ASGUARD

Advanced Security Guard

The ASGUARD with an infra-red camera during a search- and rescue exercise.

An advanced control strategy enables the robot to overcome obstacles.

ASGUARD has a waterproof body and is able to swim.

A highly mobile robotic system for search and rescue missions and outdoor surveillance

ASGUARD is a highly mobile robot which was developed for outdoor surveillance, remote inspection, and security missions in complex environments. The robot can negotiate difficult terrain, overcome obstacles, and climb stairs.

Robotic drones can support first responders in dangerous situations and provide video streams and sensor information in real time. ASGUARD can carry up to 5 kg of payload and can be equipped with multiple application sensors depending on the scenario and type of mission (video and IR cameras, laser scanner, GPS, chemical and biological sensors).

The hybrid legged-wheel design helps the robot to climb stairs and keep the center of mass low on obstacles. Each wheel is individually driven by a electric motor and controlled by high-performance custom motor driver electronics. A passive degree of freedom between the front and hind section of the body improves traction and stability on uneven surfaces. The low system weight and the high-power lithium polymer batteries allow the robot to move fast and efficiently and achieve runtimes of up to 2 hours.

ASGUARD can be remotely controlled by a joystick via a long range 868 MHz communication channel. The onboard electronic system will detect critical situations and limit the power or disable motors before any damage occurs.

The adaptive bio-inspired control approach ensures reliable and stable operation of the robot on stairs and steep slopes.

Technical Data

• Maximum speed:	2 m/sec
• Weight:	8 kg
• Payload:	5 kg
• Dimensions (l x w x h):	95 cm x 50 cm x 44 cm
• Motors:	4 x 24V DC motors
• Battery:	30V Lithium Polymer
• Application Sensors:	Video camera, infrared camera, laser scanner, GPS, chemical and biological sensors

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