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September 17, 2018

***By ECFS***

Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12th Street, S.W.  
Room TW-A325  
Washington, DC 20554

**REDACTED – FOR PUBLIC INSPECTION**

Re: 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:

T-Mobile US, Inc. (“T-Mobile”) hereby submits a follow on document production and a slight revision of the network engineering model submitted to the Commission on September 5, 2018. This version of the network engineering model resolves an anomaly to ensure that solutions for congestion are addressed in a consistent fashion. The revised model is being submitted in electronic format on the attached DVD.

To be consistent with T-Mobile’s ordinary course actions, the network model was designed to implement congestion solutions from least to most expensive (with “cell splits”, which means building and deploying new cell sites, as the last resort). The model will evaluate adding a sector or splitting cells, but should not allow a combination of sector adds and cell splits to address congestion. The model submitted September 5th applies this approach consistently when solving for congestion for a single technology. However, in the course of developing the economic analysis it became apparent that applying the least costly solution to address congestion for a single technology (either LTE or 5G) could in some cases result in an impermissible mixing of sector adds and cell splits as the model resolves congestion for the second technology. While this issue only occurs very infrequently, T-Mobile is submitting a revised model that addresses this issue to produce the most accurate results. Also included with this submission is a revised documentation tab to address the changes to the engineering model as well as to include other minor changes to provide consistent verbiage and correct column references. These documentation changes do not impact the model or any calculations, but are provided to improve the accuracy and utility of the documentation.

In addition, in the September 11, 2018 letter pausing the merger shot clock, Messers. Lawrence and Stockdale requested an explanation as to: (1) what aspects of the prior network modeling



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(submitted on August 1, 2018) were extended in the new modeling and (2) why.<sup>1</sup> T-Mobile was also requested to provide any updated figures for the assertions in the Public Interest Statement that resulted from the new modeling. T-Mobile's response to that request is provided below:

- The network engineering model submitted on August 1 was used to develop the numbers in Neville Ray's Declaration in the Public Interest Statement regarding the meaningful increase in throughput and capacity that the New T-Mobile network will achieve relative to the standalone networks. This model considered only the capabilities of each network in light of the allocation of spectrum resources to each technology and spectral efficiency values to calculate network speed and capacity. In contrast, the expanded model submitted on September 5 includes additional modules to calculate congestion and the number of solutions for addressing congestion. These capabilities are necessary to support the economic analysis comparing the standalone networks to the New T-Mobile network.
- A complete economic analysis to address petitions to deny requires that the model consider the projected user demand to determine the resulting congestion on each network. The model must also apply the companies' ordinary-course processes for resolving congestion to evaluate the effectiveness of applying specific network solutions to resolve congestion. This helps support the economic modeling and marginal cost comparison. To the extent possible, the expanded engineering model uses the same assumptions, methodology, algorithms, and solutions that T-Mobile and Sprint use in the ordinary course process of predicting where network congestion will occur and how to resolve it. Taken together, the expanded model supports the existing analysis in ways that advance economic decision-making.
- Updated output figures based on the expanded model as submitted in revised form today are included in the Reply Declaration of Neville Ray, being submitted today with T-Mobile's and Sprint Corporation's Joint Opposition. As additional modeling work continued, it was determined more spectrum could be refarmed from LTE to 5G – which has led to the slight changes in some of the output figures.

The supplemental document production includes the first tranche of materials from non-priority custodians in response to the August 15, 2018, General Information and Document Request from

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<sup>1</sup> Letter from David B. Lawrence, Director, T-Mobile/Sprint Transaction Task Force, FCC, and Donald Stockdale, Chief, Wireless Telecommunications Bureau, FCC, to Kathleen O'Brien Ham, T-Mobile US, Inc., and Vonya B. McCann, Sprint Corporation, at 2 n.3 (Sept. 11, 2018).



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the Federal Communications Commission (the “Commission”) in the above-referenced docket.<sup>2</sup> It consists of a hard drive containing the load files and production index associated with the document requests in the Information Request, containing items tagged as “Highly Confidential,” “Confidential,” and “Public,” per the Protective Order.<sup>3</sup>

The filing contains information that is “Highly Confidential” pursuant to the Protective Order filed in WT Docket No. 18-197.<sup>4</sup> Accordingly, pursuant to the procedures set forth in the Protective Order, a copy of the filing is being provided to the Secretary’s Office, including both the hard drive and the DVD media.<sup>5</sup> In addition, two copies of the Highly Confidential Filing are being delivered to Kathy Harris, Wireless Telecommunications Bureau.<sup>6</sup> A copy of the hard drive is being sent, by overnight mail, to the FCC’s e-Discovery vendor. A copy of the Redacted Highly Confidential Filing is being filed electronically through the Commission’s Electronic Comment Filing System.<sup>7</sup>

Should any questions arise regarding this filing, please do not hesitate to contact the undersigned counsel for T-Mobile.

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<sup>2</sup> Letter from Donald K. Stockdale, Jr., Chief, Wireless Telecommunications Bureau, to Kathleen O’Brien Ham, T-Mobile U.S., Inc., WT Docket No. 18-197 (Aug. 15, 2018) (“*Information Request*”).

<sup>3</sup> *In the Matter of Applications of T-Mobile US, Inc. and Sprint Corporation Consolidated Applications for Consent to Transfer Control of Licenses and Authorizations*, Protective Order, WT Docket No. 18-197, DA 18-624 (Jun. 15, 2018) (“*Protective Order*”). Pursuant to discussions with Staff, custodial documents and data and materials being provided with this response, unless specifically reviewed and downgraded, have been classified as “Highly Confidential.” Notwithstanding that default classification, Applicants are not asserting Highly Confidential status for any documents that have been publicly released (which would be Public) or for third party materials that are copyrighted (which would be considered Confidential).

<sup>4</sup> *Id.*

<sup>5</sup> *Id.* at ¶13.

<sup>6</sup> *Id.*

<sup>7</sup> *Id.*



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Respectfully submitted,

*/s/ Nancy J. Victory*

Nancy J. Victory

Enclosure

cc: Kathy Harris  
Linda Ray  
Kate Matraves  
Jim Bird  
David Krech

**REDACTED**