Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Establishing the Digital Opportunity Data Collection	)	WC Docket No. 19-195
	)	
Modernizing the FCC Form 477 Data Program	)	WC Docket No. 11-10
	)	

REPLY COMMENTS OF AT&T

AT&T Services, Inc.[1] hereby replies to the comments[2] filed on the Federal Communications Commission's ("Commission's") *Report and Order and Second Further Notice of Proposed Rulemaking*[3] in the above-captioned docket.

I. INTRODUCTION AND SUMMARY

In its initial comments, AT&T submitted a proposal to refine the propagation modeling process that fixed and mobile wireless providers use to generate their coverage maps. As discussed in more detail below, this proposal is consistent with the weight of the comments regarding propagation mapping. Thus, the Commission should adopt an approach based on mapping to Commission-defined service levels, with full transparency regarding the modeling parameters that filers use to generate their maps, including detailed link budgets. The record shows that the submission of 5G coverage data (beyond the 5G-NR data already required) would

[1] AT&T Services, Inc. files these comments on behalf of its wireless and wireline operating affiliates (collectively, "AT&T").

[2] Unless otherwise indicated, references herein to parties' "comments" refer to comments filed by the noted party on or about Sept. 23, 2019.

[3] *Establishing the Digital Opportunity Data Collection, Modernizing the FCC Form 477 Data Program*, Report and Order and Second Further Notice of Proposed Rulemaking, WC Docket Nos. 19-195, 11-10, FCC 19-79 (rel. Aug. 6, 2019) ("*R&O*" and "*Second FNPRM*," respectively).

be premature. Commenters also support effective and efficient use of third-party data, such as crowdsourcing data, to improve coverage maps, but do not support penalties for inevitable minor, inadvertent errors.

II. THE RECORD SUGGESTS BROAD SUPPORT FOR AT&T'S PROPAGATION MODELING PROPOSAL

A. The Comments Supports AT&T's Framework for Producing Fixed and Mobile Wireless Coverage Maps

In its initial comments, AT&T offered a specific proposal for increasing the reliability of propagation maps used by fixed and mobile wireless providers to generate their coverage maps.[4] Specifically, AT&T proposed that the Commission should:

- Define a uniform service level (or levels) that providers are required to map, and
- Require filers to provide transparency into their modeling process, including a detailed link budget, so that filers' propagation models can be reviewed by the Commission and other parties.[5]

AT&T's proposed approach is consistent with the recommendations of most commenters. For example, CTIA recommends requiring mobile wireless providers to "submit standardized 4G LTE coverage maps that meet the following service-level requirements: a 5 Mbps download speed and a 1 Mbps upload speed with a cell edge probability of 90 percent and a cell loading of 50 percent."[6] CTIA then recommends that the Commission "not prescribe additional technical

[4] AT&T Comments at 4-8.

[5] *See id.* AT&T noted, however, that providers should not disclose specific infrastructure location information for competitive and national security reasons. *Id.* at 8-9.

[6] CTIA comments at 5. *See also* AT&T comments at 4 (same parameters).

parameters for propagation models that underlie providers coverage maps" given the variable nature of wireless systems.[7]

Verizon concurs that the commission can "address most of the concerns that have been expressed about the Form 477 mobile broadband deployment data" by adopting a standardized service level for 4G LTE propagation models, such as "5 Mbps download speed, uplink sufficient to support VoLTE, a 90 percent cell edge probability, and a 50 percent loading factor."[8]

Similarly, U.S. Cellular supports the use of a 90% cell edge probability and 50% loading factor.[9] For its part, the Competitive Carriers Association ("CCA") proposes a modeling framework that is virtually identical to AT&T's, including the same proposed cell edge probability and loading percentages and a similar discussion of the disclosure of clutter factors.[10] The one difference is that CCA proposes for the Commission to standardize the reported signal strength level.[11] As several commenters point out, and as the Commission has recognized, the approach of modeling to a defined service level subsumes the notion of modeling a particular signal strength (e.g., RSRP), and more accurately reflects the customer experience. For example, as CTIA points out, the Commission declined to establish a signal strength parameter in the MF-II data collection because "'the signal strength parameter in propagation models may not be

[7] CTIA comments at 6-7.

[8] Verizon comments at 9.

[9] U.S. Cellular comments at 15.

[10] CCA comments at 4-7.

[11] CCA comments at 4-7.

closely correlated with actual on-the-ground data in a particular geographic area,'" and a "'cell edge speed threshold subsumes a specific signal strength value depending on specific operating signal bandwidth and the network deployment configurations.' Thus, a cell edge speed and probability factor, not signal strength, will better reflect consumer experiences."[12]

With regard to fixed wireless, WISPA focuses on the varying nature of wireless networks resulting in a need for flexibility in how providers develop their models and the inputs used in them.[13] These concerns are consistent with the rationale underlying AT&T's proposal (and echoed by the other commenters discussed above) to provide filers with flexibility in generating their propagation models. The transparency that AT&T proposes will enable fixed wireless providers to exercise this flexibility, consistent with WISPA's comments, while still allowing for meaningful review of their submissions.[14]

B. Refinements to the Proposal Based on the Initial Comments

While the comments support the framework set out in AT&T's proposal, the information in the record also suggests that certain refinements and clarifications to the proposal are warranted.

First, in light of the record developed, AT&T agrees that mobile voice and broadband services are provided over a single network that may be composed of different network

[12] CTIA comments at 9-10, *quoting MF-II Challenge Process Order*, 32 FCC Rcd 6282, 6302-03 ¶ 40 (2017). *See also* Verizon comments at 9-10. Although the Commission should not prescribe a signal strength level as part of the service standard to which filers must model, filers should include signal strength information in their link budget submissions. *See* AT&T comments at 8.

[13] WISPA comments at 2-5 and Att. A.

[14] For fixed wireless providers, the first element of AT&T's proposal – modeling to a Commission-defined service level – is already addressed by the Commission's requirement for fixed broadband providers to submit separate polygons by speed tier. *Order* at ¶ 12.

technologies, and the reporting standards should reflect this. As a result, AT&T proposes that the Commission:

- Permit mobile providers to report voice and broadband services on the same coverage maps, rather than requiring separate reporting of voice and broadband coverage.

- Require mobile providers to report on their broadband networks by speed capability rather than technology. The record reflects that speed is more important to consumers than the air interface used to provide it. AT&T therefore proposes that the Commission require mobile providers to report their mobile voice and broadband coverage with coverage maps depicting two service levels: (1) voice and broadband service below 5 Mbps download and 1 Mbps upload, and (2) voice and broadband service at or above 5 Mbps download and 1 Mbps upload.

The coverage map for the first service level would include the entire area where service is adequate to support voice only as well as the area where voice and broadband at speeds below 5 Mbps download and 1 Mbps upload are available. The coverage map for the second service level would delineate the area where voice and broadband service are available at or above 5 Mbps download and 1 Mbps upload with a 90% probability at the cell edge assuming 50% loading.

Although wireless providers should not be required to submit separate coverage maps by wireless technology, they could still specify the wireless technology that they use in their link budget submissions.

With regard to fixed wireless service, AT&T maintains its proposal that fixed wireless providers should generate propagation maps showing service in Commission-designated Fixed wireless speed tiers.[15] The Commission should clarify, however, that fixed wireless providers are only required to submit coverage maps for speed categories for which they market service.

[15] AT&T comments at 6.

Finally, AT&T wishes to clarify that, by specifying a list of the kinds of information that could be included in fixed or mobile providers broadband mapping transparency submissions, AT&T was not intending to suggest that the Commission should require providers to include all of the factors listed as examples in our comments. [16] The point is simply that wireless providers should be required to file their entire propagation maps, including all inputs used to develop them (with the exception of specific infrastructure location information). The actual number of inputs submitted will vary depending upon the sophistication of the filer's particular modeling tool. As a result, AT&T's approach will not impose any additional burdens on small filers.

III. THERE IS BROAD AGREEMENT THAT IT IS NOT YET TIME TO REQUIRE REPORTING ON 5G COVERAGE

As AT&T observed in its comments, it would be premature for the Commission to require wireless providers to submit coverage maps for 5G service at this time.[17] There is universal support in the comments for this position. For example, as CTIA points out, service standards for 5G are still emerging, precluding reporting of service-level coverage for 5G networks (other than the 5G-NR submissions already required.[18]

Further, as AT&T pointed out, requiring 5G coverage maps in this early stage of 5G deployment could reveal sensitive information about cell site locations and even customer locations, in cases where 5G is being deployed in high-band spectrum for specific enterprise customers.[19]

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[16] *Id.* at 6-8.

[17] *Id.* at 5.

[18] CTIA comments at 8. *See also* Verizon comments at 9 & n.29.

[19] AT&T comments at 5.

Thus, the record does not support requiring 5G coverage maps at this time. As discussed above, the Commission should require mobile wireless providers to report in two speed tiers: below 5/1, and 5/1 and above.

IV. THE RECORD SUPPORTS MAKING EFFECTIVE USE OF THIRD-PARTY DATA SOURCES FOR VALIDATION OF PROPAGATION MAPS

A number of commenters support the use of third-party datasets, including crowdsourced data, to validate the coverage maps submitted by fixed and mobile wireless providers provided such information is used effectively and efficiently. As one commenter observes, "the effectiveness of crowd sourcing is only as good as the crowd, so the Commission must adopt rules that ensure the process takes into account only legitimate concerns, provides for a simple process for addressing any undisputed discrepancies, and allows reporting carriers to make any necessary corrections without fear of immediate reprisal."[20]

NCTA notes that "online speed tests that do not control for factors outside the control of the provider should not be used for the purpose of assessing the validity of a provider's reported deployment."[21] To improve data validity, the Commission should favor information from third-party vendors that take reasonable and transparent steps to validate their information.[22]

Any data collected from third-party sources, particular crowdsourced data, should be collected and analyzed by the Commission or USAC to identify trends, which can be brought to filers' attention to improve the accuracy of the mapping process.[23] CTIA's suggestion to

[20] Alexicon comments at 5-6.

[21] NCTA comments at 10-11.

[22] *See, e.g.,* CTIA comments at 12 (favoring data from vendors such as Ookla).

[23] *See, e.g.,* NTCA comments at 11 ("Rather than treating such reports as 'one-off' consumer complaints with each necessitating investigation by USAC and/or Commission staff and detailed

conduct a pilot or beta test of any crowdsourcing system or requirements would be useful in determining the most effective processes and procedures.[24] Providers should not be expected to respond to each and every challenge submitted via crowdsourcing; rather, provider responses only should be required where the trends in crowdsourced data identify a problem.[25]

By making this kind of efficient and effective use of third-party data, the Commission can help ensure that the DODC contains more accurate data than the current Form 477 data collection.

V. COMMENTERS AGREE THAT PENALIZING DODC FILERS FOR COVERAGE CORRECTIONS WOULD BE COUNTERPRODUCTIVE

There is broad agreement that the Commission's compliance mechanism for the DODC should focus on ensuring accurate data rather than imposing penalties. As NCTA observes, "[g]iven that the largest providers operate networks that pass tens of millions of homes and businesses, it would be wholly unrealistic to expect that every single location will be reported accurately."[26] As a result, particularly given the scope of the change in reporting that the DODC will entail, "[w]hen errors are identified, the Commission should focus on correcting data so that its future maps are as accurate as possible, not punishing providers for good-faith mistakes."[27]

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responses from providers, NTCA proposes that the Commission use this data to identify trends that may indicate inaccuracies in need of correction.").

[24] CTIA comments at 8-11.

[25] *See* NTCA comments at 11.

[26] NCTA comments at 5.

[27] *Id.*

Similarly, ACA Connects advocates "permitting providers to fix errors without penalty, except where the provider's errors are intentional and persistent."[28]

The Broadband Mapping Coalition, too, cautions against implementing "a reporting regime that penalizes reporting entities for errors in their data unless it is demonstrated that such errors are the result of willful misrepresentation or repeated negligence in the gathering or presentation of data."[29]

As these comments demonstrate, the Commission should focus its efforts in the DODC on obtaining accurate data rather than attempting to impose penalties on providers for non-willful errors.

VI. A BROADBAND SERVICEABLE LOCATION FABRIC WILL ALSO IMPROVE WIRELESS MAPPING

As noted in its initial comments, AT&T generally supports USTelecom's positions regarding the broadband mapping,[30] in particular with regard to the creation of a Broadband Serviceable Location Fabric ("Fabric").[31] In fact, commenters overwhelming support the Commission's proposed adoption of the Fabric.[32] There is strong agreement that creation of the Fabric will enable more accurate mapping of fixed broadband by enabling broadband availability

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[28] ACA Connects comments at 9. *See also* Next Century Cities comments at 5 (supporting warnings "in the early years" of the new reporting mechanism with fines or other sanctions only for "continued errors"). *But see* New York City comments at 3 (arguing for unnecessarily draconian penalties without regard to fault).

[29] BMC comments at 25.

[30] *See* AT&T comments at 2 n.4.

[31] *See generally* USTelecom, ITTA, and WISPA comments.

[32] *See, e.g.,* Cal. PUC comments at 2; Connected Nation comments at 3-4; NTCA comments at 6-7; Verizon comments at 7-8; WTA comments at 3-5.

reporting via polygons or at the location level based on harmonized geocoding.[33] The Fabric will also enhance efforts to close the digital divide by clearly identifying where homes and businesses that do not have broadband are located. AT&T believes that the Commission should move forward as quickly as possible with the creation of the Fabric for the entire country. While the Commission and commenters focus on the utility of the Fabric for fixed broadband reporting, AT&T believes that once the Fabric is created it will also serve as a useful foundation for mapping the availability of mobile broadband. The propagation maps created by mobile providers can also be overlaid on top of the Fabric which will help promote accuracy and facilitate constructive challenges and crowdsourcing efforts.

VII. CONCLUSION

AT&T urges the Commission to adopt procedures for the DODC consistent with these reply comments.

Respectfully submitted,

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[33] *See, e.g.*, Connected Nation comments at 3-4; NTCA comments at 6-7; Verizon comments at 7-8; WTA comments at 3-5.