HFD2 **Meeting Minutes**

Date and Time:

Monday Oct 19, 2020 at 12:45PM

Location:

Online – Zoom breakout room

List of attendees:

Mason Brouwer - Project Manager, Sai Chava - Client liaison, Zach Skrobot - Security, Junnan Fu - Meeting coordinator, Avni Avdulla - Web Master

Meeting Purpose and Topic:

- The project managers of each HFDS group raise questions about HFDS to the incumbents.

  --- Questions raised by the HFD2 team and responses received：

  How will a vehicle respond if a possible collision from the rear/front?
  - HFDS does not do anything here.
  - Coop cruise control is responsible for it
  - Try to perform an emergency break

  What are the signs for bad weather?
  - If there is noise (sensor), on camera it is deemed as unsafe.

  What type of control does the system have over external lights and what conditions would they get used in?
  - Only use hazard lights to come to a stop
  - Driving with lights always on
  - Never use high beams

  Can a driver wear sunglass while driving? (Does it cause the monitor to miss the eyes?)
  - The sunglasses will not affect the monitor.

  How does the system control the distance between the vehicle and the vehicle in front?
  - The distance from the car in front can be customized

--- Questions raised by the other teams and responses received：

1. What are stages of warnings when the driver is not actively engaged?
    - System will flash green light on steering wheel to prompt driver
        - If not paying attention for about 5 sec
    - If user stays not attentive red light
    - Sound prompt for the driver (“take control”) / seat and wheel vibration on third alert
    - If driver does not take over it stops and turns on blinkers / hazard lights
        - Gradually slow down, not slam on breaks
        - Could alert authorities if driver deemed compromised
    - As long as they are considered attentive by the cameras then it goes back
2. What happens when it needs to stop?
    - Car stays in the middle of the road
    - With hazard lights on
    - Never changes lanes
    - Maybe external adaptive cruise control can take over
3. How does the system react to unsafe conditions?
    - User takes control of the vehicle
    - System projects a path 2500 meters ahead.
    - Using a predefined lidar map. Over the air updates for the map.
        - Major updates for the system you have to get serviced.
    - If one sensor has a fault, the user takes control.
4. Is there any other way a driver can take control other than braking, accelerating, or taking the steering wheel?
    - Vehicle that this operates on is assumed to be in drive.
    - If they shift gears, they would regain control.
5. Wheel will turn blue when the user is using it to avoid a pothole or something, then when they let go it will go back to normal.

6. What sort of risk are we looking at for hacker threats? What does the resilience of the system have to be?
    - Does not have best answer
    - Biggest way hackers can get involved is over
    - the air updates. Ensure that is very secure.
7. Could you talk about what is “actively” engaged? How does the camera monitor that?
    - Camera mounted on steering wheel, tracking drivers face and head movements
    - If they are looking away it determines they are not attentive
        - That is a subsystem that needs to be fully functional for the system to be operational
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8. How would the system respond to a fork in the lane?
    - If the system expects it, it will work as intended
    - Otherwise give control back to the user
    - Any concern of what lane to take, give back control
9. Can we have more information about how the data from the sensors will be rayled to the system?
    - Radar sensors data will be optimized to ensure safety
    - If any maneuver cannot be performed smoothly then it is deemed unsafe
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10. Needs type of cameras:
    - Downward pointing sensors for lane tracking
    - Infrared cameras
    - Forward facing cameras
    - 360 degree camera, shows overview of vehicle to account for redundancies

- Cameras should be able to see through glasses

11. If it sees construction in front of you and it determines what happens?
    - It goes directly to level 3 and gives back control

Project website: http://webdev.cse.msu.edu/~avdullaa/HFD2Website/