



April 12, 2017

Docket Management Facility M-30
U.S. Department of Transportation
West Building, Ground Floor, Rm. W12-140
1200 New Jersey Avenue SE
Washington, DC 20590

Re: Docket No. NHTSA-2016-0126; NPRM on Vehicle-to-Vehicle (V2V) Communications

To Secretary Chao:

5G Americas applauds the Department and the National Highway Traffic Safety Administration (“NHTSA”) for its efforts in reducing crashes on U.S. roadways through connected vehicle technology. 5G Americas members, which include AT&T, CommScope, Ericsson, HP Enterprise, Intel, Nokia, Samsung, Sprint, T-Mobile USA, and Qualcomm¹, have been developing Vehicle-to-Everything (“V2X”) technology which includes both V2V and Vehicle-to-Infrastructure communications. Several 5G Americas members will have CellularV2X for V2V demonstrations later this year, in conjunction with automotive manufacturers.²

5G Americas’ mission is to foster the advancement of Long-Term Evolution (“LTE”) wireless technologies and their evolution to the fifth generation of wireless (“5G,”) throughout the mobile ecosystem in the Americas. 5G Americas is the regional partner of the global standards initiative 3GPP.³ 5G Americas shares NHTSA’s goal of safer roads, but does not support mandating Dedicated Short Range Communication 802.11p-based (“DSRC”) technology in all U.S. light duty vehicles, given the challenges DSRC faces in maximizing safety in the near- or long-term.

DSRC relies on road side units (“RSU”), which are not ubiquitously deployed in the U.S., whereas cellular networks are ubiquitous, including in most rural areas. At the physical layer, DSRC has several inefficiencies due to the asynchronous nature of the system, resulting in reduced range, robustness and reliability, and higher latency. Currently there is no activity in the

¹ See 5G Americas, Board of Governors, <http://www.5gamericas.org/en/about-us/board-governors/>.

² See *5G V2X: The automotive use-case for 5G*, 5G Automotive Association at 10, http://www.3gpp.org/ftp/Information/presentations/Presentations_2017/A4Conf010_Dino%20Flore_5GAA_v1.pdf (noting demonstrations of Ericsson and Qualcomm and others in 2017).

³ 3GPP, or the Third Generation Partnership Project, unites seven telecommunications standard development organizations (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC), and provides their members with a stable environment to produce the Reports and Specifications that define 3GPP technologies. See 3GPP, About 3GPP Home, <http://www.3gpp.org/about-3gpp/about-3gpp>.

IEEE 802.11 standards body to study a next-generation DSRC technology that will meet the requirements of more advanced V2X use cases such as automated vehicles.

Fortunately, DSRC is not the only solution for V2X communications. LTE and 5G cellular systems have the potential of supporting not only existing DSRC use cases, but also the more challenging and futuristic use cases that require low-latency, high reliability and high bandwidth. Cellular V2X (“C-V2X”) could also complement DSRC to enhance V2X communications capabilities. Mobile operators can provide additional value to the overall V2X solution. Cellular networks could be used to distribute certificate and certificate revocation lists and for RSU backhaul communications. Additionally, LTE networks can extend the V2X range from the 300 meters that DSRC can achieve to several kilometers or more, providing earlier notifications to drivers and their vehicles.

5G Americas submits its recent White Paper on *V2X Cellular Solutions*⁴ to support its request that NHTSA not mandate DSRC, but rather pause, and take into account the improved V2X technology that the private sector is developing voluntarily. Not only U.S. mobile operators and vendors are exploring C-V2X, but so is the mobile sector in Europe and Asia, which will provide economies of scale and safety enhancements to U.S. passengers. Unlike in IEEE, at 3GPP there is active, global study on evolving connected car technology.⁵ For the enhanced V2X work at 3GPP, additional, more challenging use cases are considered to derive service requirements in Release 15 and beyond of 3GPP mobile standards. The attached White Paper notes 3GPP members’ work and explains the role and benefits that C-V2X can provide to support the Department and NHTSA’s objectives of improving safety and reducing vehicular crashes. C-V2X can also further the additional societal goals of increased mobility and reduced pollution. Moreover, C-V2X can enable many transportation applications.

5G Americas is confident that after reviewing the C-V2X White Paper and the rest of the comments in the above-captioned proceeding, NHTSA will appreciate that there are more technologically advanced options to consider. A voluntary path to enhance the long-term safety of U.S. roadways is preferable to mandating decades’ old technology that is not likely to evolve, and therefore might not deliver benefits comparable to C-V2X.

Respectfully submitted,



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⁴ *V2X Cellular Solutions*, 5G Americas (October 2016), http://www.5gamericas.org/files/2914/7769/1296/5GA_V2X_Report_FINAL_for_upload.pdf.

⁵ *See, e.g., Study on enhancement of 3GPP support for 5G V2X services*, 3GPP TR 22.885 V15.1.0 (March 17, 2017), available at http://www.3gpp.org/ftp/Specs/archive/22_series/22.886/.

