Contents

- Reminder
- Functioning of the remote control
- Software development
- Mechanical integration
- Live demo
Reminder

- Objectives
  - Being able to control every robot in the lab
  - Being able to flash a robot with the remote control (SD card)
  - Make it more ergonomic

- At mid-term
  - PCB prototype just received
Functionning of the remote control

LCD screen
Displaying menu

Communication
Radio & Zigbee

SD Card

STM32F103 Microcontroller

Up
Down
Back
Ok

Joysticks to control the robot
Software development

- Use of a RealTime OS: ChibiOS/RT
  - Ease the development
  - Produce well written code
  - Possibility of doing several things at the same time

- Threads
  - LCD screen display (one per line)
  - Buttons
  - State machine
  - Joysticks (when robot started)
State machine

- Main menu
- Connect to a robot
- Battery
- Play Mario song
- Error

Zigbee
- Radio
- Select a robot
- Select a channel
- Scan

Robot menu
- Start/Stop robot
- Explore SD Card
- Flash robot
- SD Card
- Scan
Hardware issues

- Radio problem on the PCB prototype
- Missing 25mOhm resistor to check battery state
- ACI workshop closing during one month
Mechanical integration

- Sony: same controller for almost 20 years

Source: G. Cuendet’s presentation

Source: http://media.moddb.com
Mechanical integration

- Ergonomics
  - SolidWorks design and 3D printing
Mechanical integration

- New PCB in production
Live demo

- Let’s flash the salamandra and play with it a little!
Thank you for your attention!

- Do you have any question?