# MOVING AMERICA FORWARD: NEXT-GEN TRUCK FREIGHT TRANSPORT 11/19/2019

UMass – Amherst, MA

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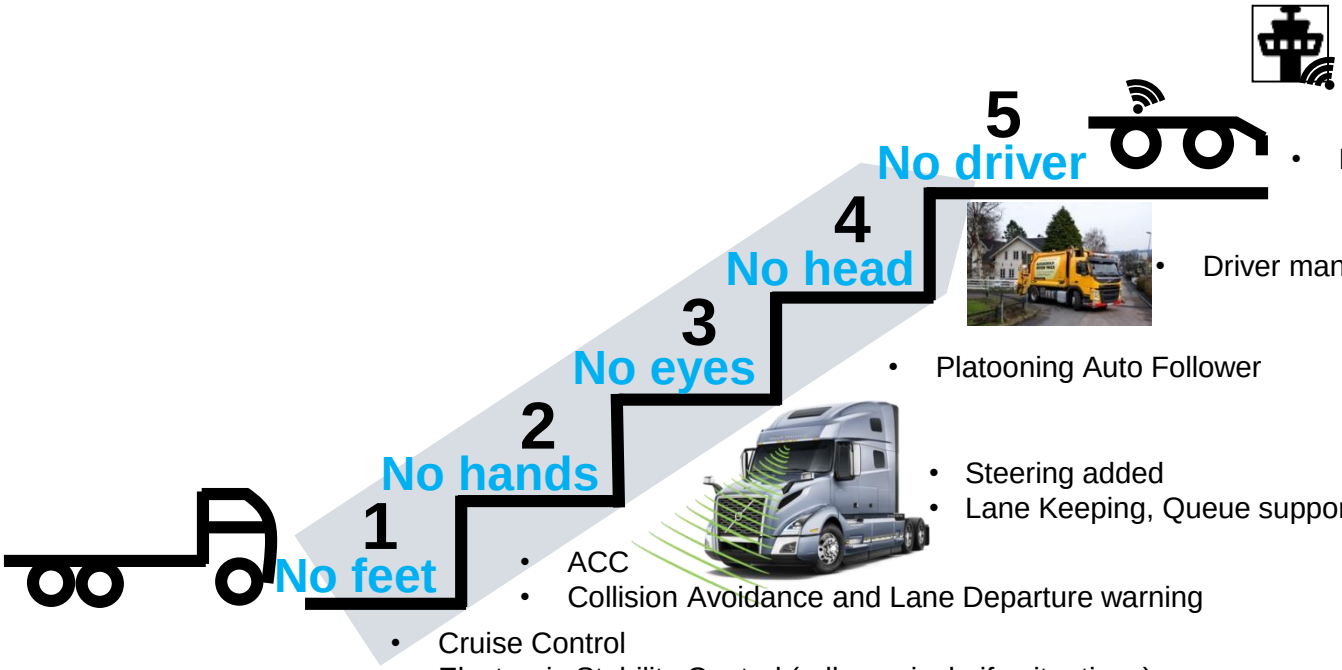
# Overview of Automation development in HD Trucks

- Advanced Driver Assistance Systems (ADAS) are our primary direction

  Benefits:
  - Reduce driver stress
  - Address traffic conflict areas around the truck
    - Low visibility conditions
    - Sensors to cover ”blind spots”
    - Reduce speed for greater following distance
    - Quick reaction thru electronics
  - Electronic Stability Controls to reduce rollover

# Automation – levels over time

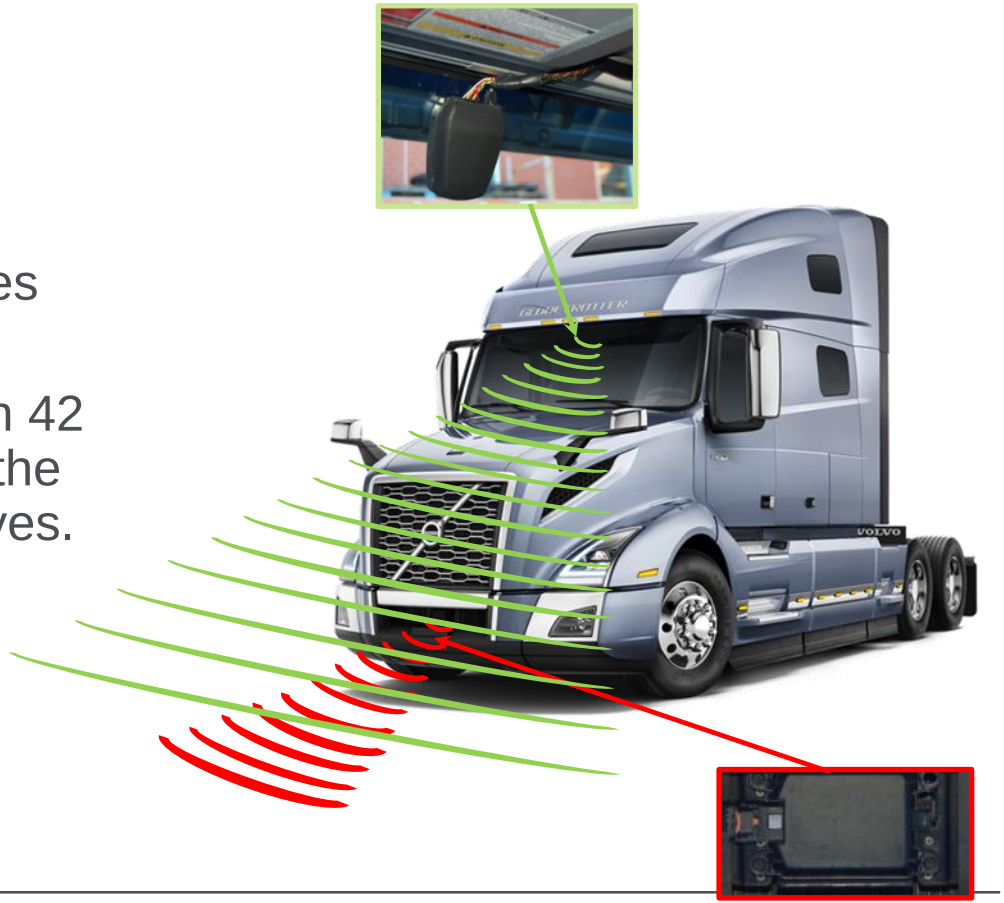



- Cruise Control
- Electronic Stability Control (rollover, jacknife situations)
- ACC
- Collision Avoidance and Lane Departure warning
- Steering added
- Lane Keeping, Queue support, backing assist
- Platooning Auto Follower
- Driver managed autopilot, confined areas
- Driverless, Control Tower

# Volvo Active Driver Assist

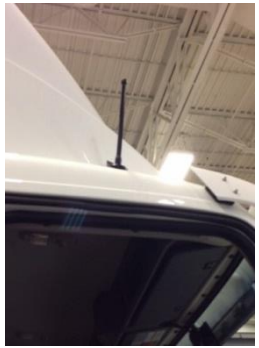
**Radar + Camera = Accuracy**

- Radar detection range of 22 degrees wide and about 500 ft. front.
- Camera viewing angle of more than 42 degrees will cover and detect what the radar can't. Act as an extra set of eyes.
- Adaptive Cruise Control (ACC)
- Collision warning and mitigation
- Lane Departure Warning
- Emergency Braking



# Public Highway Platooning Testing

- CACC
  - V2V thru DSRC
  - Speed, gap control
  - Braking
- Customer and highway partnership



# Higher levels of Automation (level 4)

- Confined areas:
  - Ports
  - Mining
  - Construction sites
  - Refuse
  - Limited access

- **Hazardous cargo needs special consideration**

- **Regulations must be changed in order to permit wide scale testing and development for on-highway use**

# Question the Answers and Thank You!

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- Assorted Web References:
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