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March 4, 2019

Via Hand Delivery
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

**Re: Written *Ex Parte* Presentation
Applications of T-Mobile US, Inc. and Sprint Corporation for
Consent to Transfer Control of Licenses and Authorizations
WT Docket No. 18-197**

Dear Ms. Dortch:

Pursuant to Section 1.1206(b) of the Commission's rules, 47 C.F.R. Section 1.1206(b), and by counsel, Voqal hereby submits the attached written *ex parte* presentation.

This filing contains information that is "Confidential" pursuant to the Protective Order filed in WT Docket No. 18-197.¹ Pursuant to the procedures set forth therein, I am submitting one copy of this filing to the Secretary's Office. Additionally, two copies of this Confidential Filing are being delivered to Kathy Harris, Wireless Telecommunications Bureau. A copy of the Redacted Confidential Filing is being filed electronically using the Commission's Electronic Comment Filing System for inclusion in the public record of this Docket 18-197 proceeding.

Sincerely,

/s/ Mark Van Bergh

Mark Van Bergh

cc: Kathy Harris

¹ Applications of T-Mobile US, Inc. and Sprint Corporation for Consent to Assign Licenses, Protective Order, WT Docket No. 18-197, DA 18-624 (June 15, 2018)



2.5 GHz Spectrum Divestiture as a Condition for Approving the Sprint/T-Mobile Merger

Submitted to the Federal Communications Commission, March 4, 2019

Last year, Voqal formally petitioned the FCC to require significant 2.5 GHz spectrum divestiture as a condition to the Sprint/T-Mobile merger. In our filings, and a subsequent meeting with the Transaction Team, we set forth a number of options, which we have continued to refine. In this memorandum we focus principally on one possible divestiture alternative.

The Sprint/T-Mobile merger application overlaps the FCC's pending rulemaking in which it proposes extensive changes in Educational Broadband Service (EBS) regulation (WT Docket No. 18-120). The overlap of these two proceedings offers an unusually broad range of opportunities with respect to expanding the availability of 2.5 GHz spectrum.

I. Revised Recommendation

Upon further study Voqal recommends imposing a merger condition that roughly bisects the 2.5 GHz band and would require "New T-Mobile" to divest the highest 94 MHz of frequencies between 2596 and 2690 MHz. This divestiture would consist primarily of Broadband Radio Service (BRS) channels. We refer to this plan as "Top Half divestiture."

Bottom Half divestiture—requiring New T-Mobile to divest the lower 100 MHz of frequencies instead—also is an option, but not our primary recommendation because, while feasible, it is more complicated to implement. Our divestiture proposal is discussed further below.

II. Dividing the 2.5 GHz Band

Appendix A contains a diagram of the current 2.5 GHz band and the allocations for BRS and EBS.

The revised Voqal divestiture proposal divides the 194 MHz of the 2.5 GHz band into the Bottom Half of 100 MHz, which runs from 2496 through 2596 MHz, and the Top Half of 94 MHz, which runs from 2596 through 2690 MHz. The dividing line between the Bottom Half and the Top Half is the border between EBS Channel D4 (as the highest

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channel in the Bottom Half) and EBS Channel G4 (as the lowest channel in the Top Half).¹

III. Primary Proposed Merger Condition – Top Half Divestiture

A. The Two Halves of the 2.5 GHz Band.

The baseline divestiture would consist of all Sprint's current spectrum holdings in the Top Half.² The 94 MHz Top Half is a contiguous swath of spectrum composed of 70.5 MHz of BRS spectrum and 23.5 MHz of EBS spectrum.³ *BRS spectrum may be licensed to commercial entities.* Commercial entities are not presently allowed to hold EBS licenses, though they commonly lease excess capacity from EBS licensees.⁴ One proposal in the pending NPRM would allow commercial entities to acquire EBS licenses.

For the most part, in major markets Sprint holds licenses for the BRS spectrum it uses, though in a small number of cases Sprint leases it from a third-party BRS licensee. In other rare cases, there are available BRS channels that Sprint has failed either to buy or lease.

¹ Unlike the terminology of this memo, current FCC rules divide 2.5 GHz spectrum into three parts: the Lower Band Segment (LBS), the Midband Segment (MBS), and the Upper Band Segment (UBS). At the time it adopted current 2.5 GHz rules, the FCC contemplated that the MBS would be used for high power video transmission, whereas the LBS and UBS were reserved for low power wireless broadband. In order to isolate the high-power MBS, the FCC created guard bands that it dubbed the J and K blocks, each consisting of 4 MHz. The J block separates the LBS from the MBS, whereas the K block separates the UBS from the MBS. The FCC allotted one MHz of the J block to each of the licensees of the A, B, C, and D group EBS channels, with 1/3 of a MHz assigned to the holder of each LBS main channel. Similarly, 1/3 of a MHz of the K block is allotted to the licensee of each channel in the BRS E, F, and H groups in the UBS, as well as the EBS licensee of each G group EBS main channel. As there is currently very little high power use of the 2.5 GHz MBS frequencies, in most locations the J and K blocks have become suitable for wireless broadband use. However, the fact that the J and K blocks are located as they are in the band plan has important implications for what a carrier needs to do in order to maximize spectrum contiguity.

² Specifically, the Top Half consists of, from lowest to highest frequencies: MBS EBS channel G4 (6 MHz), MBS BRS channel F4 (6 MHz), MBS BRS channel E4 (6 MHz), BRS K block channels KH1 – KH3 (1 MHz), EBS K block channels KG1-KG3 (1 MHz), BRS K block channels KF1-KF3 (1 MHz), BRS K block channels KE1-KE3 (1 MHz), BRS channel 2 (6 MHz), BRS channels E1-E3 (16.5 MHz), BRS channels F1-F3 (16.5 MHz), BRS channels H1-H3 (16.5 MHz), and EBS channels G1-G3 (16.5 MHz).

³ Because the EBS KG channels isolate the BRS MBS channels and KH channels, the amount of contiguous BRS spectrum is 57.5 MHz.

⁴ A few EBS licenses are held by commercial entities based upon long-abandoned regulations allowing commercial operators to obtain licenses for a limited number of these channels. Commercial EBS licenses are located in smaller markets.

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The FCC initially licensed BRS spectrum in major metropolitan areas in the 1980s based upon localized protected service areas, resulting in a patchwork of BRS coverage. In the 1990s, the FCC held an “overlay” auction for BRS licenses based on Basic Trading Areas subject to the rights of the pre-existing incumbents. Through a series of combinations over the years, Sprint acquired all but a small number of incumbent licenses and almost all the BTA licenses. There are 487 BTAs in the United States. According to the FCC’s Universal Licensing System database, Sprint now holds BRS licenses covering 454 of these BTAs. The BTA licenses that Sprint does not hold are in secondary or tertiary-sized markets. In the rare case of BRS leases, the licensee usually holds a grandfathered localized license subsumed within one or more BTAs; Sprint leases capacity in that “Swiss cheese hole” within its otherwise fully-controlled BTA territory.

In sum, Sprint holds the right to deploy the vast bulk of BRS spectrum nationwide.

EBS is currently licensed based on localized, circular “geographic service areas” with a 35-mile radius. Currently unallocated EBS areas (referred to as “white space”) constitute about 50% of the US geographically, containing approximately 15% of the US population. The pending EBS rulemaking includes various proposals about how to allocate this EBS white space.

B. Effectuating the Primary Divestiture Proposal.

Licensed Spectrum. Under the divestiture proposal that we favor, the FCC would condition grant of the merger application on New T-Mobile divesting (selling) its licensed Top Half BRS spectrum within one year of closing the Sprint acquisition, as well as any commercial EBS G-Group spectrum New T-Mobile or its affiliates then hold as a licensee. It would have to divest all such spectrum to a single entity.

Leased Spectrum. For Sprint’s leased spectrum holdings in the Top Half, New T-Mobile (and any successor) would be required to unconditionally offer the lessors and sublessors (whether EBS or BRS) the right to terminate their existing leases/subleases with Sprint at any time, upon 6 months’ notice, and without providing any additional consideration to New T-Mobile/Sprint or incurring any penalty. The right of lessors to terminate these spectrum leases would last three years from the closing of the Sprint acquisition.

As explained above, the top half of the band includes a single EBS channel group, the G-group. There are hundreds of G-group EBS licensees, though many of them serve lightly populated areas. Generally, local entities hold EBS licenses, though some EBS organizations have national portfolios of licenses with multiple G-group authorizations. For instance, Voqal organizations hold G-group licenses in Philadelphia, Minneapolis, Indianapolis, and Las Vegas. The most complex part of the proposed Top Half divestiture involves reaching leasing or spectrum purchase agreements with what would almost surely be scores of different EBS licensees. However, even if the new entrant

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(acquiring the BRS licenses) cannot obtain the use of G-group EBS spectrum in certain locations, its BRS holdings alone (57.5 MHz of contiguous spectrum) would suffice to offer 5G service.

IV. Alternative Recommendation: Bottom Half Divestiture

The principal alternative to Top Half divestiture is to require divestiture of the Bottom Half of the 2.5 GHz band, consisting of 100 MHz of spectrum between 2496 to 2596 MHz. The Bottom half consists of one 6 MHz BRS channel (known as BRS-1) with the remainder composed of EBS spectrum.⁵

Bottom Half divestiture of the EBS portion (94 MHz of the 100 MHz) would be effectuated the same way as the proposed G-group Top Half divestiture: by requiring New T-Mobile to give spectrum licensees/lessors three-year lease termination options as a merger condition. Sprint also would have to sell its BRS-1 spectrum, which sits at the very bottom of the band.

Currently allocated EBS licenses cover roughly 85% of the US population. Assembling adequate Bottom Half coverage would involve working with hundreds of licensees rather than scores. However, this process could be simplified by making deals with “national” EBS licensees, thus reducing the necessary volume of transactions. See Appendix B which provides information about the holdings of the top five 2.5 GHz EBS licensees and lease holders.⁶ Also lessening the transaction burden is the fact that some local EBS licensees hold multiple licenses in their markets, including such major metropolitan areas as Boston, Phoenix, and Denver. Further, if the FCC decided to require Bottom Half Divestiture as a merger condition, it could encourage Bottom Half EBS licensees to form local consortia to negotiate leases with a new entrant.

BRS channel 1 is likely to be most valuable to an entity that has acquired use of the EBS A group and/or other Bottom Half EBS spectrum. Hence, Bottom Half BRS divestiture should follow Bottom Half EBS divestiture in time. We suggest that New T-Mobile be required to sell its BRS1 licenses to a nonaffiliate between three and four years after the merger closes.

⁵ Specifically these channels, from lowest to highest frequencies are: BRS channel 1 (6 MHz), EBS channels A1 – A3 (16.5 MHz), EBS channels B1 – B3 (16.5 MHz), EBS channels C1 – C3 (16.5 MHz), EBS channels D1 – D3 (16.5 MHz), EBS channels JA1 – JA3 (1 MHz), EBS channels JB1 – JB3 (1 MHz), EBS channels JC1 – JC3 (1 MHz), EBS channels JD1 – JD3 (1 MHz), EBS midband channel A4 (6 MHz), EBS midband channel B4 (6 MHz), EBS midband channel C4 (6 MHz), and EBS midband channel D4 (6 MHz).

⁶ The information in Appendix B includes a proprietary compilation of spectrum holdings provided to Voqal by a third party that has requested confidentiality for its work product. This firm has extensive experience working on spectrum-related matters, including the 2.5 GHz band. The information is submitted in redacted form pursuant to the Protective Order in WT Docket No. 18-197.

V. Relative Advantages and Disadvantages of Top Half Divestiture

Top Half divestiture is the most effective way to stimulate 5G competition because it will place a significant amount of midband spectrum in the hands of a national competitor. Given that Sprint now dominates Bottom Half spectrum through hundreds of EBS leases, New T-Mobile would retain ample 2.5 GHz spectrum for 5G purposes. Top Half divestiture also is much simpler to implement than Bottom Half Divestiture, though not free of complexity because of the number of G-group EBS licensees.

Another advantage is that because BRS is licensed on a BTA-wide basis, a new Top Half entrant would have access to wider geographic coverage uninterrupted by white space. It thus would have less reliance on the outcome of the current EBS rulemaking that is expected to create the framework for allocating EBS white space.

Sprint and T-Mobile are likely to object to Top Half divestiture, and for reasons beyond simple aversion to divesting spectrum. For example, in most areas Sprint has deployed its LTE services on BRS spectrum, supplemented by G group EBS channels in the larger markets. However, New T-Mobile's/Sprint's expected complaint of the inconvenience of divesting spectrum bearing deployed LTE service should be considered in light of announced plans that New T-Mobile would clear all LTE uses off the 2.5 GHz band in the near future and devote it to 5G exclusively.

Finally, the competitive concerns raised by New T-Mobile's proposed accumulation of spectrum generally, and in the 2.5 GHz band specifically, are sufficient to overcome objections to the proposed divestiture plan.

APPENDIX A

CURRENT 2.5 GHz (BRS-EBS) BAND PLAN – 2495-2690 MHz

SOURCE: <http://wireless.fcc.gov/services/brsebs/data/BRS-EBS-BandPlans.pdf>

