

Ministry of Communications and Information Technology



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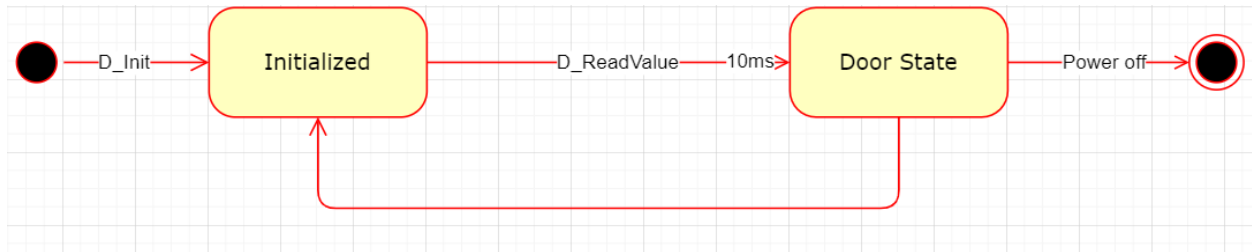
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Project: Automotive door control system design

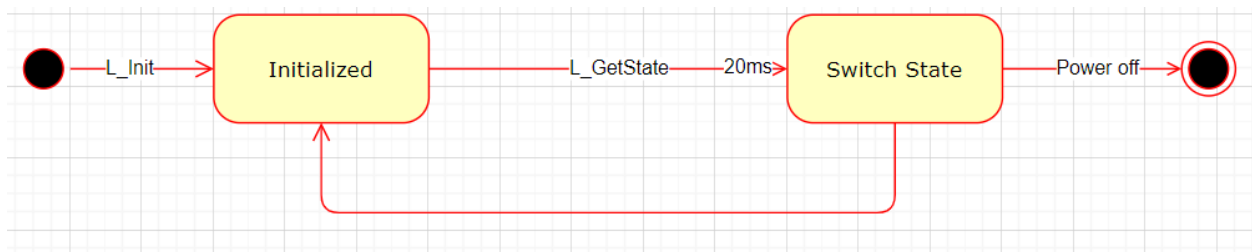
1. ECU 1

a. State machine diagram for each ECU component:

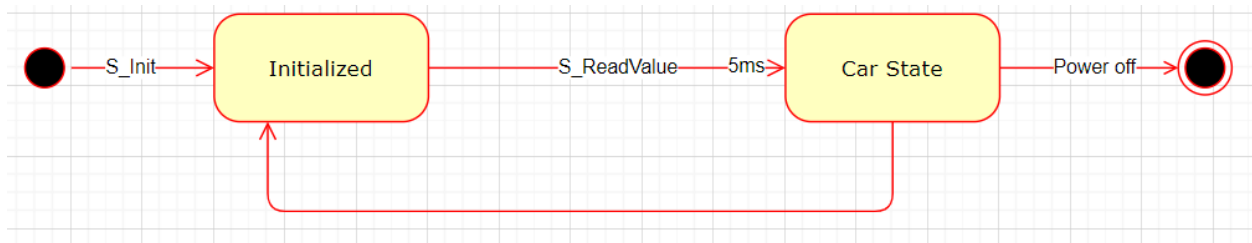
1. Door sensor:



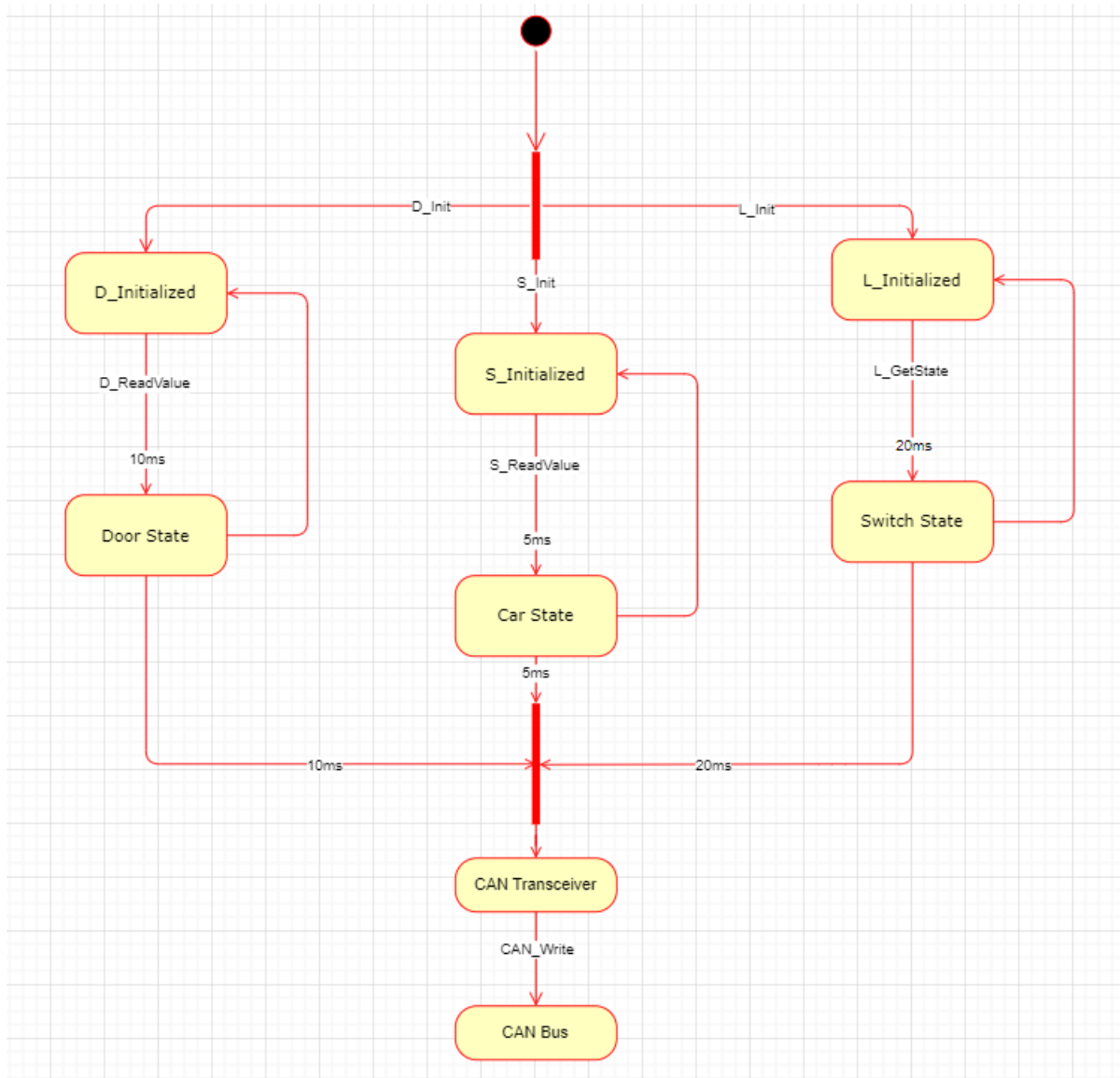
2. Light switch:



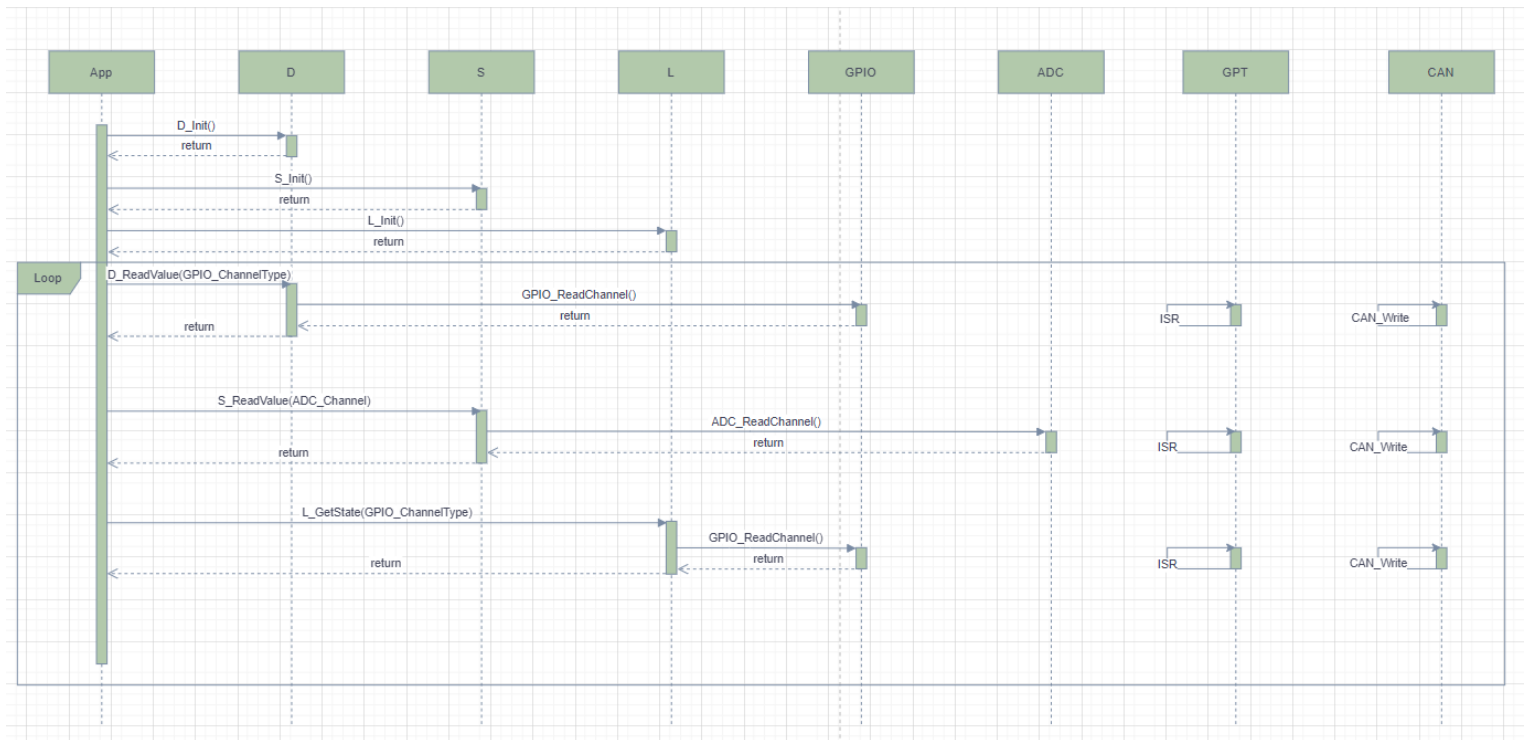
3. Speed sensor:



b. State machine diagram for the ECU operation:



c. Sequence diagram for the ECU:



d. CPU load:

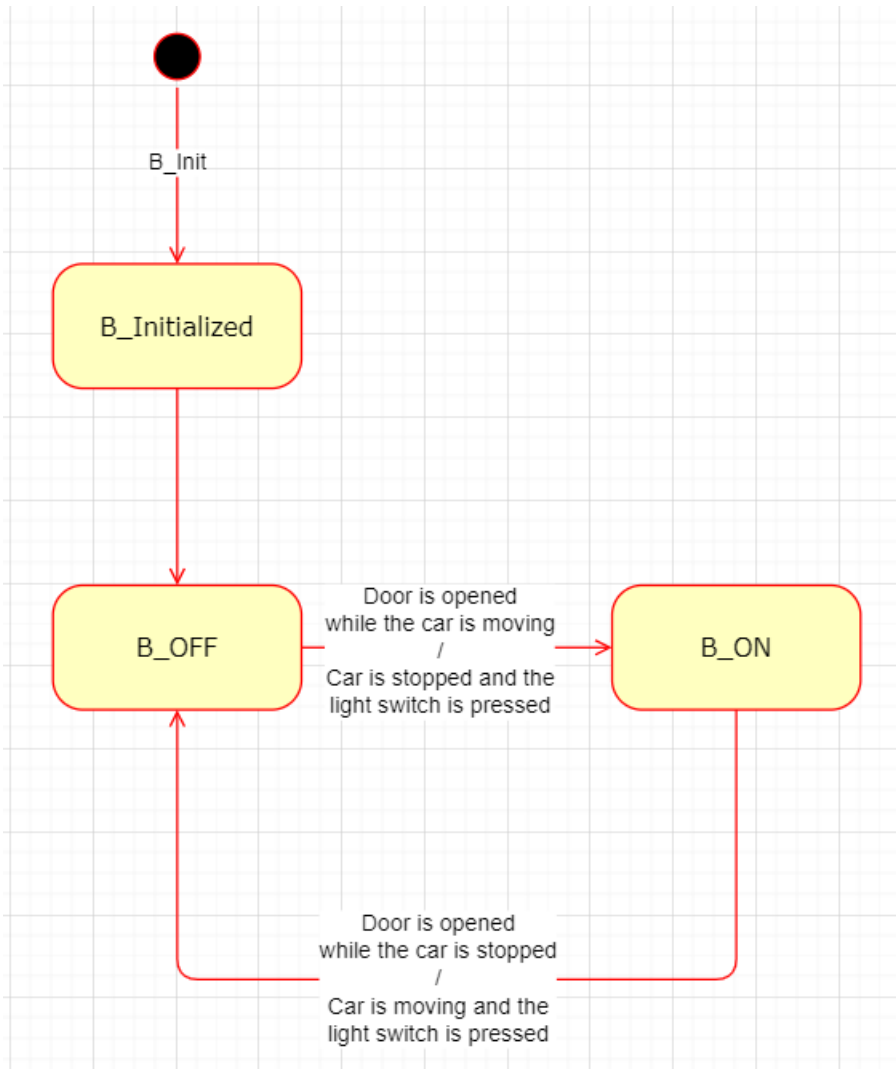
CPU Utilization = 100 – Idle time = 100 – 65

CPU Utilization = 35%

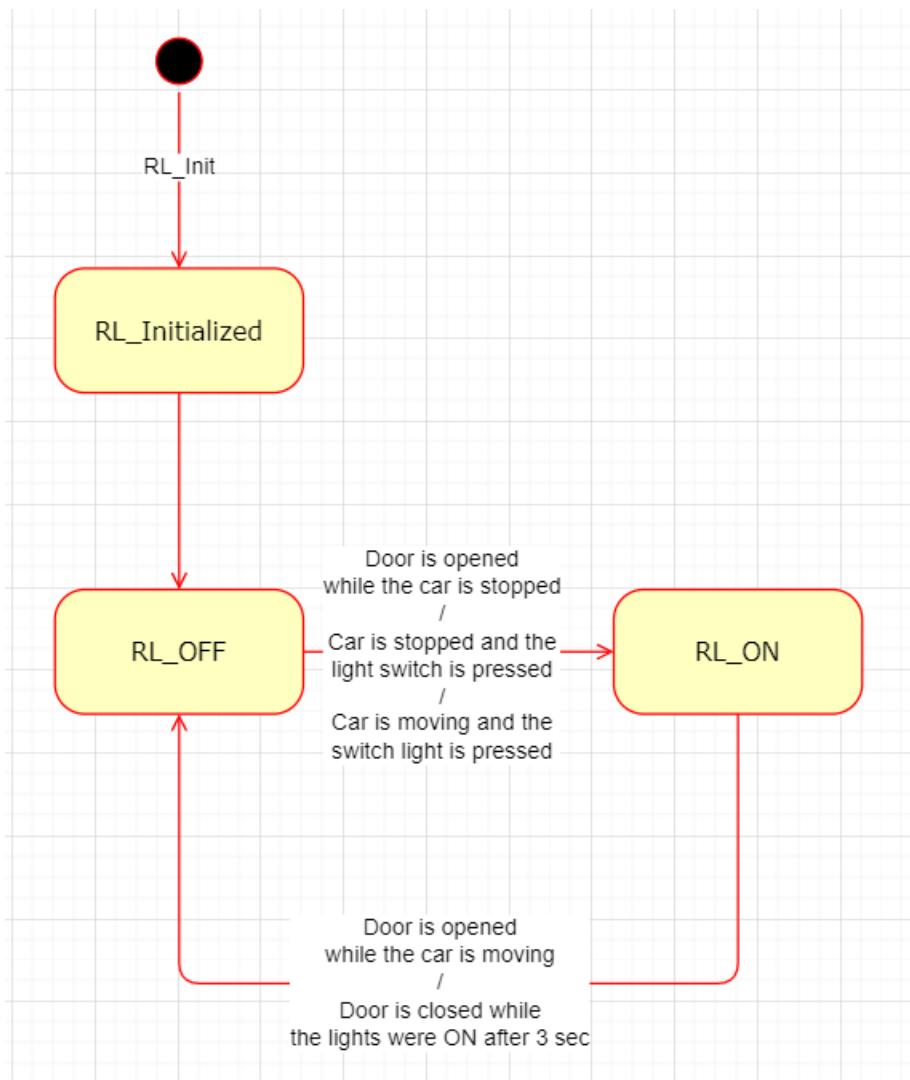
2. ECU 2

a. State machine diagram for each ECU component:

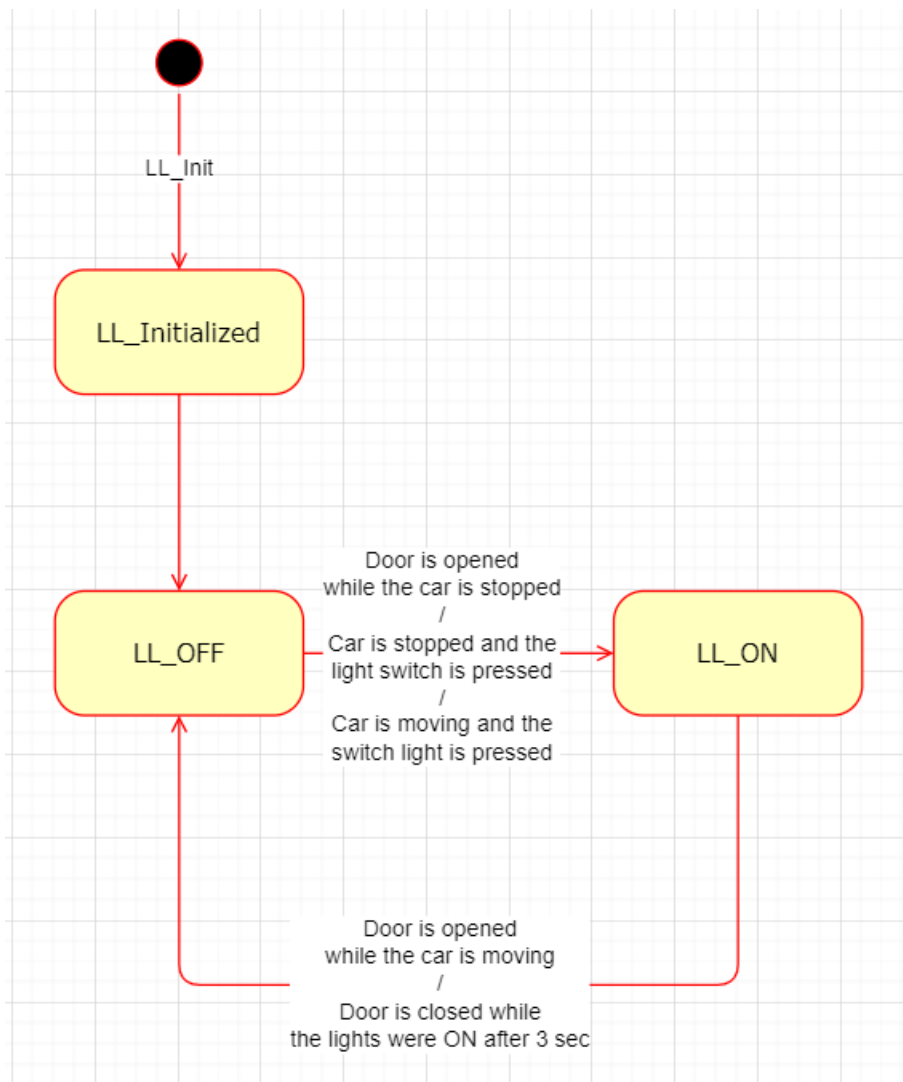
1. Buzzer:



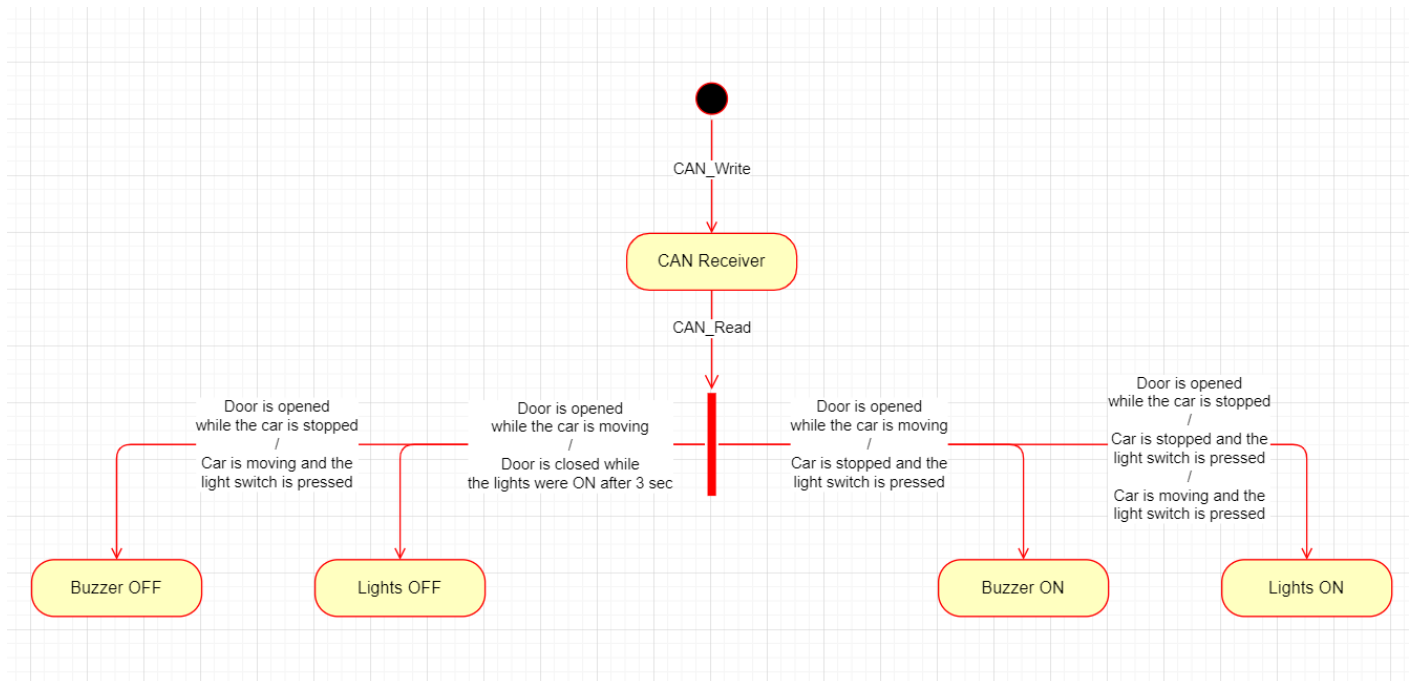
2. Right light:



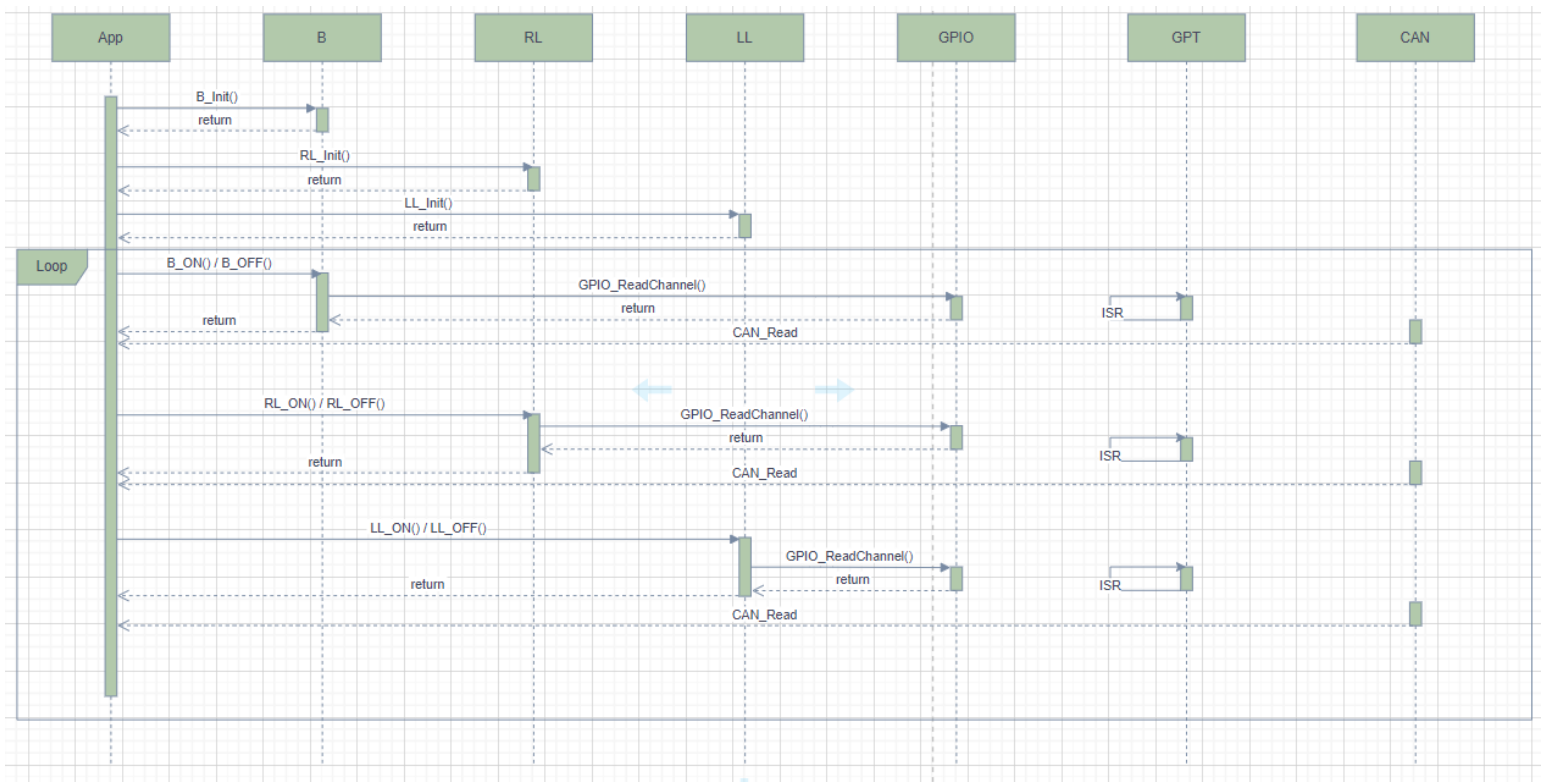
3. Left light:



b. State machine diagram for the ECU operation:



c. Sequence diagram for the ECU:



d. CPU load:

CPU Utilization = 100 – Idle time = 100 – 65

CPU Utilization = 35%