Assignment6

Before doing this assignment, you should already know the following things:

- What is CAN
- How to transmit and receive CAN message using HAL library

Embedded programming exercise

Task

In this assignment you need to decode the CAN message from motor GM6020 and try to turn it on.

1. Read the GM6020 User Guide it will tell you the defination of CAN message and how to control it.
2. Receive and decode the CAN message from GM6020, show it on Ozone
3. Transmit the control message, let the motor spin. DO NOT SET THE CURRENT TOO HIGH, usually 2000~3000.
   (We will provide you the motors and do the wiring for you)

API

You may need the following APIs from HAL library to finish this task:

- HAL_CAN_Start
- HAL_CAN_Stop
- HAL_CAN_AddTxMessage
- HAL_CAN_GetRxMessage
- HAL_Delay

Hint

- How to decode: (reference only, buffer is what you received from CAN bus)

```
rawEncoder = buffer[0] << 8 | buffer[1];
rpm = buffer[2] << 8 | buffer[3];
torque = buffer[4] << 8 | buffer[5];
temperature = buffer[6];
```

Useful links:

- Bitwise Operators in C/C++ (this will help you understan the decode function)
- Description of STM32F1 HAL and low-layer drivers

Demo

We will help you to finish the task cause it is not easy for beginers, you need to finish your code first and we will help you debugging.