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

Ex Parte

Re: Notice of Ex Parte Presentation, Higher Ground LLC Blanket License Application for C-band Mobile Earth Terminals IBFS File No. SES-LIC-20150616-00357

Dear Ms. Dortch:

The Utilities Technology Council ('UTC') provides the following written *ex parte* presentation in support of the Petition to Deny and the Opposition filed against the above-referenced application and waiver request of Higher Ground LLC, which seeks to operate a nationwide mobile network in the 5925-6425 MHz band (6 GHz band).¹ As more fully described below, the 6 GHz band is allocated for private operational fixed services and is heavily used by utilities to support mission critical voice and data communications.

UTC is concerned that the proposal by Higher Ground threatens to cause significant harmful interference to incumbent utility operations in the 6 GHz band, undermining the reliability of mission critical communications that ensure the safe, secure and reliable delivery of essential energy and water services.. Further, UTC agrees with the concerns of the Fixed Wireless Communications Coalition (FWCC) and CenturyLink that:

- 1) Higher Ground should pursue a petition for rulemaking rather than a waiver for authorization from the FCC to operate its mobile network;
- 2) Higher Ground has not justified its need to use the 6 GHz band and that there are other bands that would be more suitable;
- 3) Higher Ground has not demonstrated that it would not cause harmful interference to incumbent microwave operations in the 6 GHz band; and
- 4) Higher Ground has not demonstrated that the potential for interference can be mitigated and that the resulting interference would be traceable by incumbent fixed microwave systems.²

Therefore, UTC supports the Petition to Deny and the Opposition, and it urges the Commission to proceed, if at all, through a rulemaking proceeding, instead of considering the application and the waiver request by Higher Ground.

¹ See Petition to Deny of the Fixed Wireless Communications Coalition (hereinafter "FWCC"), IBFS File No. SES-LIC-20150616-00357 (Sept. 11, 2015); Comments of CenturyLink in Opposition to Application, IBFS File No. SES-LIC-20150616-00357 (Sept. 10, 2015).

² *Id.*

I. Introduction and Background

Established in 1948, UTC is the trade association for the communications and information technology interests of the nation's electric, gas and water utilities, pipeline companies and other critical infrastructure industries.³ Its members include large investor-owned utilities who serve millions of customers in multi-state service territories, and smaller municipal and cooperatively-organized utilities who may serve only a few thousand customers in remote areas and communities across the country. These members all use communications in support of their core electric, gas and water services. These communications systems are extensive and diverse, including wireline and wireless technologies – including microwave communications systems in the 6 GHz band.

Utilities use the 6 GHz band for a variety of mission critical operations to support the safe, secure and reliable delivery of essential electric, gas and water services. These systems need to meet high standards of performance and service reliability. Any failure of their operations can have severe and widespread consequences for public and worker safety, as well as operational integrity and security. The microwave systems serve as the backbone for a variety of utility applications, such as supervisory control and data acquisition (SCADA) networks that utilities use to monitor and control substations and valves, as well as security and transfer-trip protection circuits that protect against external threats and isolate faults on the grid. These microwave systems also support voice applications, including utility nuclear emergency telecommunications systems. These microwave systems are used for both primary and redundant communications. As such, interference to these 6 GHz microwave systems is a major concern for utilities and the millions of customers they serve.

Utilities have significant systems in the 6 GHz band. The vast majority of the thousands of licenses in the band are held by utilities, and these licensed systems have many more links that traverse extensive areas. Utilities rely heavily on this band because it not only provides backhaul capacity, but it is also well-suited for the large geographic areas that utilities need to serve, providing point-to-point communications between and among critical utility assets. In addition to the sheer magnitude of these networks, it is important for the Commission to recognize that many utilities migrated to the 6 GHz band after the FCC reallocated the 2 GHz microwave band for Personal Communications Service (PCS) and Mobile Satellite Services (MSS). Having been forced to relocate already, utilities should not be displaced by Higher Ground's proposed mobile use of the band. Finally, utilities lack reasonable alternatives to these microwave systems to serve rural areas, which is exactly where Higher Ground intends to operate. As such, the 6 GHz band serves as an essential source of communications and is heavily used by the utility industry.

II. The Application and Waiver by Higher Ground is Procedurally Improper and Substantively Defective and Should be Denied.

Higher Ground attempts to achieve through a rule waiver what it should request through a petition for rulemaking. That said, its request fails to meet the requirements for a rule waiver because Higher Ground has not demonstrated that the underlying purpose of the rule would be frustrated by its application here, and it has failed to show that there are unique circumstances at issue or that an rules represent an undue burden, such that the public interest would be served by waiver of the rule.

Higher Ground has requested waivers of the Commission's coordination rules, 47 C.F.R. §§ 25.130(b), 25.203(c), and 101.103, based on low power operations of its transmitter and an automated frequency

³ See www.utc.org.

coordination analysis system described in the technical exhibit included in its application. Higher Ground also has requested a waiver of 47 C.F.R. § 2.106, the Table of Allocations, to permit mobile earth station operations as an application within the Fixed Satellite Service allocation. Both of these waiver requests should be denied.

As the FWCC aptly stated in its petition, the purpose of the microwave coordination rules is “not just to coordinate initial licensing, but also to provide licensees with the ability to pinpoint a potential interfering station at a fixed location.”⁴ Higher Ground suggests that the coordination requirements can be waived because it will coordinate its mobile operations through a database that will remotely and automatically control the transmissions of its hand-held Satpaq devices to avoid causing harmful interference to incumbent microwave operations in the band. In support of this assertion, Higher Ground describes the underlying assumptions and algorithms upon which the database would function. As the FWCC has pointed out, some of the assumptions are flawed, which raises questions about the performance of the database.

The FWCC argues, and UTC agrees, that prior coordination in accordance with the rules is necessary to mitigate the potential for interference. That has proven effective in coordinating Earth Stations on Vessels (ESVs) with offshore and coastal microwave facilities that operate in the 6 GHz the band.⁵ It also reflects the fact that coordinating systems in the 6 GHz band can be difficult and is not something that should be expected to be effectively conducted through a database. Moreover, the process of prior coordination helps to enable licensees to determine the source of interference, should it occur. The process suggested by Higher Ground would frustrate the underlying purpose of the rule by making it more difficult for licensees to determine if interference is being caused by the proposed mobile operations, which would be made even more difficult by the intermittent and mobile nature of the interference that would likely be caused by Higher Ground’s network.

In addition to frustrating the underlying purpose of the rule, Higher Ground’s waiver request fails to show any unique circumstances and/or undue burden that would justify the Commission’s granting a waiver. As the FWCC has shown, Higher Ground does not explain why it is necessary to use this band, such that the restriction against mobile operation in the 6 GHz band should be waived. Instead, this appears to be a matter of convenience or preference for Higher Ground. Its argument largely rests on the assertion that the public interest would be served if Higher Ground were able to offer services using this band without having to comply with the rules requiring prior coordination of operations. This argument is misplaced for two reasons. First and foremost, the public interest would not be served by causing interference to incumbent microwave systems, many of which support mission critical communications by utilities and others. Second, the threat of interference is much greater here than is the case with ESVs, because there are many more devices that would be operational in Higher Ground’s network and they would operate in closer proximity to incumbent microwave systems than the ESVs, which only operate in proximity to microwave systems in coastal and offshore areas. As such, the facts weigh against a waiver, not in support of one. The circumstances are not unique, the public interest would not be served, and there is no undue burden that would justify a waiver in the case of Higher Ground’s application. Higher Ground’s waiver request should be denied for these reasons, as well.

⁴ Petition to Deny of the Fixed Wireless Communications Coalition against the application by Higher Ground, File No. SES-LIC-20150616-00357 at 4 (filed Sept. 15, 2015).

⁵ *Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in the 5925- 6425 MHz/3700-4200 MHz Bands and 14.0-14.5 GHz/11.7-12.2 GHz Bands*, Report and Order, 20 FCC Rcd 674 (2005) (“ESV Order”).

III. Higher Ground’s Request Should Be Addressed in a Rulemaking, if the Commission Decides Not to Deny the Application and Waiver.

UTC agrees with the FWCC and other comments in opposition to Higher Ground’s application and waiver that the relief it seeks is more appropriately addressed in the context of a rulemaking. “[T]he choice between rulemaking and adjudication lies in the first instance within the [agency’s] discretion,” and the Commission should choose to conduct a rulemaking here because Higher Ground seeks a fundamental change in the rules which could have dramatic and widespread impact on incumbent operations in the 6 GHz band.⁶ As the Supreme Court has ruled, “an agency must proceed by rulemaking if it seeks to change the law and establish rules of widespread application.”⁷ Higher Ground’s application is not a minor request that could be considered administrative in nature, such that a waiver could be considered appropriate. Higher Ground requests relief that would fundamentally change the nature of the use of the 6 GHz band, and would affect incumbent licensees nationwide. Higher Ground’s proposal for mobile operations in the 6 GHz band without prior coordination is a change in the rules that would have widespread effect, not an exception that would have a limited impact.

To the extent that the Commission considers Higher Ground’s proposal, it should proceed through a rulemaking so that interested parties have sufficient notice and an opportunity to comment, and to provide the Commission with a sufficient record upon which to base its decision. While Higher Ground claims that a rulemaking “would serve no purpose other than to cause unnecessary delay,”⁸ in reality, a rulemaking would serve an important and essential purpose, namely, to protect the interests of the parties that would be affected by Higher Ground’s proposed operations. Some of the comments on the record have remarked that they only recently were notified about Higher Ground’s application and waiver.⁹ These comments underscore the need to conduct a rulemaking, so that other parties may be made aware of Higher Ground’s application and have a sufficient opportunity to comment on it. Finally, the fact that Higher Ground is the first to propose such a network does not mean that others will not attempt to operate a similar network of their own. Thus, the Commission should conduct a rulemaking to consider fairly the interests of incumbent licensees, applicants and potential users of the band, not just the interests of Higher Ground.

IV. Higher Ground’s Proposed Mobile Operations Threatens to Cause Widespread Harmful Interference to Mission Critical Microwave Communications in the 6 GHz Band.

UTC has serious concerns with the substantive claims made by Higher Ground in this proceeding and, therefore, urges the Commission to deny its application and waiver, and, instead, to proceed through a rulemaking, if at all. Specifically, UTC agrees with FWCC and other comments on the record that question whether the database has been sufficiently tested to reliably and accurately perform as claimed by Higher Ground. As CenturyLink pointed out in its comments, Higher Ground proposes to rely on transmission logs to determine the source of interference that it may be causing; “[y]et it remains questionable – and untested – that transmission logs will be sufficient to identify a device that may be

⁶ *NLRB v. Bell Aerospace Co.*, 416 U.S. 267, 294 at ¶¶29-38 (1974).

⁷ *Ford Motor Co. v. FTC*, 673 F.2d 1008, 1009 (9th Cir. 1981) (“[A]n agency must proceed by rulemaking if it seeks to change the law and establish rules of widespread application.”).

⁸ Consolidated Opposition of Higher Ground LLC, File No. SES-LIC-20150616-00357 at 6 (filed Sept. 23, 2015).

⁹ Letter from Al Burton, Director Federal Regulatory Affairs, Frontier Communications to Marlene H. Dortch, Secretary, FCC in response to IBFS File No. SES-LIC-20150616-00357, Call Sign E150095 at 2 (filed Aug. 22, 2016).

causing interference.”¹⁰ UTC also agrees with CenturyLink that Higher Ground has proposed an impractical process for remedying interference that would force incumbent licensees to attempt to trace the source of the interference based upon the bandwidth of the signal. This would require the incumbent licensee to conduct engineering tests and have specialized training in order to isolate the signal from Higher Ground operations.¹¹

Moreover, the technical submission in support of Higher Ground’s application is faulty and makes false assumptions about incumbent utility operations. In addition to the concerns about the database and its capabilities described above, Higher Ground’s assumptions about the performance standards to suppress off-axis antenna gain underestimates the potential for its operations to cause interference to incumbent microwave systems in the band.¹² There are also a host of other technical issues associated with Higher Ground’s application, including lack of transparency, conflicting incentives, lack of recourse, adjacent channel interference, errors in the ULS database upon which Higher Ground relies, insufficient modelling, differential fading, and reliance on phone sensors to turn transmissions on and off. All of these issues need to be thoroughly addressed, as well.

Finally, UTC agrees that the transient nature of the proposed operations would exacerbate the potential for interference to incumbent utility systems and make it extremely difficult for utilities to detect, identify, isolate and remedy. As a practical matter, utilities would be subject to intermittent interference at various times and locations, as the Higher Ground devices transmit at different times and locations. This interference could prevent utilities from being able to control and monitor their operations, which could result in outages and other potentially catastrophic impacts. It will be far too late to correct the interference after it has happened as Higher Ground suggests; it needs to be avoided beforehand – the very purpose of frequency coordination. Similarly, this interference could prevent utilities from being able to communicate with personnel in the field and in substations, nuclear power plants and other critical assets, which would threaten safety and reliability. Again, this is an unacceptable risk for utilities.

¹⁰ CenturyLink Reply in Opposition, File No. SES-LIC-20150616-00357 at 3-4 (filed Sept. 28, 2015)(also questioning “[h]ow does the fixed link operator know how to quickly identify if a SatPaq device is the cause of the interference and where does it go to address that?”)

¹¹ *Id.* at 4.

¹² Petition to Deny by the FWCC at 10 (stating that “[w]hile HG describes its Figure A-8 pattern as typical, FWCC believes that in fact only about 40% of 6 GHz antennas suppress the off-axis gain to this ultra-high performance level. Most antennas are at lower performance levels, including about 40% that are either standard performance (only meeting Category B1) or improved-performance (just meeting Category A).”)

Conclusion

For all of these reasons, UTC urges the Commission to deny the application and request for waiver by Higher Ground to operate a mobile nationwide system in the 6 GHz band. The application is procedurally defective because it fails to provide a sufficient basis for the waiver that it requests from the restrictions against mobile operations in the 6 GHz band and the general requirement for prior coordination of operations in the band. Moreover on the substantive issues, Higher Ground's operations would threaten to cause widespread interference to incumbent microwave systems in the band that would be impractical to mitigate. The public interest would not be served, because the utility industry and other critical infrastructure industries rely on the 6 GHz band to ensure the safe, reliable and effective delivery of essential services to the public at large. The reliability of these mission critical communications must not be jeopardized by harmful interference from Higher Ground's proposed operations. There are other bands that Higher Ground could use, and it has not demonstrated unique circumstances or any undue burden that would support its use of the 6 GHz band. It is purely arguing from convenience, not necessity. Moreover, the public interest clearly weighs in favor of protecting utility communications systems in the 6 GHz band.

Thank you for your help in this matter. If there are any questions concerning this matter, please let me know.

Respectfully,



Brett Kilbourne