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**VIA ELECTRONIC DELIVERY**

January 22, 2016

Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12th Street, SW  
Room TWA325  
Washington, DC 20554

**Re: *Ex Parte* Notice**

ET Docket No. 13-49, *Revision of Part 15 of the Commission's Rules to Permit  
Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*

Dear Ms. Dortch:

This is to inform you that on Wednesday, January 20, 2016, Hilary Cain, John Kenney, and Kevin Ro of Toyota (collectively, the "Toyota Representatives"), met with Johanna Thomas, legal advisor to Commissioner Jessica Rosenworcel. In this meeting, the Toyota Representatives briefed Ms. Thomas on Toyota's active deployment of Dedicated Short Range Communications ("DSRC") systems. Toyota became the first company in the world actually to deploy vehicle-to-vehicle ("V2V") communication, incorporating the technology into three models in Japan at the end of last year. Toyota emphasized that it firmly believes in this technology and is committed to its success in the United States and globally.

As for as the overall development and deployment of DSRC, Toyota reiterated that the industry is on track, and exactly where it expected to be, in terms of the timeline following the Commission's channelization decisions in 2006:

- From 2007-2009, the industry focused on the development of the technology itself and the standards that would be needed to support the technology;
- 2010-2011 was focused on acceptance trials in a number of different geographic locations, confirming that the technology would be one that people wanted;
- From 2011-2013, the industry and the U.S. government conducted testing and pilot programs, including in Ann Arbor, Michigan, to verify the maturity of the standards and the interoperability of the technology, and to gather the data that NHTSA needed to conduct a cost/benefit analysis of the technology;
- 2014 was focused on NHTSA conducting that benefits analysis and then releasing the ANPRM to mandate the technology in future vehicles; and
- 2015 has been focused on the finalization of deployment-ready standards, which were published at the end of the 2015.

The Toyota Representatives noted that the timeline associated with the development of DSRC technology is not dissimilar to the timeline associated with the development of other communications technologies, including WiFi itself, which took nearly 15 years to bring to the market after spectrum was first made available for unlicensed use in the mid-1980's. They also observed that DSRC is in no way a dated or outmoded technology. DSRC technology has developed over time, particularly on the receiver side, such that the technology Toyota is on the verge of deploying in the United States is significantly more sophisticated than the technology first envisioned in 1999.

The Toyota Representatives disputed the claim that a truly effective technology must reach a "critical mass" in terms of market penetration. To the contrary, the benefits will come incrementally. Here, with each additional DSRC-equipped vehicle that is introduced, the benefits of the technology will only increase and lives will be saved. Such benefits were evident in the Ann Arbor pilot program: with only a relatively small percentage of the Ann Arbor cars equipped with DSRC, Toyota observed more than 100 interactions per day, and thousands of interactions per month.

The Toyota Representatives also refuted the claim that sensor-based automated technology has leapfrogged or superseded the need for V2V communication. In fact, V2V communication is an extension of and complimentary to sensor technology. Sensor technology has inherent limitations with respect to range, field-of-view, and line-of-site, and those gaps will be addressed via V2V technology. Moreover, automated technology actually is increasing the automotive industry's need for DSRC and bandwidth, as there is now a need to share sensor data between vehicles to increase the overall robustness and social utility of automated vehicle systems. For example, one car may "see" something that another car cannot "see" (*e.g.*, a child running out into the road, a patch of ice, etc.), and if it can share that information with the other car, everyone is better off in terms of societal benefit.

Finally, with respect to current pending proposals for sharing between primary DSRC operations and unlicensed operations in the 5850-5925 MHz ("5.9 GHz") band, the Toyota Representatives opined that the Cisco "Listen, Detect, and Avoid" sharing proposal -- currently being feasibility-tested by industry -- appears to have merit, and is elegant in its simplicity. By contrast, they observed that another pending proposal by QUALCOMM is ill-defined, and certainly not testable at this point.

Toyota believes that once the automotive industry can achieve regulatory certainty in the United States with respect to DSRC deployment at 5.9 GHz, U.S. citizens and consumers will benefit greatly.

/s/ Hilary M. Cain

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