

ECU1

1-Task Parameters:

Task name	Task periodicity deadline	Task execution time (Assumed)
Speed sensor	5	1 ms
Door_sensor	10	1 ms
Light switch	20	1 ms
Comm manager	5	1 ms
CAN module	5	1 ms

2-Hyperperiod:

Equals the least common factor between the task's periodicities = 20 ms

3-CPU load

ECU1 CPU load = $((4 \times 1) + (2 \times 1) + (1 \times 1) + (4 \times 1) + (4 \times 1)) / 20 = 75\%$

ECU2

1-Task Parameters:

Task name	Task periodicity deadline	Task execution time (Assumed)
CAN module	5	1 ms
Data handler	5	1 ms
Buzzer control	5	1 ms
Lights control	5	1 ms

2-Hyperperiod:

Equals the least common factor between the task's periodicities = 5 ms

3-CPU load

ECU2 CPU load = $((1 \times 1) + (1 \times 1) + (1 \times 1) + (1 \times 1)) / 5 = 80\%$

The system is schedulable