Workshop “ROS for Engineers”

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Learning goals

1. Know and understand basic concepts of ROS
2. Being able to deal with various ROS tools in a practical way
3. Being able to build an application yourself with existing ROS nodes
4. Being able to Model, visualize and simulate robots
5. Being able to make a mobile robot platform navigate autonomously
6. Being able to plan a trajectory for a robot arm

To achieve these learning objectives, a number of sessions are required.

Foreknowledge

Required prior knowledge:

- Some skills in dealing with Linux (especially Ubuntu), both with the mouse and via commands in a terminal window
- Some knowledge of sensors (camera, laser scanner, etc.), and actuators (motors etc.)
- Some knowledge of kinematics
- Some knowledge of interfaces (USB, RS232, Ethernet / EtherCat)

Programming experience is not necessary, but useful.

Necessities

You have to bring your own laptop with Ubuntu 16.04 and ROS Kinetic installed.

Ubuntu Desktop 16.04 can be downloaded here.

A guide for installing ROS Kinetic (Desktop - full install) in Ubuntu can be found here.

Linux command skill

In order to work with ROS, you have to have some skills in dealing with Linux commands.
Some tutorials that might help:

- UNIX Tutorial for Beginners: http://info.ee.surrey.ac.uk/Teaching/Unix/
- Linux Command Line Cheat Sheet: https://www.cheatography.com/davechild/cheat-sheets/linux-command-line/