CSE522: RTES – ASSIGNMENT 4

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INSTRUCTIONS TO SET UP

HCSR-04 SENSOR

1. Copy the HC-SR04 folder (Contains drivers for the sensors – hcsr04_drv.c and hcsr04_drv.h) enclosed to the Sensor folder – This will include zephyr driver and Kconfig and Cmake files for this directory
2. Modify the following files in /driver/Sensor/ subdirectory as follows

Kconfig

```
source "drivers/sensor/hc-sr04/Kconfig"
```

CmakeLists

```
add_subdirectory_ifdef(CONFIG_HCSR04            hc-sr04)
```

We will enclose these files in our zip for you to easily access.

24FC256 EEPROM DIRECTORY-

1. Copy EEPROM driver files into /driver/flash/ subdirectory (Driver files – eeprom.c & eeprom.h)
2. Modify the following files as mentioned below

drivers/flash/CmakeList.txt: Copy the text below at the end of the file

```
Add zephyr_sources_ifdef(CONFIG_EEPROM_24FC256 eeprom.c)
```

drivers/flash/Kconfig: Copy the text below at the end of the file

```
config EEPROM_24FC256
        bool
        prompt "EEPROM 24FC256 memory"
        help
                Include EEPROM_24FC256 driver in system config.

config EEPROM_24FC256_DRV_NAME
        string
        prompt "EEPROM device name"
        depends on EEPROM_24FC256
        default "EEPROM_drv"

config EEPROM_24FC256_INIT_PRIORITY
        int
        depends on EEPROM_24FC256
        default 80
        help
          EEPROM Device driver initialization priority.
```

INSTRUCTIONS TO RUNS THE CODE

PROGRAM RUNNING

1. First the Build_code.sh present in the folder needs to be edited. Please edit the SD_CARD, PROGRAM_LOCATION and ZEPHYR_BASE locations. The -Wall flag has been added in this script.
2. Next paste the “Assignment-4” folder at the appropriate location /samples/
3. Use the shell file to configure the SD Card with Zephyr files
 /boot
 /efi
 /kernel

5. Now run the build_code.sh shell or the set of instructions (you have) required to compile Zephyr code on the SD Card.
6. Place the SD Card in the slot of Galileo board and power on.
7. In order to load shell module, type SELECT RESULTS
8. It will show the following options:
    1. Shell Enable → Type 1, Followed by 0/1/2 to select instance of the sensor
        eg: 1 1
    2. Shell Start → Type 2, Followed by no of pages to write
        eg: 2 3
    3. Shell Dump → Type 3, Followed by p1 and p2 pages to read data between
        eg: 3 4 5

HCSR DRIVER

Please note that the following configuration were used

HCSR Sensors 01

TRIGGER → IO2
ECHO → IO12

HCSR Sensor 02

TRIGGER → IO3
ECHO → IO10

FLASH DRIVER

WRITE PROTECTION→ IO8