

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

In the Matter of	)	
	)	
TerreStar Corporation Request	)	WT Docket No. 16-290
For Temporary Waiver of	)	
Substantial Service Requirements	)	

**REPLY COMMENTS OF TERRESTAR CORPORATION**

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**I. Introduction and Summary**

TerreStar Corporation (“TerreStar”) hereby replies to comments on its request for a thirty-six month waiver of its substantial service obligations in the commercial 1.4 GHz band.<sup>1</sup> TerreStar has demonstrated that it satisfies the Commission’s criteria for a temporary substantial service waiver and appreciates the strong support for this request from GE Healthcare (“GEHC”) and Philips Healthcare (“Philips”). By granting this thirty-six month waiver, the Commission will advance the development of wireless medical telemetry at 1.4 GHz, significantly enhancing the standard of patient care at healthcare facilities around the United States, and further the public interest.

The American Society for Healthcare Engineering (“ASHE”) of the American Hospital Association also favors the use of the commercial 1.4 GHz band for wireless medical telemetry, but raises certain concerns with respect to TerreStar’s request. In this reply, TerreStar provides reassurance on these issues and further detail on various aspects of its proposal, including its

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<sup>1</sup> TerreStar Corporation Request for Temporary Waiver of Substantial Service Requirements, WT Docket No. 16-290 (Aug. 12, 2016) (“Waiver Request”); *Wireless Telecommunications Bureau Seeks Comment Regarding TerreStar Corporation’s Request for Relief of Certain 1.4 GHz Construction Requirements*, Public Notice, WT Docket No. 16-290, DA 16-1029 (rel. Sep. 14, 2016) (“Public Notice”).

open, non-exclusive spectrum leasing approach, the mitigation of any new administrative and financial burdens for hospitals, and the non-intrusive nature of its spectrum oversight.

## **II. GEHC and Philips Agree That a Commission Grant of TerreStar’s Request for Temporary Waiver Would Generate Substantial Public Interest Benefits**

TerreStar is the sole, nationwide licensee in the commercial wireless 1.4 GHz band at 1390-1395 MHz/1432-1435 MHz. In early 2014, TerreStar had plans to undertake the widespread deployment of a high-power 802.16 WiMAX network for smart grid applications on its licensed spectrum. In 2014 discussions, however, ASHE, GEHC, Philips, and other parties voiced serious concerns that, although a high-power 802.16 WiMAX network might be permitted under existing Part 27 rules, out of band emissions from a 1.4 GHz WiMAX network would threaten substantial interference to life-critical wireless medical telemetry service (“WMTS”) applications. After additional consultations with GEHC and Philips during 2014-2016, TerreStar decided to move forward with a different business plan at 1.4 GHz. Given (i) the adjacency of TerreStar’s licensed spectrum to spectrum bands dedicated to WMTS and (ii) technical and market conditions in the 1.4 GHz band, TerreStar now believes that long-term wireless medical telemetry use of its spectrum will generate public interest benefits far greater than those from any other presently feasible use of this band. As described in the Waiver Request, the resulting substantial increase in wireless medical telemetry capacity at 1.4 GHz will enhance the reliability of life-critical medical telemetry transmissions, foster innovation, and improve the quality of medical care for millions of patients at hospitals and other healthcare facilities throughout the country.<sup>2</sup>

Wireless medical telemetry operations in TerreStar’s spectrum are possible, however, only if TerreStar and future wireless medical telemetry users are provided sufficient time and

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<sup>2</sup> Waiver Request at 1-2, 20.

regulatory certainty to implement this deployment. TerreStar’s current substantial service deadline for each of its sixty-four geographic-area licenses at 1.4 GHz is April 23, 2017. While initial wireless medical telemetry deployments in TerreStar’s spectrum could occur as soon as 2018, a robust, national build-out will ultimately be necessary to meet the Commission’s substantial service requirements. As TerreStar explained in its Waiver Request, several overlapping developmental phases for wireless medical telemetry at 1.4 GHz will likely take more than three years to complete. Given this developmental timeline, TerreStar requests that the Commission grant a temporary, thirty-six month waiver of the Commission’s substantial service deadline, until April 23, 2020.

In their comments, GEHC and Philips both urge the Commission to grant TerreStar’s request for temporary waiver of its substantial service requirements.<sup>3</sup> TerreStar greatly appreciates this support, which comes from leading manufacturers of wireless medical telemetry equipment who have deep expertise on the medical telemetry ecosystems in the dedicated WMTS bands. TerreStar has worked cooperatively and extensively with these companies over the past two years, and their input has played an important role in TerreStar’s wireless medical telemetry plans at 1.4 GHz.<sup>4</sup> In its filing, GEHC points out that TerreStar’s proposed framework at 1.4 GHz “will help meet the nation’s growing demand for spectrum to support safety-of-life wireless medical telemetry operations, such as heart rate and oxygen saturation monitoring.”<sup>5</sup>

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<sup>3</sup> Comments of GE Healthcare, WT Docket No. 16-290 (Oct. 4, 2016) (“GEHC Comments”); Letter from Delroy Smith, Philips Healthcare, to Marlene H. Dortch, WT Docket No. 16-290 (Oct. 4, 2016) (“Philips Comments”).

<sup>4</sup> Through its discussions with GEHC and Philips, TerreStar has gained an understanding of the growing need and demand for wireless medical telemetry spectrum, the existence of readily compatible telemetry equipment at 1.4 GHz, and the best approach for deploying medical telemetry systems at healthcare facilities and elsewhere under the Commission’s Part 27 rules.

<sup>5</sup> GEHC Comments at 1.

Similarly, Philips states that “[t]he waiver and TerreStar’s work would significantly increase the supply of spectrum for 1.4 GHz medical telemetry and allow a substantial expansion of WMTS capacity that today is foreclosed by spectrum restraints.”<sup>6</sup>

In addition to recognizing these public interest benefits, both GEHC and Philips confirm the need for a thirty-six month waiver of the Commission’s substantial service rules. GEHC observes that “[i]t could take up to three years for TerreStar, equipment manufacturers, and healthcare providers to develop, test, and deploy wireless medical telemetry systems that can viably operate on TerreStar’s 1.4 GHz spectrum.”<sup>7</sup> Philips also “agree[s] with TerreStar that development of WMTS in its licensed spectrum likely will take three years, as TerreStar, equipment manufacturers, and healthcare providers work through a number of complex processes that must be completed to realize this deployment.”<sup>8</sup> If the Commission follows the advice of these manufacturers and grants the requested thirty-six month waiver, TerreStar anticipates that the deployment of wireless medical telemetry equipment at a substantial percentage of major healthcare facilities in the United States (likely including numerous healthcare facilities in each economic area grouping (EAG) and major economic area (MEA) license area) – in combination with medical telemetry use in mobile environments, residential locations, research and development facilities, and other innovative settings – will satisfy the substantial service requirement for each of its commercial 1.4 GHz licenses by the new April 23, 2020 deadline.

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<sup>6</sup> Philips Comments at 2.

<sup>7</sup> GEHC Comments at 4.

<sup>8</sup> Philips Comments at 2.

### **III. TerreStar Is Working with ASHE Regarding the Potential Use of TerreStar's Licensed Spectrum for Wireless Medical Telemetry Operations**

In its comments on the Waiver Request, ASHE welcomes “TerreStar’s recognition of the vital importance of WMTS systems in significantly enhancing the standard of patient care,” as well as “TerreStar’s recognition of the likely spectrum shortage facing WMTS licensees, and of the substantial benefit that can be realized by making the 1390-1395 MHz and 1432-1435 MHz bands available for use in WMTS systems.”<sup>9</sup> ASHE also believes that “TerreStar’s proposal to make its 1.4 GHz band available for WMTS nationwide certainly would alleviate . . . potential concerns” regarding limited spectrum capacity for WMTS.<sup>10</sup> TerreStar appreciates ASHE’s assessment of TerreStar’s recent efforts and the potential public interest benefits of wireless medical telemetry in the commercial 1.4 GHz band.

ASHE generally supports the use of the 1.4 GHz band for wireless medical telemetry and does not oppose a grant of relief to TerreStar, but raises some concerns about TerreStar’s waiver request. In this reply, TerreStar provides additional detail on its open, non-exclusive spectrum leasing approach, the mitigation of administrative and financial burdens for hospitals, and the non-intrusive nature of its spectrum oversight. TerreStar expects that ASHE and its members will be reassured by this information.

TerreStar recognizes ASHE’s important role as a principal advocate for its member hospitals and healthcare entities in this and other regulatory proceedings. While resource constraints may have previously prevented ASHE from becoming fully engaged and focused on the specifics of TerreStar’s proposed medical telemetry framework at 1.4 GHz, TerreStar anticipates that, going forward, these parties will have a productive ongoing dialogue. TerreStar

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<sup>9</sup> Comments of the American Society for Healthcare Engineering of The American Hospital Association, WT Docket No. 16-290, at 2 (Oct. 4, 2016) (“ASHE Comments”).

<sup>10</sup> *Id.*

notes, however, that its Waiver Request satisfies the requirements for a temporary, thirty-six month waiver of its substantial service requirements,<sup>11</sup> and ASHE's concerns do not warrant denial or delay of a Commission grant.

TerreStar expects that one issue in the parties' ongoing discussions will be ASHE's potential role as frequency coordinator in the commercial 1.4 GHz band. In its Waiver Request, TerreStar expressed hope that it would contract with ASHE and Comsearch to establish and administer a national registration and frequency coordination framework for wireless medical telemetry systems in its licensed 1.4 GHz spectrum,<sup>12</sup> since this framework would be similar to the procedures in place today in the dedicated WMTS bands for which ASHE serves as the exclusive frequency coordinator. If ASHE is concerned about the potential burden of serving in that role, however, TerreStar will arrange to work with a different experienced and competent entity to handle registration and coordination in the commercial 1.4 GHz band. There are multiple Commission-recognized frequency coordinators for other bands. TerreStar notes, for example, that in the frequency band designated for Medical Body Area Networks ("MBAN") at

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<sup>11</sup> Under the Commission's wireless service rules, to obtain a waiver of the substantial service requirements in the commercial 1.4 GHz band, a licensee must demonstrate either that the underlying purpose of the substantial service rule would not be served or would be frustrated by applying the rule to its case and the requested waiver would be in the public interest, or that, in view of unique or unusual factual circumstances of its case, applying the substantial service rule would be inequitable, unduly burdensome, or contrary to the public interest. 47 C.F.R. §§ 1.925(b)(3)(i), (ii). As described in the Waiver Request and these Reply Comments, given the unique adjacency of TerreStar's licensed spectrum and the 1.4 GHz WMTS bands and the extraordinary public interest benefits from WMTS use of TerreStar's frequencies, denial of this waiver request would be "contrary to the public interest."

<sup>12</sup> Waiver Request at 19. Comsearch is a global provider of spectrum management and wireless engineering services, and has offered frequency coordination services for wireless communications in numerous spectrum bands. ASHE has contracted with Comsearch for frequency coordination in the designated WMTS spectrum.

2.3 GHz, the Enterprise Wireless Alliance (“EWA”) is the frequency coordinator for MBAN operations.<sup>13</sup>

#### **IV. TerreStar’s Proposed Spectrum Leasing Framework for Wireless Medical Telemetry in Its Licensed Spectrum Is Flexible and Would Not Impose Material Administrative or Financial Burdens on Healthcare Facilities and Providers**

In its comments, ASHE states that TerreStar’s spectrum leasing approach is complex and that the proposed implementation of wireless medical telemetry at 1.4 GHz would impose excessive administrative and financial burdens on healthcare facilities and providers.<sup>14</sup> ASHE should be reassured that this is not the case. The flexible nature of TerreStar’s proposed framework will enable healthcare entities to avoid any material burdens or costs.

In the Waiver Request, TerreStar indicated that it will enter into individual spectrum manager leasing arrangements at 1.4 GHz with a mix of healthcare providers, healthcare facilities, and wireless medical telemetry equipment manufacturers. In light of ASHE’s spectrum leasing concerns and TerreStar’s continuing dialogue with medical telemetry equipment manufacturers, TerreStar now expects that GEHC, Philips, and other equipment manufacturers and vendors will in most instances be the entities that enter into these spectrum manager lease arrangements. The role of spectrum manager lessee is appropriate for medical telemetry equipment manufacturers, since it is the manufacturer that typically oversees the engineering, installation, and maintenance of wireless medical telemetry systems deployed at healthcare facilities. Thus, while hospitals and healthcare facilities will be free to enter into individual spectrum manager lease arrangements directly with TerreStar, they will not *have* to do so to use medical telemetry systems operating in the commercial 1.4 GHz band. Healthcare

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<sup>13</sup> See *Wireless Telecommunications Bureau Announces that the Enterprise Wireless Alliance May Begin Frequency Coordination of MBAN Equipment*, Public Notice, 30 FCC Rcd 12367 (WTB 2015).

<sup>14</sup> ASHE Comments at 2-4.

facilities will be able to avoid the “dual licensing system” that ASHE says would be unworkable for these entities.

Another key aspect of TerreStar’s proposed framework is that its spectrum manager leasing arrangements with equipment manufacturers and other entities will be *non-exclusive*. Consistent with the Commission’s spectrum leasing orders and policies, TerreStar expects to enter into multiple spectrum manager leases covering the same frequencies and geographic areas, with the multiple lessees in those areas sharing that spectrum.<sup>15</sup> Furthermore, TerreStar commits that it will enter into a spectrum manager leasing arrangement in the commercial 1.4 GHz band with any equipment manufacturer or other qualified healthcare entity that (i) meets the Commission’s eligibility and qualification requirements, (ii) consents to certain basic conditions regarding wireless medical telemetry use, and (iii) otherwise agrees to reasonable terms and conditions for such lease arrangements. Given this open, non-exclusive spectrum leasing

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<sup>15</sup> In its 2004 *Second Report and Order* in its secondary markets proceeding, the Commission “clarif[ied] that parties may enter into spectrum leasing arrangements in which licensees and spectrum lessees share use of the same spectrum, on a non-exclusive basis, during the term of the lease. For example, a licensee and spectrum lessee may enter into a spectrum manager or *de facto* transfer lease in which use of the same spectrum is shared with each other by employing opportunistic devices. In another variation, a licensee could enter into a spectrum manager lease with one party that has access to the spectrum on a priority basis, while also leasing use of the same spectrum to another party on a lower-priority basis . . . .” *Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets*, Second Report and Order, Order on Reconsideration, and Second Further Notice of Proposed Rulemaking, 19 FCC Rcd 17503, ¶ 88 (2004) (“*Second Report and Order*”). See also *Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets*, Third Report and Order, 22 FCC Rcd 7209, ¶ 3 (2007) (stating that, in the *Second Report and Order*, the Commission “clarified that its spectrum leasing rules permit ‘dynamic’ spectrum leasing arrangements, whereby licensees and spectrum lessees may enter into more than one spectrum leasing arrangement involving the shared use of the same spectrum.”); *Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets*, Notice of Inquiry, 25 FCC Rcd 16632, ¶ 38 & n.53 (2010) (stating that in the *Second Report and Order*, “the Commission clarified that licensees and spectrum lessees may enter into a wide variety of ‘dynamic’ spectrum leasing arrangements that enable users to share use of the licensed spectrum based on the particular parameter and arrangements that the licensee and spectrum lessee(s) have agreed upon.”).

approach, there should be no concern that a spectrum manager lessee (whether an equipment vendor or other entity) would gain a “*de facto* monopoly” over wireless medical telemetry at 1.4 GHz in any geographic area,<sup>16</sup> or that there would otherwise be adverse competitive effects on the wireless medical telemetry manufacturing sector.<sup>17</sup> In addition, as a result of this open leasing approach, TerreStar expects that its spectrum manager lease arrangements with equipment manufacturers and vendors will collectively cover the populated geography of the United States, and will generally extend for the useful life of the installed wireless medical telemetry equipment. Accordingly, healthcare facilities *everywhere* should be able to contract with vendors for the installation and secure, reliable use of wireless medical telemetry systems at 1.4 GHz, just as they do today in the dedicated WMTS bands.

TerreStar’s spectrum manager leases will also require that lessees participate in TerreStar’s national registration and frequency coordination framework, whether it is administered by ASHE or a different entity. Before deploying wireless medical telemetry equipment in the commercial 1.4 GHz band, the spectrum lessee will be required to register in TerreStar’s commercial 1.4 GHz database.<sup>18</sup> As described in the Waiver Request, TerreStar’s database will provide spectrum manager lessees and other parties with the information necessary to coordinate and avoid interference between different wireless medical telemetry systems at 1.4

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<sup>16</sup> See GEHC Comments at 4 (expressing concern that TerreStar would “enable a *de facto* monopoly in a particular geographic area by leasing spectrum that could be used by a number of healthcare providers to only one equipment manufacturer”).

<sup>17</sup> See ASHE Comments at 4 (stating that TerreStar’s proposed framework might “adversely affect the competitive nature of the WMTS manufacturing sector”).

<sup>18</sup> TerreStar understands that in the dedicated 1.4 GHz WMTS band, it is typically the equipment manufacturer or vendor that registers the WMTS equipment and pays the associated registration/coordination fees, rather than the healthcare facility.

GHz.<sup>19</sup> In the rare event of interference or frequency disputes between medical telemetry users, TerreStar will work with the commercial 1.4 GHz frequency coordinator to resolve such disagreements. Thus, under TerreStar's proposal, the administrative burdens on hospitals and other healthcare facilities will be virtually identical to the burdens these entities face under Part 95 in the dedicated WMTS bands.

ASHE also worries that TerreStar's proposal would impose significant financial costs on hospitals,<sup>20</sup> but healthcare entities using TerreStar's spectrum will generally be subject only to costs equivalent to those incurred under the existing Part 95 framework. Beyond their equipment expenses, healthcare entities will pay at most registration and coordination fees associated with TerreStar's 1.4 GHz database. These fees will be determined by market forces and are likely to mirror the fees ASHE currently collects for registration and coordination in the dedicated WMTS bands. If the equipment vendor pays the required registration/coordination fees, then the healthcare facility will avoid this cost altogether. Meanwhile, for hospitals and qualified healthcare entities interested in entering into individual spectrum manager leases, TerreStar

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<sup>19</sup> Parties using wireless medical telemetry equipment within healthcare facilities (*i.e.*, devices operating in TerreStar's spectrum at 1390-1392 MHz/1432-1435 MHz) will indicate the location of those facilities, and provide such information as manufacturer, model number, operating frequency, emission type, and other relevant technical parameters. Wireless medical telemetry operators using equipment outside healthcare facilities (including devices operating at 1392-1395 MHz, where operations in healthcare facilities are prohibited) will specify the location and nature of the operating environment, as well as provide appropriate technical information. As the Waiver Request described, the use of TerreStar's commercial 1.4 GHz spectrum will enable wireless medical telemetry systems to expand into mobile operation, home usage, nursing facilities, and other locations where there is a growing need for such wireless medical functionality but Part 95 WMTS is not permitted.

<sup>20</sup> ASHE Comments at 4.

expects to charge spectrum lease fees that are designed only to cover its own administrative costs for such arrangements.<sup>21</sup>

**V. TerreStar’s Regulatory Oversight Obligations as a Spectrum Manager Lessor Will Not Interfere With Day-to-Day Operations at Hospitals and Other Healthcare Facilities**

ASHE also expresses fear that, as the 1.4 GHz licensee and spectrum manager lessor, TerreStar would “be involved in any element of the operation of any WMTS system” and would potentially “dictate the operation of WMTS facilities.”<sup>22</sup> This concern is unfounded. While as a spectrum manager lessor TerreStar is subject to various requirements regarding the use of its licensed spectrum, these obligations will not interfere with day-to-day operations at hospitals and other healthcare facilities.

TerreStar appreciates that hospitals and healthcare facilities do not want outside involvement in their internal operations, including their operation of wireless medical telemetry equipment. At the same time, in order for TerreStar’s commercial 1.4 GHz spectrum to be used for wireless medical telemetry and help alleviate the shortage of spectrum for this service, TerreStar must meet the basic obligations identified in the Commission’s secondary market rules for spectrum manager lessors.<sup>23</sup> Among other things, TerreStar is required to have a reasonable degree of working knowledge of the lessees’ activities, an ability to resolve interference issues, and the right to ensure lessee compliance with the Commission’s rules.<sup>24</sup>

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<sup>21</sup> In its comments, GEHC states that the rates that TerreStar charges healthcare providers for access to the commercial 1.4 GHz band must be reasonable. GEHC Comments at 4. TerreStar will meet this “reasonableness” standard not only for spectrum manager leases with hospitals and other healthcare facilities, but also for spectrum manager leases with equipment manufacturers and other qualified entities.

<sup>22</sup> ASHE Comments at 4.

<sup>23</sup> 47 C.F.R. § 1.9020.

<sup>24</sup> Waiver Request at 18.

Once wireless medical telemetry systems at 1.4 GHz are deployed in the field, however, TerreStar's fulfillment of these regulatory obligations will be minimally burdensome and intrusive for hospitals and other healthcare facilities. The proposed registration and coordination database at 1.4 GHz will facilitate TerreStar's oversight and working knowledge of wireless medical telemetry activities on its spectrum, without affecting hospitals' daily activities. Moreover, wireless medical telemetry equipment at 1.4 GHz is highly unlikely to raise regulatory compliance issues, given the extremely low-power nature of wireless medical telemetry compared to the Commission's far more liberal Part 27 power limits. In practice, TerreStar would become involved only in the highly unlikely event that (i) a hospital's medical telemetry system is operating materially outside its design parameters, (ii) that system is experiencing or causing harmful interference from or to other systems or services, and (iii) neither the equipment vendor, spectrum lessee, nor the healthcare facility resolves this problem expeditiously. In this improbable scenario, TerreStar's obligation would be to address these spectrum issues with and through the lessee.

## **VI. Conclusion**

ASHE asked the Commission to grant a seven-month extension of TerreStar's substantial service deadline, to December 31, 2017, to give interested parties and the Commission sufficient time to address the concerns that ASHE has identified.<sup>25</sup> ASHE stated that this approach would allow interested parties to identify the most appropriate means of utilizing the commercial 1.4 GHz band for wireless medical telemetry. In TerreStar's view, ASHE's proposed interim waiver is unnecessary. As these Reply Comments explain, ASHE's concerns regarding TerreStar's proposal – including spectrum leasing, registration and coordination, and TerreStar's role vis-à-

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<sup>25</sup> ASHE Comments at 5-6.

vis hospital operations – are unfounded. A multi-month negotiation should not be necessary to resolve whatever outstanding issues may still exist between the parties after consideration of TerreStar’s proposal as clarified both in this reply and in the direct discussions between TerreStar and ASHE.

Certainly, following almost two years of consultations with GEHC, Philips, and other members of the wireless medical telemetry community, TerreStar is eager to deploy wireless medical telemetry systems in its licensed 1.4 GHz spectrum as soon as possible. The grant of ASHE’s proposed seven-month waiver would only delay TerreStar’s efforts, since this truncated waiver would fail to provide TerreStar, equipment manufacturers, and other wireless medical telemetry interests with sufficient regulatory certainty to begin this resource-intensive, multi-year implementation. As TerreStar has described, a robust wireless medical telemetry deployment in each of TerreStar’s license areas will require the completion of several complex developmental phases, including increasing the frequency range of existing WMTS devices, safety and efficacy testing, equipment certification, and system installation. While the time frames for these respective phases will overlap, altogether these processes will likely take more than three years to complete industry-wide.<sup>26</sup> Given this developmental timeline, GEHC and Philips agree that TerreStar’s proposed thirty-six month waiver is the appropriate relief.

Significantly, without the additional time and regulatory certainty needed to implement wireless medical telemetry at 1.4 GHz, TerreStar will soon be compelled to shift gears and move forward aggressively with new high-power 802.16 WiMAX smart grid deployments at 1390-1395 MHz/1432-1435 MHz, the only proven application in this spectrum. Even operating in full compliance with the Commission’s Part 27 technical rules, these WiMAX facilities at 1390-1395

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<sup>26</sup> Waiver Request at 26-27.

MHz/1432-1435 MHz would threaten harmful interference to adjacent-band WMTS systems in hospitals and other health facilities, a reality that TerreStar first heard in its discussions with medical telemetry interests more than two years ago.<sup>27</sup> TerreStar has been working responsibly to avoid such a scenario.

In addition to heightening the risk of harmful interference to WMTS, a failure to grant TerreStar's requested relief would miss an extraordinary – and likely unique – opportunity to expand wireless medical telemetry capacity and benefit millions of patients, hospitals, and other healthcare facilities. All the parties in this proceeding agree that there is insufficient spectrum available to meet the burgeoning demand for wireless medical telemetry.<sup>28</sup> Unfortunately, in the current environment, there is no identifiable source of additional, dedicated WMTS spectrum. The United States has already allocated more spectrum to WMTS than any other country, and a new allocation to WMTS may never be possible given continuous regulatory and commercial pressures to designate additional spectrum for mobile broadband operations. Thus, the use of TerreStar's licensed commercial spectrum for wireless medical telemetry likely represents the last, best chance to add much-needed, long-term capacity for these life-critical applications and improve the standard of care for patients across the United States. TerreStar looks forward to working with the Commission as well as with ASHE, GEHC, Philips and other medical telemetry stakeholders to expeditiously realize this important goal.

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<sup>27</sup> Waiver Request at 22-23. These high-power WiMAX systems might also threaten detrimental interference to a number of other services adjacent to or near TerreStar's licensed 1.4 GHz spectrum, including Federal/aeronautical telemetry at 1435-1525 MHz, Telemetry service below 1432 MHz, Radio Astronomy at 1350-1400 MHz, and Federal radar systems at 1300-1390 MHz. *Id.* at 23-26.

<sup>28</sup> Waiver Request at i, 20, and Exhibit A; *see also* ASHE Comments at 2.

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TerreStar is working with ASHE to address its concerns and appreciates the supportive comments of GEHC and Philips in this proceeding. TerreStar satisfies the Commission's requirements for a waiver and requests that the Commission temporarily waive the substantial service requirement for its sixty-four geographic-area licenses in the commercial 1.4 GHz band for thirty-six months, until April 23, 2020.

Respectfully submitted,

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