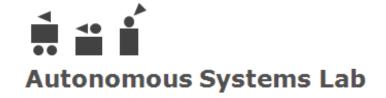
NIFTi robot Capabilities and interface

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NIFTibot

NIFTi robot:

- Search and Rescue ground robot,
- compact, autonomous,
- ► rich sensor suite,
- good traversability capabilities.







Structure

Structure:

- two tracks linked by a differential,
- ► four flippers,
- body with sensors and onboard computer,
- ► $70 \times 60 \times 40$ cm,
- ► around 20 kg.









Motion capabilities

Motion capabilities :

- climb stairs up and down,
- ► 30 cm steps,
- ► 45° slopes,
- differential for uneven terrain,
- ► 0.6 m/s top speed.









Sensor suite

Sensors:

- ► Ladybug 3 omnicamera,
- ► rolling Sick LMS 151 laser scanner,
- ► XSens MTi-G IMU+GPS
- tracks, flippers, and differential encoders.







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ROS interface

Sensors:

- /tf: position of all the links,
- /dynamic_point_cloud (PointCloud2) : 360° assembled point cloud,
- /scan_relay (LaserScan) : individual laser scan,
- ► /imu/data (Imu) : imu data,
- ► /viz/pano/image : panoramic image.





ROS interface

Commands:

- /nav2/cmd_vel (Twist) : velocity command for the tracks,
- ► /flippers_cmd : position command of all four flippers,
- ► /flipper_cmd : position command of on flipper.





Thanks for your attention.

