CowBhave

Software installation

1. Firmware installation on RuuviTags

1.1. Uploading Ruuvi tag firmware by Nordic Semiconductors DevKit

Install Segger Embedded Studio

https://www.segger.com/downloads/embedded-studio/

Download nRF5_SDK

https://developer.nordicsemi.com/nRF5_SDK/nRF5_SDK_v15.x.x/

Download Ruuvi tag developed firmware

// https://github.com/cowbhave/cowbhave.scan_response.c

https://github.com/cowbhave/cowbhave.scan_response.c/pull/1

With the following lines commented

```
//status = task_led_write(RUUVI_BOARD_LED_RED,
!RUUVI_BOARD_LEDS_ACTIVE_STATE);

//status |= task_led_write(RUUVI_BOARD_LED_RED,
RUUVI_BOARD_LEDS_ACTIVE_STATE);
```

Prepare Development Kit and the Ruuvi tag

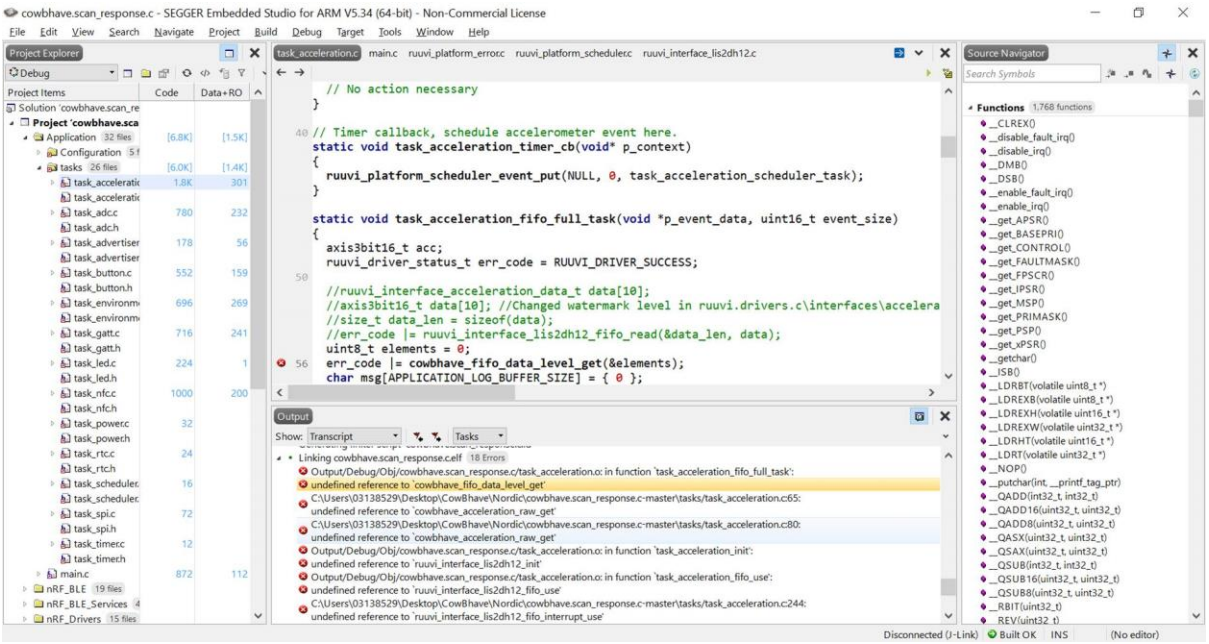
https://lab.ruuvi.com/devshield/

https://lab.ruuvi.com/ruuvitag-fw/

Compile and upload the firmware.

https://blog.ruuvi.com/ruuvitag-segger-embedded-studio-1e5a24cb6a43

Possible problems



Solution: Right click folder -> "Choose synchronize with disk".

https://lab.ruuvi.com/ses/

1. Attach and hold a tag to the Devkit.
2. Turn the Devkit on.
3. In the Segger Embedded Studio menu Target->Connect J-Link
4. In the Segger Embedded Studio menu Target->Erase All
5. In the Segger Embedded Studio menu Build->Build and Run
6. Turn the Devkit off.

2. Programs installation on receiving stations Raspberry Pi

Connect the RuuviTag Development Kit to a PC according to the instructions:

https://lab.ruuvi.com/devshield/

https://ruuvi.com/setting-up-the-development-environment-for-ruuvitag-firmware/

2.1. Setting low energy Bluetooth on Raspberry

```
sudo apt-get install bluez bluez-hcidump
sudo apt-get install libbluetooth-dev libboost-all-dev cmake git
git clone https://github.com/edrosten/libblepp
cd libblepp
./configure
make -j4
sudo make install
```

Move file libble++.so from /usr/local/lib to /usr/lib

2.2. Setting ZeroMQ for C++ on Raspberry

Installing according to the instructions at https://github.com/MonsieurV/ZeroMQ-RPi

```
cd ..
sudo apt-get install libtool pkg-config build-essential autoconf automake
sudo wget
https://github.com/jedisct1/libsodium/releases/download/1.0.3/libsodium-
1.0.3.tar.gz
sudo tar -zxvf libsodium-1.0.3.tar.gz
cd libsodium-1.0.3/
sudo ./configure
sudo make
sudo make install


cd ..
sudo wget http://download.zeromq.org/zeromq-4.1.3.tar.gz
sudo tar -zxvf zeromq-4.1.3.tar.gz
cd zeromq-4.1.3/
./configure
make
sudo make install
sudo ldconfig


cd /usr/include/
sudo wget https://raw.githubusercontent.com/zeromq/cppzmq/master/zmq.hpp
```

Uploadie the Signal receiving program

Create directory RuuviDataCollection on /home/pi/.

Create directory “data” on /home/pi/RuuviDataCollection/.

3. Configuring receiving stations Raspberry Pi

3.1. Setting connection with Raspberry through VNS

Allow VNS connection in Raspberry definitions:

Preferences->Raspberry Pi Configurations->Interface->VNC: enabled.

Username: pi

Password: LukePLF, LukeCows123

3.2. Setting priority of networks for Raspberry

sudo nano /etc/wpa_supplicant/wpa_supplicant.conf

Change the priority of the networks, higher number matches higher priority.

```
network={
            ssid="LukeCowBhave_5GHz"
            psk="LukeCows123"
            key_mgmt=WPA-PSK
            priority=3
}
```

Ctrl+O, Enter, Ctrl X.

3.3. Update clock

sudo date -s "3 February 2020 12:52:15"

clock format with seconds

%X

3.4. Processor temperature

/opt/vc/bin/vcgencmd measure_temp

watch -n5 rpi-temp

System installation

Barn coordinate system