

Traffic Safety and the 5.9 GHz Band
Remarks by Undersecretary Derek Kan
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Good afternoon,

Thank you to all of you for coming today. Thank you, Diana, for this introduction, and for organizing the conference.

Thank you also to all our panelists; National Highway Transportation Safety Deputy Administrator Heidi King; Ken Leonard from the Intelligent Transportation Systems-Joint Program Office and Karen Van Dyke from Spectrum Management.

I am glad to join you to continue this conversation about Traffic Safety and the 5.9 GHz Band.

Through the course of today's events, we've heard from a variety of panelists—from our agency, from various state DOTs, from university and industry, who have shown us what is going on with the 5.9 GHz band and talked about intelligent transportation systems and connectivity relative to safety.

Safety is one of the key points I want to drive home.

We've had an opportunity to look at considerations for efficient use of the 5.9 GHz band that will result in greater levels of interoperability and compatibility to promote safety.

USDOT encourages use of the 5.9 GHz band of spectrum by transportation technology and application deployers and operators, transportation service providers, and users for purposes of safety, system efficiency, and greater mobility—particularly in the movement of freight and passengers to enhance our Nation's economic benefits and well-being.

All of that is to say, we want to preserve the 5.9 GHz band so that everything— automated light duty vehicles, trucks and motor coaches, rail, transit, and infrastructure and traffic devices across all surface modes, can work in the safest possible way.

As you have heard today, we are already using the 5.9 GHz band for traffic safety—not in some distant future, but right now.

The 5.9 GHz band of spectrum is of critical importance to the Department for reducing crashes and mitigating congestion. It is uniquely capable of supporting safety applications that could prevent or significantly reduce the severity of vehicle crashes.

We have heard today that the 5.9 GHz band is used for traffic light control, traffic monitoring, travelers' alerts, automatic toll collection, traffic congestion detection, emergency vehicle signal preemption of traffic lights, and electronic inspection of moving trucks through data transmissions with roadside inspection facilities. It also governs numerous systems such as red-

light violation warnings, reduced speed zone warnings, curve speed warnings and spot weather-impact warnings and other safety-critical applications.

Millions of dollars have already been invested in this effort, including incorporating connected vehicle technologies into infrastructure and significant past and present investments in connected vehicle innovations. This will only continue moving forward as state and local executives and various agencies across the country continue to deploy these technologies.

The Federal Highway Administration uses our Cooperative Automation Research Mobility Applications or, CARMA, vehicles to perform cooperative automation research. These vehicles combine connectivity and automation to improve the operational efficiency of the transportation system and increase safety. This includes using the 5.9 GHz band to allow vehicles to platoon closely together at freeway speed-- with less than one second headway. The low latency, reliable, high bandwidth capabilities of the 5.9 band support this application well.

Again, we at USDOT have focused on this issue at length. Today we've heard about advances from State DOTs in Georgia, New York and Utah as well as industry leaders from Panasonic and scholars from Carnegie Mellon. We've done the work to prove connectivity is critical to traffic safety and we can identify how it can work.

Use of this spectrum saves lives. And as I mentioned, safety is the key point and one of Secretary Chao's first priorities.

For it to continue to save lives, we need to protect the 5.9 GHz band from interference that compromises traffic safety and efficiency.

While momentum is building toward connected vehicle implementation, multiple discussions around opening the 5.9 GHz band to wi-fi and other spectrum sharing options are causing regulatory uncertainty and slowing down progress.

The fact is, speed matters when safety information is involved. Sharing the band could compromise the speed at which this information is received and put lives at risk. With over 37,000 deaths on our Nation's roads every year, it is critical that efforts to free up additional spectrum do not come at the expense of life-saving technologies. We cannot afford it.

There are more than 70 active deployments of V2X (vehicle to everything) communications using the 5.9 GHz band for cooperative applications. More than 18,000 vehicles are deployed with aftermarket V2X communications devices and over 1,000 infrastructure V2X devices have been installed at the roadside in 25 states.

There are multiple deployments of proven technology and the community is ready for more.

These deployments actively use all seven channels in the 5.9 GHz band—essential to enabling a wide deployment of V2X that accommodates all vehicle types, road users and infrastructure operators, as well as fostering the innovation in V2X applications to facilitate the safe and efficient movement of people and goods.

This deployment in turn has created a diverse industry that has responded aggressively in support of these technologies—building units into traffic signals hardware and spurring development of aftermarket on-board units.

We're moving forward at a rapid pace.

Both the National Highway Transportation Safety Administration and the Federal Motor Carrier Safety Administration have recently sought public comment on removing regulatory barriers to Automated Driving Systems.

NHTSA's proposed rulemaking are part of ongoing efforts to identify and address regulatory barriers to ADS Automated Driving Systems technologies, while our Motor Carrier Administration is considering changes to its rules to account for significant differences between human operators and automated vehicles.

We are preparing ourselves for the future—one where we recognize that we need significant spectrum available to safely integrate automated vehicles into all modes of surface transportation, no matter the technology. Spectrum is the backbone of connected vehicles and connected vehicle technology.

I know we focus quite a bit on cars and automated vehicles, but this is bigger than cars. Use of the band is cross- and multi-modal. It's important to the Department in evaluating the safe, secure, efficient and interoperable use of the 5.9 GHz band, that we continue to communicate with manufacturers and the public.

We are continuing to support current deployments and research into technological advances in this area. Importantly, the Department is technology neutral, encouraging the market to demonstrate appropriate approaches to connectivity that result in safe, interoperable, scalable, and efficient use of spectrum.

The Department does not promote any particular technology over another, and we encourage the automotive industry, wireless technology companies, and other innovators to continue developing multiple technologies that leverage the 5.9 GHz band of spectrum for transportation safety benefits.

As technology advances, it is clear that interoperability is central to enabling universal, nationwide and regionwide V2X capability and benefits. Our technology should play well together. There should be seamless communication between onboard units and roadside units. No matter who the manufacturer is, the units need to be able to exchange and use data consistently, just as an iPhone 3 can talk to an iPhone 10, and both can talk to Androids and Blackberries and even old Ma Bell landline phones.

With more than 75 connected vehicle projects in the U.S. alone (54 currently operational), a common path forward is needed to ensure current deployments can continue without the risk of investment loss and/or jeopardizing the intended safety and mobility benefits.

We must work to ensure that this technology:

- Is effective for collision avoidance and,
- Works across all makes and models

Also, as we move forward to advance deployment, the technology must:

- Be affordable (including aftermarket upgrades)
- Be able to work no matter if you're in rural Texas or downtown DC.
- Work across all platforms/modes
- Include both forward and backwards compatibility

It must also address privacy and cybersecurity protection of all potential networks and associated elements.

There has been considerable progress by State and local governments in deploying V2X technology, in addition to DOT-funded deployment programs, such as the Connected Vehicle Pilot Program and Smart Cities.

America must continue to innovate—in our approach and practice. Innovation is another of the Secretary's top priorities. We commit to better understanding the spectrum requirements of automated vehicles, so we can better meet the needs of the disabled and other communities with underserved transportation needs.

The Department promotes transportation's ability to stay at the forefront of technology and connectivity to reap new opportunities and innovations.

We all share a vision of a better future transformed by intelligent mobility—one that works without significant disruption, leaves room for the development of new and emerging technologies and doesn't compromise public safety.

Now I would be glad to take a few questions.

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