AAC-Clydespace Software Engineer Test

[Programming Test]

1) You are given the LIS3MDLTR 3-Axis Magnetometer sensor to operate on an I2C bus. Please write driver code to accomplish the following:
    a. Retrieve the device's full-scale configuration
    b. Retrieve and set the device's output data rate
    c. Enable or disable the device's interrupt pin
    d. Read the output data of a specific axis

The datasheet of the device can be found here:
https://www.st.com/content/ccc/resource/technical/document/datasheet/54/2a/85/76/e3/97/42/18/DM00075867.pdf/files/DM00075867.pdf/jcr:content/translations/en.DM00075867.pdf

For this assignment, assume you have access to a predefined I2C API with the following functions:

- `i2c_read(uint8_t bus_address, uint8_t register_address, uint8_t *buffer, uint16_t length);`
- `i2c_write(uint8_t bus_address, uint8_t register_address, uint8_t *data, uint16_t length);`

Note:

- You're encouraged to spend not more than a couple of hours on the task.
- Submission can either be via Git (preferred) or as a Zip file.