



John Deere Intelligent Solutions Group
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October 24, 2017

Via ECFS

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: Reply Comments of Deere & Co.--Modernizing the FCC Form 477 Data Program (WC Docket No. 11-10)

Dear Ms. Dortch:

Deere & Company ("Deere") hereby submits these brief reply comments in the above-captioned proceeding. Deere is a world leader in the manufacture of agricultural, construction, and forestry machinery, diesel engines, and other machinery equipment. It provides advanced construction equipment to builders of infrastructure, and agricultural and other equipment and services to customers that cultivate, harvest, transform, enrich and build upon the land to meet the world's dramatically increasing need for food and materials. Deere has delivered innovative equipment since 1837, and today, is pioneering state-of-the-art data and information solutions designed to greatly enhance productivity, environmental sustainability, and human safety.

Broadband services, especially mobile broadband, are critical to agricultural areas. Modern farming operations more and more demand high-speed mobile broadband to support high-precision agriculture techniques that significantly increase crop yield and reduce costs and environmental burdens. Despite the clear and growing demand, high-speed mobile broadband has not been consistently available to users involved in rural agricultural operations on croplands and ranchlands.

Deere applauds the FCC for taking steps to improve the value of broadband data collected. Accurate and reliable mobile broadband deployment data is essential to policymakers and consumers, both business and residential.¹ The Form 477 deployment data is used for multiple purposes and ultimately can influence the focus and direction of FCC and other

¹ *Modernizing the FCC Form 477 Data Program*, Further Notice of Proposed Rulemaking, para. 8. WC Docket No. 11-10 (rel. Aug. 4, 2017) ("FNPRM"); see also Comment of Rural Wireless Association, Inc., at 1, WC Docket No. 11-10 (filed Oct. 10, 2017) at 1-2.

infrastructure deployment efforts targeting unserved or underserved areas.² As reflected in the FNPRM, inconsistencies among carrier methods of generating coverage data and the lack of transparency of carrier measurement and definitional approaches regarding minimum advertised speeds and coverage make it extremely difficult to verify actual implementation and compare services among providers.

Deere agrees with those commenters that support greater transparency in the data gathering process and data collected, especially with respect to mobile services data.³ FCC Form 477 data should be made publicly available to bring greater accountability to the process and generate strong public confidence in the published information regarding speed and availability. Access to FCC Form 477 data will be critical to facilitate public verification of actual broadband speeds, prices, availability and competition. Without such data, policymakers as well as consumers, both business and residential, are at a distinct disadvantage when assessing coverage and speed of mobile service in a given area and verifying providers' marketing representatives. While Deere supports greater public disclosure of FCC Form 477 data, Deere notes the important concerns expressed by carriers in the comments regarding potential commercial harms that could arise from public disclosure.⁴ The Commission will need to balance these concerns with its priority in this proceeding: improving the value of the broadband data collected.

With respect to mobile services, greater uniformity and granularity in the coverage data reported is important to the agricultural community. Deere shares the view of the United States Cellular Corporation that it is essential that Form 477 data reflect uniform propagation models that show accurate coverage data. Deere previously supported using propagation maps reflecting a signal strength of -85 dBm RSSI (Relative Signal Strength Indicator) for the purpose of the Mobility Fund II.⁵ Based on Deere's experience with coverage measurements, the -85 dBm measure accurately reveals areas where service quality is insufficient.⁶ Deere agrees that it must be a top priority to refine the Form 477 process in order to accurately identify areas that have

² Deere has long been a proponent of retaining and expanding the Mobility Fund II and rules and policies that direct funding support to increase wireless coverage of rural America where people live, work and travel. See Comments of Deere & Co. in *Universal Service Reform - Mobility Fund*, WC Docket No. 10-90 (filed Apr. 26, 2017) ("Deere Mobility Fund II Comments").

³ See, e.g., Comments of Broadband Census LLC and Microbrand Media LLC, at 8, WC Docket No. 11-10 (filed Oct. 10, 2017) ("Broadband Census Comments"); Comments of United States Cellular Corporation, at 2-3, WC Docket No. 11-10 (filed Oct. 10, 2017) ("US Cellular Comments").

⁴ See Comments of CTIA, at 13-14, WC Docket No. 11-10 (filed Oct. 10, 2017) (subscribership information and propagation parameters should be confidential); Comments of T Mobile, Inc. at 13-14, WC Docket No. 11-10 (filed Oct. 10, 2017) (providers' Form 477 data should be kept confidential).

⁵ Deere Mobility Fund II Comments, at 7-8.

⁶ Based on the experience of Deere's Machine Knowledge Center in mapping wireless broadband coverage on cropland and rangeland where John Deere machines operate, an -85 dBm measure can be used to indicate a reliable signal for LTE data transfers in the range of three to five miles from a cellular tower.

poor mobile broadband coverage.⁷ “Overstatement of coverage in Form 477 data is particularly harmful to rural consumers living in areas with poor quality service, because it prevents additional investment with universal services support, perhaps forever.”⁸

Deere agrees that more granular data would “improve the Commission’s ability to provide more accurate mobile competition and analyses . . .”⁹ Mobile broadband data collected at the state level does not provide a meaningful picture of mobile service subscribership and Deere supports collection at a more disaggregated geographic level. Deere also encourages the Commission to continue to collect deployment data by technology and well as frequencies used.

For similar reasons, Deere urges the Commission to require some form of “on the ground” test data (via app or drive tests).¹⁰ Test results will help ensure the accuracy of coverage data showing the actual consumer experience. To date, it has been difficult to assess coverage because of the variability among carrier methods of calculation and the large areas purportedly covered. Deere is open to approaches that minimize the burden on carriers. Speed-test requirements must be carefully drawn so as not to swamp providers, especially smaller providers, with excessively burdensome requirements. If crowd-source data provides timely and accurate data, the FCC should accept such data.¹¹

⁷ See US Cellular Comments at 3 (FCC’s “first order of business” should be improving Form 477 process to accurately identify areas of poor mobile broadband coverage).

⁸ Id. For the Mobility Fund II, the Commission did not adopt a -85 dBm RSSI propagation model. Instead, providers were directed to submit to a one-time data collection. Order on Reconsideration and Second Report and Order, *Universal Service Reform – Mobility Fund*, WC Docket Nos. 10-90, WT Docket No. 10-208 at para. 28 (rel. Aug. 4, 2017). Deere is open to the suggestion that the Commission and stakeholders have an opportunity to assess whether those procedures in fact provided the extent and accuracy of data needed to identify underserved and unserved areas as a part of the process of considering a new FCC Form 477 propagation model parameter.

⁹ FNPRM at para. 27.

¹⁰ See Comments of Connected Nation, Inc. at 11, WC Docket No. 11-10 (filed Oct. 10, 2107) (“Connected Nation Comments”) (on the ground data is crucial to validate service and not overly burdensome to obtain).

¹¹ See US Cellular Comments at 4 (FCC should consider gathering drive test data through whatever sources are available).

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Finally, the Commission should retain the semi-annual data collection, rather than reduce it to an annual process. Broadband coverage, particularly mobile coverage, can change significantly within a single year and the additional data will enable customers and other stakeholders to identify changes in unserved and underserved areas and respond accordingly to continuing demand in a more accurate and timely manner.”¹²

Sincerely,

/s/

Mark N. Lewellen

Deere & Company
Manager, Spectrum Policy

¹² See also, Broadband Census Comments at 8 (retaining semi-annual requirement is vital to maintain up to date data); Connected Nation Comments at 20 (service availability landscape is constantly evolving); Comments of Open Technology Institute at New America, at 9, WC Docket No. 11-10 (filed on Oct. 10, 2017) (informed policymaking requires more than a yearly snapshot of market).