Assumptions:

1. Any node that is sending us a packet is within 100m
2. The truck is always in the RIGHT LANE and in FRONT
3. Truck speed is in random range of **[20, 35]** m/s
4. Cars can start in LEFT or RIGHT LANE
5. Car starting speed is **[25, 35]** m/s
6. Connecting / disconnecting nodes is done in another layer
   1. We will never be < 100m and not connected to all nodes in that radius

**Road Rules (Not in Road Train)**

1. IF I am in the LEFT LANE, check and see if there is anything within 20 meters in the RIGHT LANE
   1. IF CLEAR, move to RIGHT LANE, resume normal speed (if different)
   2. ELSE increase speed by 5 m/s
      1. Make sure I do not go above some MAX SPEED (Starting speed + 5)
2. IF I get a packet indicating a car is less than 20 meters ahead AND is going slower than me AND IS NOT in a PLATOON…
   1. IF I am in RIGHT LANE
      1. Check if anyone is in LEFT Lane within 20m
         1. IF CLEAR, move to LEFT LANE (Case 1 takes over)
         2. ELSE MATCH the Car’s speed ahead of me
            1. NOTE: We match the speed so we stay at 20 meters behind, this should make us keep checking if the Left Lane is clear (Case 2)
   2. ELSE I am in the LEFT LANE
      1. MATCH the car’s speed ahead of me
      2. Wait until the lane is clear then case 1 should take over

**Road Train Rules - Truck**

1. [TRUCK]: I receive a REQUEST to JOIN the RoadTrain
   1. Check my variable to see if the RoadTrain is OPEN
      1. IF OPEN (No other cars are in the process of joining)
         1. Send the car the link number he is (used to calc distance)
         2. Set RoadTrain to CLOSED
         3. Wait for ALL CLEAR Packet from Car
      2. ELSE CLOSED (A car is joining the Road Train)
         1. Send the car a packet saying, “TRY AGAIN”
2. [TRUCK]: I receive an ALL CLEAR packet from a car
   1. Set RoadTrain to OPEN, the next car may now join

**Road Train Rules – Car**

1. IF I am in RIGHT LANE and one of my links is a PLATOON\_MEMBER, I send a REQUEST TO JOIN to PLATOON LEADER (aka Node 1, need to figure out how to get Address)
   1. Wait for Response
      1. IF RoadTrain is OPEN (Received my platoon number)
         1. Increase speed until I am the correct distance away from TRUCK, then match Platoon speed
         2. Send ALL CLEAR PACKET
      2. ELSE MAINTAIN SPEED and keep sending REQUEST PACKETS until OPEN
2. IF I am in LEFT LANE and join a network with a PLATOON
   1. Slow down until I can safely move back to Right Lane
      1. Resume Speed case 1 should take over