HOME CHALLENGE #1: TINY OS REPORT

The goal of this activity is to Create a Cooja simulation with three TinyOS (sky) motes that communicate over the radio. following In this case our attention was on three different motes.

In order to successfully complete the exercise we took in consideration the “RadioCountLedsApp” code and we used a GitHub repository to simplify the team work.

* The **first request** was to create a message structure composed by a counter and a sender id.

In order to do so, we modified the parameter *‘nx\_struct radio\_count\_msg’.* The message structure required one more field: an unsigned Int of 16 bits for defining the variabile “senderId“.

* The **second request** was to define the frequency at which every mote send messages.

We have solved this problem by introducing the macro ”TOS\_NODE\_ID” that defines the three mote’s id from 0 to 3. Based on the id we set the sending period at 1000ms, 333ms and 200ms. The sender id was needed to be included into the message sent, so in the message (“rcm”) we recall the value of the ”TOS\_NODE\_ID” variable.

* The **third request** was to control each led and make it turn on every time the corresponding mote sends a message (the first led associated to the first mote and so on…)

To do so the program checks the “senderId” values to decide when to turn a led on using the ﻿ledXToggle() function.

* The **fourth request** was to turn off all the leds when the variable “counter” (that has been increasing of a unit for every received message) reach the value of 10.

To program checks if the rest of the division by 10 of the “counter” variabl is 0 or not.