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Today I am submitting public comment in the case Alex Nguyen v. Verizon Wireless. These comments are my own, and not on behalf of any company.

The Importance of the Block C CFR

It is important to respect how 47 CFR § 27.16 (hereafter, the “Block C CFR”) has created innovation. Today, you can purchase a smartphone from one of several different smartphone manufactures, and activate it easily on all four national carrier’s 4G LTE networks. This was clearly made possible by proper implementation of the Block C CFR by Verizon, which mandated open device access on Band 13 networks.

The Block C spectrum was intended to be a place for open device innovation - and carriers that participated in the auction agreed to strictly adhere to its unique rules. Those rules are still in place, and bear the force of law - law that the Commission should ardently enforce, for its legal authority to be respected worldwide.

The Complaint by Alex Nguyen

In general, I agree with Alex Nguyen’s claims. Since the filing of this action, Verizon has gone further - outright subsidy-locking some devices, despite clearly being against the explicit mandates of the Block C CFR. This limits innovation and stifles competition in devices that utilize Block C spectrum.

Furthermore, Verizon has announced plans to lock most devices sold by Verizon, in banal violation of the Block C CFR.

I are choosing to focus on three behaviors Verizon is engaging in, related to this complaint, that each are a violation of Block C CFR mandates, as well as of serious concern to this commenter. I will outline these three individually.

*** Verizon’s Locking of Prepaid Devices, In Violation of 47 CFR § 27.16(e)**

In the summer of 2016, Verizon modified its prepaid device sales policy, to note that it had begun subsidy locking prepaid 4G LTE devices.

Mr. Nguyen’s complaint strikes at the heart of this issue, even though Verizon’s latest actions to block prepaid devices from other networks, actually began after

the filing of this complaint. This is brazen, as Verizon was aware of Mr. Nguyen's complaint, and yet continued to take newer and additional actions to block their prepaid devices from other networks.

Prior to the summer of 2016, Verizon openly agreed to sell all 4G LTE devices as subsidy (SIM) unlocked, noting that they may still subsidize and lock 3G devices. This is because 4G LTE devices, unlike 3G CDMA-only devices, access and are subject to 47 CFR § 27.16(e). As the complaint notes, the Block C CFR states that licensees of spectrum in the Upper 700 MHz Band C Block shall not lock devices from use on other networks, under any circumstances. Quoting directly: “**Handset locking prohibited.** No licensee may disable features on handsets it provides to customers, to the extent such features are compliant with the licensee's standards pursuant to paragraph (b) of this section, nor configure handsets it provides to prohibit use of such handsets on other providers' networks.

Additionally Verizon's own prior policy preserved the subsidy on these devices, by denying them from use on Verizon postpay plans - despite being subsidy unlocked to other carriers. This is fully permissible under the Block C CFR, since it does not prevent activation on other networks - while rewarding the owner for keeping the device for a period on Verizon prepaid. Verizon's new policy, in contrast, is a clear violation of the same CFR mandate, because it denies access to other networks.

Verizon is clearly denying prepaid devices from being used on other networks, even including MVNO networks operating on the Block C Spectrum. We implore the Commission to act on this matter expediently.

*** Verizon's Band-limiting of OEM Devices Certified by Verizon**

Verizon, like all carriers, sources devices that utilize a shared design. As LTE and VoLTE have become pervasive in devices, smartphones, tablets, and hotspots now share more and more radios, chipsets, and antennas. With the exceptions of iPhone, Galaxy and Pixel today, Verizon has engaged in a pattern of seeking and/or demanding that manufacturers remove key non-Verizon, domestic LTE frequencies from their phones. This pattern has only accelerated since the initial filing of this complaint.

Today (aside from the trio of aforementioned devices) it is very difficult to find a Verizon device that offers LTE Band 12, the most commonly used LTE frequency by both AT&T and T-Mobile in rural coverage. The impacted devices, based on technical analysis, fully support LTE Band 12 at the modem, chipset, and antenna levels.

I can only conclude that Verizon is likely instructing manufacturers to modify their baseband firmware, to prohibit these devices from communicating on other US LTE networks properly. This crippling of devices, if the reason this pattern is happening, is a clear Block C CFR violation, as it reconfigures the device to deny access to an otherwise compatible network - particularly, in a way the user cannot change. Verizon generally locks bootloaders on their devices, and prevents the user from unlocking the bootloader.

Bootloader-locked devices, locked by Verizon, in turn deny the user the ability to access baseband firmware, in order to activate frequencies such as LTE Band 12. This can be particularly true if the device shares a common design, that is already certified for LTE Band 12, but the baseband has been programmed by the manufacturer (presumably at the behest of Verizon) to deny access to LTE Band 12. LTE Band 12 is the primary extended-range spectrum used by T-Mobile and AT&T domestically.

As an individual, I cannot investigate this matter - only the Commission can inquire as to why the vast majority of Verizon-branded smartphones other than iPhone, Galaxy and Pixel all suddenly began to lack LTE Band 12. But the rationale above is the only one apparent. iPhone, Galaxy and Pixel are maintained by Apple, Samsung and Google, respectively, all three of which combined assert platform control against the vast majority of the smartphone industry.

Tellingly, this policy does not impact Verizon or Verizon MVNO devices. If a consumer were to cease using a band-limited phone on Verizon, they likely would self-select a Verizon MVNO, as the device would still function on Verizon's LTE band (including bands 2/4/5/13/66). This in turn ensures a consumer defecting from Verizon, that wants to keep using their same device, would then move to a Verizon MVNO.

While Mr. Nguyen raised these merits in his complaint, Verizon's change in tactics to emphasize baseband configuration, subsequent to the filing of this complaint, compels me to remind the Commission of this important way in which Verizon is violating the Block C CFR. Block C licensed carriers may not modify or instruct others to modify the configuration of a device to be incompatible with other networks.

*** Verizon's Intercepting of Tethering Packets, In Violation of the 2012 Consent Decree and 47 CFR § 27.16(b)**

Subsequent to the 2012 Consent Decree, Verizon has begun intercepting (and treating differently) internet packets based on decayed TTLs. This is a process

where a packet moves from one device to a router, and then to the Verizon network. This practice is commonly known as tethering. Uses of tethering includes everyday consumer processes such as using Android Auto over Wi-Fi with an LTE smartphone, or using a computer to mirror the Netflix feed emanating from a smartphone.

Since the 2012 Consent Decree, Verizon has initiated TTL interception of packets. This thwarts tethering, including on MVNO sub-carriers that were covered in the Consent Decree.

Previous to Mr. Nguyen's complaint, for a period of many years, Verizon did not interfere with any tethering on unlimited data plans (though at times requested some customers pay an additional fee). Today, they only offer this offering to (according to Verizon statements) less than 1% of their customer base. Meaning, the other 99% of customers cannot access unlimited data (4k video, tethering, etc) without extreme penalties on "Unlimited" plans, including slowing data to speeds below broadband ("3G" speeds) - or outright denial of service. This is particularly prevalent on Verizon MVNO plans, which are also subject to the Block C CFR.

The impact of this is clear: Rural customers with no other terrestrial means of accessing the internet are stranded or stuck with metered plans that are unaffordable or unsustainable in bridging the broadband gap.

Today smartphones and tablets can run the same data-demanding applications and services as computers and other devices. Verizon's actions also stifles device-to-device IoT and M2M solutions for the consumer such as Connected Car and Virtual Reality, as well as rural broadband. And there is no evidence it provides a network benefit to Verizon. After all, a video stream of Netflix in HD on a tablet, now uses just as much data as on a Mac or PC.

Verizon's Planned Locking Of All Devices

This month, Verizon announced plans to lock standard, consumer-sold smartphones and devices. They claim this is to prevent theft. I find this claim to lack merit. Verizon has the capability to activate MEID/IMEIs at the point of sale, significantly negating the need to subsidy lock devices.

If Verizon has concerns about devices being stolen, there are existing, real-world solutions Verizon can implement, that do not run afoul of the CFR. For example, providing unlock codes automatically at the point of sale, thus ensuring the device arrives to the consumer unlocked (even to a non-Verizon customer, purchasing a device outright) - but not in a manner that could be performed if stolen. Verizon

could also offer a website that provides these codes to anyone, even a non-Verizon customer - but importantly, not to device serial numbers reported stolen.

Regardless, Verizon's current stated plan is a clear, patent, and unquestionable violation of 47 CFR § 27.16(e), that strikes at the heart of the merits in this case.

The Commission has not ruled on this case for considerable time now, and additional potential violations by Verizon (like this one) may mount in the absence of basic enforcement.

This Case's Lack of Relationship to Title II

While many individuals have filed Net Neutrality comments in this case, we must all recognize that this is clearly **not** a Net Neutrality debate. This is a complaint related to the mutually-agreed, explicit terms of the Block C CFR, which unlike Title II determinations, are already cauterized into administrative law.

While formal complaints from individuals are rare, this complaint was filed well over a year ago. There has been no progress by either party on a mutual resolution, and the Commission will have to make a decision to adjudicate this case. I pray the Commission will simply enforce the Block C CFR as explicitly written, and resolve this complaint urgently.

If a wireless carrier is allowed to bypass the explicit statements of numerous provisions of 47 CFR § 27.16, and continue to implement additional violations in the wake of a formal complaint, it may have a chilling effect on future formal complaints filed by individual consumers. When a consumer dots ever "i" and crosses every "t" - the Commission should give their complaint an urgent, expeditious, and thorough review - and ruling/determination.

In sum, the Commission is uniquely qualified and uniquely positioned to act on this complaint, and require Verizon to honor both 47 CFR § 27.16, and the 2012 Consent Decree, as explicitly stated. **That means an end to locking prepaid devices, an end to TTL and other tethering restrictions, and an end to ordering handset manufacturers to block certain LTE bands at the baseband level to their devices.** All of these behaviors are prohibited by the Block C CFR mandates, which both the FCC, and Verizon, have mutually agreed upon in the past.

It is, however, clear why consumers are filing public comments about this issue in the vein of Net Neutrality. While consumers are concerned with what they can do on their device, they're just as concerned about the openness of their device. The

Block C CFR is an explicit agreement, not something that any carrier should be allowed to change without a new CFR, and the opportunity to comment.

Potential Conflict of Interest

Members of the Commission, and their past ties to Verizon, have been raised in the public dialogue recently. While the FCC Inspector General does not comment on such matters potentially pending, I do ask commissioners, and the Enforcement Bureau's counsel, to consult with one-another, and determine if the appearance of a potential conflict of interest exists, and to take appropriate actions if any affected commissioners are inclined to side with Verizon in this case.

I say this with deep respect for all current commissioners, and out of admiration, not derision.

Conclusions

The Block C CFR continues to spark device innovation today. The terms of the Block C auction were, and are, clear. Verizon gained access to coveted, low-frequency spectrum that made their LTE network launch a success. In gaining such access, they agreed to certain terms. They agreed to allow tethering, not lock devices, and they agreed to not cripple devices that they sell from use on other networks. Those terms did not have an expiration date.

For these reasons, I ask that the Commission rule in favor of Mr. Nguyen, and compel Verizon to implement strict enforcement of the Block C CFR, as well as cease and desist band-locking, tethering restrictions, and subsidy-locking of devices. I also ask the Commission to compel Verizon to unlock and provide unlock codes for non-customers of Verizon that have already been locked. Finally, I thank the Commission for reviewing this extensive public comment.