iClebo Kobuki is a low-cost mobile research base designed for education and research on state of art robotics. With continuous operation in mind, Kobuki provides power supplies for an external computer as well as additional sensors and actuators. Its highly accurate odometry, amended by our factory calibrated gyroscope, enables precise navigation.

Functional Specification

- Maximum translational velocity: 70 cm/s
- Maximum rotational velocity: 180 deg/s (>110 deg/s gyro performance will degrade)
- Payload: 5 kg (hard floor), 4 kg (carpet)
- Cliff: will not drive off a cliff with a depth greater than 5cm
- Threshold Climbing: climbs thresholds of 12 mm or lower
- Rug Climbing: climbs rugs of 12 mm or lower
- Expected Operating Time: 3/7 hours (small/large battery)
- Expected Charging Time: 1.5/2.6 hours (small/large battery)
- Docking: within a 2mx5m area in front of the docking station

Hardware Specification

- PC Connection: usb or via RX/TX pins on the parallel port
- Motor Overload Detection: disables power on detecting high current (>3A)

- Odometry: 52 ticks/enc rev, 2578.33 ticks/wheel rev, 11.7 ticks/mm
- Gyro: factory calibrated, 1 axis (110 deg/s)
- Bumpers: left, center, right
- Cliff sensors: left, center, right
- Wheel drop sensor: left, right
- Power connectors: 5V/1A, 12V/1.5A, 12V/5A
- Expansion pins: 3.3V/1A, 5V/1A, 4 x analog in, 4 x digital in, 4 x digital out
- Audio : several programmable beep sequences
- Programmable LED: 2 x two-colored LED
- State LED: 1 x two colored LED [Green - high, Orange - low, Green & Blinking - charging]
- Buttons: 3 x touch buttons
- Battery: Lithium-Ion, 14.8V, 2200 mAh (4S1P - small), 4400 mAh (4S2P - large)
- Firmware upgradeable: via usb
- Sensor Data Rate: 50Hz
- Recharging Adapter: Input: 100-240V AC, 50/60Hz, 1.5A max; Output: 19V DC, 3.16A
- Netbook recharging connector (only enabled when robot is recharging): 19V/2.1A DC
- Docking IR Receiver: left, centre, right

Software Specification

- C++ drivers for linux and windows
- ROS node
- Gazebo Simulation

Customizing Kobuki

The Kobuki is a mobile base. It has sensors, motors and power sources, however by itself, it cannot do anything.

To be functional, it requires you to build your platform on top of it's shell. On the hardware side, this usually involves adding a netbook or an embedded board to be the computational core for your system and usually a few extra sensors to make it truly functional. On the software side, this involves either building all of your own software or integrating software from other groups with your own development sources.

This can take time, effort and money. If you want to get started quickly, or a standardized platform for your group you can either use an existing reference platform or ask your nearest distributor to customize a packaged platform for your group.

Reference Platforms

- Turtlebot 2 - tap into the power of RoS with a complete software framework built around a mobile 3d sensing platform.

TurtleBot2 is an open robotics platform designed for education and research on state of art robotics. It is also a powerful tool to teach and learn ROS(Robot Operating System) and make the most of this cutting edge technology. Equipped with a 3D sensor, it can map and navigate indoor environments. The 3D perception, together with the turtlebot arm, enables manipulation tasks.

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Kobuki

iClebo Kobuki is a product of Yujin Robot.

- Website: http://kobuki.yujinrobot.com/
- Blog: http://blog.yujinrobot.com
- Sales and Technical Issues: kobuki@yujinrobot.com
- Users Mailing List: kobuki-users@yujinrobot.com

Turtlebot

Yujin Robot is also licensed to carry the Turtlebot trademark.

- Turtlebot Special Interest Group: ros-sig-turtlebot@googlegroups.com
- Korean Ros Forum: http://www.ros.or.kr
- Q&A: Users Mailing List:: http://answers.ros.org
- Google+: https://plus.google.com/s/turtlebot