CSE-522 Assignment 4 Report
Team 9

We have developed an application to develop a distance sensor channel for HC-SR04 and an I2C-based EEPROM device driver Zephyr RTOS (version 1.10.0) on Galileo Gen 2 board. Two instances of HC-SR04 sensor instances (HCSR0 and HCSR1) and one instance of EEPROM device have been created.

1] To optimize the use of delays, we have done series of observations with different delays used in application program to find detect sections where we can run application without need of delay. Also we have changed delay values as well to find minimal delay time that can be used whenever required so that delays can be optimized when in execution.

2] Also for console displays, we have got rid of prink statements used for debug or for user information to reduce overhead of prink calls. That way we ensure there is minimum delay when we are recording sensor values & writing them to EEPROM.

3] As per guidelines, when “start p” command is used inside shell, we are first erasing all EEPROM pages flushing it completely & then initiating the write.

4] Also due to time limitations we were not able to implement multithreading solution suggestion that was given in assignment where for reading sensor data & writing to EEPROM in application separate threads could have been used with semaphores to synchronize & ensuring both processes run without affecting execution of other.

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