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October 6, 2017

VIA ELECTRONIC FILING (ECFS)

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

Re: Notice of *Ex Parte* Presentation
*TerreStar Corporation Request for Temporary Waiver of Substantial
Service Requirements*, WT Docket No. 16-290

Dear Ms. Dortch:

On October 5, 2017, on behalf of TerreStar Corporation (TerreStar), the undersigned and Douglas Brandon met with Erin McGrath, legal advisor for Commissioner O’Rielly, and Kevin Holmes, acting legal advisor for Commissioner Carr, to discuss TerreStar’s temporary waiver request in the above-referenced proceeding. The attached presentation was used to discuss TerreStar’s position.

In these meetings, TerreStar explained how grant of its temporary waiver request would serve the public interest. TerreStar plans to deploy a critical new wireless medical telemetry service (WMTS) for the commercial 1.4 GHz band, and this request for temporary waiver, supported by unaffiliated public interest organizations, would facilitate the pressing need for additional bandwidth for lifesaving WMTS applications. Consistent with the Commission’s standards for granting such waivers, any delays in the deployment of this service were due to circumstances beyond TerreStar’s control and that could not have reasonably been discovered by TerreStar until well into its license term. Upon discovery of the significant and unresolvable interference issues that derailed TerreStar’s initial deployment plan, TerreStar worked cooperatively with the WMTS industry and the FCC to develop a new plan for the 1.4 GHz spectrum.

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Pursuant to Section 1.1206 of the Commission's rules, we are filing an electronic copy of this letter in the above-captioned docket.

Respectfully submitted,

/s/ BRYAN N. TRAMONT

Bryan N. Tramont

Attachment

cc: Erin McGrath
Kevin Holmes



Public Interest Benefits of Waiver Grant

October 2017

Overview

- **Acquisition:** TerreStar acquired the spectrum in 2008 with a plan to deploy smart grid systems.
- **Medical Telemetry Interference Concerns:** Five years later, after significant planning and investment, Wireless Medical Telemetry Service (“WMTS”) interests alerted TerreStar that our planned and compliant operations would present a significant danger to existing and new WMTS deployments and to patient safety.
- **Innovative Solution in the Public Interest:** TerreStar worked diligently with WMTS interests and the FCC to arrive at a viable technical solution, which would create a critical new wireless medical telemetry application for commercial 1.4 GHz and address the pressing need for additional WMTS bandwidth.
- **Need for Regulatory Relief:** The unopposed requested waiver, consistent with the Commission’s policy goals, would safeguard WMTS, while quickly adding much needed capacity and functionality to medical telemetry networks.

TerreStar's Early Investment and Planning

- **June 2008** – TerreStar purchases the 1.4 GHz spectrum that had been auctioned by the FCC in April 2007 with the intent to use it in its planned satellite/terrestrial mobile network.
- **June 2009** – Primary Federal incumbents finally cleared from the band; TerreStar begins investigation of use for smart grid applications.
- **2009 to 2012** – TerreStar and its lessee work closely with standards-setting bodies, device and component manufacturers (e.g. Airspan, Cisco) and utilities to set standards and create an ecosystem for smart grid networks, including 8 separate device classes built and certified, all consistent with existing technical rules.
- **May 2012** – TerreStar enters into spectrum lease arrangements with FirstEnergy Service Company to be deployed in a trial of its Smart Grid Modernization Initiative project.
- **March 2013** – 802.16 Air Interface Standard for High Reliability Networks released which codifies the work done on WiGRID, an optimized profile for utility smart grid applications.
- **Fall 2013** – TerreStar meets with FCC staff to discuss a regulatory change normalizing power limits across the 1.4 GHz band and the FCC suggested meeting with WMTS stakeholders.

WMTS Design Evolution Over the Past Decade

- After 2008, WMTS service evolved substantially, changing its interference profile.
 - The increased use of ultra-wide passband filters in the WMTS receiver made the receiver susceptible to “desense” from emissions in the adjacent band.
 - The change to very low power WMTS transmitters allowed for extended battery life of the patient worn device and higher frequency reuse factors, but the resulting weak signal worsens the “desense” situation.
- The above WMTS design decisions were not known by TerreStar until they were integrated into the first large-scale WMTS deployments after certification of equipment in 2011.
- Because they were not launched until 2011, TerreStar’s reasonable due diligence could not have revealed the interference issue.

The Two Compliant Spectrum Plans Unexpectedly Collide

- **Early 2014** – At the FCC’s suggestion, TerreStar contacts WMTS industry representatives (including Philips Healthcare, GE Healthcare, and ASHE) with deployments directly adjacent to its initial and planned smart-grid deployments to discuss other technical issues. TerreStar then first learns that its high-power, smart-grid operations could cause significant harmful interference to new adjacent-band medical telemetry systems and threaten patient safety.
- **March 2014** – TerreStar meets with FCC staff to discuss potential technical rule changes in the commercial 1.4 GHz band.
- **Mid 2014** – TerreStar completes laboratory and field tests that confirm that, even if compliant with the Commission’s rules that apply to the company’s 1.4 GHz band, smart grid operations in TerreStar’s licensed spectrum would be expected to have a significant, deleterious impact on existing and future life-critical WMTS devices and systems at health care facilities, jeopardizing patient safety.
 - Due to the spectrum adjacency, a compliant smart-grid network would likely threaten patient safety at nearly 2000 registered health care facilities using 1.4 GHz WMTS.
- **Mid 2014** – TerreStar explores alternate uses that protect WMTS, focusing on downlink-only operations in its continuing effort to develop its licensed spectrum.
- **February to August 2015** – TerreStar concludes that downlink-only doesn’t effectively protect WMTS; TerreStar reassesses its options for the 1.4 GHz spectrum, including the possibility of deploying commercial medical telemetry systems.

An Elegant Solution for All Parties: Pursuit of Wireless Medical Telemetry

- **Fall 2015** – TerreStar begins to pursue its current plan for wireless medical telemetry use of its licensed 1.4 GHz spectrum and actively prepares for WMTS deployment by meeting and working cooperatively with WMTS vendors and ASHE, and moving forward with initial application development and early testing.
- **December 2015 to July 2016** – TerreStar meets with FCC staff to discuss proposed wireless medical telemetry use of its spectrum, and subsequently consults with FCC staff prior to submitting waiver request.
- **March 2016** – TerreStar formally informs WMTS industry representatives that it is no longer pursuing smart-grid implementation and begins working closely with them to develop a new commercial WMTS that would use the 1.4 GHz. TerreStar worked to develop a lease and registration system for spectrum access that provides equal access to commercial spectrum without the requirement for health care facilities to alter their procurement practices.
- **August 2016** – TerreStar submits the waiver request.
- **March to April 2017** – TerreStar engages in extensive, good faith negotiations and agrees to a number of performance milestones that would be included as conditions on a waiver grant.
- **April 2017** – TerreStar files license renewal applications for its commercial 1.4 GHz licenses.

Grant of TerreStar's Waiver Is Consistent with the FCC's New Policies

- TerreStar conducted due diligence, developed a business plan, invested in equipment, and signed up customers – consistent with FCC technical rules – designed to meet buildout via smart grid network.
- WMTS's evolution of its service was beyond TerreStar's control – and alters the public interest calculus.
- TerreStar then worked cooperatively with WMTS and the FCC to develop a new WMTS service with new equipment, power levels, and aggressive timelines for deployment.

Grant of Waiver Advances Public Interest in Medical Telemetry

- Significantly enhanced WMTS capacity – helps fulfill new Department of Veterans Affairs obligations to encrypt patient data without suffering a loss of patient beds covered.
- Efficient and easy to use long-term leasing.
- Readily available equipment.
- Secure “spectrum home” for medical telemetry especially important due to risks to Channel 37 and unlicensed operations.