Robotnik

RISING

RISING is a mobile manipulator specially designed forintervention, reconnaissance and EOD missions. We can highlight its high mobility and dexterity.

Product

RISING has been designed for situation awareness, assesment, and intervention missions. RISING is a high mobility, robust, modular, easy transportable and easy to deploy robot platform.

The robot integrates navigation sensors, and allows easy integration of additional portable devices, being modular and scalable.

The set of robot sensors include: IMU, color IR cameras, RGBD camera, PTZ 360° camera and bidirectional audio. Optional sensores include thermal imaging and RTK-DGPS, among others.

RISING can mount different EOD disruptors and specific sensors. All sensors are integrated at a data level and connected to the robot CPU, allowing the real time data monitoring and the remote broadcast to the different levels of remote operators.

RISING has a high mobility kinematic configuration that allows accessing adverse and rough terrains and stair climbing. Despite its robustness, the robot is lightweight and compact and can fit in a tactical vehicle and deployed easily with the help of the remote operator console.

The RISING arm has 6 DOF and payload of 7 Kg (610 mm) / 5 Kg (850 mm) and mounts a interchangeable gripper. The robot platform is completely sealed and has IP65 enclosure class.

The arm gripper is interchangeable, among other tools it can mount gripper/plier cutter adapter, interchangeable gripper fingers, rotary multi-tool (drill, saw, impact driver, reciprocating saw, router, etc.). The controller allows cartesian TCP motion commands.

The robot software architecture operates under ROS (Robot Operating System http://www.ros.org).
ROS defines a well structured framework and includes a high number of packages and stacks, implementing a high number of components and algorithms as localization, GIS cartography, planning, handling, perception, etc.

RISING uses the ROS architecture to increase the situation awareness by generating 3D environment maps and allowing localization and autonomous navigation. ROS allows easy integration, software component reusability (either device drivers or the most advanced algorithms in vision, SLAM, swarming, planinng, etc.).

Applications

- Law enforcement and first responders intervention
- Rescue and surveillance
- Remote monitoring
- Hazardous environments

Technical Specifications

Mechanical

Dimensions	749mm x 540mm x 510mm (Folded)
	967mm x 540mm x 510mm (Spread out)
Weight	65 Kg
Platform payload	20 Kg / Arm 5 Kg
Speed	2.5 m/s
Enclousure class	IP54
Traction system	2 tracks and 2 flippers
Autonomy	210 minutes
Batteries	48V LiPO
Temperature range	-10° to + 50°C
Max. climbing angle	40°

Robotic Arm

6 DOF

Weight	18.5 Kg
Payload	5/7.5 Kg
Range	7Kg (610 mm) 5 Kg (850 mm)
End effector	Manually exchangeable
Power (Standby/max.)	Min 90W, Typ. 150W, Max 325W
Accuracy	+/- 0.1 mm
Speed	180°/s

Control

Controller	Open architecture ROS
	Embedded PC with Linux
Communications	Multiprotocol system:
	Cable/WiFi/Radio
Connectivity	Internal: USB, RS232, Ethernet,
	WiFi, CANBus

∷ROS