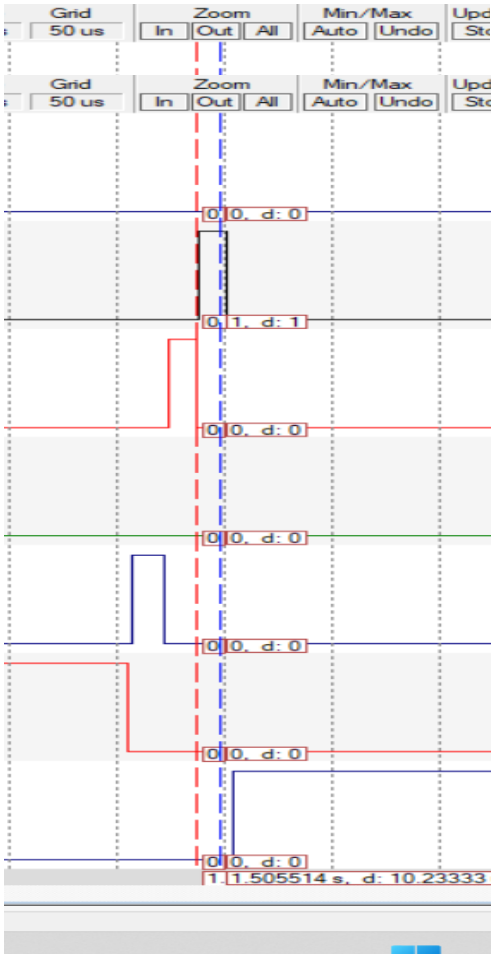
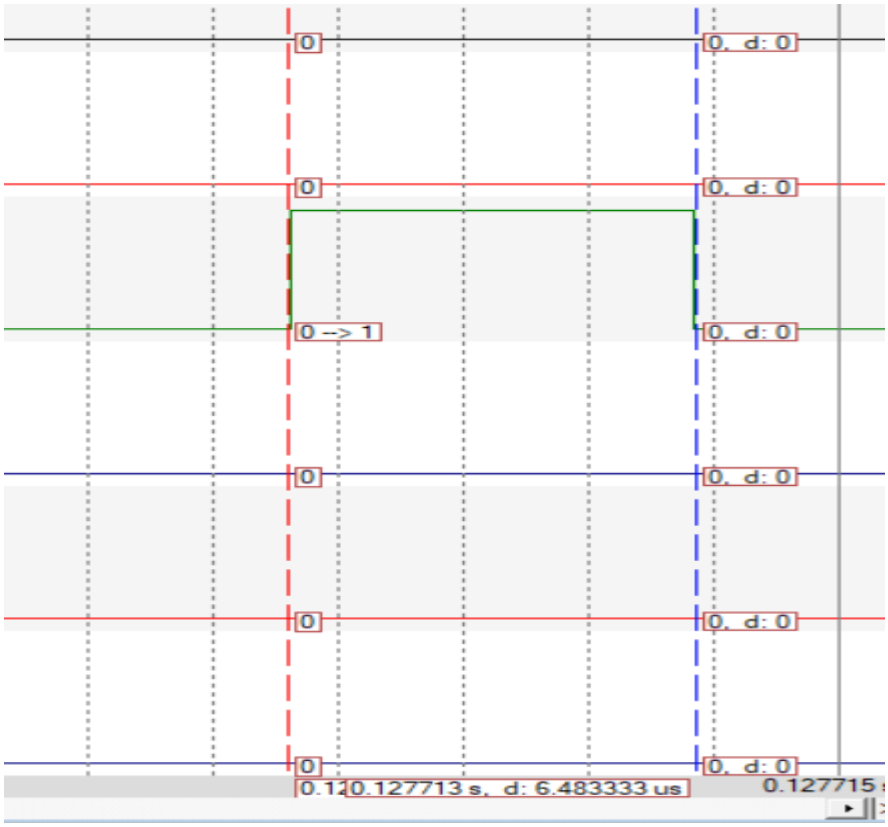
EDF SCHEDULER

we Should first Calculate the Execution Time Of each Task :



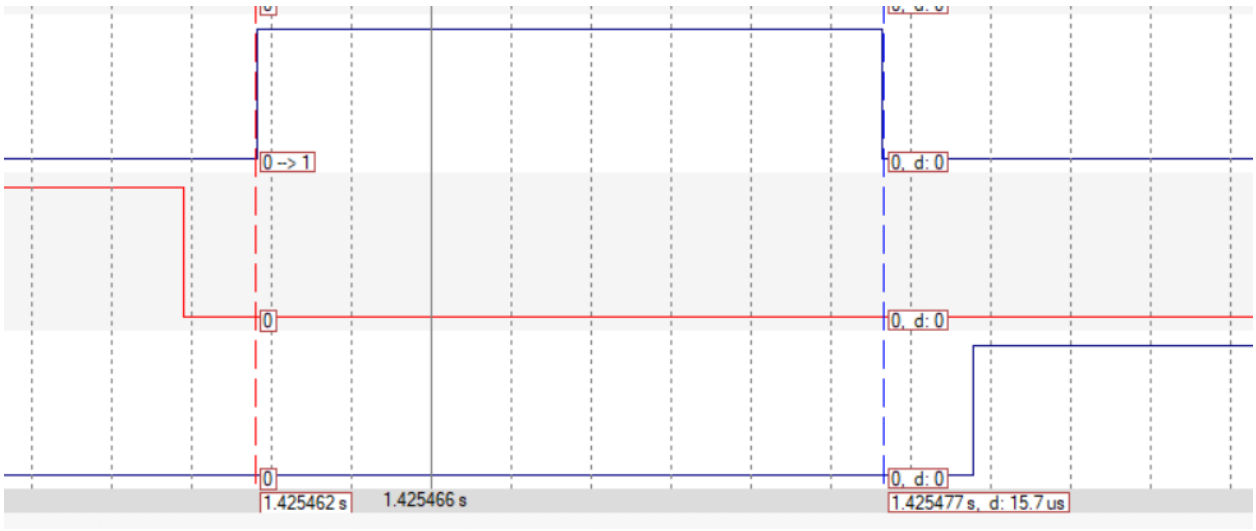
BUTTON_1_MONITOR ------> About 10 us.

BUTTON_2_MONITOR ------> About 10 us.



PERIODIC TRANSMITTER ----->
About 6 to 7 us

Uart_Receiver ---> About 15 us



Task 5: ""Load_1_Simulation"", {Periodicity: 10, Deadline: 10}, Execution time: 5ms
Task 6: ""Load_2_Simulation"", {Periodicity: 100, Deadline: 100}, Execution time: 12ms

Using Simso offline simulator

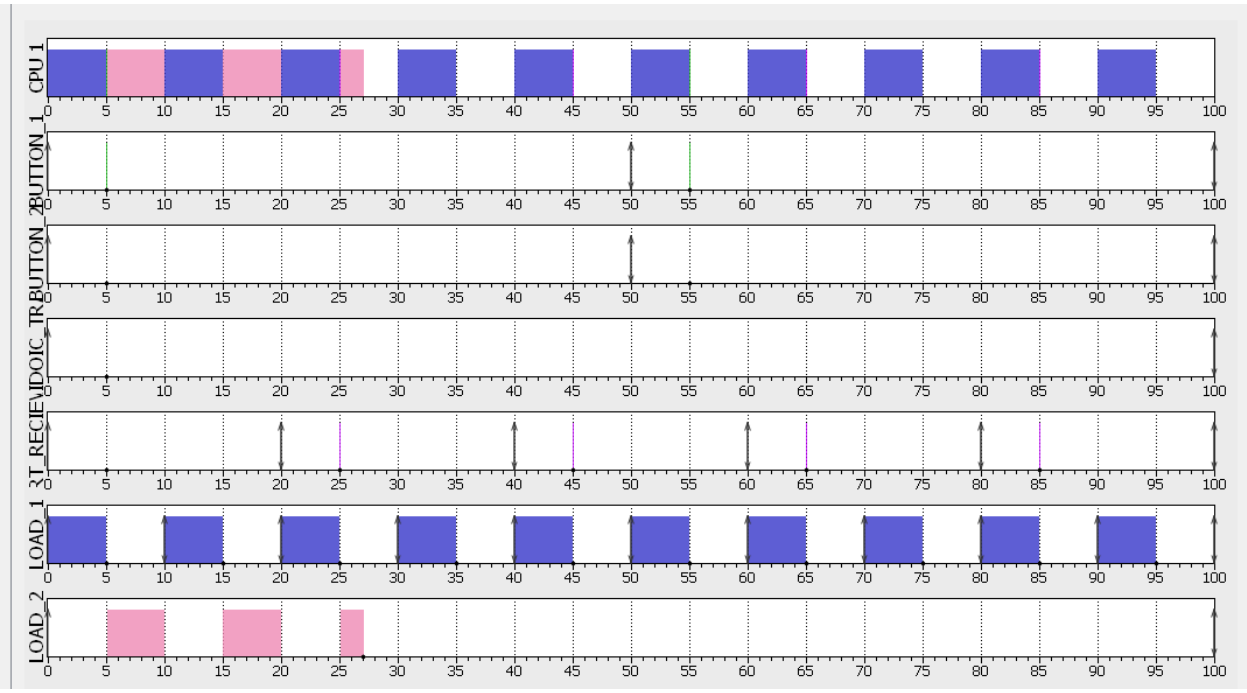
* FILE.xml

General | Scheduler | Processors | Tasks

id	Name	Task type	Abort on miss	Act. Date (ms)	Period (ms)	List of Act. dates (ms)	Deadline (ms)	WCET (ms)
1	BUTTON_1	Periodic	No	0.0	50.0	-	50.0	0.01
2	BUTTON_2	Periodic	No	0.0	50.0	-	50.0	0.01
3	PERIDOIC_TRANS	Periodic	No	0.0	100.0	-	100.0	0.007
4	UART_RECIEVER	Periodic	No	0.0	20.0	-	20.0	0.015
5	LOAD_1	Periodic	No	0.0	10.0	-	10.0	5.0
6	LOAD_2	Periodic	No	0.0	100.0	-	100.0	12.0

Scheduler ----→ Rate_Monotonic

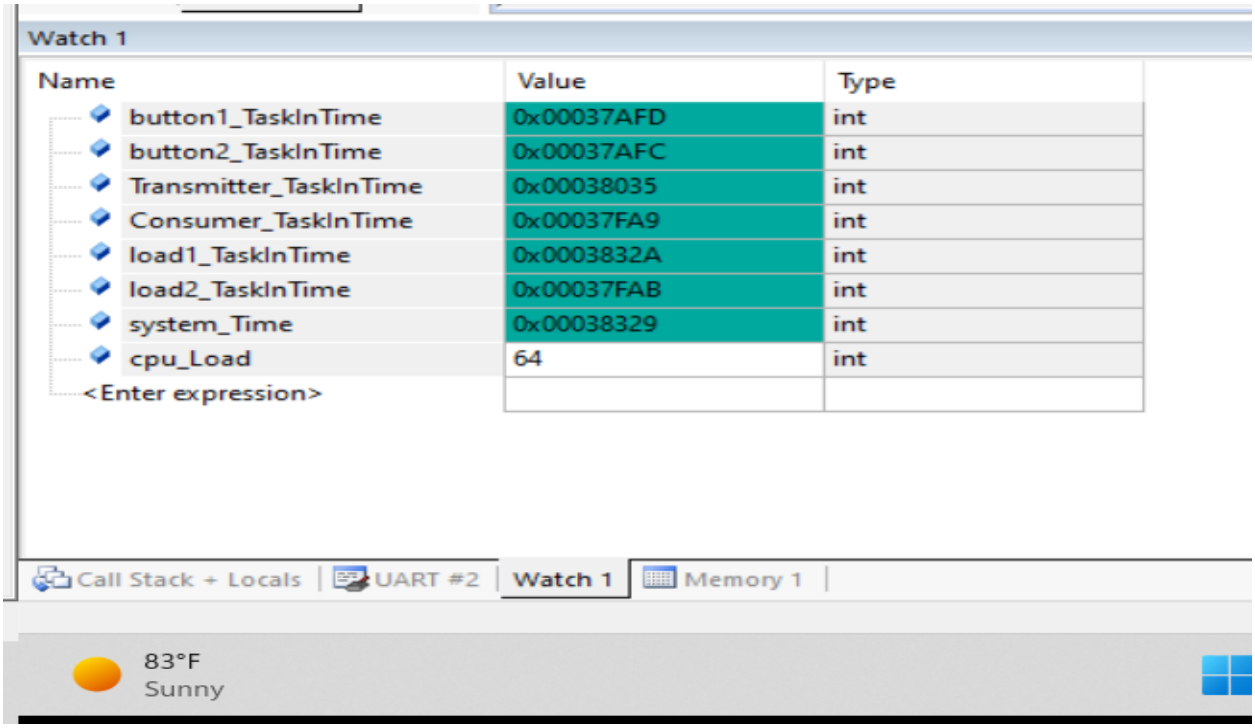
Simulation :



Load_2_Simulation Task is preempted by Load_1_Simulation Task as it has lower periodicity

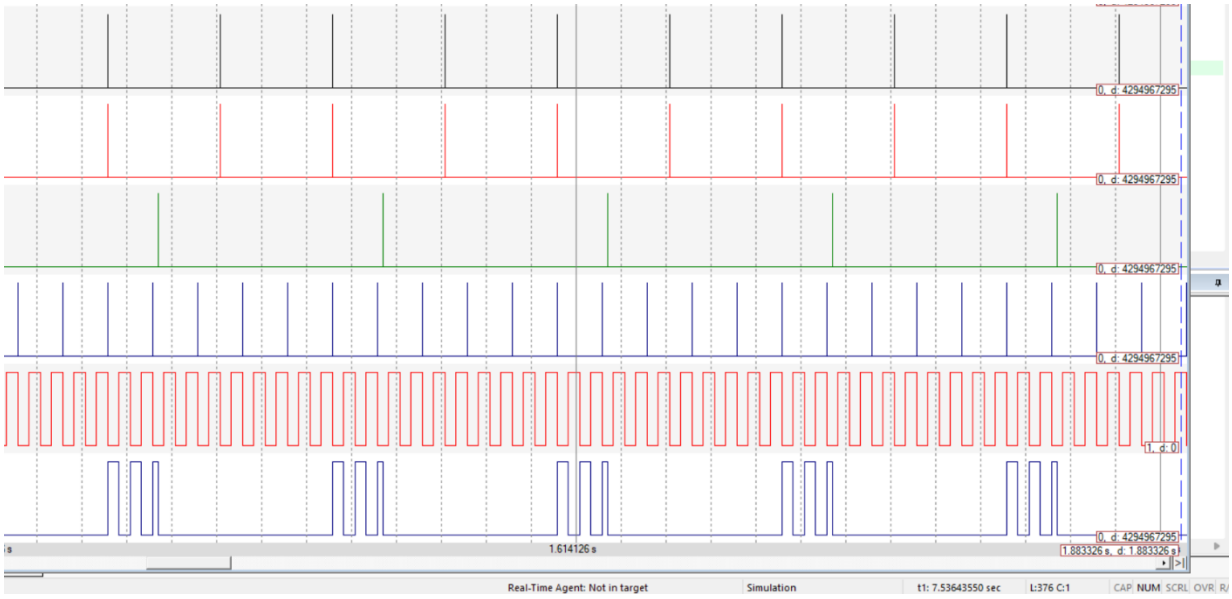
The Execution Time of the rest is too small.

Using Keil simulator in run-time



CPU_LOAD is from 62% to 64% then System Implementation is Successful

Using Gpios



Load_1_Simulation Task is executed first as it has the Earliest DeadLine then Uart_Receiver

Then Button_1_Monitor & Button_2_Monitor (Same Deadline) then Periodic_Transmitter.

Thanks Alot