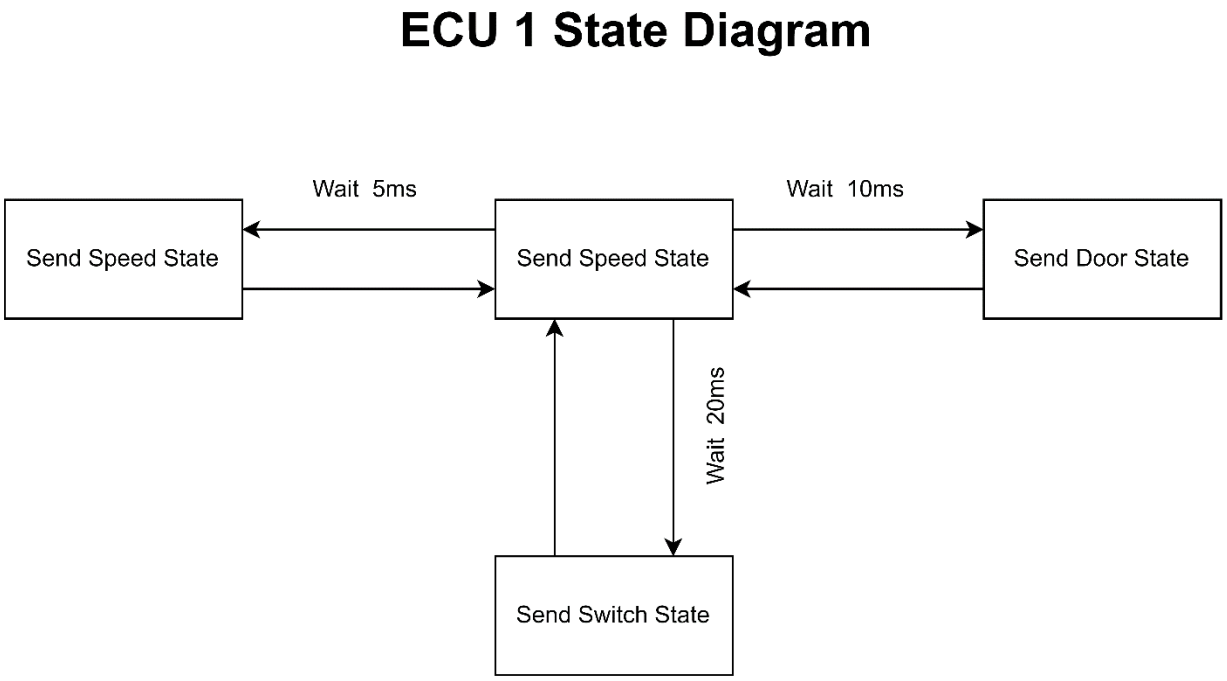
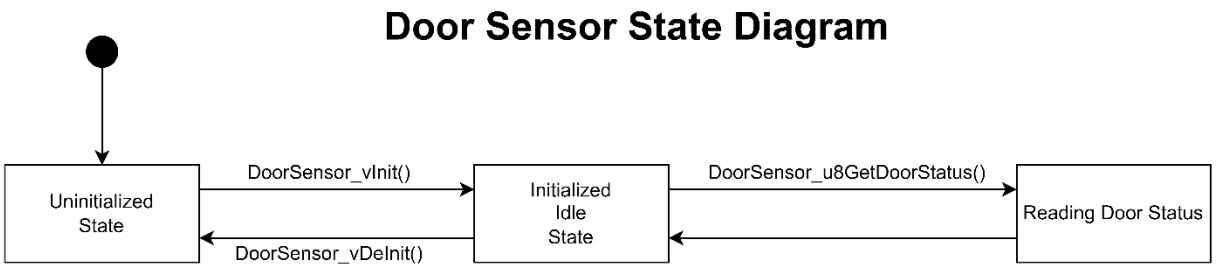
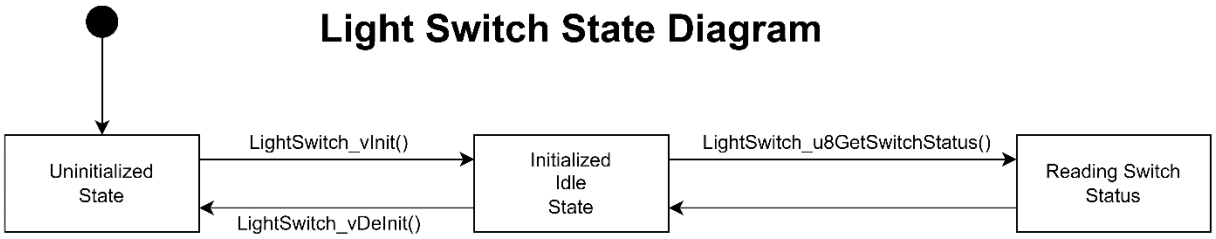
Automotive Door Control
Dynamic Design

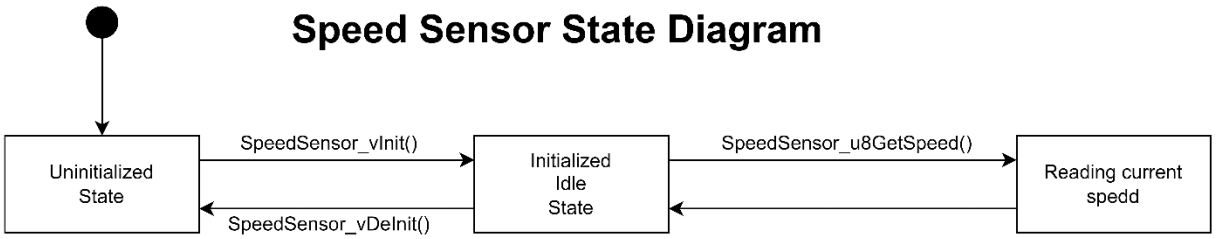
ECU-1 operation State Diagram



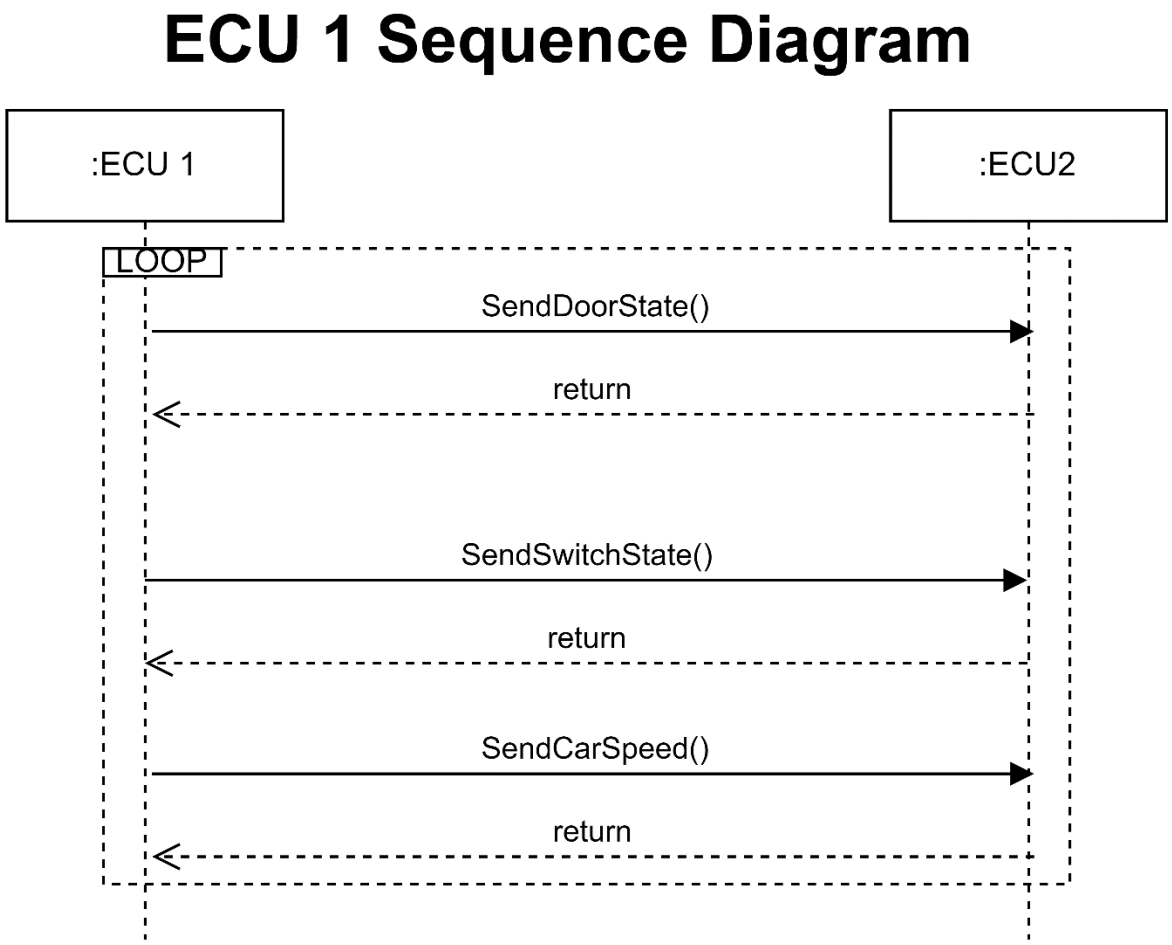
ECU-1 Components State Diagram







ECU-1 Sequence Diagram



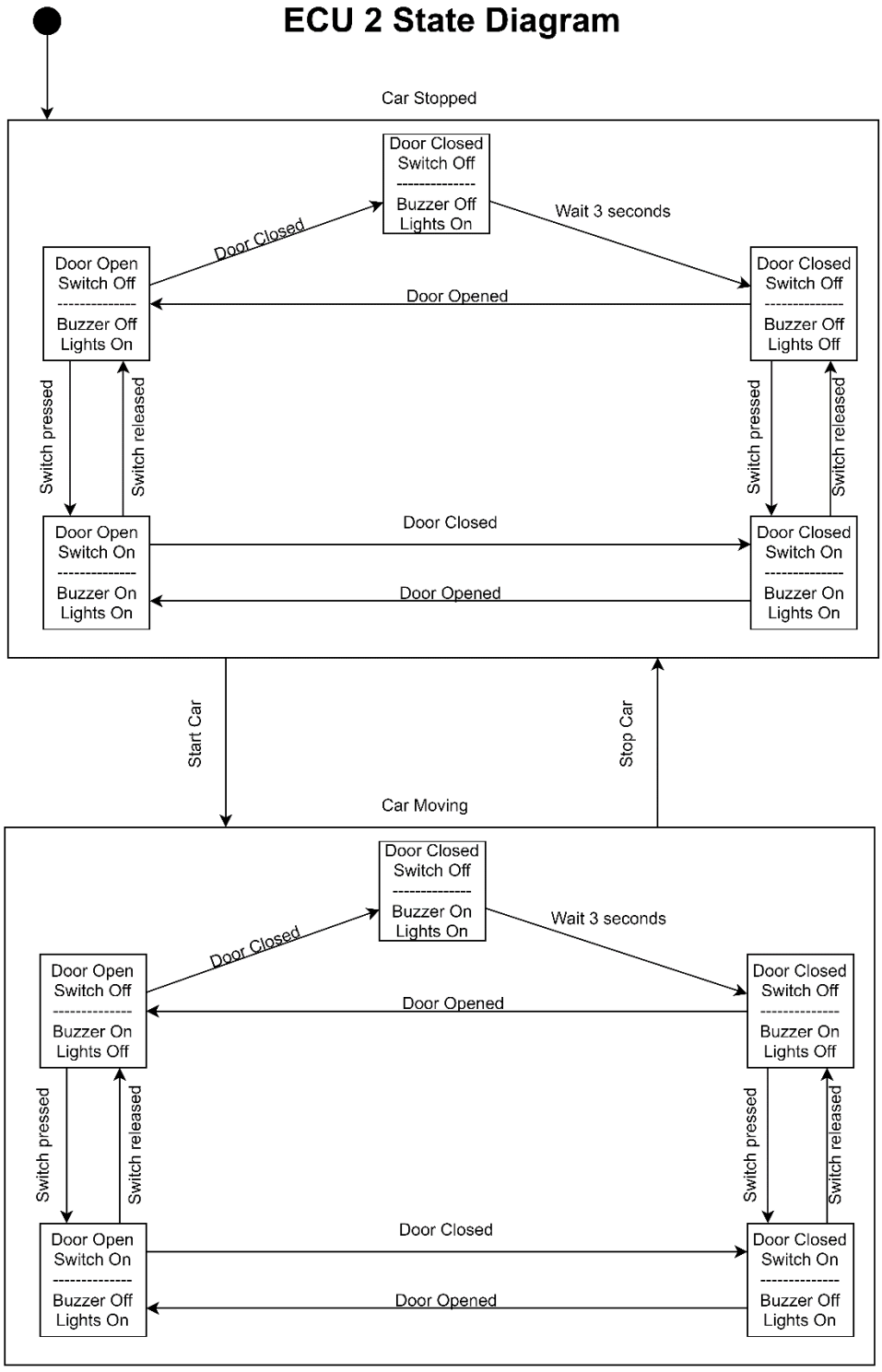
ECU-1 CPU Load*

SWC	Periodicity	Burst	CPU Load
Reading and Sending Door State	10ms	1ms	10 %
Reading and Sending Switch State	20ms	1ms	5 %
Reading and Sending Car Speed	5ms	2ms	40 %

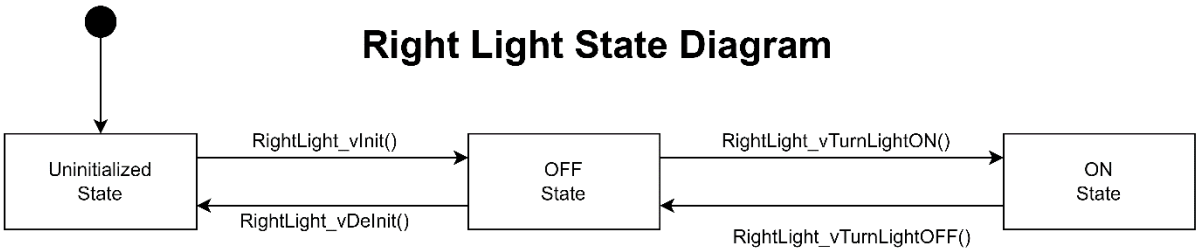
CPU Load = Load-1 + Load-2 + Load-3 = 10 % + 5 % + 40 % = 55 %

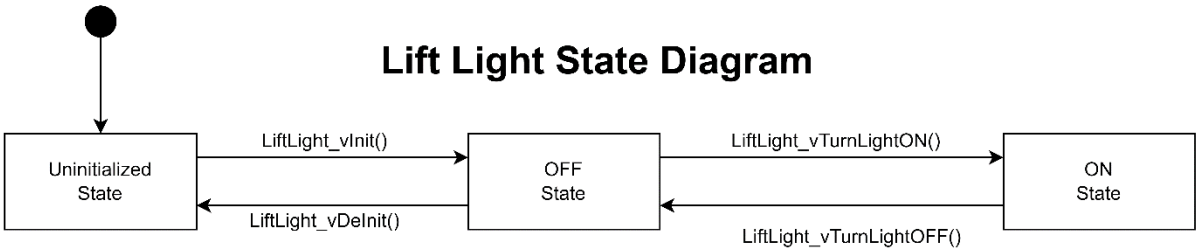
* All Periodicity and Burst values are assumed to show the proof of concept.

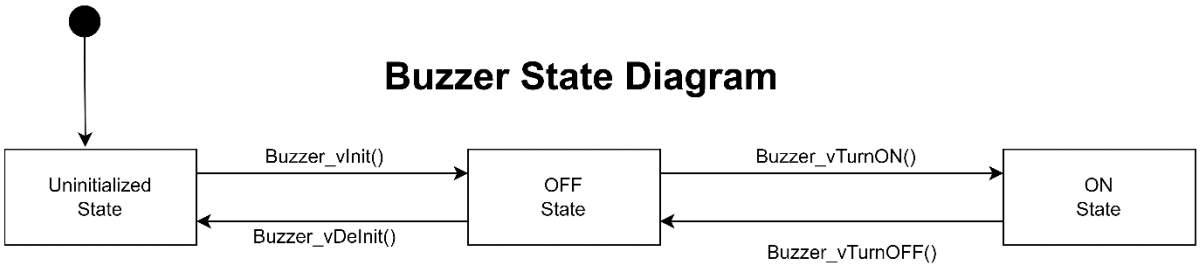
ECU-2 operation State Diagram



ECU-2 Components State Diagram

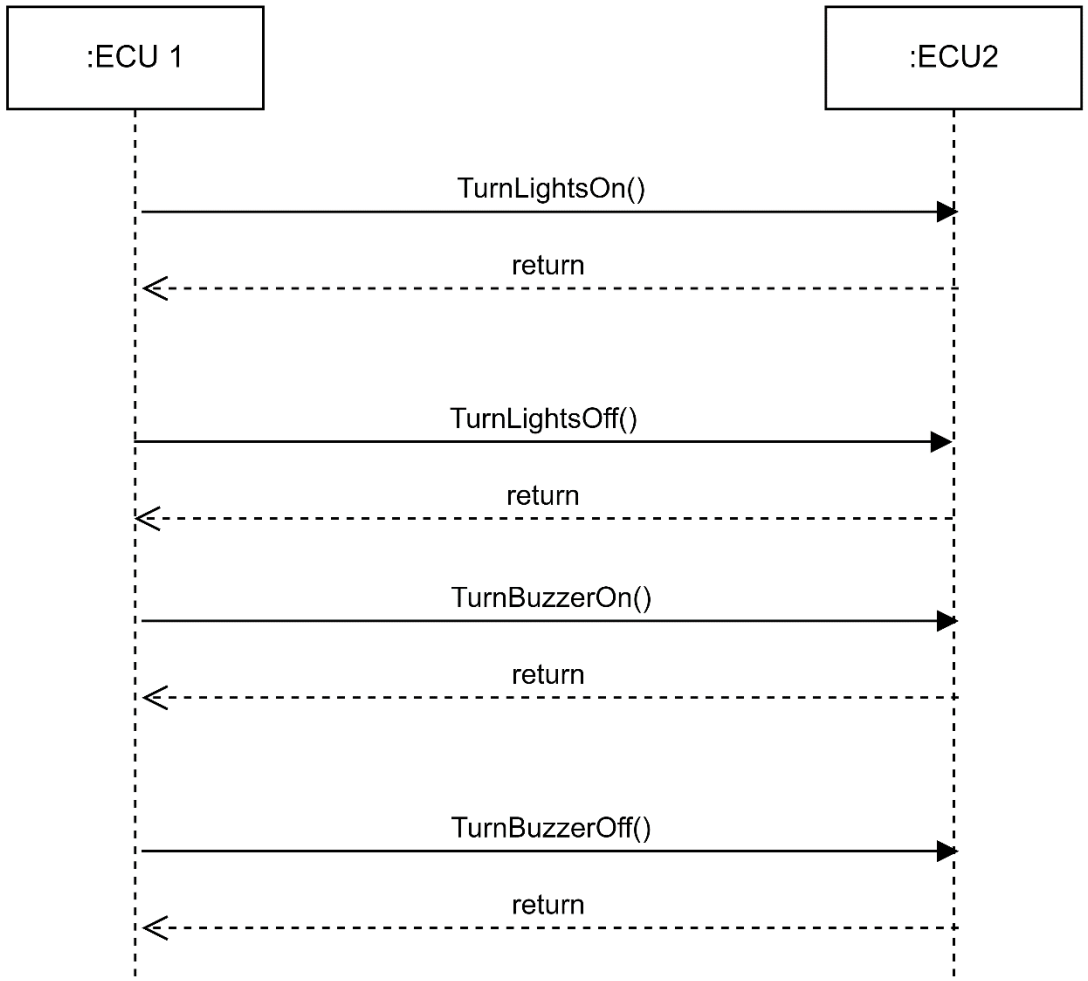






ECU-2 Sequence Diagram

ECU 2 Sequence Diagram



ECU-2 CPU Load*

SWC	Periodicity	Burst	CPU Load
Updating Left Light State	10ms	1ms	10 %
Updating Right Light State	10ms	1ms	10 %
Updating Buzzer State	10ms	2ms	20 %

CPU Load = Load-1 + Load-2 + Load-3 = 10 % + 10 % + 20 % = 40 %

* All Periodicity and Burst values are assumed to show the Proof of Concept