

Collision Avoidance Report

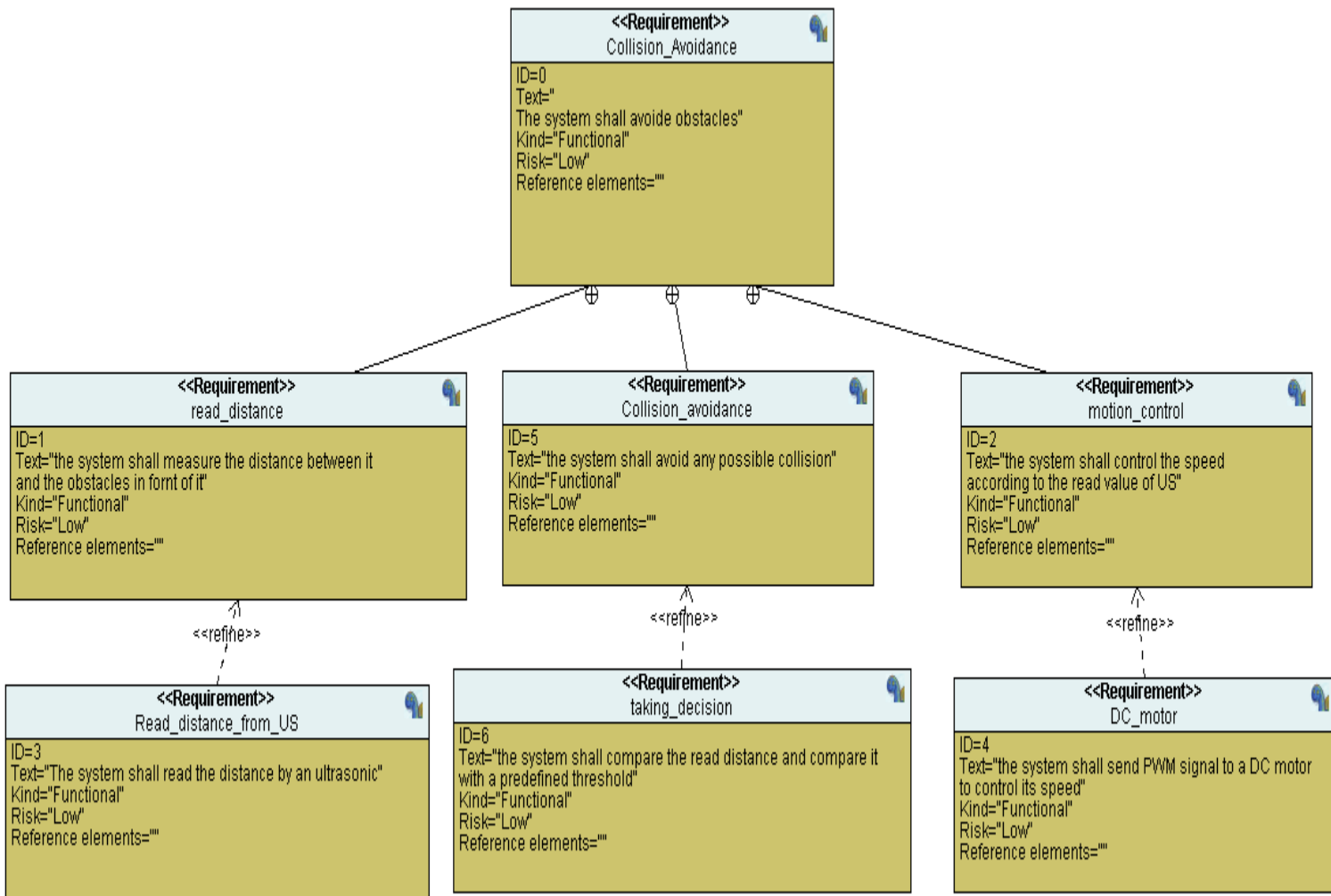
Case study :

- A moving robot that avoid any possible collisions.
- The robot shall stop when there's an obstacle in front of it.
- The distance between the robot and the obstacle must be at maximum 50cm , so the robot must stop when the distance is less than 50cm.

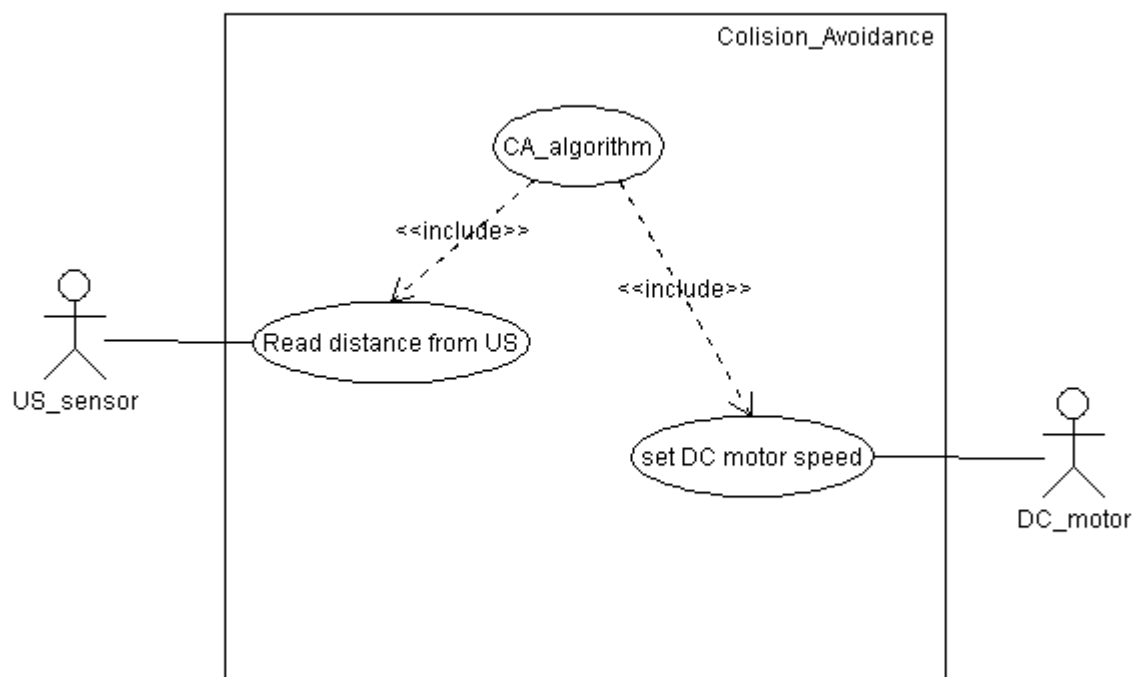
Assumptions :

- ✓ The ultrasonic sensor will never fail.
- ✓ The DC motor will never fail.
- ✓ The robot maintenance is not modeled.

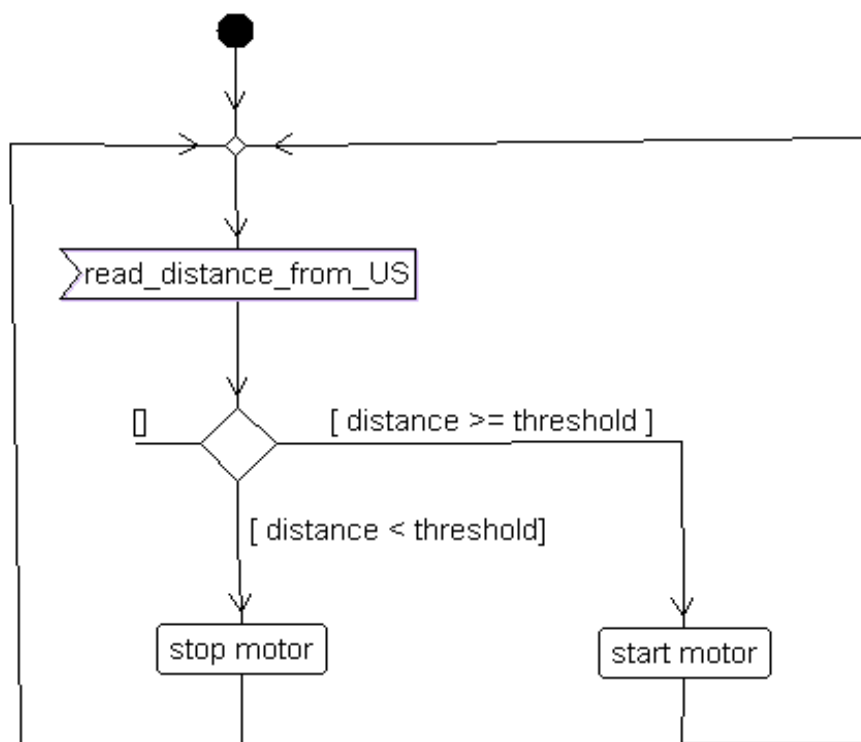
Requirement diagram :



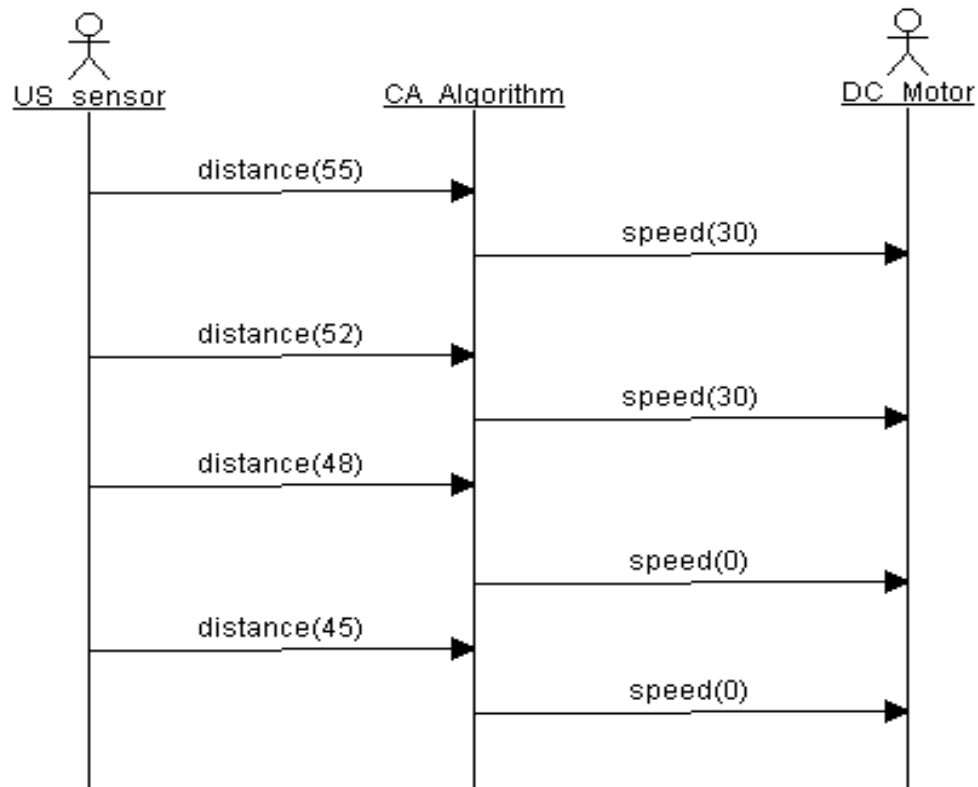
Use case diagram :



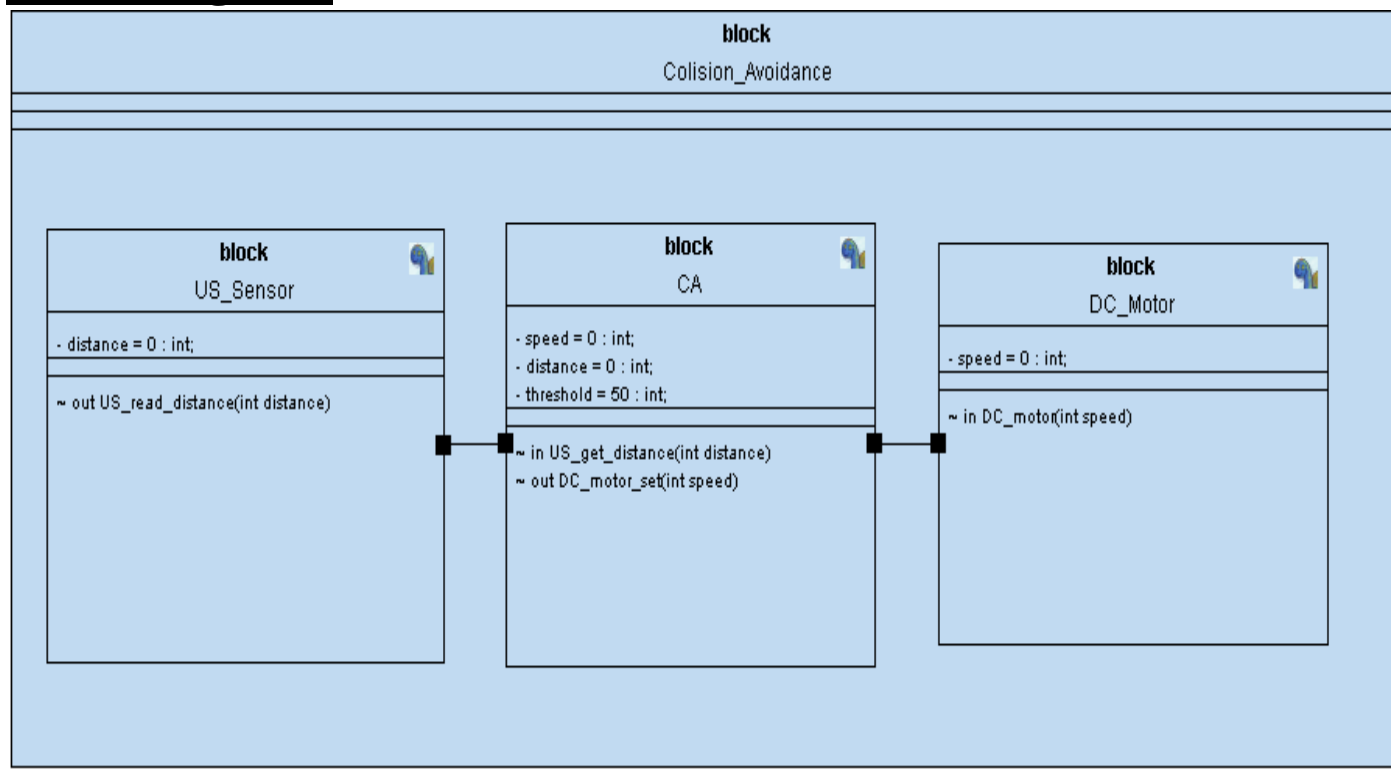
System activity diagram:



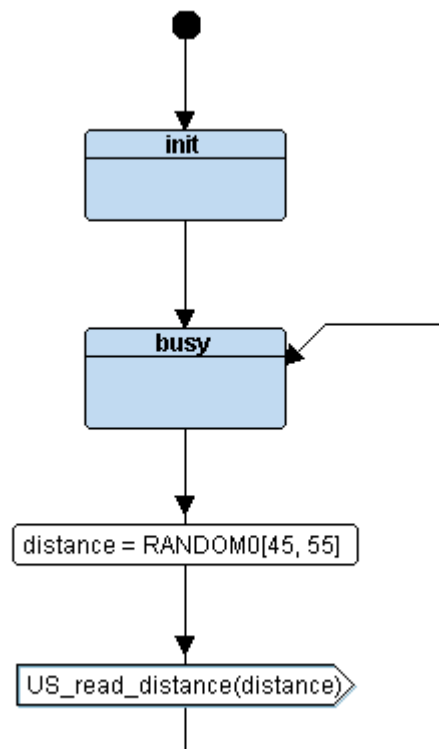
Sequence diagram:



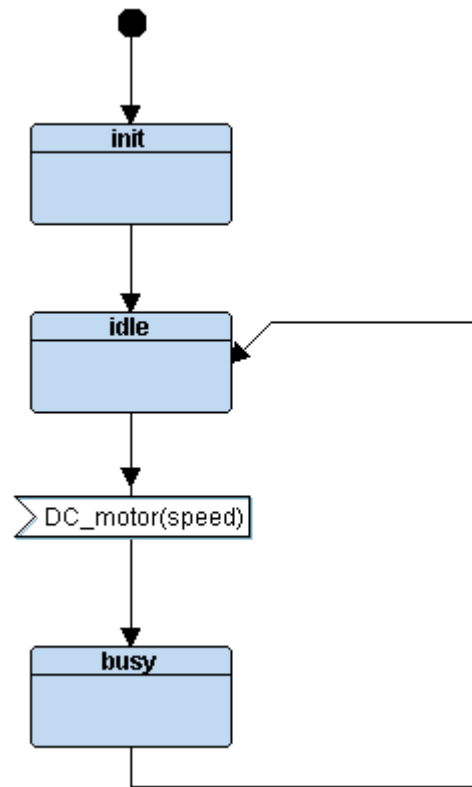
Block Diagram:



UltraSonic state diagram:



DC motor state diagram:



Collision avoidance algorithm state diagram:

