REPORT

For optimizing the bandwidth we are using two threads, one to read the sensor value and another to write to the eeprom. For this purpose, we are allocating two buffers of page size, one will store the read data and other will be used to write the data to the flash device at a time,i.e. If in one buffer we are reading the values from one sensor while the other buffer will be used to store the values.The threads are explicitly scheduled to run using round robin algorithm. The config parameters to be used for scheduling using round-robin are :

CONFIG_TIMESLICE_SIZE = 5
CONFIG_TIMESLICING = y
CONFIG_TIMESLICE_PRIORITY = 5

The time slice size is set to be 5ms, which is optimized based on the number of context switches and trial and error. The timeslice priority defines what is the highest priority for scheduling the threads in round robin. Each thread is assigned a priority of 6. The lower bound for the min time interval is the min amount of time the sensor takes to The constant interval for reading the values is calculated based on the amount of time taken by the flash-driver to write to the flash device. Roughly the time taken to get one page of information from sensor is 80ms. The amount of time taken by the sensor to compute the values is only in us. Thus, by reading the values every 5ms, we are able to read the values for a one page roughly within 80ms, then the next page can start writing.