Truck Platooning

Team Outbreak

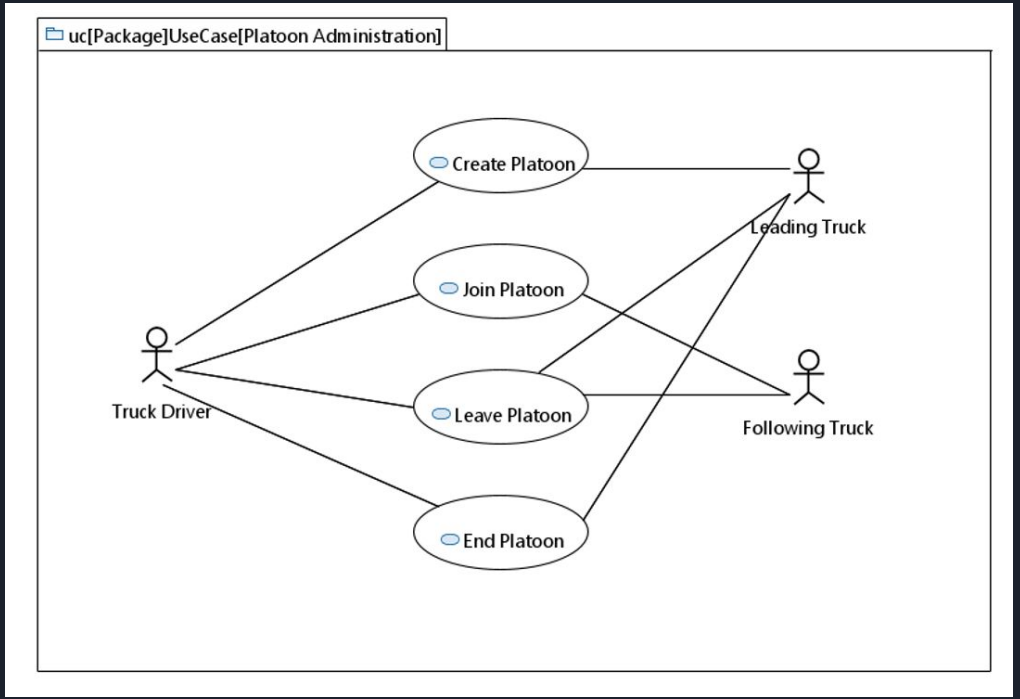
Requirement Diagram

- Requirement Elicitation and analysis where done before starting the requirement diagram.
- Main requirements are analysed and specified as

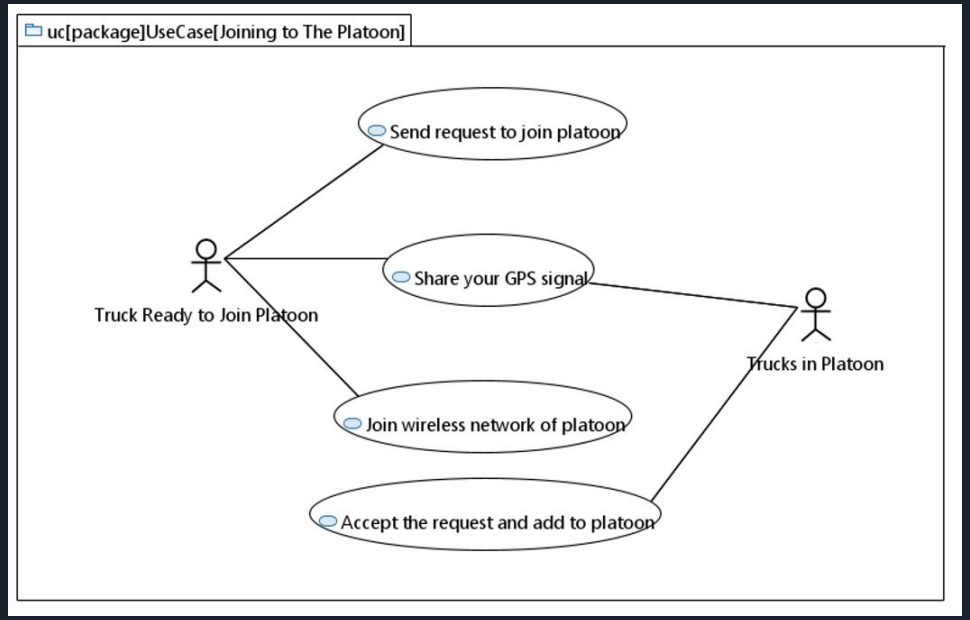
Use Case Diagram

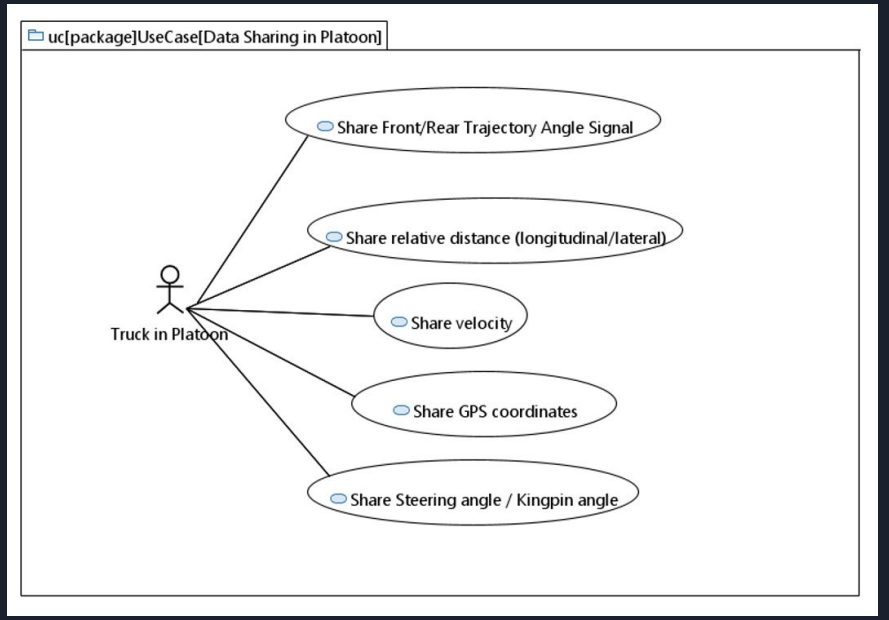
Use case diagram defines the operations that users want to perform on the system through a function.

It consists of four main elements: Actors, System, Use Cases and their relations.

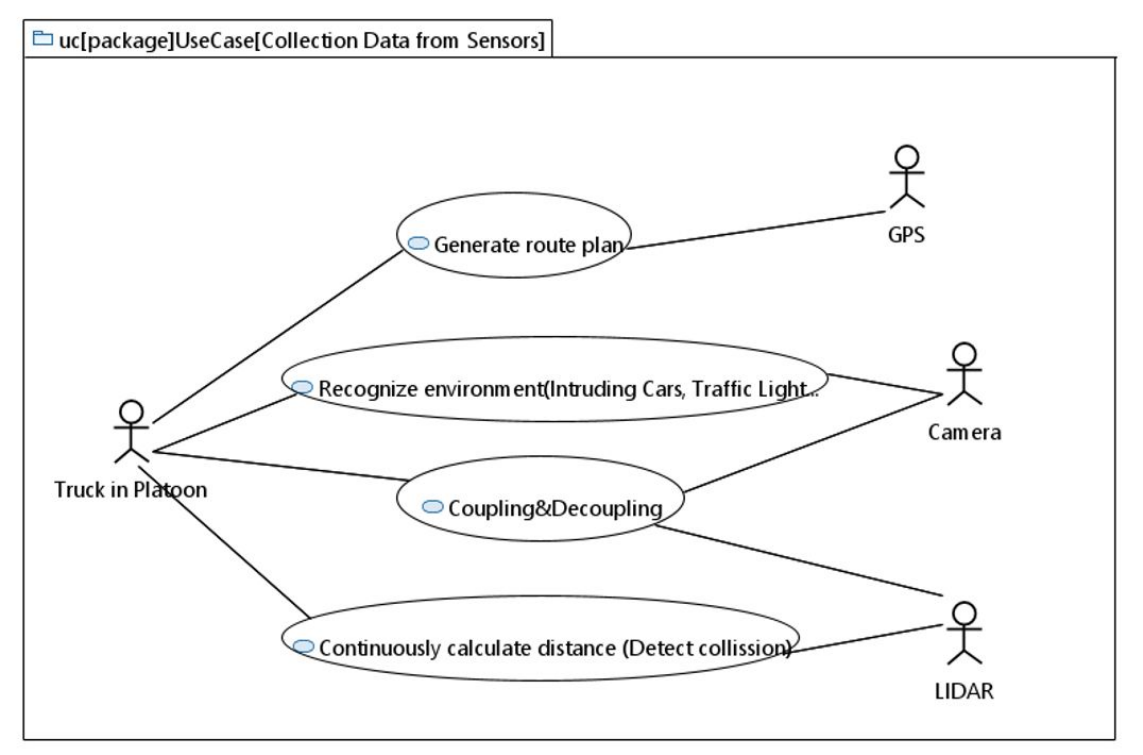


Use Case Diagram





Use Case Diagram



Activity Diagram

Block Diagram

Sequence Diagram

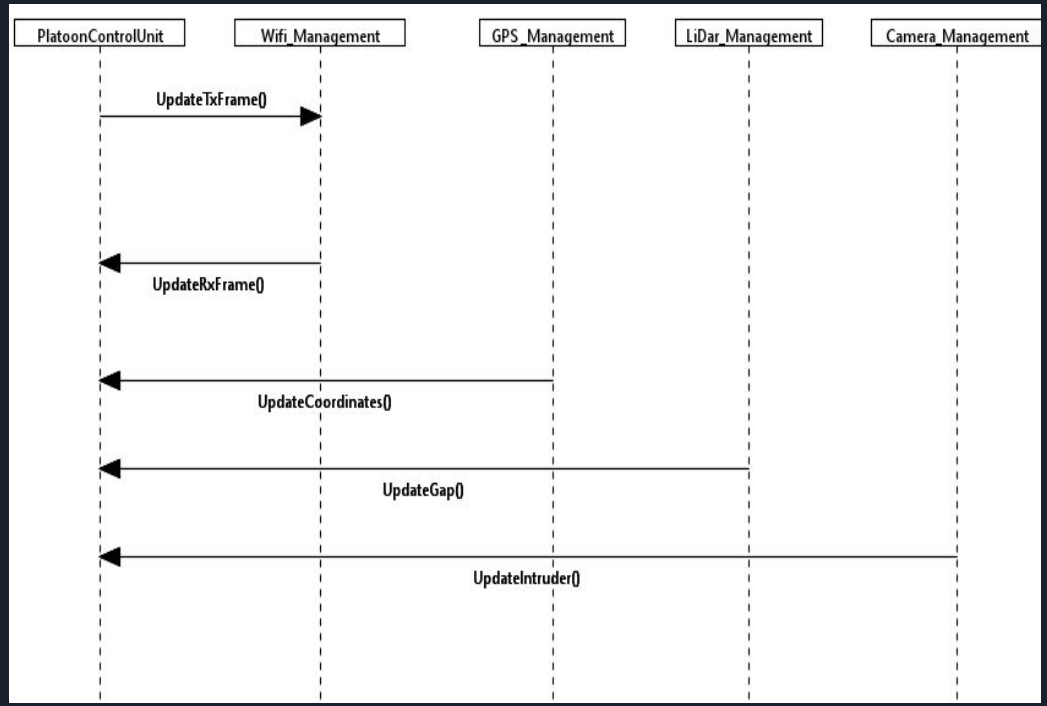
-UpdateTxFrame to update the Wifi credentials

-UpdateRxFrame to show the main controller the received output

-UpdateCoordinates is sent from Gps to update longitude and latitude of first truck

-UpdateGap is getting data from the Radar and updates distance between the trucks

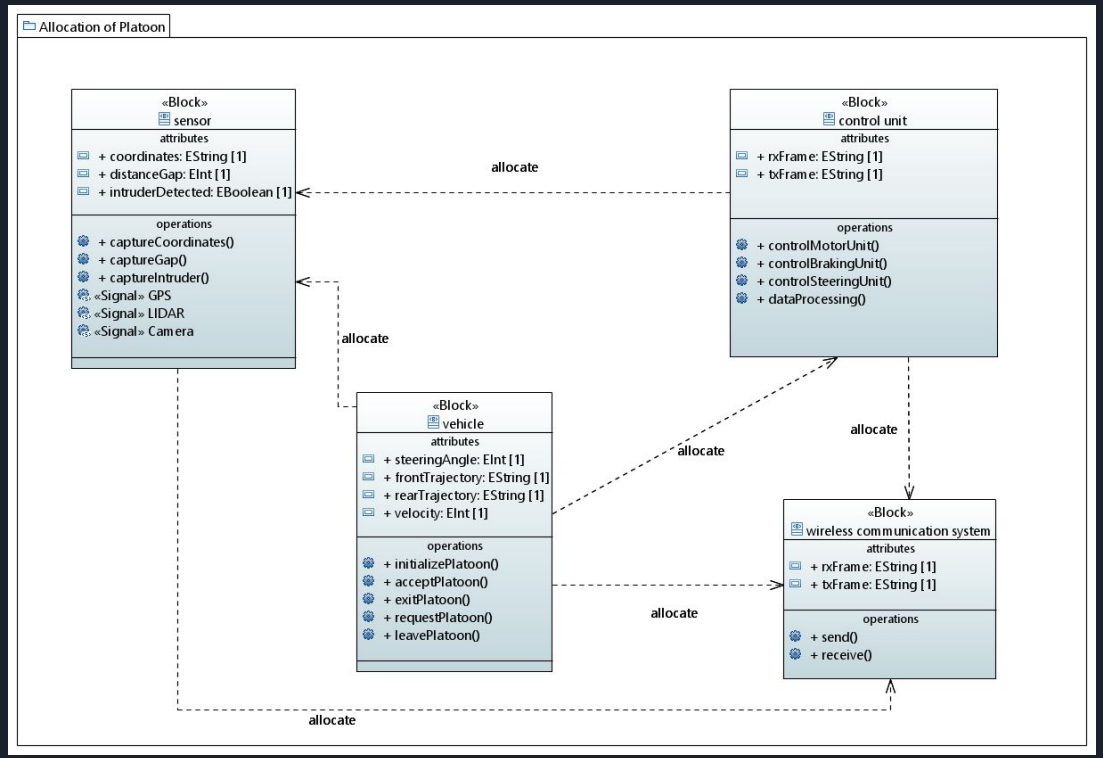
-As there is intruder in the system PCU got informsed by UpdateIntruder message



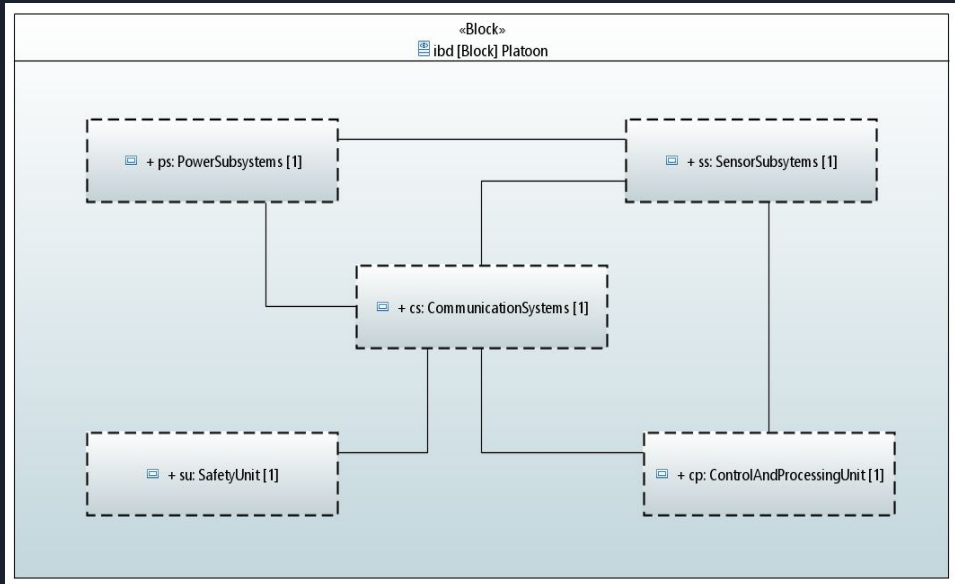
Parametric Constraint Diagram

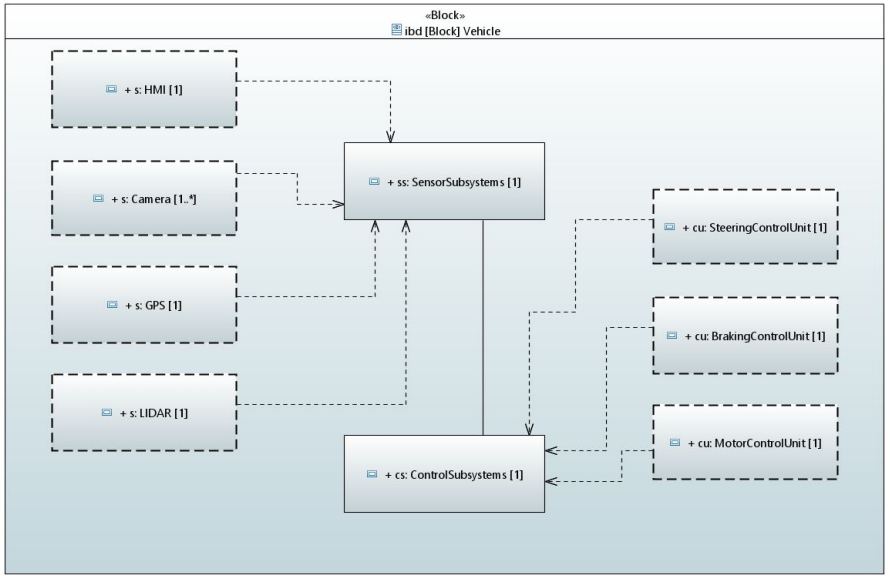
Allocation Diagram

Allocation diagrams are used to define relationship of various parts of the model.



Internal Block Diagram





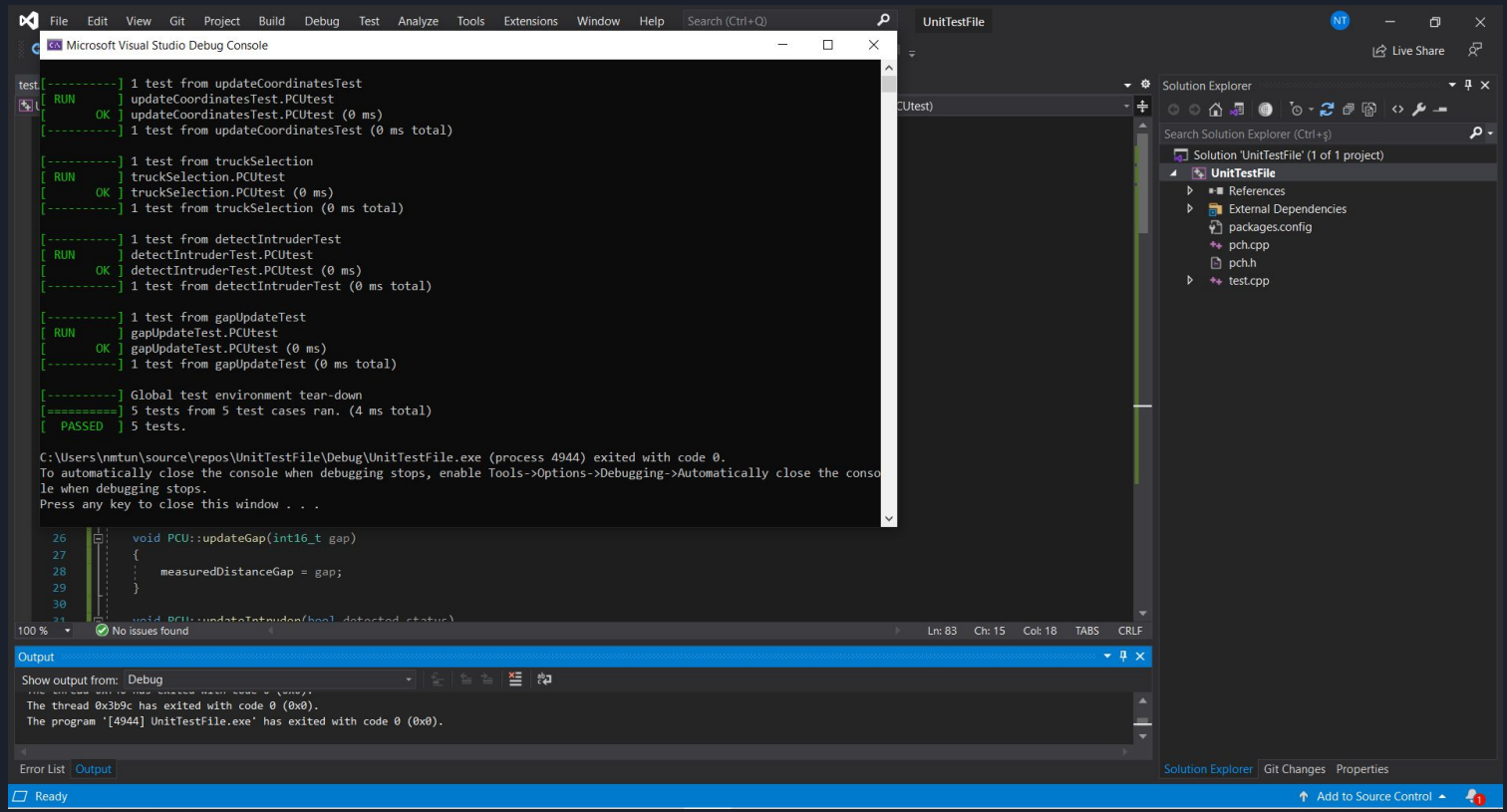
State machine Diagram

Implementation

Scheduling

Inspection

Unit testing



Component Testing

There are 5 components in the system. PCU, Wifi, Lidar, Camera and Gps. PCU is main object so I tested other using PCU object functions

-Test Camera if it informs the PCU about intruder

-Test GPS weather it updates coordinates correctly

-Test Lidar to send distance data to PCU and check if PCU is responding in correct way

-Test Wifi via comparing output from it with input from PCU