



National Highway Traffic Safety Administration
1200 New Jersey Ave., S.E.
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Washington, DC 20590

ATTN: Finch Fulton, Deputy Assistant Secretary for Transportation Policy

Re: V2X Communications (Docket No. DOT-OST-2018-0210)

Wind Talker Innovations (WTI) is honored to be able to provide comments for the future of V2X communications. The Department of Transportation has been tirelessly perusing the road to zero and rapidly developing technologies make it extremely difficult to shape and standardize safety for our roadways. As a veteran owned startup that is developing proven military network technologies for all modes of commercial transportation, we believe that all transportation stakeholders should continue developing technologies that leverage spectrum for transportation safety benefits.

All the arguments in the other V2X submissions for or against C-V2X, are the very same reasons why transportation safety data should ultimately be delivered by an agnostic network. Only a protocol, spectrum and system agnostic network can employ best practices, cutting-edge technologies, data rates and have enough market penetration to truly support transportation safety. A truly agnostic network would allow the DOT to connect to any current or future network (5G, LEO, FSO) for connectivity and processing, while remaining independent for direct safety communications and data fusion within the transportation nodes themselves. An agnostic network will support best practice standardization, by supporting all message protocols, translating them when beneficial, and integrating them into a standard payload. Standardizing once protocols have been proven will maximize efficiency by eliminating translation processing time and effort.

Protocol translation isn't optimal, but should always be a requirement, to ensure new technologies can be introduced with minimal delays, as well as providing transportation safety while traveling outside the US. WTI believes any transportation network must have a multi-modal design to remain relevant, which means it will have to be employable on a global scale.

With the controversy surrounding both DSRC and C-V2X's safety, security and overall capabilities. It seems logical for the DOT to focus on the architectural design, on the pipe/delivery first, then the protocol. Focusing on a multi-modal network architecture will provide a solid foundation for these developing protocols to be delivered to any system, on any spectrum, using DSRC, C-V2X or any other protocol. Likewise, any radio, antenna, sensors or laser that needs to be supported as well. Short, medium, or long-haul infrastructure should also be seamlessly available from the network to stream content, dump non-time-sensitive safety data or report conditions, incidents, etc...

Current requirements for V2X are all static (Minimum distance, message update rate, latency, etc...). Transportation is dynamic by nature and the requirements and network should be dynamic as well. Reference WTI's confidential submission for our solution.

Technology is rapidly advancing all modes of transportation from pedestrian scooters, to drone deliveries and flying cars. These will all change the dynamic requirements for vehicle safety. Any current or future transportation network needs to be designed to handle a multi-modal dynamic 3D environment, not a network focused on vehicles or one that was designed to rely on infrastructure

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that's not always available and offers limited spectrum. With current technology, it is easy to employ multi-spectral solutions in a small, efficient SWaP solution that can directly communicate, translate disparate protocols, fuse sensor information and provide guidance to a smart vehicle, train, ship, plane, smart phone or wearable. Reference WTI's confidential submission for our solution.

Transportation and safety networks need to be designed to share information and filter that information for its intended purpose while securing the data appropriately, based on message content. These network capabilities go well beyond creating protocol messages to pass data for different vehicle situations. Reference WTI's confidential submission for our solution.

Accuracy is key for anti-collision avoidance. GPS location accuracy and latency have proven to be insufficient in DSRC and other testing. Sensor types, update rates and multiple sensors on a vehicle help, but they are lacking and inefficient. Reference WTI's confidential submission for our solution.

Nether a fully directional, disconnected network nor an infrastructure-based network will fully support all the needs for transportation safety, flow management and connectivity, a hybrid is required. But that doesn't mean that the DOT has to pick a single solution. If designed correctly they can have all the benefits from the years of development and testing of DSRC as well as new innovations like C-V2X and other innovations that are available now or will come available in the future.

Wind Talker Innovations is grateful to be able to submit our thoughts on this V2X request for comments. We recommend that the DOT continues to look for innovative frameworks to support transportation safety. Particularly networks that don't delay proven safety technology that is tested and ready to field. We also ask that the DOT consider employing a multi-modal network with common frequency spectrum and message protocols to ensure future relevance. For details on how WTI's Osmosis™ network can meet the DOT's objectives for multi-modal safety, please reference our confidential reply that addresses concerns raised in this response as well as DOT and FCC questions/concerns that were listed in the RFC. For direct contact, please email Ryan Luther at dot@windtalker.com

Sincerely,
Wind Talker Innovations Inc.



Ryan Luther
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