Lab 8

School of Architecture, Civil and Environmental Engineering

EPFL, SS 2017-2018

http://disal.epfl.ch/teaching/signals_instruments_systems/
What this lab is about

• Familiarize you with the e-puck robot
  – how to program the robot using the e-puck library
  – how to transfer data to and from the robot using serial comm.

• Understanding sensors on a real platform
  – plotting and analyzing sensor data

• Implementation: The e-puck as a mobile node
  – Using the sensor
Hardware

- Everybody will receive:
  - 1 e-puck robot
  - 1 battery
  - 1 USB-Bluetooth dongle
e-puck: insert battery

If you can see the serial number it’s wrong
e-puck: Reminder

You will need to use 2 buttons on the robot:
- reset
- power (behind right wheel)

Also: watch for the power (green) and the low-power LED (red)
Software

• On a git repository
  – download files by executing
git clone https://disalgit.epfl.ch/epuck/epuck.git

• Content of folder EpuckDevelopmentTree/
  – e-puck library
  – test programs (not needed in this lab)

• Executables: already installed in GR B0 01
  – epuckconnect
  – epuckupload
Programming the e-puck

- Turn on robot, plug USB dongle into computer
- Connect computer to e-puck 123:
  epuckconnect 123
- Upload program abc.hex
  epuckupload -f abc.hex 123
- Remember:
  Before compiling a C file (abc.c), edit your Makefile:
  EPUCKLIBROOT=/home/user/Desktop/MyFiles/epuck/EpuckDevelopmentTree/library
Hint for this lab

We will not be able to lend you the hardware!

- Do as many of the exercises which require the robot hardware in the lab session
IR sensors

- **As proximity sensor**

- **As light sensor**
Colision avoidance

• For last question – rule based collision avoidance:
  – Threshold on IR sensors