**Моделировании беспроводных сенсорных сетей на cooja симуляторе**

**Лабораторная работы No 2: сбор данных с Rime**

* изучать как запустить симуляции в виде csc
* изучать использование java скрипты
* изучать тестовые скрипты для автоматизации симуляции

**Начать COOJA**

cd contiki-2.6/tools/cooja/

ant run

COOJA compiles, and after a few seconds the simulator appears. All COOJA simulations are controlled using plugins: small Java programs that interact with simulations and simulated nodes. When COOJA is started, no simulation is loaded and no plugins are started.

**Создать симуляцию**

A new simulation is created via the menu.

• Click menu item: File, New Simulation. A number of configuration options are presented. Feel free to ask if you have any questions.

• Enter a Simulation title, and click Create.

We have now created our first simulation in COOJA. However, the simulation does not contain any nodes yet. To add nodes we need to first create a node type, and then add nodes to the simulation.

**Открыть файл csc**

To load a simulation, click menu item:

File, Open simulation, Browse....,

Select a simulation configuration. (example, Rime, example.collect.csc)

When a simulation is loaded, all simulated Contiki applications are recompiled. A functionality similar to saving and loading simulations, is reloading a simulation. Reloading can be used to reset the simulation to restart all nodes. More importantly, reloading a simulation will recompile all Contiki code, useful while developing Contiki programs.

**Тестовые скрипты для автоматизации симуляции**

(The following tutorial is based on an email from Fredrik Österlind to the developer mailing list, 2009-05-18) The easiest way to automate simulations in Cooja so that you can run multiple test is by using COOJAs **Contiki test scripts**. Contiki tests can be run both with and without GUI, and could, combined with a shell script, automate several test runs (for example changing parameters in the .csc simulation file).

Example: running a simple Hello world test repeatedly with different random seeds.

**Создать новую симуляцию**

When in the "Create new simulation" dialog, be sure to configure for automatically generated random seeds (the checkbox right of the "Main random seed"). Every time this simulation is loaded, a new random seed will be used.

**Конфигурация симуляции**

Create a mote type (use hello world or your favorite Contiki app), and add a few nodes. At this step you may typically also want to configure the radio medium, node positions...

**Создать текст скрипта**

Start the "Contiki Test Editor" plugin. There are several test scripts available (Javascripts, ends with .js), for now use this very simple script:

TIMEOUT(10000);

log.log("first simulation message at time : " + time + "\n");

while (true) {

YIELD(); /\* wait for another mote output \*/

}

Copy and paste this script into the upper part of the test editor - this is where the javascript code goes. The lower part shows the currently active test output.

The above script is very simple: it declares a test timeout of 10 seconds. It also prints the first printf() output from any of the simulation nodes. Depending on what you want to do, perhaps such a simple script is sufficient if you only want to repeat tests with a given duration (10 seconds in this case).

**Активировать скрипт**

Click "Activate" in the plugin, and then start the simulation. The simulation stops after ten seconds. In the lower part of the test editor plugin, you should messages indicating that the test timed out (failed).

**Задачи**

* сделать снимки для окон
* написать описание для каждого окна
* сделать скрипт на jave для примера сбора данных Rime (example.collect.csc)

1) для чего используется инструмент rime в симуляторе cooja

2)приведите пример скрипта для создания сенсорного узла на симуляторе cooja

3)как посмотреть в cooja посмотреть дальность действия сенсорного узла