

WORK IN PROGRESS

23/02/2009

We have taken a new course for our master test. First, we were reading a lot of papers to investigate existing algorithms to get better RSSI readings and better positioning information. We gained knowledge about the existing algorithms, but it takes a lot of statistics knowledge to really understand the better algorithms and takes a lot of time. We stopped our research for now, to create a proximity application. This application will tell you in which room you are currently being present.

The application will contain:

- Suitable application that runs on the telosb motes. For performance reasons, this application will exist out of different messages:
 - Sensormeasurements message, this will be send to the controller to report about the measurements of the sensors, this message exists out of:
 - Battery (voltage)
 - Light
 - Humidity
 - Temperature
 - Button pressed?
 - Mote ID
 - Type (integer for the type of message)
 - Status message, this will be send to the controller to report about the status of the network, this can happen when the user makes use of the GUI to put a LED on. This message exists out of:
 - Mote id
 - Type (of message)
 - Active (participating in the localization or not?)
 - AN
 - Posx (x coordinate, set by the GUI)
 - Posy (y coordinate, set by the GUI)
 - Samplerate (for the sensors)
 - locRate (rate for transmitting RSSI)
 - leds (what leds need or are on)
 - power (transmit level)
 - frequency
 - conn (contains the number of motes the BN is connected to)
 - Localization message, this is namely used to transmit the coordinates of the blind nodes and their RSSI, this message exist out of:
 - Mote id
 - ANmoteid
 - Type (type of message)

- Posx (calculated x coordinate of mote)
- Posy (calculated y coordinate of mote)
- RSSI

Further, the adaption of the parser is needed to transmit these different messages correctly to the controller and we also added a panel to set the ip of the controller and the listen/send port.

The final step is the creation of a GUI. This GUI will help us a great deal with testing the different algorithms. Like selecting anchor nodes, there frequency, coordinates, samplerates...