

July 20, 2015

**VIA ECFS**

Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12th Street SW  
Washington, DC 20554

Re: Ex Parte Communication, ET Docket 14-165; GN Docket No. 12-268

Dear Ms. Dortch:

This letter is submitted, pursuant to Section 1.1206(b)(1) of the FCC's rules, on behalf of the Wireless Medical Telemetry Service ("WMTS") Coalition to follow up its June 12, 2015 *ex parte* letter in the above-referenced dockets. In that letter (footnote 2), the WMTS Coalition informed the Commission that the Coalition, through its technical consultant Comsearch, and GE Healthcare were preparing the results of two more tests of potential interference to WMTS systems from unlicensed TV White Space devices. These tests were conducted at two separate hospitals in the Milwaukee area near GE Healthcare's headquarters, Froedtert Community Memorial Hospital ("Froedtert") and Wheaton Franciscan Healthcare – Franklin Hospital ("Wheaton"). By this letter, the Coalition submits the Comsearch and GE Healthcare test reports.

As the GE Healthcare reports discuss, test results at both Milwaukee area hospitals show that significant harmful interference can be caused to existing WMTS systems from even a single unlicensed device operating at the power level, separation distance and height authorized under the rules in proposed by the FCC in ET Docket No. 14-165. In the case of Froedtert, the interfering signal needed to be reduced by at least 1 dB and up to 11 dB from the FCC's proposed levels at numerous test locations to avoid electrocardiogram (ECG) waveform dropout;<sup>1</sup> and at one Wheaton test location the interfering signal needed to be reduced by 6 dB

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<sup>1</sup> GE Healthcare Froedtert Report at Table 4, page 15 of 16.

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from the FCC's proposed levels to avoid ECG waveform dropout.<sup>2</sup> Additionally, there were multiple test locations at both hospitals where the interfering signal could not be increased, meaning there was little to no margin left to protect the WTMS distributed antenna system ("DAS") from harmful interference.

The GE Healthcare reports further indicate that the conditions in the tests do not fully reflect realistic worst-case scenarios in several respects. For example, only a single interferer was simulated and the victim telemetry transmitters were not positioned at the true outer limit of coverage area. If interference was aggregated from multiple interferers and/or if the victim telemetry transmitters were placed exactly at the -95 dBm receive sensitivity limit rather than 10 dB above, the interferer EIRP would likely need to be reduced (or separation distance increased) even more to avoid prevent harmful interference.

The test reports of Comsearch demonstrate the wide variations in path loss even at the same hospital. For example, the results at Froedtert test site ## 5 and 10 show propagation over free space losses as low as 0.23 and 1.56 dB, respectively, while the values at other test sites at the same hospital are as high as 16 dB.<sup>3</sup> These Comsearch findings not only corroborate the conclusions of the GE Healthcare reports that "it is possible that free space or near free space path loss can be expected from unlicensed devices located outdoors at near ground level to the perimeter of a hospital [exterior],"<sup>4</sup> but further demonstrate that building penetration losses due to hospitals exterior walls and windows may approach or equal 0 dB in some situations. The data also support the WMTS Coalition's position that there are no "typical" hospitals for purposes of calculating building loss and that even the same hospital complex may utilize a variety of construction materials (for example, different wings built at different times) that cause variations in building loss.

Please contact the undersigned if you have any questions.

Respectfully submitted,

/s/

Lawrence J. Movshin

Timothy J. Cooney

Counsel to the WMTS Coalition

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<sup>2</sup> GE Healthcare Wheaton Test Report at Table 4, page 14 of 15.

<sup>3</sup> Comsearch Froedtert Report, Section 4.1 (numbered page 102, pdf page 105).

<sup>4</sup> See, e.g., GE Healthcare Froedtert Test Report at page 16 of 16.

WILKINSON ) BARKER ) KNAUER ) LLP

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cc: Mr. Julius Knapp  
Mr. Ira Keltz  
Mr. Hugh Van Tuyl  
Ms. Geraldine Matisse  
Ms. Aspasia Paroutsas