POLITECNICO
MILANO 1863

# Contiki-NG
# Evaluation Lab

Luca Mottola

luca.mottola@polimi.it

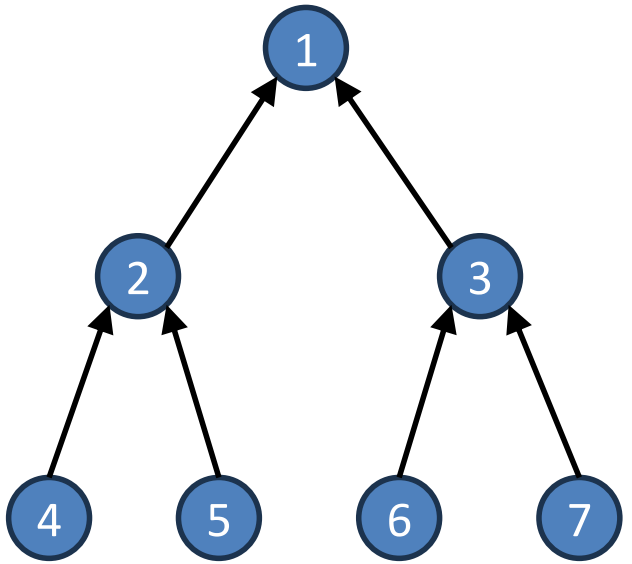
http://mottola.neslab.it

# A Simple RPL Monitor

- You are to implement a simple RPL network monitor running at the root
  - Every ~1 minute, a number of UDP clients send a message to the monitor with the id of their parent
  - The monitor stores this information as long as it is **periodically refreshed**
    - This information is printed out every minute too
  - If the RPL tree **changes** or **new nodes** are added, the monitor should eventually update its information
  - If a UDP client is **not heard** for **at least** 3 consecutive minutes, it is **eventually removed** from the monitor

# Considerations

- Clients may appear or disappear at any time
- You can use COOJA motes
- Please use descriptive log information
- For testing, please use a simple topology



# Suggestions and Tips

- To simulate tree changes and node addition/removal, move nodes around in Cooja
- Useful functions
  - **`#include "net/routing/rpl-lite/rpl.h"`**
  - **`rpl_parent_get_ipaddr (curr_instance.dag.preferred_parent)`**
    returns the IPv6 address of the current parent
  - **`uip_ipaddr_cmp(*addr1,*addr2)`**
    compares two IPv6 addresses
  - **`uip_ipaddr_copy(*dest,*source)`**
    copies IPv6 **`source`** address into **`dest`**
- You can start from an existing example!

# Rules

- Complete the README.md file with
  - Your group identifier
    - From the group registration document
  - Name of each group member
  - A 200-word (max) description of your solution
    - What piece of code does what when…
- Create and submit a single zip file with
  - The README.md
  - All necessary source files and Makefile(s) in no specific subdirectory
  - A `.csc` file with the test topology seen before
  - Remove everything that is not the project you want to submit
    - Binary files…
  - Name of the file: contiking-groupXX.zip
    - XX is the group identifier from the group registration document
  - Submit by the user corresponding to the contact email specified in the group registration document