Bassant Ahmed Mohamed
Automotive Door Control System Design

(Dynamic Analysis)

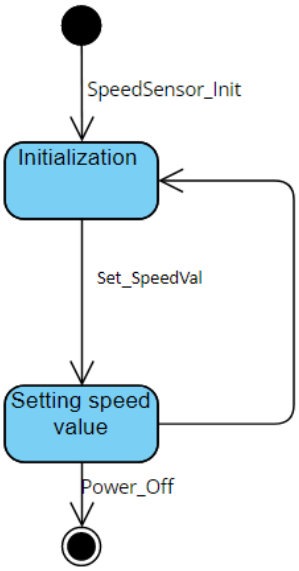
Submitted to:

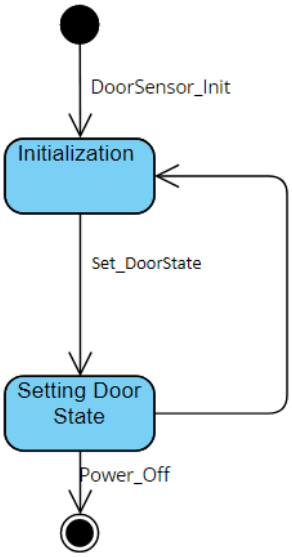
EgFwd Advanced Embedded System Track

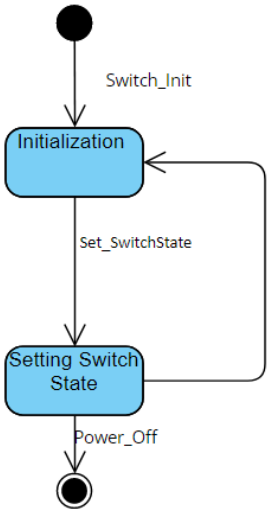
1. ECU 1

1.1 State Machines

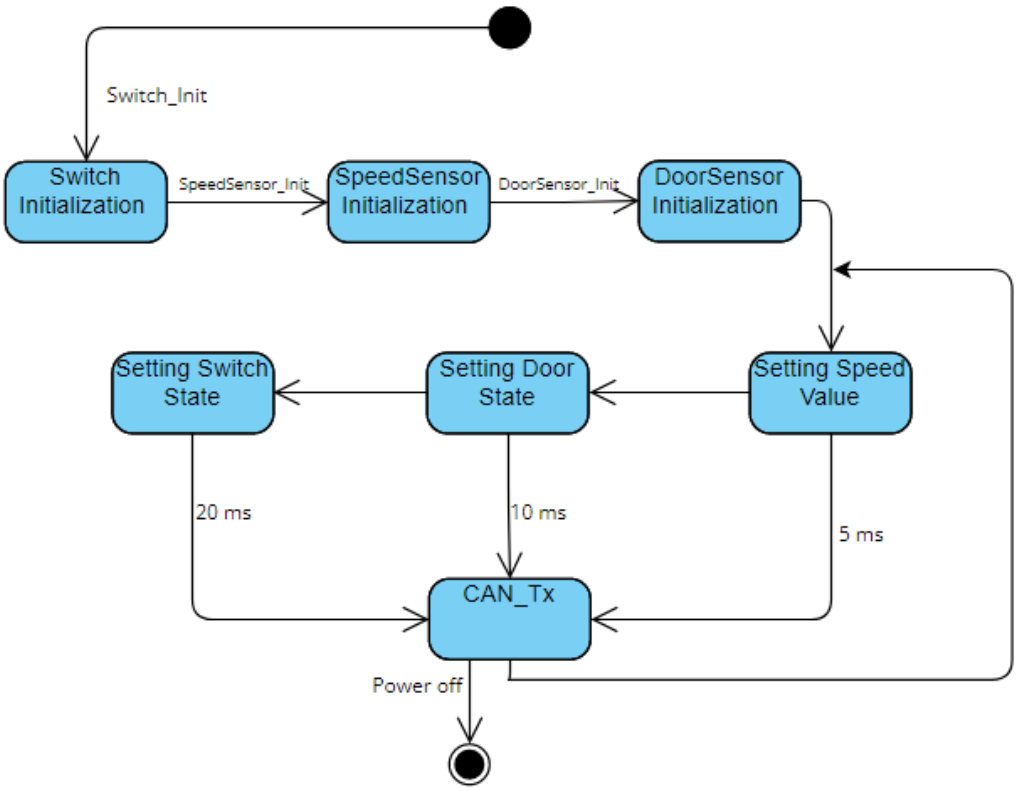
1.1.1 Each Component State Machine Diagram



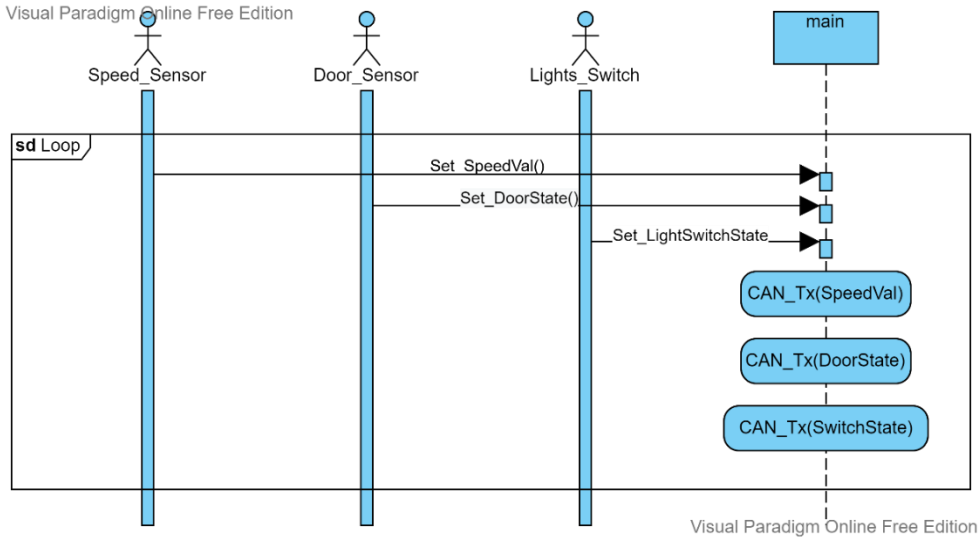




1.1.2 ECU Operation State Machine Diagram



1.2 ECU 1 Sequence Diagram



1.3 ECU1 CPU Load

Assuming total tasks execution time = 30 ms

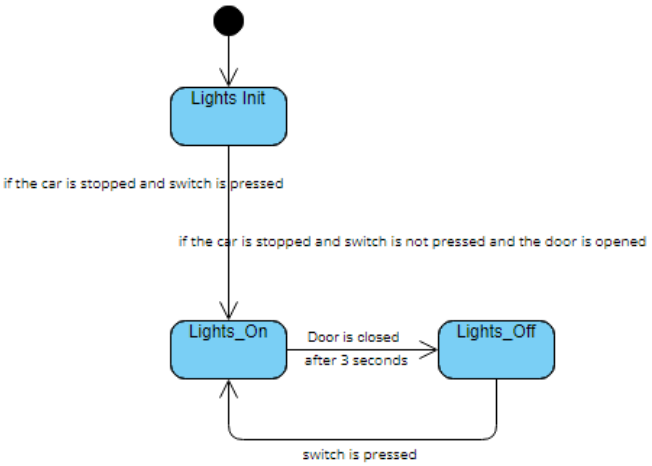
Hyper period = 80 ms

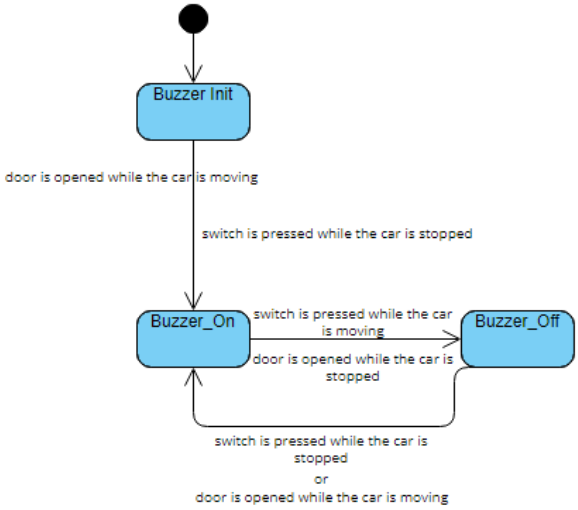
Then , $U = \frac{30ms}{80ms} * 100 = 37.5\%$

2. ECU 2

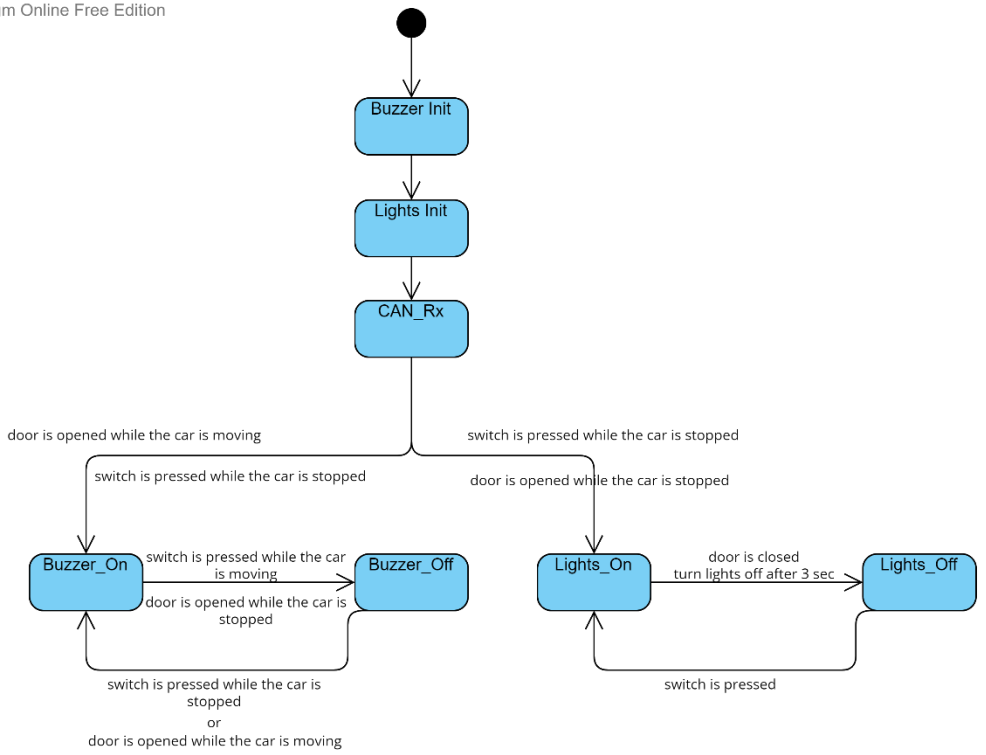
1.1 State Machines

1.1.1 Each Component State Machine Diagram

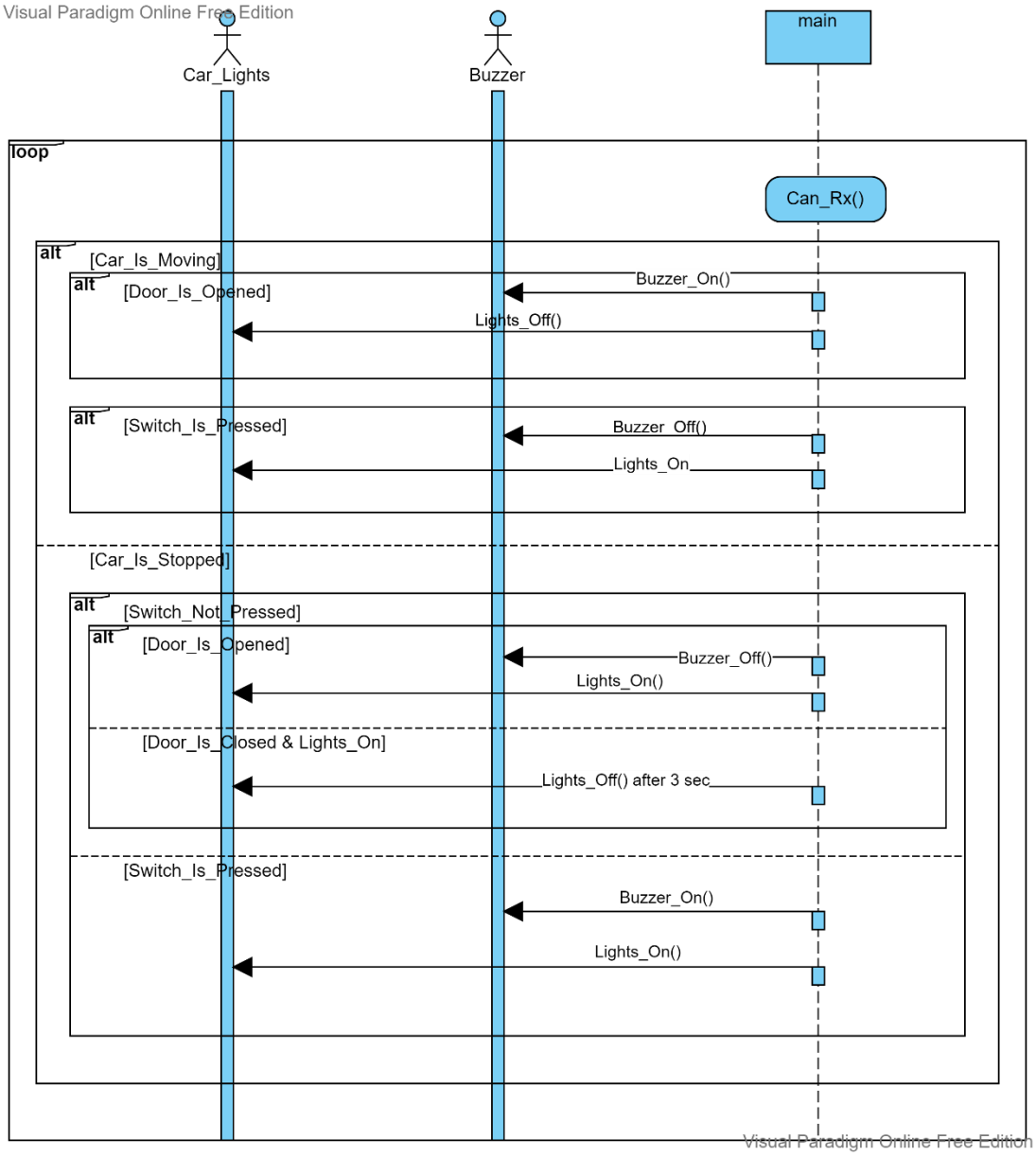




1.1.2 ECU 2 Operation State Machine Diagram



1.2 ECU 2 Sequence Diagram



1.3 ECU2 CPU Load

Assuming total tasks execution time = 40 ms

Hyper period = 100 ms

Then , $U = \frac{60ms}{100ms} * 100 = 40\%$