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-sendAck.nc

In the code 4 variables are used: *last_digit* = 2, which is the last digit of the ID, *counter* and *rec_id* which are counters (one variable for each node. As we receive the REQ we assign the RESP its counter.) and *req_ack*, which keeps track of the number of acks received by node 1. When the system is booted we start the node 1 by switching on its radio and triggering a timer corresponding to the periodic sending of the REQ message. For the message we also use a flag to indicate that an ACK is expected. Once the msg is sent we check if we received an ack. If no, which is true for the first Y = 16 seconds, the statement is displayed and we leave the function waiting a second for the timer to send another REQ.

One the node 2 is booted, we switch on the radio and do nothing, since the timer was checked to be used by the node 1 using *TOS_NODE_ID*. When the REQ is received by node 2 it sends back an ack and upon reception we increment *req_ack*, checking if it is equal to *last_digit+1*. We display the counter and, if the previous statement is true, we stop the timer, otherwise timer is intact. Then node 2 extracts the counter from the REQ, generates the measurement, creates a message and sends it with a flag. As before, once the message is received, its content is displayed and an ACK is sent back. and stop sending REQs.

- sendAckApp.nc

For wiring the components. Simmilar to all the previous example, with several new interfaces, like *FackeSensorC* for the sensor and *ActiveMessageC* to work with ACKs.

-sendAck.h

The message is a structure having 3 fields: *msg_type*, which represents if the message is REQ/RESP; *msg_counter*, for signing the message with the iteration and *value*, which has the measurement from the sensor.

-RunSimulationScript.py

Only two lines are modified: *time2 = 16*t.ticksPerSecond();* - to make the mote 2 start at the corresponding time; *for i in range(0,10000):* - increased the number of events displayed.

ALL THE OTHER FILES, LIKE NOISE OR TOPOLOGY ARE REMAINED UNMODIFIED.