Public Knowledge

May 9, 2016
Ms. Marlene H. Dortch, Secretary
Office of the Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

RE: **ET Docket No. 13-49 - Revision of Part 15 of the Commission's Rules ("5.9 GHz")**

ET Docket No. 15-170 - Amendment of Parts 0, 1, 2, 15, and 18 of the Commissions Rule's, et al. ("Wireless Router Firmware")

ET Docket No. 15-105 - Current Trends in LTE-U and LAA Technology

Dear Ms. Dortch:

On May 5, 2016, Harold Feld, Senior Vice President at Public Knowledge, and I met with Edward Smith, Legal Advisor to Chairman Wheeler, regarding the above-captioned proceedings.

5.9 GHz

Public Knowledge urged that the Commission move expeditiously to adopt a framework order to begin moving forward with sharing in the 5.9 GHz band. In particular, PK urged the following issues be addressed in such an order:

1. Framework order

Four years of bad faith on testing, and a record which demonstrates that unlicensed car radar has been developed and deployed far more quickly and effectively than DSRC, prove that there is no reason why the DSRC allocation even remains necessary, let alone exclusive. The Commission should therefore proceed directly to adopt a "Framework Order" establishing that the band is to be shared with Part 15 devices, and issue a Further Notice requiring that DSRC licensees demonstrate any need for exclusivity in any part of the spectrum.

DSRC is a product designed in the 1990s for a massive mainframe network that never materialized. It represents a step ***backward*** from already existing unlicensed technology and emerging LIDAR systems. Indeed, unlike unlicensed car radar, DSRC is such a complex, outdated, and ineffective technology that – as NHTSA found in the ANPRM in 2014 – it must be mandated to bring about market acceptance. It took the auto industry 15 years to develop and even begin to build and deploy a first-generation DSRC system. By contrast, it took the unlicensed community less than three years from the FCC's Report & Order on unlicensed car radar in 2012 to develop the new technology, bring it to market,

and see swift and significant uptake in the first year of mass availability – all without a government mandate.

As a life and safety technology, DSRC actually makes us less safe. The Commission should no longer nurture what has become a "moral hazard" to the auto industry and NHTSA by inhibiting the embrace of better, more robust, more secure and altogether more modern technology than this 1990s throwback.

2. Non-commercial condition.

The auto industry licensees insist that sharing is impossible in the band (or is only possible using the Cisco proposal of total avoidance) because of concerns for life and safety. Life and safety allocations are always made on a non-commercial basis. This is necessary for two reasons. First, allocation to public safety on a non-commercial basis is necessary to preserve the centrality of the public safety mission. Second, permitting commercial operation on spectrum allocated without auction expressly for life and safety purposes constitutes a windfall to the licensees. This is particularly true here, where the licensees are for-profit automobile companies rather than traditional life and safety entities.

The Commission should therefore seek comment on whether to impose a non-commercial condition on that portion of the band reserved for life and safety operations. If the Commission adopts the Cisco approach of avoidance, or rejected any sharing, the entire 75 MHz would be subject to a non-commercial condition. By contrast, if the Commission were to adopt the Qualcomm proposal, only the portion of the band designated for life and safety functions would be subject to a non-commercial condition.

3. Privacy, cybersecurity, and other public interest concerns.

As the Commission has repeatedly emphasized, consumers have the right to expect privacy in the use of wireless systems. This is particularly true with regard to geolocation information, which can be extremely sensitive. Because unlicensed spectrum is open to all, it has no "service rules" beyond power limits, out of band emissions, and other rules related to interference avoidance.

Licensed spectrum, however, generally carries with it significant public interest obligations. In particular, as the Commission discussed extensively in the NG911 Order, public safety services have obligations to protect both privacy and cybersecurity.

Cybersecurity is even more of a concern in the DSRC context than it was in the NG911 context. Unlike existing unlicensed car radar and LIDAR systems, which do not have two-way communication capability and therefore cannot be hacked, DSRC creates yet another entry port for malware into the operating system of our cars. Worse, because DSRC only works if cars freely communicate with each other, any malware that infects one car will rapidly spread to ***all*** cars. Although the DoT ANPRM does include a security mandate, the reports of high-profile hacking into cars via wireless systems (such as the entertainment system), and the automobile industry's documented efforts to suppress warnings from security experts, do not inspire tremendous confidence in the auto

industry's ability to protect DSRC systems without additional obligations from the Commission.

Wireless Router Firmware

PK separately urged the Commission to act regarding ongoing issues with wireless router firmware. At least one router manufacturer has begun prohibiting the loading of open-source router firmware, claiming that this action is a response to the Commission's actions regarding interference last year.

PK urged that the Commission take two steps. First, the Commission should issue a Public Notice reaffirming that open source firmware contributes enormous value to the unlicensed ecosystem and the Commission has explicitly disclaimed any requirement to "lock down" wireless routers. Furthermore, the Commission should clarify that, while no manufacturer is compelled to support open source software, and manufacturers are free to lock down wireless routers if they desire to do so, they may not falsely claim that the Commission ***requires*** manufacturers to lock down their routers.

Second, PK urged that the Commission resolve the issue by adopting a report and order that refers the question of appropriate standards to protect software associated with Part 15 devices from modifications which violate the Part 15 rules, to a suitable standards-setting body such as Wi-Fi Alliance, IEEE, or another similar organization. As the Commission has noted in other proceedings, it is generally preferable in the first instance, where possible, to allow voluntary industry standards bodies to resolve these issues. The Commission should state that it will continue to monitor the situation, and that it will act to punish those who violate Part 15 rules with regard to importation, manufacture, advertising, sale, or use of illegally modified devices.

LTE-U

Regarding LTE-U, PK reiterated its views regarding forthcoming interference testing. PK urged the Commission to release via Public Notice, and open for public comment and analysis, any data derived from such testing. An open and inclusive process in evaluating testing results is essential to ensuring that the Commission has before it a complete record as it moves forward.

In accordance with Section 1.1206(b) of the Commission's rules, an electronic copy of this letter is being filed in the above-referenced dockets. Please contact me with any questions regarding this filing.

Sincerely,

/s/ John Gasparini
Policy Fellow
Public Knowledge

Cc: Edward Smith