Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
T-Mobile License LLC	)	
	)	ULS File No. 0010206629
Application for Review of	)	
Opinion and Order	)	
	)	

To: The Commission

APPLICATION FOR REVIEW OF BLOOSURF, LLC

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SUMMARY

The Commission has an obligation to protect licensees from harmful interference, an obligation it is currently failing with respect to Bloosurf, LLC. Bloosurf is a fixed wireless ISP and was awarded CAF II funding in 2018 to construct a 4G LTE network that serves rural and underserved communities on the Eastern Shore of Delaware, Maryland, and Virginia. Bloosurf's network provides a critical lifeline to local communities, including by offering voice/911 service to many of its customers and by providing broadband access where it is not otherwise available. However, due to co-channel interference caused by T-Mobile, Bloosurf customers have experienced CPE disconnections and degraded broadband speeds. If customer CPE experiences a disconnection during an emergency, T-Mobile's harmful interference could put lives in jeopardy, and the degradation of Bloosurf's broadband speeds threatens to undermine the CAF II requirements established by the Commission. Therefore, it is imperative that the Commission immediately address T-Mobile's harmful interference by (1) ordering T-Mobile to cease all 5G transmissions in the relevant area to eliminate harmful interference to Bloosurf's network and (2) reversing or staying the grant of the licenses acquired by T-Mobile in Auction 108 to prevent further harmful interference to Bloosurf by T-Mobile.

Bloosurf began experiencing harmful interference from T-Mobile's operations in 2020. The parties have engaged in some informal testing to attempt to determine the cause of the interference, which included T-Mobile switching off its 4G network to determine if that would eliminate the disruptions to Bloosurf's network, which it did not. However, T-Mobile did not turn off its 5G network during the tests and did not inform FCC field personnel or Bloosurf that T-Mobile's 5G network remained operational during the test. T-Mobile's concealment of its 5G operations resulted in a waste of all parties' time and resources to attempt to isolate the source of the interference.

T-Mobile has also proposed synchronization of its network with Bloosurf's using Special SubFrame 7 ("SSF 7"), but such a solution is not feasible for a variety of reasons., T-Mobile is required to take actions and bear all costs to protect Bloosurf from T-Mobile's harmful interference. Bloosurf's use of SSF 7 would reduce its coverage area up to 50%, which could render Bloosurf non-compliant with its CAF II award and cuff off service to the vulnerable consumers CAF II funding was designed to support and who Bloosurf's network currently serves. It is not clear that if there is any additional buildout of Bloosurf's network to implement an SSF7 solution, that this would enable the company to re-cover its CAF II supported service area because Bloosurf's current network makes use of all available towers in the area. Any further deployment would necessitate the construction of new towers, likely in environmentally protected areas. To the extent that such construction is permissible under current environmental regulations, the buildout would take years to complete. Moreover, the addition of new sites in Bloosurf's network would cost millions of dollars, far in excess of what was budgeted as part of Bloosurf's CAF II award, and the operation of additional sites would increase Bloosurf's OpEx costs. Thus, even if synchronization resolves the interference issues and T-Mobile were willing to pay Bloosurf for the costs incurred in recovering its network coverage area after synchronization—something T-Mobile has refused steadfastly so far, T-Mobile would still need to cease operation of its 5G network in areas around Bloosurf's network until such a build out could be completed.

In November 2022, Bloosurf filed in informal interference complaint with the Commission requesting an investigation into the interference caused by T-Mobile. The primary purpose of the informal complaint was to request an interference investigation. However, Bloosurf also requested that the FCC condition grant of T-Mobile's Auction 108 licenses on resolution of Bloosurf's interference. On February 27, 2024, the FCC issued an order directing the Wireless Telecommunications Bureau to grant T-Mobile's Auction 108 licenses and dismissing Bloosurf's informal complaint on procedural grounds because its request for conditions to be imposed on the grant of the licenses was untimely.

Bloosuf now files this Application for Review because the gravamen of its informal complaint was not to ask for conditions on T-Mobile's Auction 108 licenses. Rather, the primary thrust of the informal complaint was to request that the FCC investigate the harmful interference from T-Mobile's 5G operations to Bloosurf's 4G network. Accordingly, Bloosurf requests that the FCC reinstate Bloosurf's informal complaint; require T-Mobile to cease 5G operations in areas impacting Bloosurf; take all actions to resolve the interference, including the payment of all costs (including Bloosurf's costs to upgrade its network to implement synchronization) to eliminate the interference; stay the grant of T-Mobile's Auction 108 licenses; and condition the grant of those licenses on T-Mobile resolving any interference to Bloosurf before T-Mobile can begin operations on its licenses.

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APPLICATION FOR REVIEW

Bloosurf, LLC ("Bloosurf"), by its undersigned attorneys, and pursuant to Section 1.115 of the Commission's rules,[1] hereby applies to the full Commission for review of the Wireless Telecommunications Bureau's ("Bureau") February 27, 2024, *Memorandum Opinion and Order*[2] ("Order") granting the Application of T-Mobile License LLC ("T-Mobile") for 2.5 GHz Band Licenses in Auction 108.

I. INFORMATION REQUIRED BY SECTION 1.115

The following information is provide as required by Section 1.115(b):[3]

A. Questions Presented for Review (47 C.F.R. § 1.115(b)(1))

1. Did the Bureau err in granting T-Mobile's Application for 2.5 GHz Band Licenses despite Bloosurf's informal complaint detailing the harmful interference its 2.5 GHz network has experienced from T-Mobile's operations?

2. Did the Bureau err by dismissing Bloosurf's informal complaint on procedural grounds when the gravamen of Bloosurf's informal complaint was to request that the FCC resolve the interference caused by T-Mobile?

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[1] 47 C.F.R. § 1.115.

[2] *In the Matter of T-Mobile License LLC, Application for 2.5 GHz Band Licenses, Auction 108*, Memorandum Opinion and Order, ULS File No. 0010206629, DA 54-171 (rel. Feb. 27, 2024) ("*Memorandum Opinion and Order*").

[3] 47 C.F.R. § 1.115(b).

3. Did the Bureau err by granting T-Mobile's Application for 2.5 GHz Band Licenses when T-Mobile failed to disclose a change in control of the company due to Deutsche Telekom ("DT") acquiring majority ownership of T-Mobile in 2023?

B. Factors Warranting Commission Review (47 C.F.R. § 1.115(b)(2))

1. The action taken pursuant to delegated authority is in conflict with statute, regulation, case precedent, or established Commission policy. 47 C.F.R. § 1.115(b)(2(i). Specifically:

   a. The Order failed to consider evidence that T-Mobile's operations will cause harmful interference to Bloosurf's existing licensed 2.5 GHz operations.

   b. The Wireless Telecommunications Bureau erred by dismissing Bloosurf's informal complaint *requesting an investigation into T-Mobile's harmful interference* because the Bureau misread the informal complaint as allegedly only seeking to impose conditions on T-Mobile's authorizations acquired in Auction 108.

C. Statement Regarding How the Action Should Be Changed (47 C.F.R. § 1.115(b)(3))

The Order granting T-Mobile's Application for 2.5 GHz Band Licenses should be reversed, Bloosurf's Informal Complaint should be reinstated, and the grant of the licenses should be stayed. The Commission should investigate the interference concerns raised by Bloosurf in its informal complaint, direct T-Mobile to stop causing harmful interference to Bloosurf's operations, and require T-Mobile to bear responsibility for all costs to resolve the harmful interference caused by T-Mobile. Such responsibility should include the payment of all costs required for Bloosurf to upgrade and reconfigure its network. The FCC should also stay the grant of T-Mobile's Auction 108 licenses for violation of the FCC's auction rules by failing to disclose that DT had acquired *de facto* majority control of T-Mobile in March 2023.

D. Statement Regarding the Form of Relief Sought (47 C.F.R. § 1.115(b)(4))

The FCC should investigate the harmful interference caused by T-Mobile to Bloosurf's operations and order T-Mobile to stop the harmful interference to Bloosurf. The FCC should also stay the grant of Auction 108 licenses to T-Mobile until it can be determined that T-

Mobile's operations authorized by these licenses would not cause harmful interference to incumbent operations, including Bloosurf's.

II. BACKGROUND

A. Bloosurf is a Fixed Wireless Access Provider Serving Rural and Low-Income Customers Pursuant to the CAF II Program.

Bloosurf is a fixed wireless access provider founded in 2009 to build and operate digital infrastructure and services in rural, underserved communities in Maryland.[4] Bloosurf currently operates a hybrid network using fiber, a 4G LTE network utilizing licensed Educational Broadband Service spectrum, and CBRS and unlicensed spectrum.[5] Bloosurf provides wireless broadband service to low-income and rural customers through CBRS PAL and EBS licenses. Bloosurf was awarded CAF II funding in 2018, with which it constructed 15 LTE cell sites in compliance with its CAF II buildout obligations.

In 2020, Bloosurf became the first CAF II recipient to complete its required construction, and it continues to serve customers through this network.[6] As a CAF II recipient, Bloosurf is required to meet certain service and buildout obligations. While Bloosurf has met its CAF II construction requirements, as further discussed below, T-Mobile's interference threatens Bloosurf's ability to continue to meet its CAF II service obligation. Specifically, T-Mobile's interference has degraded Bloosurf's speed tests and caused CPE disconnections. As the Commission knows, CAF II funding required Bloosurf and other funding recipients to become ETCs and to provide 911 services to customers that elected to use a providers VoIP offering.

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[4] Informal Complaint of Bloosurf, LLC, November 21, 2022, Exhibit A ("Informal Complaint") at 2. The exhibits to the Informal Complaint have been omitted for brevity.

[5] *Id.*

[6] Informal Complaint at 4.

Therefore, a customer experiencing a CPE disconnection during an emergency could be left without critical 911 service when it matters most. Aside from the impact of interference on Bloosurf's ability to maintain its CAF II compliance, T-Mobile's interference could undermine public safety in Bloosurf's service area.

While the status quo threatens Bloosurf's CAF II compliance, T-Mobile's proposed solution could also force Bloosurf into non-compliance with CAF II requirements. T-Mobile has proposed synchronization of T-Mobile and Bloosurf's networks using Special SubFrame 7 ("SSF 7"). Even if SSF 7 synchronization resolves the interference, use of SSF 7 would reduce Bloosurf's network coverage by up to 50%.[7] Such a reduction in service area would not comply with Bloosurf's CAF II requirements, and it is not clear that a full recovery of Bloosurf's service area is possible. Bloosurf currently makes use of every usable tower in deploying its wireless network. Many of the areas most likely to be impacted by the use of SSF 7 are very rural and in or near environmentally protected parts of the Eastern Shore. Therefore, recovery of Bloosurf's service area would necessitate the construction of new tower sites (along with the requisite environmental reviews). To the extent Bloosurf can continue providing service throughout its service area after switching to SSF 7, it will take years along with millions of dollars in capital expenditures and additional operational expenditures once sites are deployed. This untenable situation is the subject of Bloosurf's Informal Complaint, and the FCC must, therefore, resolve the harmful interference caused by T-Mobile's 5G operations by ordering T-Mobile to cease operation of its 5G network in areas impacting Bloosurf until the current interference issues are resolved.

[7] *Id.* at 6.

B. Bloosurf Has Been Experiencing Harmful Interference from T-Mobile and Requested that the FCC Investigate the Interference.

Much of Bloosurf's network has been affected by harmful interference issues since 2020. Testing at a T-Mobile transmitting facility in Cordova, Maryland showed that interference was being caused by T-Mobile's operations. However, T-Mobile's operations encompass hundreds of sites, and interfering transmissions are being caused throughout Bloosurf's network from multiple T-Mobile locations. In 2021, Bloosurf was able to more accurately identify a potential issue with the interaction between 5G and LTE operations, which appeared to be the likely source of the interference issues being experienced by Bloosurf. When this problem arose, Bloosurf promptly contacted the Commission to request assistance with resolving the issue and followed all recommendations made by FCC staff to determine the exact source of the issue, including spectrum analysis and testing of narrow band emissions and outside interference.[8] Bloosurf also brought this issue to T-Mobile's attention. T-Mobile continues to operate its 5G network, and as the issue has not been resolved, it is clear that T-Mobile's 5G network cannot coexist with Bloosurf's LTE network without corrective action by T-Mobile to protect Bloosurf's incumbent operations from harmful interference caused by T-Mobile's 5G operations. This interference jeopardizes Bloosurf's ability to provide service under its CAF II award utilizing the network configuration that has been approved by the Commission and USAC.

Bloosurf has been experiencing co-channel interference issues since 2020, with the issue being identified as a result of T-Mobile's 5G co-channel operations since January 2021. Bloosurf transmits on 67.5 MHz of leased spectrum in the 2.5 GHz EBS band at 2518 to 2535 MHz. The T-Mobile 5G transmitting facility in Cordova, Maryland causing interference to

[8] Informal Complaint at 8.

Bloosurf's operations utilizes the 2520-2533.75 MHz band, i.e., T-Mobile is operating in the same frequency bands as Bloosurf and causing co-channel interference to Bloosurf.[9] T-Mobile identified this facility as a potential cause of interference, and its interfering operations began at approximately the same time as Bloosurf began experiencing disruptions to its wireless operations.[10] After Bloosurf contacted FCC staff to alert the Commission to this matter, Bloosurf engaged in FCC-recommended testing and analysis to determine the exact source of the interference.[11]

The FCC conducted field tests and corresponded with personnel via email to determine the cause of the interference, but T-Mobile's lack of candor regarding its 5G operations impaired the Commission's initial attempts to determine the source of the interference. Specifically, T-Mobile never revealed, either to the Commission or Bloosurf, that it was transmitting on its 5G network from the sites near Bloosurf's network.[12] Rather, T-Mobile switched off its 4G transmissions but continued to operate its 5G network during the test.[13] The interference to Bloosurf's network continued unabated, misleading engineers to believe that the harmful interference to Bloosurf was not from T-Mobile's operations. Bloosurf therefore requested in its informal complaint that FCC staff investigate Bloosurf's conclusion that the interference it is experiencing is being caused by T-Mobile's 5G operations.[14]

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[9] Informal Complaint at 9.

[10] *Id.*

[11] Informal Complaint at 10.

[12] Informal Complaint at 7.

[13] *Id.*

[14] *Id.*

III. DISCUSSION

A. T-Mobile's Operations Cause Harmful Interference to Bloosurf That Must be Addressed and Resolved by the Commission.

Congress has charged the Commission with regulating, among other things, wireless communications to ensure that radio services are available to promote safety of life and property, and to ensure the availability of such communications to the public.[15] An essential part of that mission obligates the Commission "to protect incumbent users from harmful interference, pursuant to the FCC's rules."[16] The disruptions caused by T-Mobile to Bloosurf's network constitute "harmful interference" under the Commission's rules, and the FCC must take action to protect Bloosurf's incumbent operations.

Harmful interference is defined as any "interference which…seriously degrades, obstructs, or repeatedly interrupts" the provision of service.[17] T-Mobile's operations have caused repeated disconnections on Bloosurf's customer premises equipment (CPE), and throughputs on Bloosurf's network have been degraded. These interference issues have plagued Bloosurf's entire network, with some of the highest levels of interference occurring in parts of Delaware near T-Mobile's operations.[18] Because Bloosurf's provision of service has been degraded and often interrupted, T-Mobile's operations constitute harmful interference under the Commission's rules. The interference caused by T-Mobile undermines the Commission's goal of protecting incumbent wireless operations from harmful interference,[19] and in this case, it

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[15] 47 U.S.C. § 151.

[16] *See, e.g.,* Letter from T. Wheeler, FCC Charman, to The Honorable Ben Ray Lujan, 2014 WL 1003594, at *1 (Feb. 28, 2014); *see also* 47 U.S.C. § 333.

[17] 47 C.F.R. § 2.1(c).

[18] Informal Complaint at 8.

[19] *See* n.16, *supra*.

further undermines the Commission's goals of promoting public safety and universal access to advanced telecommunications services by interfering with the services provided by a CAF II award winner.

B. T-Mobile Must be Held Responsible for the Harmful Interference it Causes to Bloosurf's Operations.

1. Commission Precedent Dictates that Newcomers Like T-Mobile Must Bear the Cost to Resolve Harmful Interference They Cause.

Bloosurf is the incumbent operator in the subject area, and as such, T-Mobile is required to protect Bloosurf from T-Mobile's interfering transmissions. "In resolving interference complaints, if cooperation does not work, [the Commission] will require the 'last-person-in' to correct the interference problem."[20] "It is clear that the 'newcomer' is responsible, financially and otherwise, for taking whatever steps may be necessary to eliminate objectionable interference."[21]

Although Bloosurf and T-Mobile have engaged in some informal interference testing, T-Mobile's failure to meaningfully cooperate with the parties' testing efforts undermined any efforts to yield a solution, thus forcing Bloosurf to file its informal interference complaint with the FCC. When Bloosurf brought its interference concerns to T-Mobile's attention, T-Mobile allegedly engaged in testing to determine the source of the interference. T-Mobile switched off its 4G network while measurements were taken to determine if that would resolve the

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[20] *In re Amendment of Parts 2, 22, and 90 of the Commission's Rules to Allocate Spectrum in the 928–941 MHz Band and to Establish Other Rules, Policies, and Procedures for One-Way Paging Stations in the Domestic Public Land Mobile Service and the Private Land Mobile Radio Services*, Second Report and Order, 91 FCC 2d 1214, 1223 (1982) (citations omitted).

[21] *In re Application of Sudbrink Broadcasting of Georgia, Inc., Radio Station WIIN, Atlanta, Georgia for Construction Permit to Relocate Antenna-Transmitter Site*, Memorandum Opinion and Order, 65 FCC 2d 691, 692 (1977) (citing *Midnight Sun Broadcasting Company*, 3 RR 1751 (1947); *B & W Truck Service*, 15 FCC 2d 769 (1968)).

interference. This procedure determined that T-Mobile's 4G operations were not the source of the interference, but Bloosurf continued to experience interference. Crucial to this test was the fact that T-Mobile never disclosed that it was also transmitting on its 5G network during the test even though T-Mobile had switched off its 4G network. Thus, any interference testing conducted with T-Mobile was merely a sham as T-Mobile concealed the true nature of the interference source by turning off its non-interfering 4G network while continuing to transmit on its interference-causing 5G network.

In previous interference complaints where the parties could not mutually resolve interference issues, the FCC has required the newcomer to take appropriate action to eliminate harmful interference to the incumbent. For example, in *Sudbrink Broadcasting*,[22] an incumbent AM broadcaster experienced adjacent channel interference from a new AM station operating under special temporary authority, with a pending application for a new license. The incumbent incurred costs to design and install a new filter, as well as costs related to construction and installation.[23] The FCC determined that while the preferable solution was for the parties to equitably resolve the matter, the newcomer was nonetheless responsible for taking action and paying costs to eliminate the interference. Accordingly, the FCC stayed the processing of the new station application "pending ultimate resolution of this matter", i.e., until the newcomer paid the reasonable costs incurred by the incumbent to eliminate the interference.[24] *See also*, *Broadcasting Corporation of Georgia* (WVEU(TV)) (FCC denied authorization to operate due to interference caused to land mobile operations, and reiterated that "there is no doubt that the

[22] *Id.*

[23] *Id.* at 692.

[24] *Id.*

financial responsibility for eliminating the objectionable interference falls upon the 'newcomer'").[25]

In this instant case, T-Mobile's 5G operations are causing interference to Bloosurf's network and its customers. Consistent with long standing Commission principles and precedent, T-Mobile is required to resolve the interference by first terminating its offending transmissions, and then taking whatever actions are necessary to resolve the interference, including paying all costs to implement the solution, before T-Mobile can resume its 5G transmission in the affected area.

2. Synchronization Can be a Solution to T-Mobile's Interference, and T-Mobile Must Pay All Costs Associated with Implementing That Solution, or Cease Operations on its 5G Network to Eliminate Harmful Interference to Bloosurf.

T-Mobile has not meaningfully cooperated with Bloosurf's attempts to resolve the interference, and Bloosurf did not experience harmful interference until T-Mobile began its co-channel 5G transmissions. These circumstances strongly indicate that T-Mobile is the root cause of the harmful interference. In its informal complaint, Bloosurf concluded that T-Mobile's interference could be resolved through the implementation of synchronization of their respective networks. Indeed. T-Mobile synchronized its 5G transmissions with its own 4G operations to avoid causing harmful interference to T-Mobile's 4G operations.[26]

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[25] *In re Broadcast Corporation of Georgia (WVEU(TV)) Atlanta, Georgia, Request for Authority to Operate at 50% Authorized Power*, Memorandum Opinion and Order, 92 FCC 2d 910, 912 (1982).

[26] Informal Complaint at 11-12.

The Commission has recognized that synchronization can be a solution to interference in wireless operations.[27] In response to interference complaints, the Commission may encourage parties to engage in synchronization to mitigate the interference and require the parties to negotiate in good faith to determine a synchronization protocol that would successfully remedy the interference.[28] However, it is not Bloosurf's responsibility to bear the burden to implement an expensive synchronization solution to solve T-Mobile's interference problem. As discussed above, even if the interference experienced by Bloosurf could be resolved through synchronization, it is T-Mobile's responsibility to protect incumbent operations like Bloosurf's and take all steps necessary to resolve the disruptions caused by T-Mobile to Bloosurf's operations.

Implementation of a synchronization solution by Bloosurf would likely require the company to "roughly double the number of transmitting cell sites" to achieve the necessary "capacity and speed to meet the FCC's CAF II performance requirements."[29] Such a solution would not only require Bloosurf to incur significant costs to construct those sites, this would also alter the network design used to secure the CAF II funding to provide service to rural customers in Maryland and Delaware. As the first-in-time operator, it is not Bloosurf's obligation to incur costs and to implement a solution to eliminate harmful interference caused by T-Mobile.

T-Mobile continues to unlawfully interfere with Bloosurf's operations, and the FCC should order T-Mobile to stop transmitting in the 2.5 GHz bands at the Cordova facility in Maryland, and any other T-Mobile sites found to be causing interference to Bloosurf. T-Mobile,

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[27] *In the Matter of Facilitating Shared Use in the 3100-3550 MHz Band*, Report and Order, 36 FCC Rcd. 5987, 6012 ¶ 65 (2021).

[28] Informal Complaint at 6.

[29] *Id.*

as the newcomer operator, must bear the responsibility for enacting a synchronization solution and bear all costs, including Bloosurf's, that would prevent interference to Bloosurf's incumbent operations.[30] Accordingly, the FCC should require T-Mobile to (1) immediately cease all harmful interference to Bloosurf by terminating all 5G transmissions in the relevant area, and (2) take all actions necessary to prevent harmful interference to Bloosurf before resuming 5G operations, including bearing all costs to upgrade T-Mobile and Bloosurf's network to implement synchronization to resolve the interference. Imposing the responsibility on a non-incumbent operator to engage in synchronization in order to resolve interference concerns is consistent with Commission precedent where the non-incumbent operator was the cause of harmful interference to incumbent operations in the band in which it seeks to operate.[31]

3. The FCC Should Stay the Grant of T-Mobile's Auction 108 Licenses Around Bloosurf's Service Area Until T-Mobile Resolves the Interference to Bloosurf.

T-Mobile is currently causing harmful interference to Bloosurf's operations in the 2.5 GHz band. The spectrum T-Mobile acquired in Auction 108 will operate in the same frequencies in which T-Mobile is causing interference to Bloosurf. Further, it appears that T-Mobile will be using its Auction 108 licenses to supplement and augment its existing 5G network. In other words, T-Mobile will be receiving licenses for the exact same frequencies and will be utilizing the exact same 5G wireless protocol that is currently causing widespread interference to Bloosurf's 4G network.

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[30] *See In the Matter of Central Texas Communications, Inc.,* Memorandum Opinion and Order, 24 FCC Rcd. 4715 (2009) (FCC issued limited grant of waiver request on the grounds that the non-incumbent operator was willing to engage in synchronization process to ensure no harmful effects to incumbent operations).

[31] *Central Texas Communications, Inc.,* 24 FCC Rcd. at 4727, ¶ 26.

In situations where an incumbent is experiencing interference from a would-be licensee, the FCC has required the newcomer to shut down operations and/or resolve interference issues before granting the applicant a new authorization.[32] Consistent with these principals, the Commission should reverse its grant of T-Mobile's licenses, and enjoin T-Mobile from operating on its Auction 108 authorizations in 35-mile radius protection zone around Bloosurf's network as shown in its Informal Complaint[33] until the interference issues are resolved.

C. The Wireless Telecommunications Bureau Erred in Dismissing Bloosurf's Informal Complaint on Procedural Grounds.

The informal complaint submitted by Bloosurf on November 21, 2022 highlighted issues with interference caused by T-Mobile's 5G operations in Maryland, Virginia, and Delaware. T-Mobile's operations in this area are disrupting Bloosurf's provision of wireless service to rural areas under its EBS licenses. After bringing these issues to T-Mobile's attention and finding no resolution, Bloosurf filed its informal complaint requesting that the FCC investigate the cause of the interference. Bloosurf also submitted that if T-Mobile's licenses were granted, that such grant should be conditioned on the resolution of the interference issues raised by Bloosurf.[34] Bloosurf also requested that the FCC deny T-Mobile's request for Special Temporary Authority to begin operations on the authorizations won in Auction 108.[35]

The clear intent of Bloosurf's informal interference complaint was to request that the Commission investigate and resolve the harmful interference experienced by Bloosurf. The conditions requested to be levied on the Auction 108 licenses were ancillary to Bloosuf's

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[32] *See, e.g., Sudbrink Broadcasting*, 65 FCC 2d 691; *Broadcast Corporation of Georgia*, 92 FCC 2d 910,

[33] Informal Complaint at 10-11.

[34] *Id.* at 2.

[35] *Id.* at 11.

primary concern: harmful interference. To date, the Commission still has failed in its obligation to address the harmful interference caused by T-Mobile. Nonetheless, consistent with applicable FCC precedent, it is appropriate for the Commission to condition the grants of authorization on resolving interference complaints, particularly, when the harmful interference it ongoing, and will continue unless the FCC takes action to require the newcomer, here, T-Mobile, to ensure that transmissions on new licenses will not continue to cause harmful interference to the incumbent.[36]

In granting T-Mobile's licenses, the Wireless Telecommunications Bureau dismissed Bloosurf's informal complaint in its entirety, stating that its request for conditions to be imposed on the grant of the licenses was untimely.[37] However, the Bureau failed to address the informal complaint's substantive harmful interference complaint, which was not limited to the request for conditions on the grant of T-Mobile's licenses. Because the informal complaint also requested an FCC investigation into the interference caused by T-Mobile, the Bureau's dismissal of the informal complaint on purely procedural grounds was inapt.

D. The FCC Should Investigate T-Mobile's Interference to Bloosurf and Stay the Grant of T-Mobile's Auction 108 Licenses Due to T-Mobile's Lack of Candor Regarding Interference Testing and Violation of the FCC's Auction Ownership Disclosure Rules.

On March 21, 2022, the FCC issued a public notice regarding Auction 108's filing requirements, including the obligation for applicants to comply with applicable Part 1 ownership

[36] *See* Section II.B.2, *supra.*

[37] *Memorandum Opinion and Order* at ¶ 11, n.54.

disclosure requirements.[38] In the Auction 108 Notice, the FCC informed bidders that only minor ownership modifications would be allowed to their FCC Forms 175. Specifically:

> After the initial FCC Form 175 filing deadline, an Auction 108 applicant will be permitted to make only minor amendments to its application consistent with the Commission's rules. Major amendments to an FCC Form 175 (e.g., … **changes in ownership that would constitute an assignment or transfer of control of the applicant…) will not be permitted after the initial FCC Form 175 filing deadline**. If an amendment reporting changes is a "major amendment," as described in section 1.2105(b)(2), the major amendment will not be accepted and may result in the dismissal of the application.[39]

Further, the Auction 108 Notice stated:

> After bidding closes, in the second phase of the process, each winning bidder in Auction 108 must file a more comprehensive post-auction long-form application (FCC Form 601) for the licenses it wins in the auction, **and it must have a complete and accurate ownership disclosure information report (FCC Form 602) on file with the Commission**.[40]

T-Mobile filed multiple amendments to its long form ownership disclosure, the most recent being filed on April 17, 2023.[41] In its April 2023 amended FCC Form 601, T-Mobile represented to the FCC that it "holds approximately a 44.71 percent interest in T-Mobile US", and as a result, "DT has *de jure* control over T-Mobile…."[42] T-Mobile also averred that "[t]he foreign ownership in [T-Mobile] as approved has not materially changed since November 5, 2019." Those representations to the FCC were false.

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[38] Auction of Flexible-Use Licenses in the 2.5 GHz Band for Next-Generation Wireless Services Notice and Filing Requirements, Minimum Opening Bids, Upfront Payments, and Other Procedures for Auction 108, 37 FCC Rcd. 4370 (2022) ("Auction 108 Notice").

[39] *Id.* at 4411, ¶ 114 (emphasis added, citations omitted).

[40] *Id*. at 4383 ¶ 29 (emphasis added, citations omitted).

[41] T-Mobile filed its long-form application on September 16, 2022, and subsequently amended its application on October 4, 2022, November 7, 2022, February 1, 2023, and April 17, 2023. *See* Amended Application of T-Mobile License LLC for 2.5 GHz Licenses, Form 601, ULS File No. 0010206629 (filed Apr. 17, 2023).

[42] T-Mobile FCC Form 601 Foreign Ownership Exhibit (Filed Apr. 17, 2023).

T-Mobile failed to disclose in those filings that DT had actually acquired majority *de facto* control over T-Mobile. Specifically, an SEC filing dated March 31, 2023, shows that DT and its subsidiaries had recently purchased enough shares of T-Mobile stock to push its holdings to 53.9 percent of T-Mobile's outstanding shares.[43] It is unclear why T-Mobile failed to disclose the *de facto* change in control of the company in its Auction 108 filings, though it is possible that T-Mobile sought to avoid its change in majority ownership being construed as a prohibited major amendment warranting dismissal of its Auction 108 application. Regardless of the motivations behind T-Mobile's decision not to inform the FCC of DT's acquisition of more than 50% ownership of the company, it is clear that this is just another example of T-Mobile's pattern of lack of candor and concealment of material facts to further its own self-interests.

With respect to Bloosurf's interference testing, T-Mobile concealed the fact that its 5G network was still operating during the test, thereby misleading Bloosurf and the FCC to incorrectly conclude that T-Mobile could not be causing interference to Bloosurf. With regard to Auction 108, T-Mobile failed to inform the FCC of its *de facto* change in control to DT. T-Mobile's lack of candor on both accounts must be investigated by the FCC to determine whether T-Mobile is qualified to hold the licenses it won in Auction 108, and also to prevent T-Mobile from continuing to inflict harmful interference to Bloosurf. Accordingly, the FCC should stay the grant of the Auction 108 licenses, and investigate T-Mobile's interference as further detailed in Bloosurf's Informal Complaint.

[43] *See* T-Mobile US, Inc. SEC Schedule 13D/A (filed Mar. 31, 2023) (available at https://www.sec.gov/Archives/edgar/data/0001283699/000095015723000346/sc13da.htm (last visited Mar. 28, 2024)); *see also* https://www.reuters.com/business/media-telecom/deutsche-telekom-reaches-majority-stake-t-mobile-us-ceo-2023-04-05/ (last visited Mar. 28, 2024).

IV. CONCLUSION

Because the Wireless Telecommunications Bureau failed to consider the informal interference complaint submitted by Bloosurf and incorrectly rejected Bloosurf's informal complaint on unrelated procedural grounds that failed to address the interference concerns raised by Bloosurf, the Commission should reverse the Bureau's decision. The Commission should (1) reinstate Bloosurf's informal complaint and investigate the harmful interference caused by T-Mobile to Bloosurf; (2) require T-Mobile to cease all 5G transmissions in the relevant area to eliminate harmful interference to Bloosurf's 4G network until the interference experienced by Bloosurf is resolved; (3) require T-Mobile to pay all costs required to implement an interference solution, including any costs required to upgrade Bloosurf's network; and (4) stay the grant of the licenses acquired by T-Mobile in Auction 108 and also enjoin T-Mobile from operations on any existing and recently acquired authorizations until the harmful interference described herein is resolved.

Respectfully submitted,

/s/ Tony S. Lee

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Counsel for Bloosurf, LLC

Date: March 28, 2024

CERTIFICATE OF SERVICE

I, Tony S. Lee, certify that on March 28, 2024, I served a copy of the foregoing document by email on the following:

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/s/ Tony S. Lee
Tony S. Lee

EXHIBIT A

Bloosurf Informal Complaint (Without Exhibits)

Bloosurf, LLC
1222 Old Ocean City Road
Salisbury, MD 21804
(410) 957-6060

November 21, 2022

Joel Taubenblatt, Acting Bureau Chief
Wireless Telecommunications Bureau

Blaise Scinto, Chief
Broadband Division
Wireless Telecommunications Bureau

Elizabeth Mumaw, Chief
Spectrum Enforcement Division
Enforcement Bureau

Jonathan Campbell, Chief
Auctions Division
Office of Economics and Analytics
Federal Communications Commission
Washington, DC 20554

David Dombrowski, Regional Director
Enforcement Bureau, Region One
7435 Oakland Mills Road
Columbia, MD 21046

Re: Request for Investigation

Acting Chief Taubenblatt, Chief Scinto, Chief Mumaw, Chief Campbell, and Regional Director Dombrowski:

On behalf of Bloosurf, LLC, we write to request that the Commission investigate the operations of T-Mobile US, Inc. and all related subsidiary companies, including T-Mobile USA, Inc., TDI Acquisition Sub, LLC, and T-Mobile License LLC ("T-Mobile") in connection with T-Mobile's operations in and around Bloosurf's authorized service area in Maryland, Virginia, and Delaware.[1] As set forth below, Bloosurf's 2.5 GHz network has experienced persistent, longstanding, and significant harmful interference from T-Mobile's operations that have had a material adverse effect on Bloosurf's ability to provide broadband Fixed Wireless Access ("FWA") service to consumers in rural areas, including low-income households.

[1] T-Mobile has a number of parent entities located in Germany and the Netherlands, however this letter focuses directly on its United States operations.

Importantly, harmful interference caused by T-Mobile's operations described below is certain to increase, we believe dramatically, if the Commission permits T-Mobile to activate a commercial mobile 5G network in the region on the 2.5 GHz frequencies that are the subject of the recently completed Auction 108.

Coincident with this filing, Bloosurf has communicated to T-Mobile the need to resolve the ongoing interference issues and is committed to working to reach a resolution fully and finally. To the extent that a resolution cannot be reached quickly, Bloosurf asks the Commission to treat this filing as an informal complaint under Section 1.711 of the Commission's rules, 47 C.F.R. § 1.711, as T-Mobile's voice services provided on its 5G NR network bring the company within the common carrier provisions of Title II of the Communications Act.

T-Mobile must not be permitted to commence transmission of radio signals on the 2.5 GHz band it has won in Auction 108 until the interference concerns described below are resolved. Bloosurf requests the Commission to require T-Mobile to coordinate its transmissions on the 2.5 GHz band in the region so as to prevent or eliminate harmful interference to Bloosurf's existing operations **as a condition of commencing operations in the band**.

Background

Founded in 2009 to build and operate digital infrastructure and services in rural areas, Bloosurf began providing high speed broadband service using Fixed Wireless Access ("FWA") to customers located on the Delmarva Peninsula. It now operates two cores and one network operations center. Bloosurf now operates a hybrid network using fiber as its primary backhaul, and wireless for access, using a 4G LTE network running on Educational Broadband Service ("EBS" or "2.5 GHz") spectrum, as well as CBRS spectrum and unlicensed spectrum. In 2021 Bloosurf also invested in XGS PON networks under the brand Bloofiber.

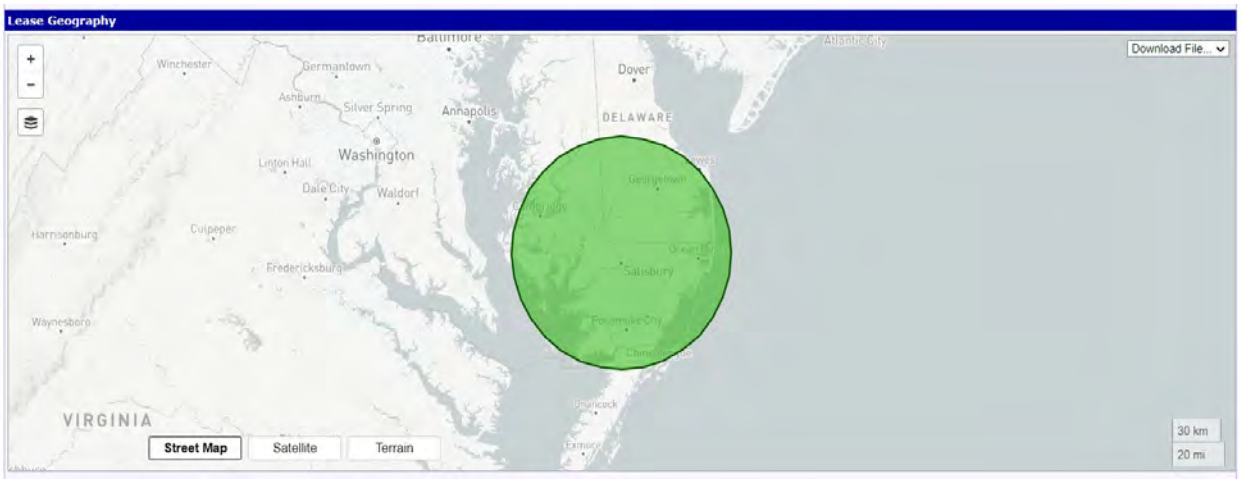
The company transmits from 21 cell site locations using 67.5 megahertz of leased spectrum in the 2.5 GHz EBS band on the following frequencies:

Call Sign WNC437
Lease ID: L000008123
Market P03144 - P35 GSA
New B1: 002518.50000-002524.00000 MHz
New B2: 002524.00000-002529.50000 MHz
New B3: 002529.50000-002535.00000 MHz
New B4: 002578.00000-002584.00000 MHz

Call Sign WNC436
Lease ID: L000008124
Market P00468 - P35 GSA
New A1: 002502.00000-002507.50000 MHz
New A2: 002507.50000-002513.00000 MHz
New A3: 002513.00000-002518.50000 MHz
New A4: 002572.00000-002578.00000 MHz

Call Sign WNC463
Lease ID: L000008216
Market P00477 - P35 GSA
New C1: 002535.00000-002540.50000 MHz
New C2: 002540.50000-002546.00000 MHz
New C3: 002546.00000-002551.50000 MHz
New C4: 002584.00000-002590.00000 MHz

The map for all three leases is as follows:



In 2010, the company was awarded $3.2 million from the federal Broadband Infrastructure Program to construct facilities to serve the region, which construction was completed in 2015.

In 2017, Bloosurf won a grant from the State of Delaware to conduct a 4G LTE FWA pilot in Seaford, Delaware.

In 2018, Bloosurf was awarded $5.5 million over ten years in the FCC's CAF II program, with a commitment to serve over 5,000 locations in Maryland and Delaware. With CAF II

funding, Bloosurf constructed 15 LTE-advanced cell sites and in 2020 became the first CAF II recipient to complete its required construction.[2]

In 2019 Bloosurf won an RFP from the state of Delaware to extend wireless broadband coverage to rural areas of the State that added 6 EBS sites in Sussex County and 8 CBRS sites in Kent County. Due to the COVID pandemic, the State paid for a six-month acceleration of Bloosurf's deployment which was completed in the summer 2020.

In Auction 105, Bloosurf won 9 CBRS PAL licenses to serve Kent County, Delaware and Caroline and Queen Anne's Counties in Maryland.

In fall of 2020, Bloosurf entered into an agreement with the Delaware Department of Education to provide low-income families with high-speed Internet access during the pandemic and was financed to install up to 250 customers a month.

The Interference Issue

One of the Commission's core missions is to protect incumbent operators from harmful interference. As set forth in Sections 151, 301, 303(f), and 333 of the Communications Act of 1934, as amended (the "Act"), Congress empowered the Commission to regulate all manner of radio transmissions with the goal of eliminating harmful interference, so that licensed users of electromagnetic spectrum can serve the overall purpose of providing for a rapid, efficient, Nationwide, and world-wide wire and radio communication service.

Section 27 of the Commission's Rules, Subpart C, contains technical standards for operating in the Miscellaneous Wireless Communications Services, including EBS. *See* 47 C.F.R. § 27.50 *et seq*. and 27.1221. Section 27.53 provides rules for protection from adjacent channel interference, while Section 27.55 provides rules for protection from co-channel interference protection in adjacent markets.

Section 27.53(m)(2) is particularly instructive. In order to protect incumbent operations from incompatible operations by a new operator, the Commission provided a process for resolving documented complaints of interference. Importantly, this includes interference caused by operations otherwise within the technical parameters of the 2.5 GHz band rules. If the parties cannot mutually resolve the interference issue, the new base station is required to protect the pre-existing base station by attenuating emissions within 24 hours of receipt of receipt of a documented interference complaint.

[2] *See, Chairman Pai Welcomes First Completed Broadband Buildout Under Connect America Fund Phase II Auction,* News Release (July 13, 2020) at https://docs.fcc.gov/public/attachments/DOC-365483A1.pdf.

The Commission is well aware of the potential for interference due to a lack of synchronization among Time Division Duplex ("TDD") operations (for example, the CBRS service in the 3.55 – 3.70 GHz band and the newly designated 3.45 – 3.55 GHz band).[3] In its *Second Report and Order*, the Commission "recognize[d] the benefits to all operators that come from TDD synchronization both within and across bands."[4] To minimize harmful interference, the Commission encouraged intra-band synchronization:

> [A] Citizens Broadband Radio Service operator may request information from a 3.45 GHz Service licensee to enable cross-service TDD synchronization if the Citizens Broadband Radio Service operator provides service, or intends to provide service, in the same or adjacent geographic area as that of the 3.45 GHz Service licensee. A request by a Citizens Broadband Radio Service operator for TDD synchronization will obligate the 3.45 GHz Service licensee to provide sufficient technical information to allow the Citizens Broadband Radio Service operator to synchronize its system with the 3.45 GHz band system and to keep such information current if its network operations change. Negotiations over the information to be provided must be conducted in good faith, with the goal of enabling synchronization between the relevant systems …. Commission staff will be available to assist with negotiations as needed to resolve disputes and ensure good faith cooperation.[5]

The need for TDD synchronization has been discussed in several academic papers and in different European countries. For example:

> The asynchronous operation (i.e., when the 5G and LTE frames are not aligned) has been investigated by the ECC. The results reported in [6] and the references therein indicate that if the frames are not aligned, then large separation distances up to 60 km may be needed to ensure non-harmful interference.[6]

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[3] Facilitating Shared Use in the 3100 - 3550 MHz Band, Docket No. 19-348, *Second Report and Order, Order on Reconsideration, and Order of Proposed Modification*, FCC 21-32, 36 FCC Rcd 5987 (2021) at ¶¶ 63 – 67.

[4] Id. at ¶ 63.

[5] Id. at ¶ 65.

[6] Abdelrahim Mohamed, Atta Quddus, Pei Xiao, Bernard Hunt, Rahim Tafazolli, *5G and LTE-TDD Synchronized Coexistence with Blind Retransmission and Mini-Slot Uplink*; *see also*, *ECC Report 296: National synchronization regulatory framework options, in 3400-3800 MHz: a toolbox for co-existence of MFCNs in synchronized, unsynchronized and semi-synchronized operations in 3400-3800 MHz*, ("ECC Report 296") ("The

Multiple EBS licensees can operate 4G LTE networks without interference by specifying Frame Configuration 2. In 2015, Bloosurf made an agreement with Sprint to synchronize their respective 4G LTE networks in this manner. Bloosurf believes that when T-Mobile activated its 5G NR signal at 12721 Ocean Gateway in Cordova, Maryland (38.8984, -76.0613) (the "Cordova Site") on or about December 29, 2020, it switched its legacy LTE network to frame Configuration 2, Subframe 7 so that it could coexist with its own 5G NR system.

T-Mobile's new 5G NR network in the region is not synchronized with Bloosurf's existing 4G LTE network, which operates on Frame Configuration 2. Bloosurf has never used Subframe 7 in connection with its 4G LTE operations, in large part as a trade-off between coverage, capacity and speed to meet the FCC's CAF II performance requirements. Moving to Subframe 7 requires the construction of roughly double the number of transmitting cell sites to achieve the same level of coverage and throughput. Accordingly, as it stands, T-Mobile's high power 5G NR network cannot coexist with the Bloosurf LTE network without creating harmful interference.

Interference With Bloosurf's Operations.

Under Part 27 of the Commission's rules (referenced above), Bloosurf's existing operations in the EBS band are entitled to protection from interference caused by newcomers on the band, including T-Mobile. As shown below, T-Mobile's new 5G NR operations in the region have caused significant harmful interference to Bloosurf's existing network.

In late 2020, Bloosurf noticed that its CPE were repeatedly disconnecting and throughput was degraded. This affected most of Bloosurf's EBS network, however the area located in the western portion of Sussex County, Delaware experienced the highest levels of interference.

Bloosurf commenced testing to locate the source. Bloosurf used the spectrum analyzer that is built into every eNodeB LTE base station to assess the noise level at the height of Bloosurf's transmitting antennae (between 100' and 250', depending upon the particular base station elevation). Bloosurf briefly turned off its network in the middle of the night, so that its base stations were solely in listening mode. This enabled Bloosurf to complement handheld spectrum analyzer measurements on the ground by:

- Measuring on all base stations and all azimuths at the same time (multi-sensor measurements);
- Measuring at the base station transmitter level;

studies show minimum distances required between unsynchronised Macro-cellular networks could be up to 60 km when co-channel operation and up to 14 km when operating in the adjacent channel").

- Measuring signals from nearby line-of-site locations and far away sites, beyond the horizon;
- Triangulating potential sources of interference; and
- Identifying changes over time.

On January 22, 2021, Bloosurf contacted Krishna Dasari (and others) to alert them to interference that it believed to be coming from T-Mobile's operations.[7] Bloosurf reported that the interference had been going on for months, but had increased significantly to harmful levels. Unknown to Bloosurf at the time, T-Mobile had activated a mobile 5G transmitting facility, operating at 2520-2533.75 MHz at the Cordova Site (7BAS064A) less than a month earlier, on December 29, 2020.[8][9]

In the course of attempting to resolve the interference issue, T-Mobile did identify two transmitting sites, without disclosing their locations to Bloosurf, that they believed could be a source of the problem.[10] T-Mobile referenced these sites as 7BAS064A and 7WAS187A, which Bloosurf later determined to be the Cordova Site and one at Lexington, Maryland (the "Lexington Site").

On February 4, 2021 at 1:30 am, T-Mobile conducted on/off testing at the T-Mobile-identified sites. Bloosurf now believes T-Mobile turned off its 4G LTE signal at the Cordova Site and the Lexington Site, but continued to operate its 5G network from those sites during testing.[11] Bloosurf reported on February 8, 2021 that T-Mobile's testing did not remove the harmful interference.[12] Bloosurf incorrectly concluded that the source of interference was not T-Mobile's LTE operations, likely because the parties did not analyze possible interference from T-Mobile's 5G operations. Bloosurf believes this is because T-Mobile never disclosed that it was transmitting on 5G and never turned its 5G NR transmitters off for testing.

[7] Email from Bloosurf's Julius Oku to Krishna Dasari, Jan. 22, 2021 at Exh. 1, p. 95 (pdf). The email's date was approximately nine months following completion of the T-Mobile-Sprint merger.

[8] A map showing the Cordova Site location is attached here to as Exhibit 2, p. 96 (pdf).

[9] Email from T-Mobile's Eugene Pivovarov to Shannon Gunter, FCC Enforcement Bureau, Columbia, Maryland office, July 1, 2021 at Exh. 1, pp. 9-10 (pdf).

[10] Email from Eugene Pivovarov to Lyne Timnou, Feb. 4, 2021 (1:30 AM) at Exh. 1, p. 74 (pdf) and generally, emails exchanged on Exh. 1, pp. 71-83 (pdf).

[11] See Exh. 1, p. 74, where the Site and Channel Details for the Cordova Site (7BAS064A) indicate that LTE was being turned off, but not 5G NR.

[12] Email from Lyne Timnou to T-Mobile Team, Feb. 8, 2021 at Exh. 1, p. 69.

Over the next several months, Bloosurf continued to investigate the source of the interference, without success. Unable to find a resolution, in April of 2021, Bloosurf contacted the FCC's Field Operations Bureau in Columbia, Maryland to request an investigation. On May 4, Mr. Shannon Gunter of the Commission's Columbia, Maryland office initiated contact with T-Mobile to investigate.[13] During the months of May and June, the Commission conducted multiple field tests and exchanged email with T-Mobile, seeking to pinpoint the cause.

FCC testing conducted on May 20 and 26 revealed one source of interference to Bloosurf's network.[14] Testing at T-Mobile's Seaford, DE location (inside Bloosurf's coverage area) showed elevated noise on Bloosurf's network attributed to T-Mobile operating its 4G LTE network at approximately 20 dB above threshold at a bandwidth of 17.4 megahertz of spectrum, which is above its authorized 15 megahertz of spectrum.[15] The excess bandwidth that T-Mobile was operating on was identified as bandwidth authorized to Bloosurf's operations and geographically located in the middle of the most congested/heavily used part of Bloosurf's Delaware network.

In response, T-Mobile corrected its illegal transmissions to bring them within the authorized power level and 15 megahertz of spectrum. Follow up testing by Bloosurf indicated that interference was improved, but the company continued to see interference in some areas, specifically at "sectors pointing towards the Sprint/Tmobile tower"[16] In response, the FCC canvassed the area to find any other sources of interference, taking measurements at the base of each tower.

On June 21, 2021, Bloosurf's engineer Julius Oku, beginning to suspect the presence of 5G NR sites in range of Bloosurf's network, asked T-Mobile what subframe the T-Mobile LTE network was using: "Do you mind sharing with us what is your frame structure (Sub-Frame Assignment)?"[17] On the same day, T-Mobile's engineer Keith Mathers responded: "We run Frame Configuration 2 the same as you. If we were out of synch you would interfere with us and we would interfere with you at much higher levels than what you are seeing in the Interference in our Seaford site like you are on yours."[18]

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[13] Email from Shannon Gunter to Muthukumaraswamy Sekar, May 4, 2021 at Exh. 1, p. 68.

[14] The frequencies that T-Mobile stated that it was operating at the Seaford, DE site are shown at Exh. 1, p. 66 (pdf). T-Mobile also (incorrectly) represented that earlier testing had determined that its operations were not the source of the interference. Id.

[15] Email from Shannon Gunter to Bhavin Patel, May 28, 2021 at Exh. 1, pp. 32-33 (pdf).

[16] Email from Julius Oku to Shannon Gunter, June 9, 2021 at Exh. 1, pp. 27-28 (pdf).

[17] Email from Julius Oku to Keith Mathers, June 21, 2021 at Exh. 1, p. 18 (pdf).

[18] Email from Keith Mathers to Julius Oku, June 21, 2021 at Exh. 1, p. 17 (pdf).

On July 1, 2021, Mr. Gunter wrote to T-Mobile, noting that the Commission observed signal emanating at 2520-2533.75 MHz from the above-referenced Cordova Site, operating outside of Bloosurf's contour, but within 40 miles of five different Bloosurf 2.5 GHz sites, the very sites that Bloosurf initially submitted to the FCC for investigation.[19] On the same day, T-Mobile's engineer, Keith Mathers, confirmed that the Cordova Site belonged to T-Mobile and Eugene Pivovarov confirmed that the site began 5G operations on December 29, 2020, as well as 4G LTE operations on January 5, 2021.[20] Mr. Pivovarov also stated again that T-Mobile had checked the Cordova Site a few months back and determined that it was not causing interference, however he did not indicate whether 4G or 5G transmissions at the tower (or both) were tested.[21]

In response to a follow up inquiry from Bloosurf, Mr. Mathers confirmed on July 30, 2021 that T-Mobile was using frame 2 and subframe 7 to achieve 4G LTE compatibility with T-Mobile's 5G NR network.[22] As stated above, Bloosurf's 4G LTE network uses subframe 2 -- it does not use subframe 7.

On August 17, 2021, Mr. Gunter provided an update for Bloosurf and T-Mobile's operations in the Crisfield/Smith Island area, identifying the site in Lexington, MD, as a possible cause for interference and finding that both sites did not exceed the height benchmark and were not entitled to interference protection pursuant to Section 27.1221 of the rules, 47 C.F.R. § 27.1221. No findings were made regarding T-Mobile's 5G operations at the Cordova Site.[23]

On August 26, 2021, at 2:00 a.m., Bloosurf and T-Mobile performed another on/off test on the Lexington site. Just like the previous test at the Cordova Site, no difference between the on and off states was measured by Bloosurf.[24] Again, it appears that 4G LTE operations were turned down at the Lexington site, however it is unclear whether any 5G NR signals continued to transmit during the test period.

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[19] Email from Shannon Gunter to Lyne Timnou, Keith Mathers, et al., July 1, 2021 at Exh. 1, pp. 12-13 (pdf).

[20] See emails from Eugene Pivovarov (6:14 PM) and Keith Mathers (6:12 PM) to Shannon Gunter, July 1, 2021 at Exh. 1, pp. 9-11 (pdf).

[21] Id.

[22] Email from Keith Mathers to Vincent Sabathier, July 30, 2021, at Exh. 1, pp. 7 (pdf); email from Vincent Sabathier to Keith Mathers, July 30, 2021, at Exh. 1, p. 8 (pdf).

[23] Email from Shannon Gunter to Keith Mathers, Aug. 27, 2021, at Exh. 1, p. 6 (pdf).

[24] Email from Lyne Timnou to Eugene Pivovarov, Aug. 26, 2021 at Exh 1, p. 2 (pdf).

Following the FCC's investigation, Bloosurf has continued to test and tune its network in an attempt to mitigate or resolve interference concerns, but has been unable to remove the harmful interference. Bloosurf's customers continue to experience unacceptable network drops that cannot be attributed to either co-channel or adjacent channel interference from T-Mobile's LTE operations.

At this time, Bloosurf does not know which T-Mobile transmitting tower or towers are causing harmful interference. It could be coming from any of a number of authorizations that T-Mobile holds in the region. A search of the Commission's Universal Licensing System reveals that TDI Acquisition Sub, LLC ("TDI"), a T-Mobile affiliate, is licensed to operate in the Educational Broadband Service ("EBS") on, (1) WMX629 at the same or substantially similar location as Bloosurf's existing operations, (2) WMX626 to the north, (3) WLX578 (L000042388) to the north; (6) WHN710 (L000041488) to the south; (7) WHR993 (L000041489 to the south; and (8) WHT659 (L000043683) to the west. TDI also has authorizations on the Broadband Radio Service ("BRS") on (1) B346, to the north, and (2) B116, substantially overlapping all of Bloosurf's operations. And, there could be more that Bloosurf has yet to identify.

On October 26, 2022, the Commission released a public notice announcing that long form applications filed by T-Mobile License LLC for 2.5 GHz licenses won in Auction 108 were accepted for filing.[25] These authorizations, which cover areas surrounding and overlapping Bloosurf's network, include markets in Delmarva region under FCC File No. 0010206629.

As shown in the map above, Bloosurf's market is defined as a 35 mile radius around Salisbury, Maryland and many of its towers are located near the edge. In order for Bloosurf's FWA operations to be protected from T-Mobile's 5G NR operations, there must be at least a 40 mile buffer from the boundary of Bloosurf's market.[26] This includes T-Mobile's current or prospective 5G NR operations in the following counties:

Maryland	Delaware	Virginia	New Jersey
Caroline	Kent	Accomack	Cape May
Dorchester	New Castle	Northampton	Cumberland
Kent	Sussex	Mathews	Salem
Queen Anne's		Middlesex	
St. Mary's		Lancaster	
Somerset		Northumberland	
Talbot		Richmond	
Wicomico		Westmoreland	
Worcester			

[25] *Wireless Telecommunications Bureau Announces That Applications for Auction 108 Licenses Are Accepted For Filing,* Public Notice, DA 22-1125 (Oct. 26, 2022).

[26] As shown in ECC Report 296 (see n.6, supra), unsynchronized operations in the 3400-3800 MHz band require up to 60 km separation distances. EBS signals propagate farther, requiring even larger buffer zones.

Charles			
Prince George's			
Calvert			
Anne Arundel			
Baltimore			
Cecil			

For reference, a map showing the necessary protection zone:

Bloosurf requests the FCC to investigate Bloosurf's conclusion that the lack of synchronization between Bloosurf's existing FWA operations and the 5G NR transmissions of T-Mobile is the primary cause of Bloosurf's customer equipment repeatedly losing Internet connectivity. If Bloosurf's conclusions are accurate, not only is its business being harmed but its customers, many of whom are low-income rural residents lacking choices when it comes to Internet service, are harmed as well. With this letter, Bloosurf has included a statement from its equipment vendor, Telrad Networks Ltd, confirming the interference issue from unsynchronized operations, as well as the halving of coverage when a network migrates to subframe 7.[27]

Until T-Mobile's unsynchronized 5G NR operations cease to be a source of interference to Bloosurf's network, Bloosurf requests that the Commission condition the grant of 2.5 GHz band licenses in the region upon resolution of the interference issue. To the extent that T-Mobile refiles its October 3, 2022 request for Special Temporary Authority to commence

[27] See Exhibit 3.

operations on the authorizations won at Auction 108,[28] Bloosurf opposes such a grant until the interference issues are resolved.

To sum up:

- T-Mobile transmitted outside of its authorized power level and frequency range at one or more of its cell towers for some significant period of time, which unauthorized transmissions were corrected following an FCC investigation.

- T-Mobile turned up mobile 5G NR operations at its Cordova Site in December of 2020, which Bloosurf now believes to be the principal source of harmful interference to its network.

- T-Mobile has synchronized its 5G NR transmissions with its own 4G LTE operations (by implementing subframe 7) without consulting with Bloosurf.

- T-Mobile's failure to turn off its 5G NR operations at the Cordova Site during testing in early 2021 has wasted valuable time and resources.

- Harmful interference coming from T-Mobile's operations in adjacent areas continues to hamper Bloosurf's operations.

- Assuming the Commission finds T-Mobile qualified to hold 2.5 GHz authorizations in the Delmarva region, T-Mobile is poised to commence 5G NR operations immediately, as evidenced by its STA request.

- T-Mobile's proposed operation of a 5G NR network throughout the Delmarva region that is unsynchronized with Bloosurf's network will completely overwhelm and destroy Bloosurf's ability to provide service to its customers.

Request for Relief

Under Part 27 of the Commission's rules, Bloosurf's existing FWA operations must be protected from T-Mobile's harmful interference. If T-Mobile's 5G NR operations at the Cordova Site are any indication, its impending unsynchronized operations using authorizations won at Auction 108 threaten to overwhelm Bloosurf's network with 5G NR interference unless the networks are properly synchronized. Allowing T-Mobile to commence operations without ensuring that existing 4G LTE FWA operations of Bloosurf are protected from harmful

[28] See, FCC File No. 0010235741. The Commission's ULS shows the STA request as having been dismissed and Bloosurf has been unable to find any record of it having been resubmitted.

interference presents a significant threat to Bloosurf's existing broadband customers in the region, who depend on Bloosurf's service to access the Internet.

Accordingly, Bloosurf requests the Commission to investigate existing and potential future harmful interference from T-Mobile's 5G NR operations and ensure that T-Mobile's 5G NR network is only permitted to operate after appropriate coordination and advance testing. T-Mobile must not be permitted to commence operations of a 5G NR network on the Delmarva Peninsula anywhere within the protection zone shown above until its proposed transmissions can be shown to not cause harmful interference to Bloosurf's existing operations. To the extent that the Commission is considering a grant of an STA to T-Mobile, assuming it is refiled, Bloosurf requests that the Commission treat this letter as an informal interference complaint and investigate accordingly.

I declare that the facts set forth above are true and correct to the best of my knowledge, information and belief.

Respectfully submitted,

/s/ Vincent Sabathier, CEO
Bloosurf, LLC

cc: K. Mathers
J. Goldstein
P. Carliner
B. Koppel