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Olaf's Blog

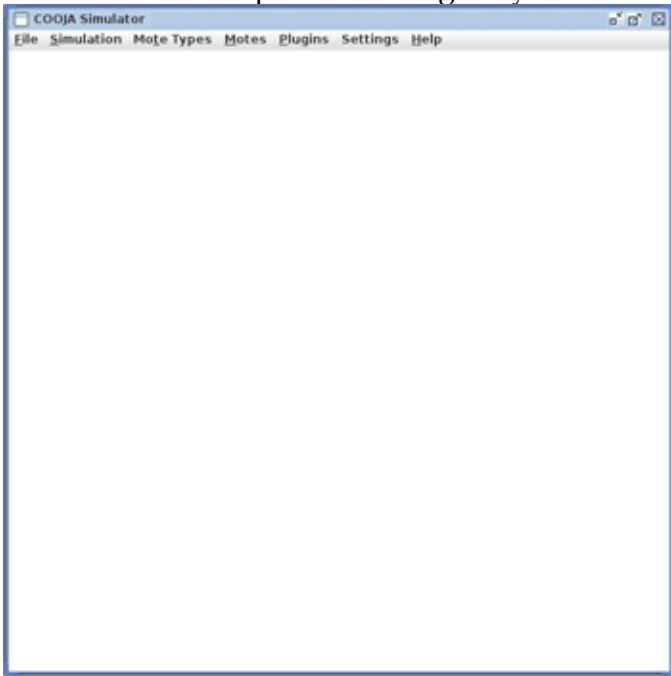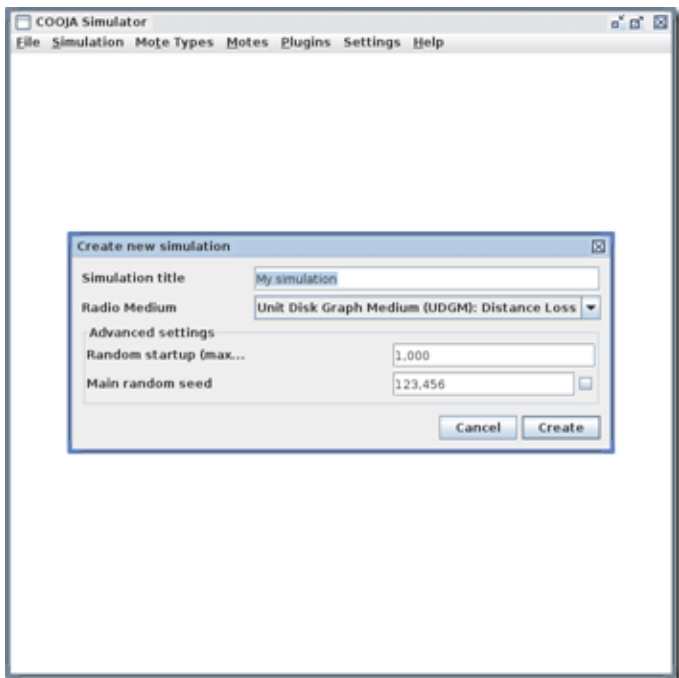Post your own or leave a trackback: Trackback URL

TinyOS and Cooja

November 25, 2010 //

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A little HowTo on running TinyOS applications in the Cooja emulation / simulation environment.
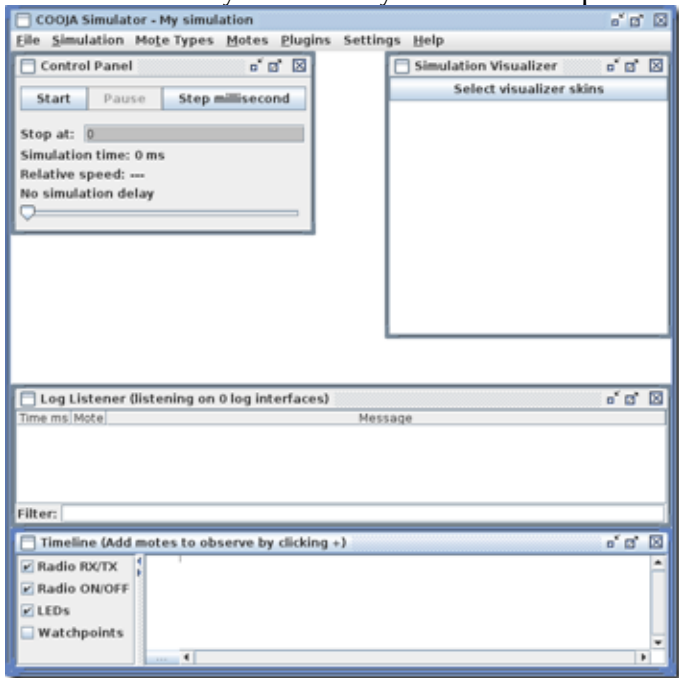
1. Cooja is included in the Contiki ~~CVS~~ Git. Hence, make sure you have a recent ~~cvs checkout~~ git clone / checkout / branch /… of Contiki on your system. See http://www.sics.se/contiki/download.html for installation instructions.
   2011-03-27: update: contiki is now on Git.
2. Compile your tinyos application with "make telosb"
3. In your Contiki installation, go to tools/cooja/ and run "ant". This requires you to have java and ant installed. After compilation it will greet you with an empty simulation environment.
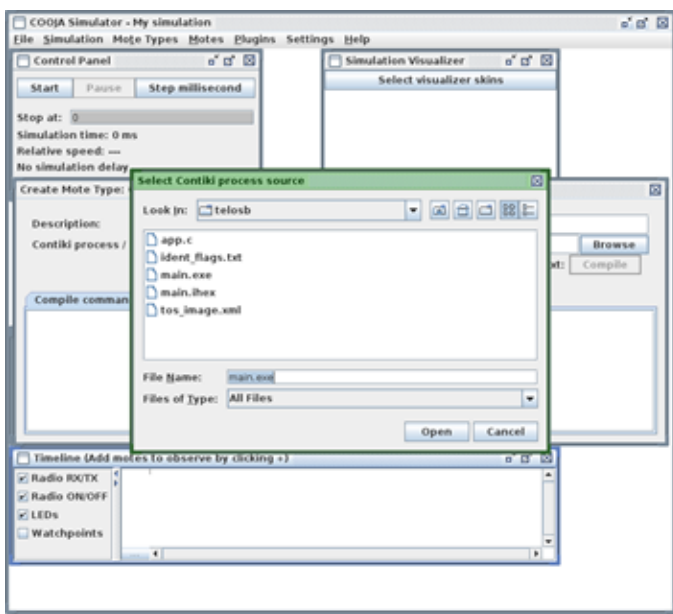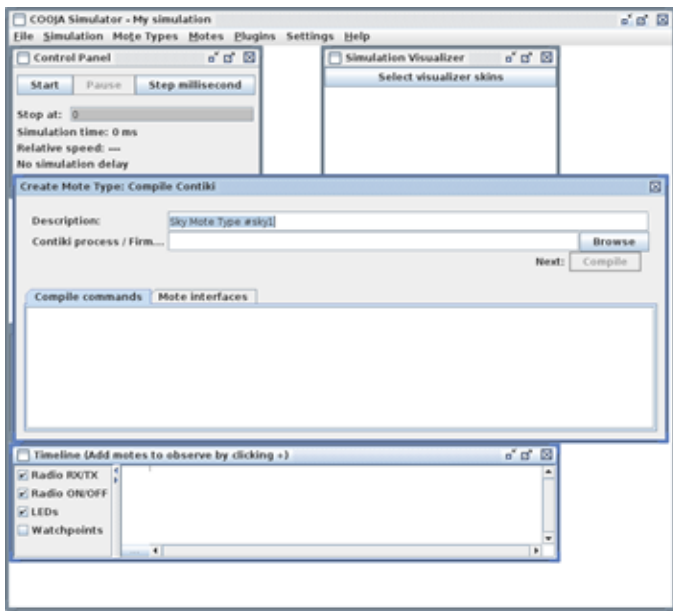

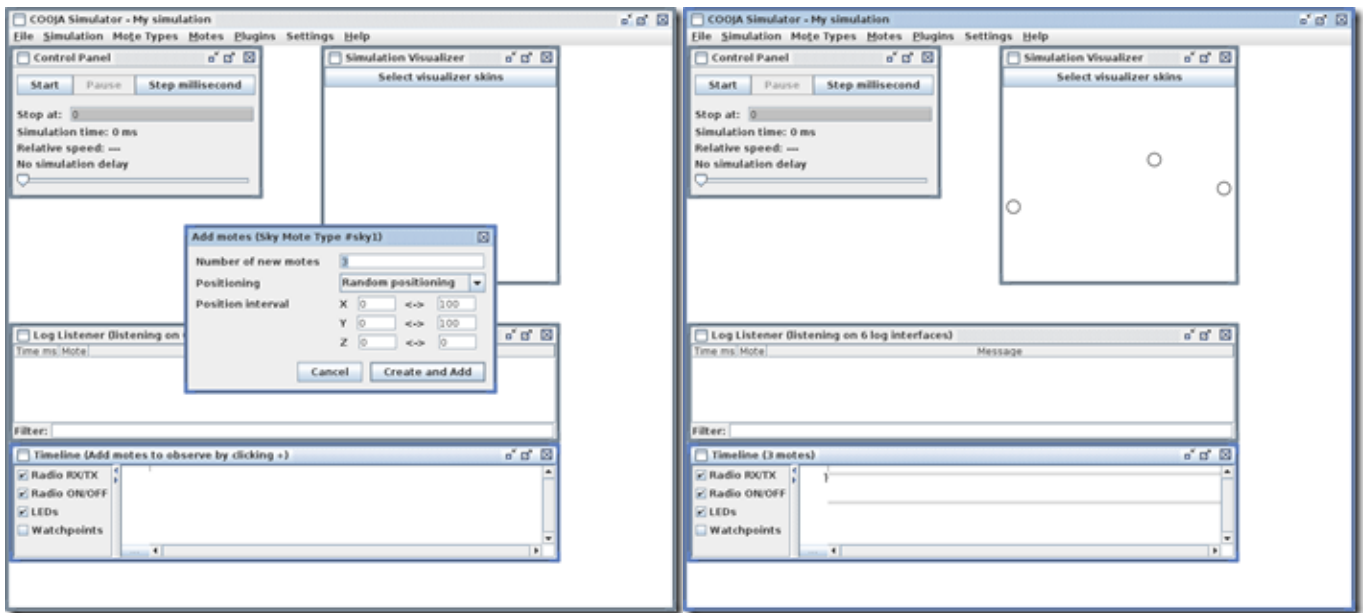4. Hit File –> New Simulation to configure your simulation run.

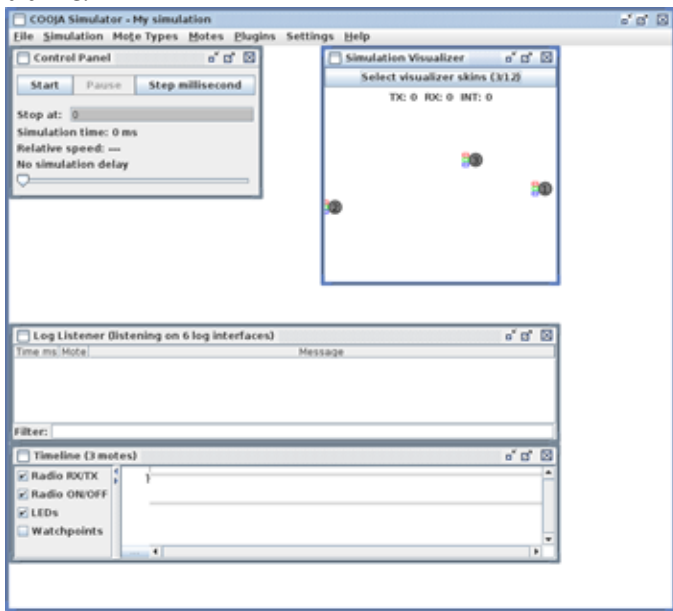5. Press create and you will see your initial setup.

6. Now it is time to add some sensor nodes. Hit mote types –> create mote type –> sky mote type and select the image (main.exe) of your tinyos application by hitting browse.
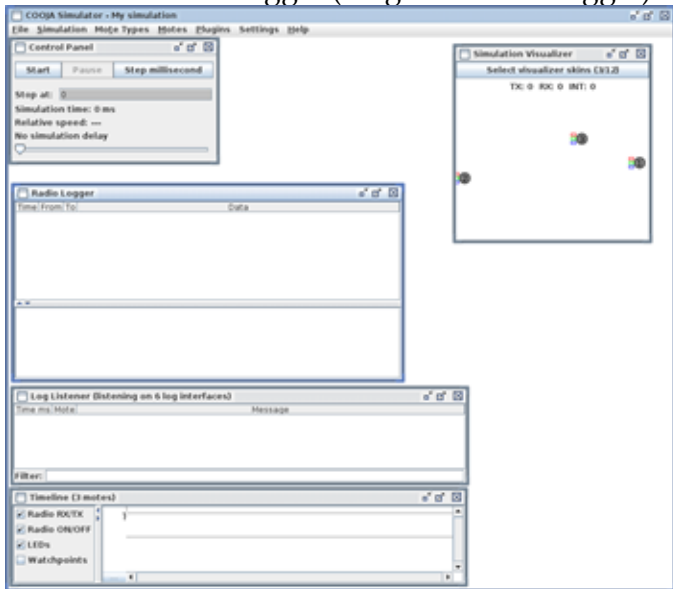
7. Hit open and create and next specify the number of sensor nodes you need with that application image. You can add other application by repeating the steps 6 and 7. Hit create and add to make the sensor nodes appear.

8. Play with select visualizer skins to customize the sensor visualizations. I prefer mote ids, leds, and radio traffic.

9. Activate the radio logger (Plugins –> radio logger) and place all windows conveniently on the screen.

10. Press start to see the action. Check the timeline to see packets sent and received and also the Leds. Check the loggers to see radio packets and serial communication.

11. Cooja has many other features such as serial sockets, debugging, etc. I will leave it to you to explore them. Please keep in mind that some functionality in Cooja is specific for Contiki and will not work (or only partially) with TinyOS.

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Tags contiki, cooja, emulation, sky, telosb, tinyos, tinyos 2.x, wsn
Categories WSN

23 Comments

Martin L
November 25, 2010 at 6:07 pm
For others reading this tutorial: you may have to rename the main.exe to main.sky for the create mote function to work.

The "log printf" function and "variable viewer" are also very useful.

Reply
olafland
November 25, 2010 at 6:32 pm
Hmmm, I have always been using the main.exe. Maybe you are not using the CVS head…