Automotive Door Control System Design

Part 2

Dynamic Design

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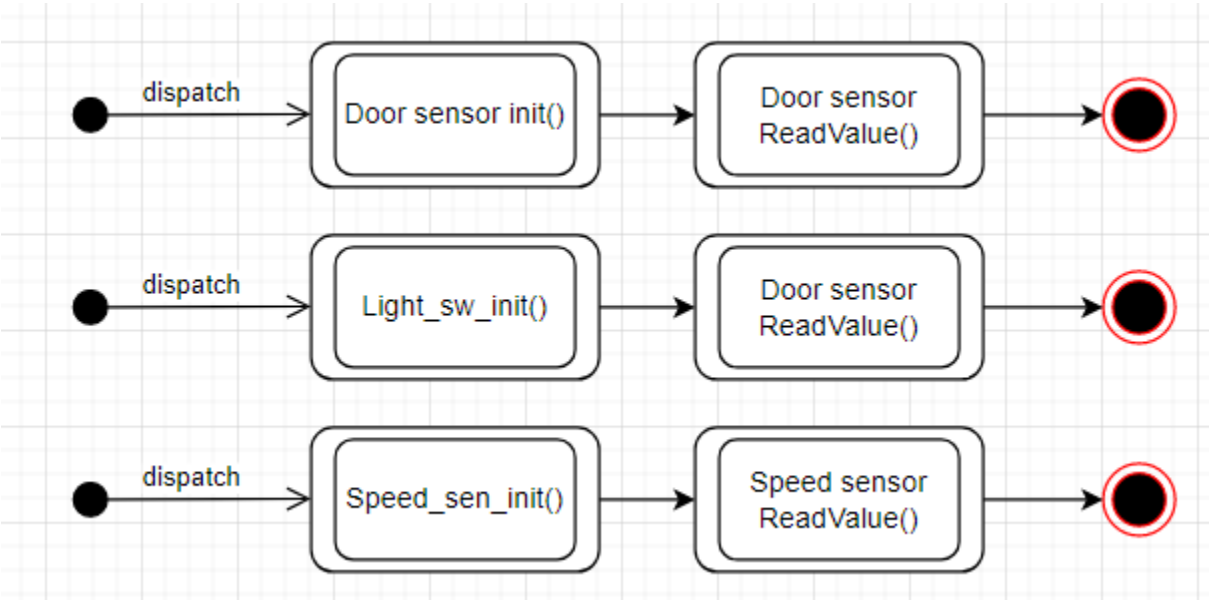
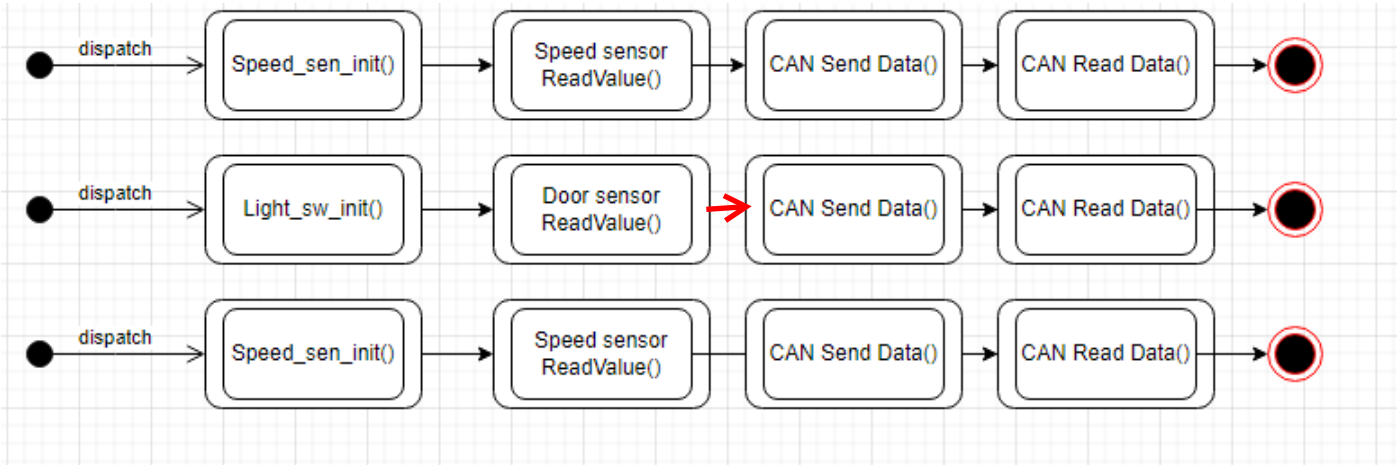
ECU 1

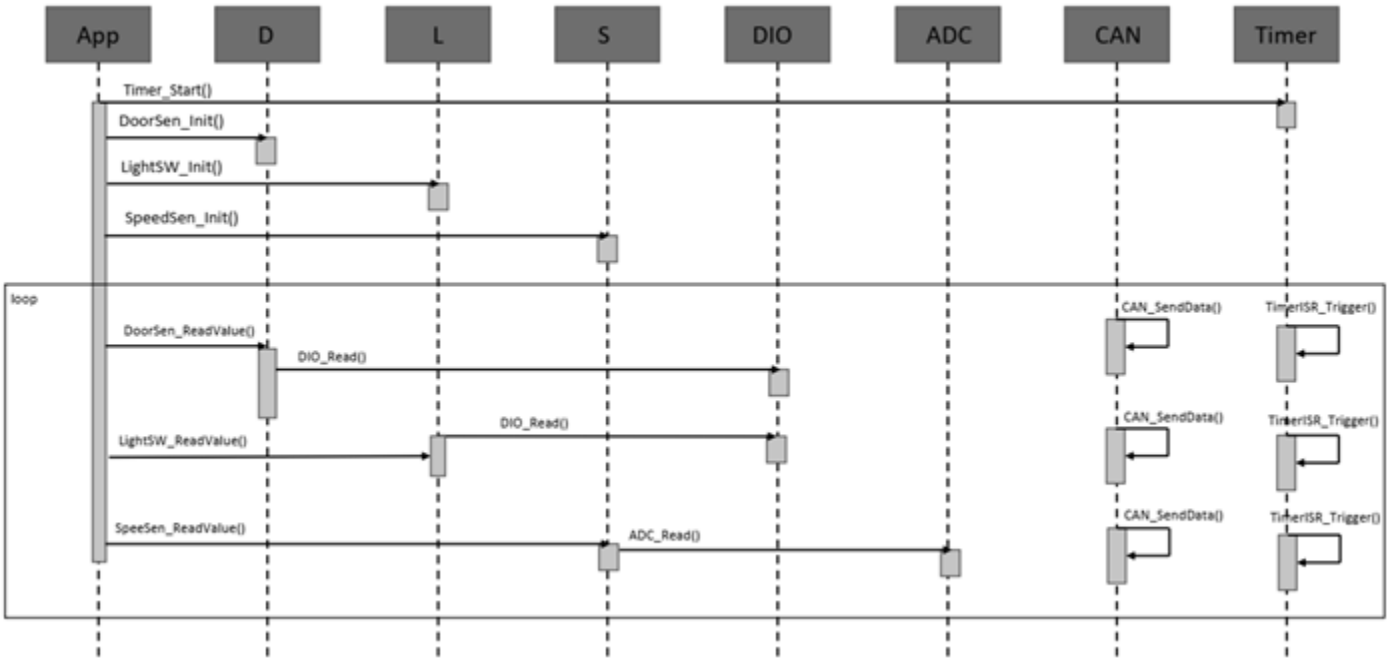
1- State Machine Diagram for each ECU1 Component



2- State Machine Diagram for ECU2 Operation



3- Sequence Diagram for ECU1



4- CPU load for ECU1

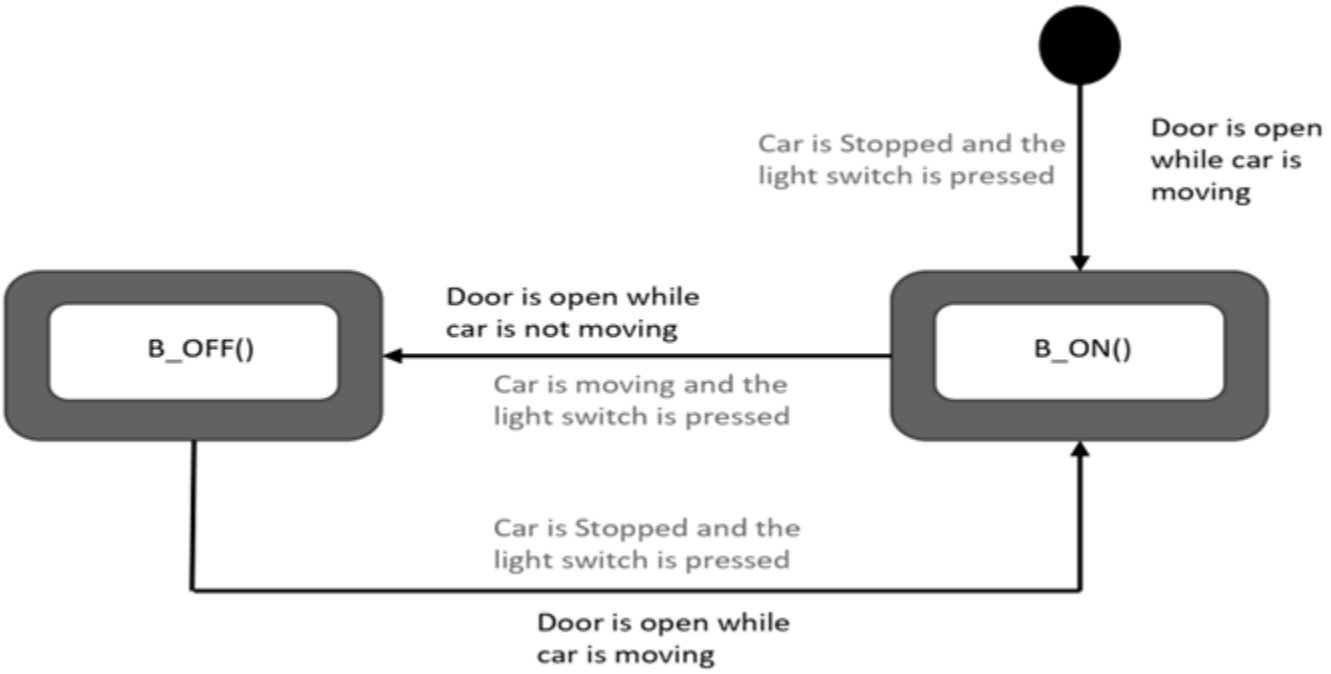
SWC	period	Burst	Load %
Door state	10 ms	1ms	10%
Switch state	20 ms	1ms	5%
Car speed	5 ms	2ms	40%

Cpu load = 10 + 5 + 40 = 55%

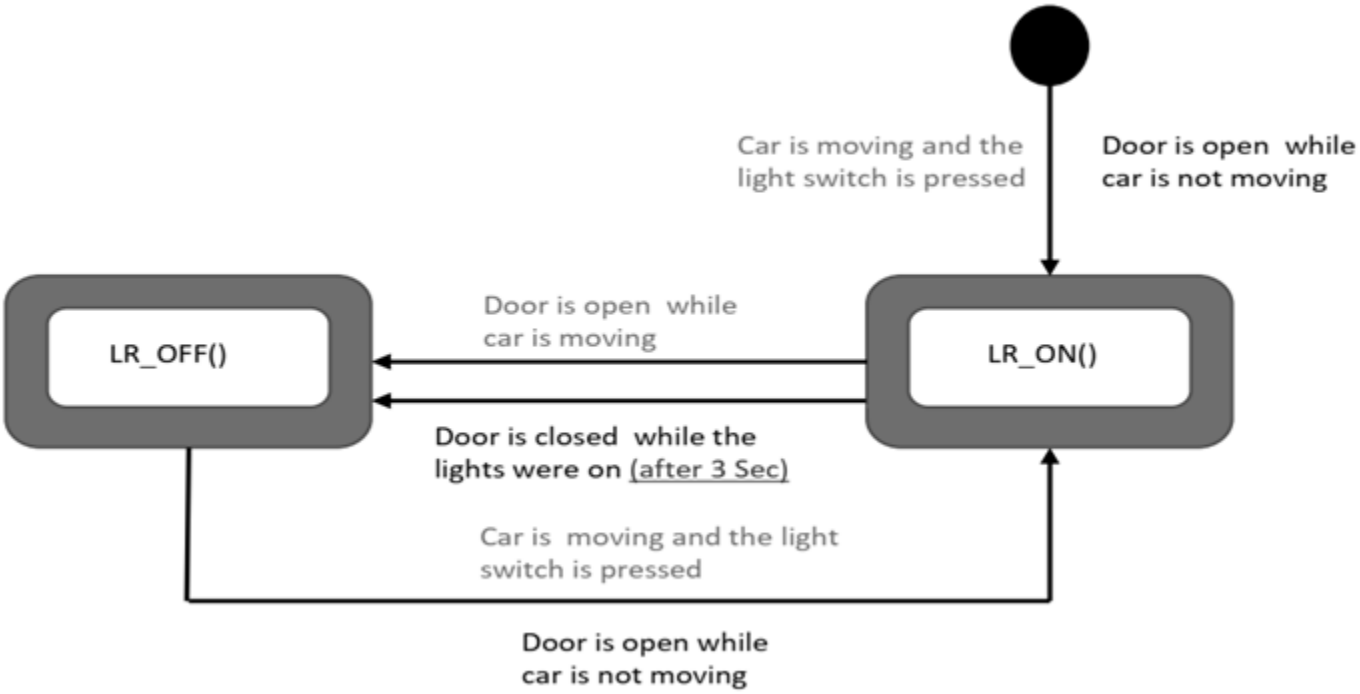
ECU 2

1- State Machine Diagram

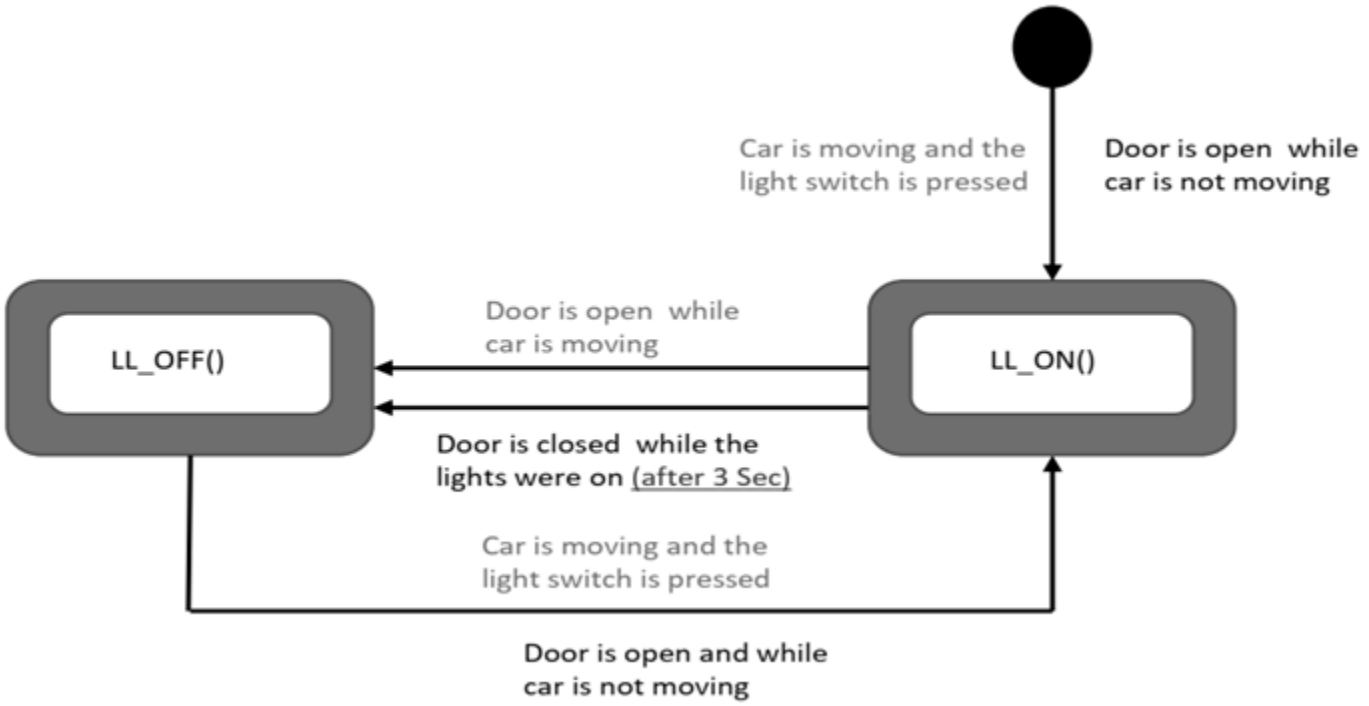
1.1 Buzzer



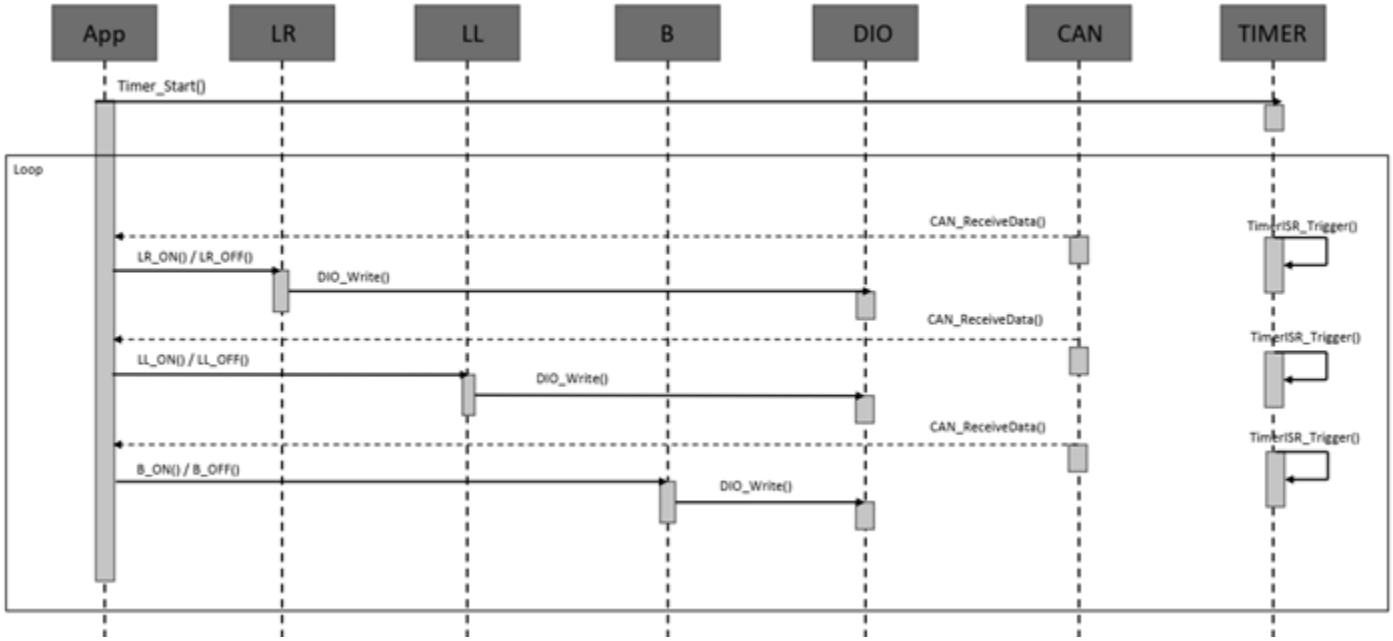
1.2 Light right (LR)



1.3 Left Light (LL)



3- Sequence Diagram for ECU2



4- CPU load for ECU2

SWC	period	Burst	Load %
Update Left light	10 ms	1ms	10%
Update right light	10 ms	1ms	10%
Update buzzer	10 ms	2ms	20%

Cpu load = 10 + 10 +20 = 40 %