monitoring, and by one turning camera that automatically focuses on the source of movement. This configuration of video surveillance system allows getting a fully detailed picture of a suspicious moving object. Video surveillance system not only tracks moving objects and people, but also records captured video.

On facilities, where a robot stays in a stationary position most of the time, and the time spent for moving between observation points comprises 20-30%, one operator can control up to 8 robots simultaneously. On protected territories, stretching away in every direction, when robots need longer time to change monitoring positions, the quantity of robots controlled by one operator may be proportionally increased. Typically, 8 robots allow reliable control over up to 20 hectares of protected area.

Using mobile remote control video surveillance robots, or security robots for short, alongside with traditional technical security systems, significantly improves safety of the protected facility. A robot needs no time to sleep or to respite. It never bunks off or falls ill. Its operation is only interfered with regular battery recharging. Its cost allows returning the investment, made while purchasing the robot, during the first year of its operation.

Specific character of physical guard on large-scale sites and facilities requires prompt response to shifts in supply and demand. The use of traditional approach, patrolling the area by efforts of private security firm officers, leads to additional costs. Staff training costs time and efforts. On the other hand, maintaining personnel reserve while waiting for new sites is also extremely expensive. Security robots may help reduce expenses and flexibly respond to the current situation on security services market.

At the same time one must understand that a robot cannot respond to alarm situations and hence security service officers should physically be present on site. Security robot is an effective tool to perform a wide variety of tasks, including organization of security on large-scale sites with fewer employees and providing high-level of security service reliability.

Robots can be implemented on protected site in a quite simple way. Guided by the operator, a robot should one time drive along all routes suitable for patrolling. Meanwhile, positions ideal for video surveillance should be set. While in service a robot will automatically move along the patrolling route, recognizing obstacles (a person or a parked car) and driving around them. When the batteries are run down, the robot will return to recharge them. Autopilot of the robot was developed based on technologies used in computer vision systems. It is these technologies that allow the robot to move along narrow pathways that are only a little bit wider than the robot's wheel track, with high accuracy. They allow locating its own position under conditions of unstable reception of satellite navigation system signal.

It is important to note that once the map of robot's patrolling routes was created, it can be uploaded to other robots that are prepared to operate onsite for the first time. This feature allows prompt reinforcing a group of patrolling robots as circumstances may require.

Technology of automatic driving is focused on multiple driving through protected area. The more times a robot drives through it, the better the driving algorithm becomes. This allows increasing speed and reliability of movement.

In case of group patrolling security robots are interconnected into a unified system. If one of them is unable to complete its task, the task will be reassigned to one of properly functioning security robots. If operator changed the task for one of the robots, other robots will continue patrolling the territory and will be automatically redistributed so that all the territory remains under their supervision.

Security robot Tral Patrol can find its use in a wide range of applications: patrolling of city infrastructure, holiday hotels areas, sport facilities, energy infrastructure facilities as well as by private customers for patrolling of territories adjacent to cottages. Especially for these customers the company developed a user friendly software product that can be installed on tablet PCs, operating under control of Android open source operating system.