:Robotnik

X-WAM

X-WAM can be raised to a considerable height and reach speeds up to 3m/s. The robot X-WAM uses ROS architecture and it is an excellent mobile manipulator main for indoor tasks.

Product

X-WAM is an omnidirectional or differential mobile manipulator designed mainly for indoor tasks, although it also can work outdoor. X-WAM is a compact robot that combines the advantages of the Summit X platform and the WAM robotic arm.

X-WAM robot can be raised to a considerable height (such a table, for example) greatly expanding the manipulator workspace, allowing it to reach objects at different heights. The suspension of the mobile manipulator has the ability to lower its center of gravity (COG). Lowering the COG allows it to reach speeds up to 3m/s.

On the other hand, the platform has omnidirectional or skid-steering kinematics based on 4 high-power motorwheels. Each wheel integrates a hub brushless motor with gearbox, speed sensors and optional encoder. The odometry is computed with the use of the four independent wheels speeds and a high-precision angular sensor mounted inside the chassis.

The strong mechanical structure allows the X-WAM to carry heavy loads. There are several suspension-shock possibilities, which can be mounted at several positions to modify the ground clearance.

The X-WAM manipulator uses the ROS architecture (http://www.ros.org). The ROS framework defines a well organized robot software architecture and includes hundreds of user-contributed packages and sets of packages that implement functionalities such localization and mapping, planning, manipulation, perception, etc.

This characteristic simplifies the software development cycle and allows easy integration and reutilization of software components whether they are device drivers or state-of- the- art algorithms in vision, SLAM, point cloud processing, grasping, planning, swarming, etc.

Applications

- Indoor mobile manipulation
- Research and education
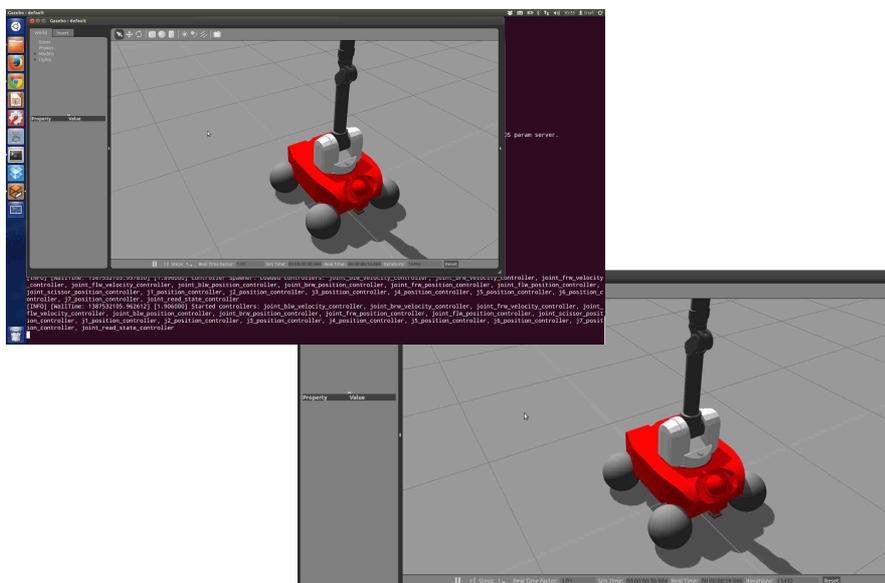- Surveillance
- Military
- Remote handling

www.robotnik.eu

Technical Specifications

Mechanical

Dimensions	796 x 673 x 779 mm (platform folded)
	796 x 673 x 1.141 mm (platform spread out)
Weight	90 Kg
Load capacity	4 Kg
Speed	3 m/s
Enclosure class	IP 54 (until IP65)
Traction system	4 wheels
Autonomy	180 minutes
Batteries	16x3.3V LiFePO4
Traction motors	4x250 W brushless servomotors
Temperature range	0º a +50ºC

Control

Controller	Open architecture ROS Embedded PC with Linux
Communication	WiFi 802.11n
Connectivity	Internal: USB, RS232, GPIO
	External: USB, RJ45, 5, 12 VDC power supplies and batterie

::: ROS.org