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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:

Pursuant to Section 1.1206(b) of the Commission’s Rules, 47 C.F.R. § 1.1206(b), notice is hereby provided of a written *ex parte* presentation in the above-referenced docket. T-Mobile US, Inc. (“T-Mobile”) hereby takes this opportunity to clarify a few aspects of the highly confidential data it has previously provided.

In the prior documentation provided to Commission,¹ the [REDACTED] as detailed in [REDACTED] of the engineering model documentation. [REDACTED]

In generating population coverage figures, all sites/sectors/bands for each network scenario are propagated in T-Mobile’s RF engineering database (Asset) providing simulated coverage to a geographic area. [REDACTED]

¹ 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). T-Mobile provided a response to this request on September 5, 2018 in WT Docket No. 18-197 (“Information Request Response”). The network model and documentation was provided as a response to Specification 13 and was updated on September 17, 2018.



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[REDACTED] This process is the basis of the throughput population served in Figure 1 along with the creation of the spaghetti graphs in Figures 4 & 5 of the Public Interest Statement.²

Sites/sectors/bands specified within the network model for the various network scenarios are propagated within Asset and coverage generated. Network parameter inputs to Asset include site latitude/longitude, antenna radiation centerlines, sector azimuths, antenna models, antenna tilts, transmitter power levels, transmissions losses, UE characteristics, and propagation models. Asset performs RF path loss calculations using the network inputs along with clutter and terrain geodata. These high resolution geospatial path loss files are then processed by Asset into coverage maps.

All coverage maps are based on outdoor link budget coverage thresholds. Detailed band level link budgets were previously provided to the FCC in response to Specification 20 of the information request.³ Link budgets are developed for specific frequency bands. Coverage is often aggregated, for instance PCS, AWS, and 2.5 GHz are combined to form “mid-band”, however, the link budgets are determined per band. The map in Figure 3 of the PIS was based on an estimated Sprint 2.5 GHz 5G TDD link budget using a standard T-Mobile FDD LTE Asset simulation adapted to account for Sprint’s 5G TDD network. The T-Mobile and New T-Mobile maps are based on T-Mobile’s standardized LTE link budgets adapted to account for 5G FDD and TDD depending on band.

5G is still in the early development stages and equipment specifications are not yet finalized. T-Mobile has utilized adapted LTE link budgets as provided in Specification 20 to represent and project 5G coverage. For the 600 MHz band, T-Mobile’s LTE link budget was recently developed and already incorporates additional 5G link reliability, thus LTE and 5G utilize the same link budget (the link budget provided in response to Specification 20 for 600 MHz LTE). For the 1900 and 2100 MHz bands, each band had individual LTE link budgets provided to the FCC (in Specification 20) and [REDACTED]

[REDACTED] For the 2500 MHz band, the New T-Mobile 2500 MHz 5G link budget was developed [REDACTED]

² *Applications of T-Mobile US, Inc. and Sprint Corporation for Consent to Transfer Control of the Licenses and Authorizations*, WT Docket No. 18-197, Description of Transaction, Public Interest Statement, and Related Demonstrations (filed June 18, 2018) (“Public Interest Statement” or “PIS”).

³ Information Request Response, Specification 20.



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[REDACTED]

In the New T-Mobile network model,

[REDACTED] as is described in more detail in
of the engineering model documentation. In general,
[REDACTED]

To determine Sprint cell sites to be retained,

[REDACTED] A similar process and thresholds were used during
the MetroPCS integration.

The
“Sprint network coverage” map in [REDACTED] of the engineering documentation provided to
the Commission (as was true for the MetroPCS coverage map) is exemplary and not attempting
to replicate an actual coverage picture.

Spectral-efficiency based methods are the best alternative for new technologies without existing
measurement data.

[REDACTED]

⁴ The Sprint 2.5 GHz link budget was previously provided to the FCC in documents SPR-FCC-10684290 and SPR-FCC-11782362.



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[REDACTED] of the engineering model documentation contains the details for the methodology used for both technologies and external references that confirm the comparison results between 5G and LTE advanced features. [REDACTED]

The filing contains information that is “Highly Confidential” pursuant to the Protective Order filed in WT Docket No. 18-197.⁵ Accordingly, pursuant to the procedures set forth in the Protective Order, a copy of the filing is being provided to the Secretary’s Office.⁶ In addition, two copies of the Highly Confidential Filing are being delivered to Kathy Harris of the Wireless Telecommunications Bureau (c/o Joel Rabinovitz, Office of the General Counsel).⁷ A copy of the Redacted Highly Confidential Filing is being filed electronically through the Commission’s Electronic Comment Filing System.⁸

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

Respectfully submitted,

/s/ Nancy J. Victory

Nancy J. Victory

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

⁵ *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).

⁶ *Id.* at ¶13.

⁷ *Id.*

⁸ *Id.*