Consumers Union
POLICY & ACTION FROM CONSUMER REPORTS

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# Comments of Consumers Union and Center for Auto Safety to The National Highway Traffic Safety Administration on Federal Motor Vehicle Safety Standards for Vehicle-to-Vehicle (V2V) Communications Docket No. NHTSA-2014-0022

## Introduction

Consumers Union, the public policy and advocacy division of Consumer Reports,[1] and the Center for Auto Safety, respectfully submit the following comments to the National Highway Traffic Safety Administration (NHTSA) in the above-referenced advance notice of proposed rulemaking. We support the continuation of this initiative, and look forward to working with NHTSA to help explore the traffic safety benefits that this new technological capability could provide.

Since its founding in 1936, Consumer Reports has been testing and reporting on automobiles, and safety has always been a primary focus. The Center for Auto Safety was founded in 1970 to further advance efforts to improve the safety of automobiles. We have been among the leading supporters of advances in car safety over the years, and we support consideration of potential new advances.

[1] Consumers Union is the public policy and advocacy division of Consumer Reports. Consumers Union is an expert, independent, nonprofit organization whose mission is to work for a fair, just, and safe marketplace for all consumers and to empower consumers to protect themselves. It conducts this work in the areas of telecommunications reform, health reform, food and product safety, financial reform, and other areas, including air travel. Consumer Reports is the world's largest independent product-testing organization. Using its more than 50 labs, auto test center, and survey research center, the nonprofit organization rates thousands of products and services annually. Founded in 1936, Consumer Reports has over 8 million subscribers to its magazine, website, and other publications.

As Consumer Reports has previously reported,[2] we have been following the progress of NHTSA's consideration of vehicle-to-vehicle communications (V2V) technology with great interest. This technology has potential to significantly improve traffic safety by giving drivers an early warning of yet-unseen crash hazards posed by other vehicles. More broadly, vehicle-to-infrastructure (V2I) and vehicle-to-pedestrian (V2P) technology – collectively, V2X – could enable drivers to obtain advance warning of other potential road hazards, and could improve pedestrian and cyclist safety as well.

As NHTSA recognizes, there are significant challenges in developing and implementing effective and reliable V2X communications systems, and in taking them from the closed testing environment to the open road. These include technological challenges, such as message congestion and gaps in GPS coverage; security challenges, such as vulnerability to hacking; and potential privacy issues, if every car's location is subject to constant monitoring. And there are fundamental driver behavioral challenges – among them, we believe, based on experience at the Consumer Reports Auto Test Center with current advanced safety systems, significant potential difficulties in how drivers will manage multiple additional warnings.

To address these driver behavioral challenges, it is important that V2X communications technology be carefully integrated into the driving experience so that potential driver distraction or disruption is minimized. Too many false alerts, or too many premature alerts of potential dangers, could be very distracting or disruptive. More ambitious suggestions for systems that incorporate automatic mechanical responses, such as automatic override braking, could be particularly dangerous if not carefully calibrated to avoid false positives. In addition to the immediate dangers of false positives, drivers could become annoyed, and respond by not taking the alerts as seriously, or even by disconnecting the alert system, as has occurred with some currently available pre-collision alert technologies.

V2X technology must effectively communicate warnings to the driver, so the driver understands why the vehicle's safety system is reacting to a perceived risk and can take timely action if necessary to avoid a crash. We encourage NHTSA to continue its research to determine the most effective and least distracting ways for V2X devices to communicate this information. In particular, a hierarchy of which warning presents the most immediate need for reaction from the driver needs to be clearly established.

Another fundamental challenge, recognized by NHTSA, is that full-scale benefits from V2X – and especially from V2V, which depends on reliable communication between vehicles to identify situations that are otherwise not visible – can be achieved only if the technology is installed and functioning reliably in every vehicle, new and old. In considering, and potentially mandating, V2X or other technology, safety must remain the overriding focus.

Some potential V2V capabilities described in the NHTSA report, such as the "do not pass" warning, for example, may ultimately prove too ambitious if intended to be utilized by drivers as a substitute for their own discretion. V2V technology might never achieve the level of

[2] "Cars That Talk Could Save Thousands of Lives, Consumer Reports, August 19, 2014, http://www.consumer reports.org/cro/news/2014/08/v2v-cars-that-talk-could-save-thousands-of-lives/index.htm; "Vehicle-to-Vehicle Communication Can Prevent Crashes," Consumer Reports, April 2012, http://www.consumer reports.org/cro/magazine/2012/04/vehicle-to-vehicle-communication-can-prevent-crashes/index.htm.

fool-proof universality and reliability that would enable a driver to safely execute a pass on a two-lane highway without being able to actually see whether or not there is an oncoming vehicle approaching – although it could provide an additional margin of safety in instances where the driver would attempt to pass believing conditions warrant it. And as indicated in the ANPRM and report, testing matrices should be broadened to include consideration of the more common event when a driver inadvertently allows the car to stray from its lane.

More broadly, we believe meaningful incremental safety benefits could be realized even with only a portion of the vehicles on the road having V2X technology. The reactions of drivers to V2X warnings in even a portion of vehicles should result in similar reactions by drivers in vehicles around them, even if the other vehicles are not V2X-equipped. For example, if a V2X-equipped vehicle slows to avoid a condition indicated by a V2X warning, drivers in vehicles behind it will be alerted by seeing its reaction. Potential benefits need to be explored based not only on an ideal end-result of universal implementation, but also in situations where surrounding non-V2X-equipped traffic can be beneficially affected.

As NHTSA proceeds with its testing of this technology and consideration of proposed rulemaking, it should be appropriately careful and measured in its stated objectives so as not to allow the potential benefits to be overpromised in a way that could compromise safety or undermine the effort, nor to under-represent the potential benefits that could result from even a portion of vehicles being equipped. Meanwhile, NHTSA should continue efforts to get proven electronic safety technologies, such as collision avoidance braking, included as standard equipment in all vehicles. These technologies can provide more immediate safety benefits while we wait for development and deployment of V2X – which, even under the most optimistic scenarios projected in NHTSA's report, would not pass the 50% penetration threshold until after 2030.

We believe the report and the Advance Notice of Proposed Rulemaking set forth an appropriate plan for continuing to explore the potential benefits of this technology, recognizing that there are also significant challenges and limitations. We encourage NHTSA to continue its thoughtful process, and look forward to contributing.

Respectfully submitted,

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