Comment from Jeffrey Rubenstein

As the NHTSA considers the safety-related issues of the development, testing, and implementation of Automated Driving Systems (ADS), one important safety feature long considered essential in traditional automobiles seems to be forgotten or overlooked in Automated Driving Systems. That safety feature is an external audio alert system (currently implemented as the car horn), which communicates to pedestrians, bicyclists, drivers of other vehicles, animals, and others outside the vehicle, particularly in cases of potential collisions.

When ADS development and testing reaches the higher levels of automation (i.e., levels 4 and 5), and an unsafe traffic situation (such as a potential collision with a pedestrian or another vehicle) occurs, then simply put theres nobody in the drivers seat to honk the horn. Its imperative that a system be included within ADS vehicles that monitors the various systems of the vehicle (e.g., navigation system, external vehicle sensors, pedestrian sensing, anti-skid braking, speed control), and uses hardware and software to intelligently and promptly transmit an appropriate audio alert to warn others outside the vehicle of the impending collision. The specific volume, direction, and type of sound (honk, whistle, voice recording, etc.) could be intelligently controlled by the system, in order to be most effective in communicating the precise nature of the event to those at risk outside the vehicle. But the important point is that such a system to replace the horn, which would otherwise be initiated by a human driver must be required in order to provide a reasonable and expected level of safety for those outside the vehicle.

I strongly urge the NHTSA to consider this recommendation in the interest of safety for the occupants of the ADS vehicle, but especially for the safety of others (pedestrians, bicyclists, and occupants of other vehicles), who expect and need to be alerted by some kind of sound (horn honk or otherwise), should a potentially unsafe situation develop.