



January 11, 2019

Ms. Marlene H. Dortch
Office of the Secretary
Federal Communications Commission
445 12th Street SW
Room TW-A325
Washington, DC 20554

Re: GN Docket No. 18-357, DA 18-1231

Dear Ms. Dortch:

APTIV COMMENTS

Aptiv has quickly reviewed 5GAA's Request for Waiver in the 5.9Ghz ITS DSRC Band and offers these comments:

Aptiv requests that the FCC deny this 5.9Ghz ITS band waiver due to the outlined items below:

Aptiv also suggests that FCC work with the cellular 5GAA community to quickly identify at least 20Mhz within their large set of unused and/or sunseting spectrum holdings that can be allocated to cellular CV2x for completion of the further studies needed for V2x safety operations capabilities.

These two recommendations allow for Broadband CV2x ITS studies and development, and ITS 5.9Ghz DSRC Safety of Life deployments to continue in order to ensure that the US meets Congress's two critical Broadband and ITS Safety/Automated orders without harm to either national priorities. Aptiv needs both Advanced Broadband and DSRC. A 5-channel DSRC band is not viable for connected safety of life and automated needs.

Outlined items:

1. The supporting 5GAA test results are invalidated by severely faulty DSRC systems utilized in the few simple conditions that the report tests to date.
2. 5GAA has yet to test, or road validate a large swath of critical conditions to confirm road safety claims, capabilities, interoperability, driving readiness, and deployment .
3. Per Aptiv's submission to the FCC in July 2016, we are deploying DSRC devices using the full DSRC spectrum, including our newest devices in 2019 for workzone safety,



emergency vehicles, network mgt messaging, public service intersections, and automated vehicles. Channel 182 and 184 are vital in these.

4. This waiver will force the shutdown of current Aptiv ITS V2x DSRC product deployments and development activities as our devices underway suddenly are declared illegal to operate. DSRC implementations not provided by Aptiv will suffer the same likelihood of shutdown.
5. This waiver eliminates the use of two critical DSRC channels, 182 and 184. It will force the shutdown of Aptiv DSRC V2x activities and the recall of existing devices until, and if, a new 5-channel DSRC band plan can be coordinated, validated and approved.
6. CV2x will cause harmful interference to Aptiv's and US incumbent DSRC users with this waiver's approval. CV2x will also cause harmful interference to adjacent proposed 5-channel DSRC band.
7. CV2x opens new security risks to the US Transportation systems.
8. CV2x is not spectrum scalable for full ITS deployment. The more modern and spectrum efficient DSRC fully deploys within the existing 5.9Ghz 75Mhz band.
 - a. CV2x requires many times the spectrum to deploy than DSRC.
 - b. CV2x will require an additional new band of channels for each new CV2x release.
 - i. Aptiv is unaware of FCC additional spectrum availability beyond DSRC's 5.9Ghz ITS and/or CV2x Release14. What is the plan for additional spectrum availability for CV2x release 15, and again another additional band needed for Release 16?
 - c. CV2x also requires more spectrum for its longer range and congestion conditions, more than 4x channel bandwidth for each doubling of range is typical.
 - i. Aptiv's automated and advanced vehicle connectivity rollout needs will not be met with CV2x, due to its excessive spectrum needs and availability limitations.
 - d. CV2x "peer to peer" is extremely spectrum-inefficient and outdated for the "many to many" ITS Transportation modernization requirements and efficiency designed into the US ITS DSRC 75Mhz spectrum and the full national deployment plan.
 - e. The FCC, USDOT, and OEMs appear to have extreme headwinds with the far greater spectrum requirements and additional bands needed with CV2x rollouts.
9. CV2x technology cost adders are high. Many of these costs are not needed with DSRC.
10. This FCC waiver will cause economic and safety of life damage to US transportation community.
11. CV2x US deployment, as outlined, has severe ITS scalability and safety messaging constraints typical of cellular broadband limitations especially with last mile, congestion, and multi-generation rollouts.



12. 5GAA's request for International regulations change for footnote NG160 for CV2x is not justifiable and untenable. 5GAA will cause additional delays to the US Transportation's current V2x deployments. Five years minimum additional delays will likely be created by normal ITU rule change processes.
13. Aptiv remains open to future advanced technologies that meet ITS needs. Yet, too many crucial required capabilities are very questionable and unproven with CV2x.
14. Aptiv is also concerned about the DSRC band's incumbent status in the lower 45Mhz from the other two co-sharing proposals.

Aptiv will be glad to meet with the FCC and USDOT to review our analysis and discuss outlined items 1-14 privately.

Aptiv needs reliable advanced US spectrum rules, open coordinated availability, incumbent protection, grid security protection, and assurance of modern communications capabilities that meet the US Transportation's and Aptiv's modernization initiatives already underway.

Our preliminary assessment is that CV2x proponents do not fully comprehend ITS modernization requirements, don't fully comprehend and verify the position of their own testing claims, and utilize outdated and non-scalable principles that don't meet the US ITS Transportation market's advanced safety of life, automated, and transportation modernization needs.

Aptiv is urgently addressing 5GAA's request to remove us, along with all other active DSRC incumbents, from the two critical and active channels allocated to ITS 5.9Ghz DSRC.

We have deployed and are continuing to deploy advanced DSRC systems. This waiver, if approved, will render all DSRC users incapable to execute according to the current USDOT ITS systems. It will also cause complete DSRC band usage to stall, waiting for re-banding definitions and coordination in the remaining new 50Mhz band.

The FCC needs to address issues identified by Aptiv contained within 5GAA's waiver support data. We need to secure the incumbent use of the full 5.9Ghz DSRC ITS band for currently deployed products and our future product programs underway. DSRC deployment is also key to many of our company's initiatives including our planned growth, deployment, and automated safety of life initiatives.

Aptiv recommends the FCC further evaluate the spectrum requirements of the new CV2x technology based on full US deployment scenarios and expected vehicle life cycle.

In Summary:

- The entire US 5.9Ghz band must be reserved for ITS Safety. Deployment is ongoing and the full capacity is needed for US initiatives.



- The band must be maintained as “co-primary” reserved for the non-federal usage of ITS safety-only applications as currently coordinated and deployed. New technology protocols need to be validated for scalability, interoperability, safety, quality and spectrum efficiency prior to new rule updates.
- We are requesting the FCC to deny 5GAA’s request for waiver. Ensuring the allocation of the full 75Mhz spectrum in the 5.9Ghz ITS Safety band to verified safety of life and full deployment capabilities thereby allowing USDoT, NHTSA, FHWA, other federal agencies, and the US transportation industry (including OEMs, Aptiv, and other suppliers) to proceed with the mass ITS Safety deployments.

Aptiv would be glad to meet with the FCC to discuss this information in detail. Please feel free to contact Bob Dockemeyer utilizing the contact information below.

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