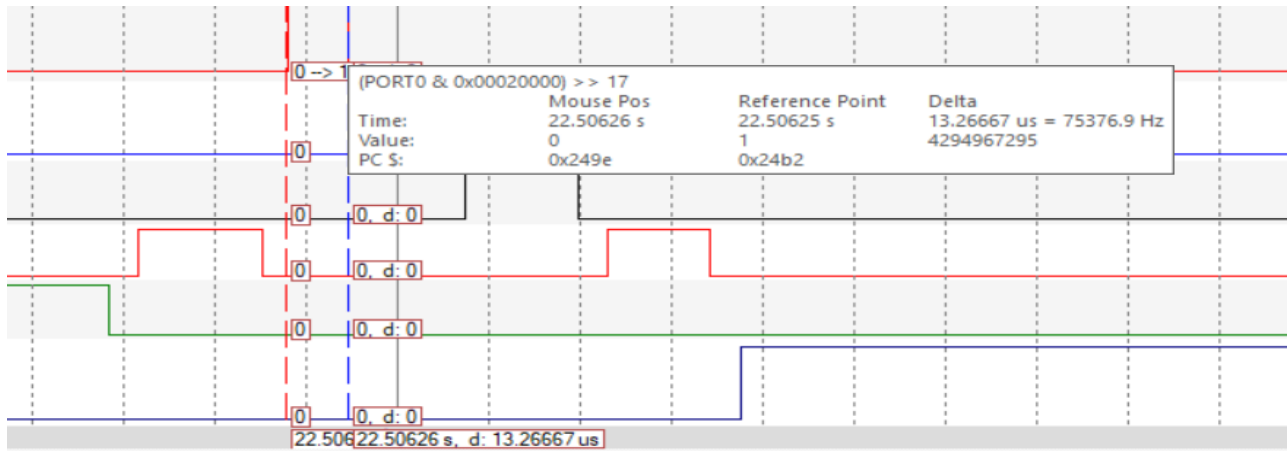


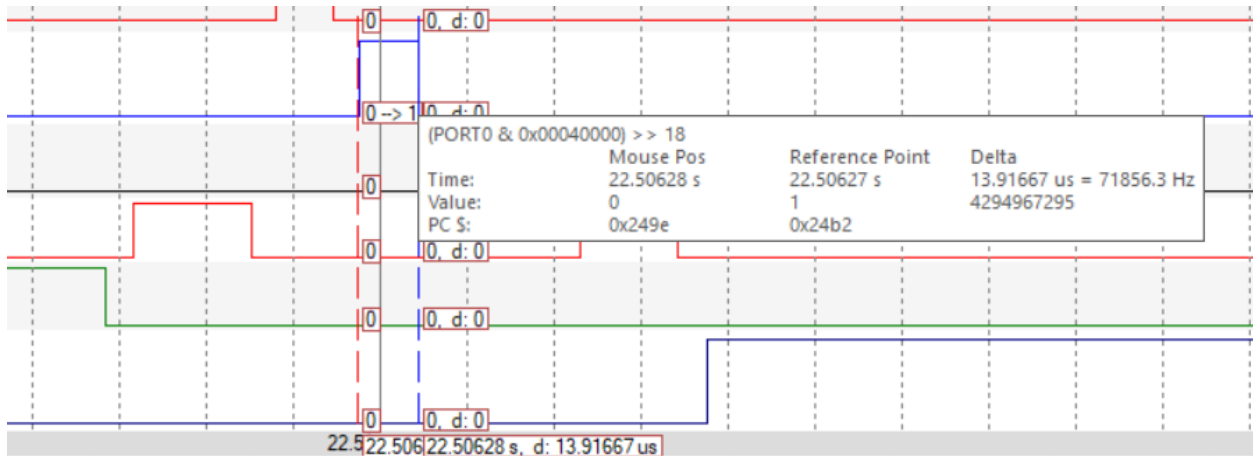
Youssef Mohamed

EDF report

1- Button_1_Monitor = 13.2us



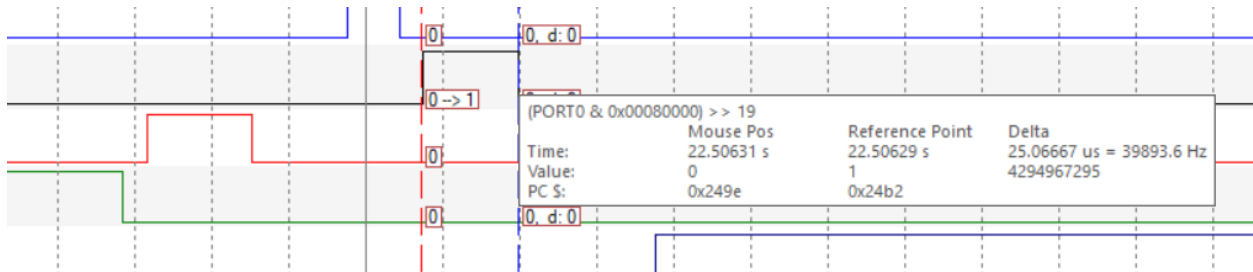
2- Button_2_Monitor = 13.9us



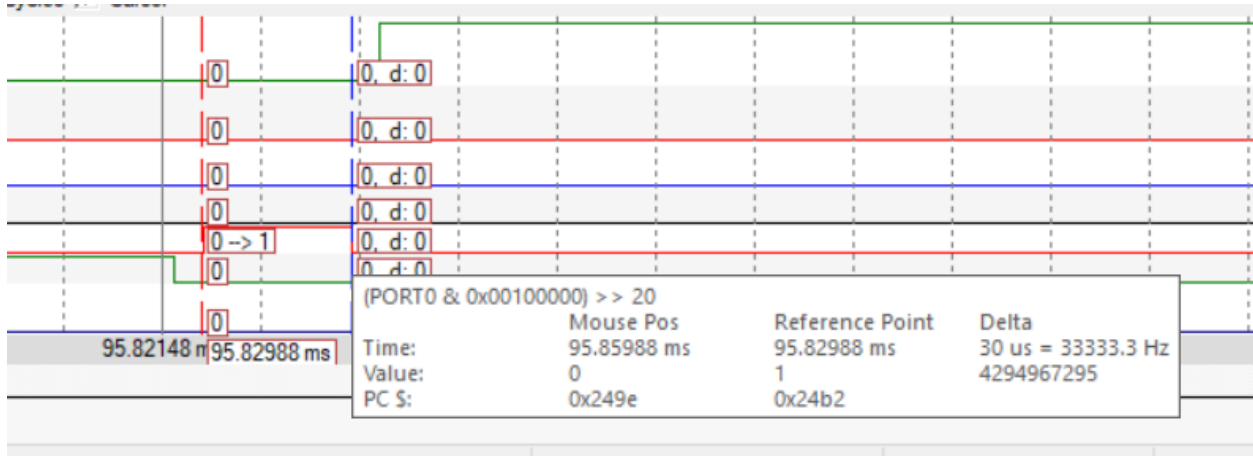
I noticed that there could be 1us tolerance, so I took the worst-case scenario for both tasks

In calculations I assumed that both ex-times are 14us.

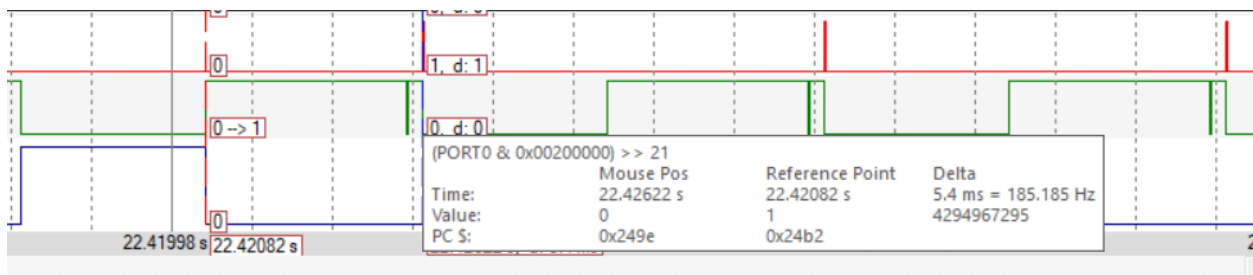
3- Periodic_Transmitter = 25us



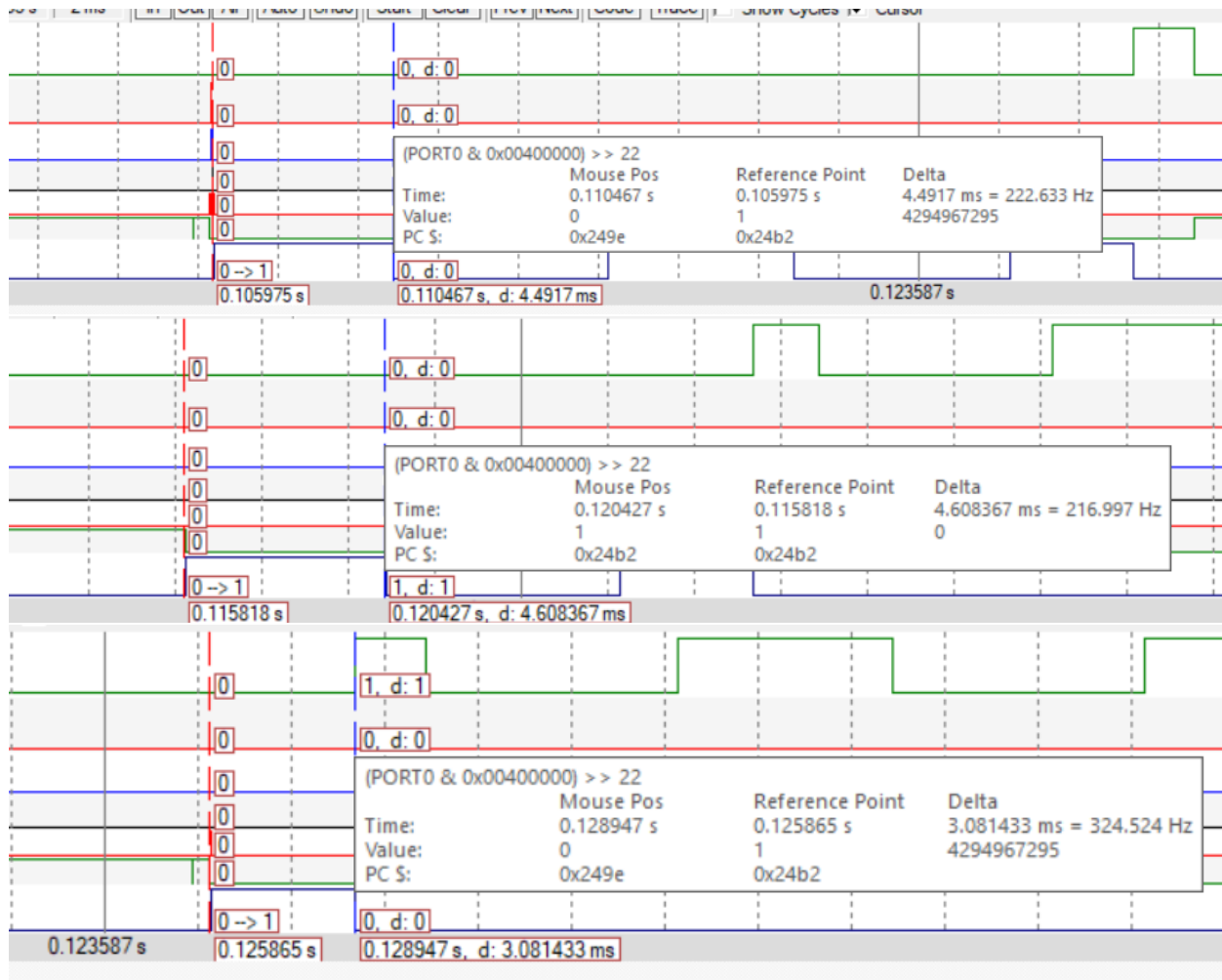
4- UART_Reciever = 30us



5- Load_1_Simulation = 5.4ms



6- Load_2_Simulation = 12ms



Note: the task "load_2_simulation" was "load_1_simulation" because "load_1_simulation" has earlier deadline.

Calculating new priorities:

- 1- Button_1_Monitor: {Periodicity: 50, Deadline: 50, Execution Time: 13.2us} priority = 2
- 2- Button_2_Monitor: {Periodicity: 50, Deadline: 50, Execution Time: 13.9us} priority = 2
- 3- Periodic_Transmitter: {Periodicity: 100, D: 100, Execution Time: 25us} priority = 1
- 4- Uart_Receive: {Periodicity: 20, Deadline: 20, Execution Time: 30us} priority = 3
- 5- Load_1_Simulation: {Periodicity: 10, Deadline: 10, Execution time: 5.4ms} priority = 4
- 6- Load_2_Simulation: {Periodicity: 100, D: 100, Execution time: 12ms} priority = 1

Check schedulability:

Hyper Period (H) = 100ms

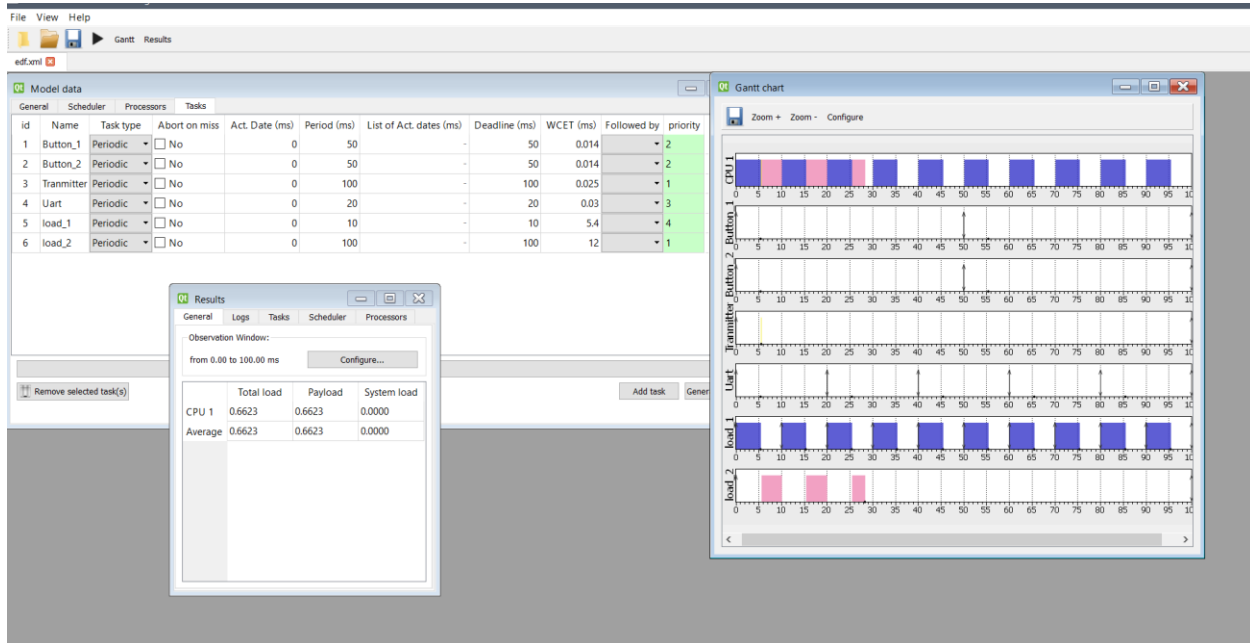
CPU load = $((2 \times 0.014) + (2 \times 0.014) + 0.025 + (5 \times 0.03) + (10 \times 5.4) + 12) \div 100 = 0.662$

$U = 0.014/50 + 0.014/50 + 0.025/100 + 0.03/20 + 5.4/10 + 12/100 = 0.662$

$URM = 6 * (2^{(1/6)} - 1) = 0.735$

$U < URM$ therefore System guaranteed schedulable

SIMSO



CPU Load = 66.5%

Name	Value	Type
cpu_load	66.5074692	float
system_time	11743989	int
Load_1_Simulation_total_ti...	6309976	int
Load_2_Simulation_total_ti...	1426593	int
<Enter expression>		