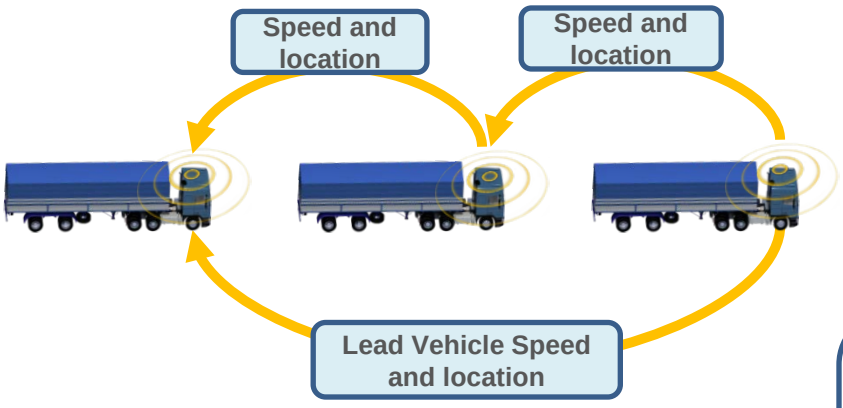
Demonstration Ride

Partially Automated Truck Platoon: Heavy Truck Cooperative Adaptive Cruise Control (CACC)



Benefits: **The CACC system enables heavy trucks to safely drive in a closer than normal formation, with automatic control of their speed and spacing, while the drivers continue to control the steering and remain vigilant for any hazards in the driving environment. The close coordination of the CACC system has several advantages:**

- **reduced aerodynamic drag, enabling energy savings and greenhouse gas reductions;**
- **enhanced stability of vehicle following, damping out traffic disturbances;**
- **shorter than normal gaps discouraging (but not eliminating) cut-ins by drivers of other vehicles; and**
- **faster responses to hard braking by preceding trucks, improving safety.**

Demonstration background: **This demonstration was implemented by the PATH Program of the University of California Berkeley and the Volvo Group under the sponsorship of the FHWA Exploratory Advanced Research Program and Caltrans.**

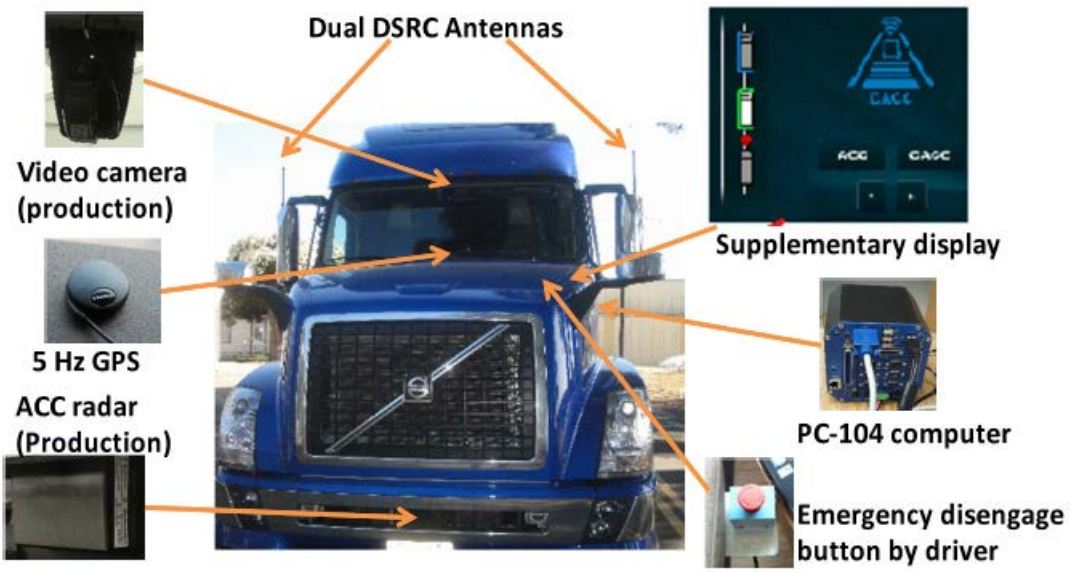
Cooperative Adaptive Cruise Control (CACC**) is an enhancement to Adaptive Cruise Control (ACC) that provides closer and more accurate control of the gap and speed differences between the trucks than conventional ACC, but the coupling is not as tight as it would be in a formally-structured platoon. The CACC system uses the forward-looking radar sensors and electronic actuation of engine and brakes of the conventional ACC system but adds Dedicated Short Range Communications (DSRC)-based vehicle-to-vehicle communications, enabling the implementation of a higher performance vehicle-following controller.**

Sign up at the US DOT exhibit

Demonstration Times

Monday-Tuesday: 11:00 AM to 3:00 PM
Wednesday: 11:00 AM to 1:00 PM
Every 30 minutes on all three days

This demonstration **provides an opportunity for visitors to ride in a heavy truck driving on a freeway as part of a string of three trucks, with the followers' speed under CACC control. The demonstration will feature a short ride along the SR-87 freeway in San Jose, CA with the visitors riding in the second and third trucks of the CACC string. They will experience the use of DSRC-based vehicle-to-vehicle communication to coordinate the speeds of the trucks so that they can follow each other accurately at constant time gaps. They may also experience the responses of the following trucks when a passenger car cuts in between the trucks, leading to the safe separation of the CACC string and resumption of the short-gap CACC operations when the intruding passenger car departs.**
Demonstration riders need to be sufficiently agile to climb up the steep steps into the sleeper cab of the heavy truck.



The Project Partners

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