14/10/2019

**Tasks:**

* Read write papers about Condition Monitoring Systems using vibration accelerometers.
* Research ways to implement FFT algorithm in uMicrocontroller
* Test the firmware for Node MCU evaluation boad
  + Is that reliable for the project?
  + What is the memory size?
* Search the Wi-Fi adaptors available for the FRDZ-K64F
  + Advantages/disadvantages Node MCU
  + Do I have to write a library or is there any library available?
* Get comparison between FRDZ-K64F (NXP) and Discovery F469

**Reflections:**

DSP boards are quite expensive and required more time to setup an environment to deploy the application. However, there is a possibility of using CMSIS library in ARM Cortex M4 MCU to optimize performance and run DSP processing. The downside of running a DSP processing in microcontroller is the test/visualization of the algorithms.

**Issues**

* Had problem on the delivery of the Accelerometer and MCU unspected delay in the arrival lead to push project for the next two weeks.

**Solutions:**

I decided to collect data with a cheaper implementation that uses Node MCU - ESP8266 Espressif for data acquisition and Wi-Fi communication. The board firmware is well stabilised and possible to be programmed using C/C++. In that way I can set a MQQT to a server and filtering and testing FFT algorithms local **PC**.