Steps involved in the Mobile Detection with CupCarbon:

Step 1. Create a new project: this can be done either by clicking on the “New project” icon of the toolbar or on the menu Project à New project. Choose the name (example: helloworld) and the place where you want to save your project. The project will create a new folder with the given project name.

Inside this folder, 1 file (helloworld.cup) and 8 other directories will be created. The content of each directory is given in the following:

1. config: it contains the simulation parameters file, the building list file, the marker list file and two other directories (sensor and sensor\_radios) that contains the list of sensor nodes (one file by sensor node) and the list of the radio modules of each sensor.
2. gps: it contains the list of routes
3. logs: it contains the log file
4. results: it contains the simulation results (a csv file)
5. scripts: it contains the SenScript files of the project
6. netevents: it contains the natural event files
7. tmp, network: are used by the simulator

Step 2. Add a new sensor node on the map: click either on the Add Sensor icon of the toolbar or from the menu bar (Add à Add Sensor Node). Then, click on the map where you want to add the sensor node. Another click will lead to another new sensor node and so on. To stop adding sensor nodes, just click on the right button of the mouse. You can also click on the icon of the toolbar, or by typing on the escape [esc] button of the keyboard.

Step 3. Open the SenScript Window: the SenScript window can be opened by clicking on the icon of the toolbar or from the menu Simulation à SenScript Window.

Step 4. Write the script: add the following script

(1) in the text area part of the SenScript window, Add the name of this script in the File name field

(2), then click on the Save button

(3) just in the left part of this field. This will create a file ‘.csc’ in the directory scripts.

Finally, close the SenScript Window.

Step 5. Assign the SenScript file to the sensor node:

1. Select the sensor node on the map
2. Go to Device Parameters in the left part of the main window
3. Then, select the ‘.csc’ file in the field Script file
4. And then, click on the apply button just in the right
5. Note that once the script is assigned to a sensor, the center will be colored in orange. This can help to detect graphically sensors without scripts.

Step 6. Run the simulation: For this example, there is no need to parameterize the simulation, just click on the run simulation button in the toolbar or in the simulation parameters menu in the left.

Step 7. Simulation results: in this example the simulation results shows a Hello World message displayed by the sensor.

Step 8. Save the project: Click on the icon to save the project.

Algorithms Involved :

Detection algorithm:

1. Repeat
2. dreadsensor x
3. if x =1
4. send msg ’Yes’ to next sensor
5. else
6. send msg ’No’ to next sensor end
7. delay

Transmission algorithm:

1. Repeat
2. wait
3. read x
4. send x to next node

Sink Algorithm:

1. Repeat
2. wait
3. read x
4. if x=’Yes’
5. Blink the node
6. else
7. Don’t Blink the node
8. end