



Politecnico di Milano
Dipartimento di Elettronica, Informazione e Bioingegneria

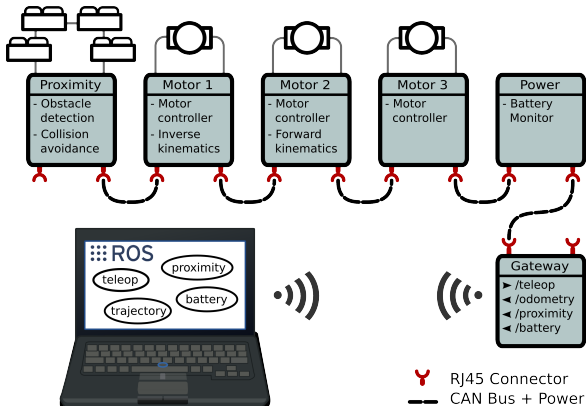
AIRLab

R²P: the Rapid Robot Prototyping Framework

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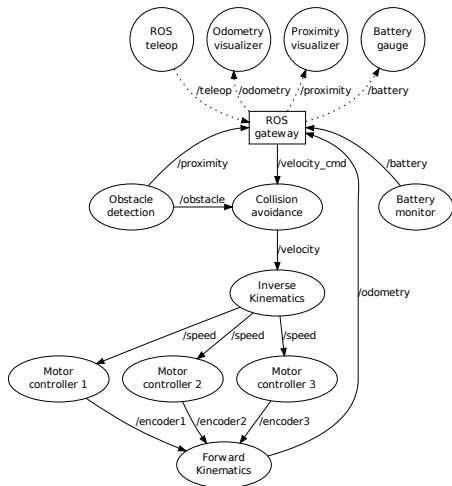
Rapid Robot Prototyping Framework



- HW and SW embedded components for robotic applications
- Distributed plug-and-play architecture
- Open source development (<http://github.com/openrobots-dev>)
- *Same ROS goals at hardware level*

R2P Middleware

- Real-Time communication over CAN bus
- Lightweight publish/subscribe middleware
- ROS-like API
- Reusable software components
- R2P nodes are listed as standard ROS nodes
- μ ROSnode: a lightweight ROS client (check tomorrow talk)

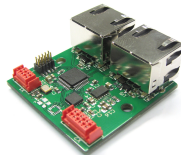


Off-the-shelf Hardware Modules



DC Motor

- 36V / 20A output
- Hall current sensor
- Quadrature Encoder



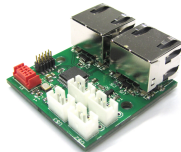
IMU

- 9-DoF MEMS sensors
- Pressure sensor
- GPS input



Gateway

- 100Mbit Ethernet
- Native ROS
- USB CDC connection



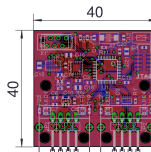
Proximity

- 4 sensor inputs
- Sharp IR sensors
- Ultrasonic sensors



Power Supply

- 5.5V to 36V input
- 5V / 4A output
- Battery monitoring



Under development

- Brushless motor
- Generic I/O module
- ...more to come