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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)
)
The National Railroad Passenger Corporation) ET Docket No. 16-415
(d/b/a Amtrak))
)
Request for Waiver of Sections 15.407(a)(1)(iii) and)
15.407(a)(3) of the Commission's Rules)
)

To: The Office of Engineering and Technology

REPLY COMMENTS

The National Railroad Passenger Corporation (“Amtrak”) replies to the few comments submitted in response to its request for a waiver of two Part 15 U-NII rules to permit operation of an improved broadband trackside network along the Northeast Corridor, enabling better broadband for millions of railroad passengers. The waiver seeks use of 5.1 GHz (U-NII-1) and 5.8 GHz (U-NII-3) spectrum between trackside antennas and trains under rules that apply to fixed point-to-point U-NII operations.¹ Globalstar, the sole Commission licensee who might be affected by Amtrak’s proposal, filed comments *in support* of the requested waiver. Conversely, the IEEE 802 LAN/MAN Standards Committee (“IEEE 802”) and the Wi-Fi Alliance seek testing to assess the impact of proposed Amtrak operations on other 5 GHz U-NII devices, but offer no technical or legal basis for doing so. Amtrak thus asks the Office of Engineering and Technology to promptly grant the waiver to enable improved broadband for millions of Amtrak passengers.

¹ 47 C.F.R. §§ 15.407(a)(1)(iii) and 15.407(a)(3).

Amtrak appreciates Globalstar's rigorous review of Amtrak's request and its willingness to work cooperatively in this matter. Globalstar "has undertaken substantial technical analysis of the proposed waiver" and does not object to it, "given its very limited deployment and unique design."² In particular:

- "Globalstar recognizes that Amtrak's trackside network has characteristics typical of fixed point-to-point operations, and it agrees that a waiver that applies the Commission's U-NII-1 rules for fixed, point-to-point access points to Amtrak's proposed trackside network represents a sound regulatory approach."³
- "Globalstar's technical analysis indicates that Amtrak's proposed operations should not cause harmful interference or technical harm to Globalstar's MSS feeder links, given the very limited number of Amtrak transmitters and the technical parameters of Amtrak's equipment."⁴

Globalstar asks the Commission to grant the requested waiver subject to the conditions Amtrak has proposed in Exhibit A to its Request for Waiver ("Request").⁵ Amtrak reiterates its acceptance of those conditions, as they will permit the Commission to tailor its grant of the waiver to the unique facts presented while allowing Amtrak to operate with the facilities necessary to deliver the public interest benefits of expanded broadband for Amtrak riders along the Northeast Corridor.

In contrast, IEEE 802 and the Wi-Fi Alliance raise unfounded concerns and make unsupportable requests that are readily disposed of. Specifically, they ask the Commission to order Amtrak to conduct testing to confirm that the proposed trackside network will not cause interference to unlicensed 5 GHz U-NII devices.⁶ As an initial matter, unlicensed devices are not entitled to interference protection, and

² Letter from Regina M. Keeney, Counsel for Globalstar, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, ET Docket No. 16-415, at 1 (filed Feb. 27, 2017).

³ *Id.* at 2.

⁴ *Id.* at 2-3.

⁵ *Id.* at 3. *See also* National Railroad Passenger Corporation d/b/a Amtrak Request for Waiver, ET Docket No. 16-415, Exhibit A (filed Dec. 13, 2016) ("Request").

⁶ Comments of IEEE 802 LAN/MAN Standards Committee, ET Docket No. 16-415, at 1 (filed Feb. 28, 2017); Comments of the Wi-Fi Alliance, ET Docket No. 16-415, at 4 (filed Feb. 27, 2017). ("Wi-Fi

the parties offer no arguments in support of the claim that one Part 15 operation must ensure it does not impact another. More broadly, Amtrak is not proposing operations beyond what the Part 15 rules already permit, and thus there is no basis for concern.

Amtrak is proposing to operate an IEEE 802.11-based network at power levels permitted under the Commission's Part 15 rules. Those rules establish different technical parameters for fixed point-to-point versus omnidirectional operations. Amtrak's trackside network bears the characteristics of a fixed point-to-point network – of note, both the access points and train-based radios transmit in a highly directional manner. Amtrak accordingly asked for a waiver that would allow it to operate under the technical parameters in Part 15 for fixed point-to-point systems – it is not seeking anything more than that.⁷

In addition, IEEE 802 and the Wi-Fi Alliance appear to mistakenly assume that the Commission adopted the 250 mW power restriction on U-NII-1 client devices to protect unlicensed 5 GHz operations, but this is not so.⁸ In fact, the Commission adopted the restriction to protect Globalstar feeder links from aggregated interference caused by U-NII devices (and, again, Globalstar has not objected to Amtrak's proposal).⁹ Under Section 15.407(a)(1)(i), U-NII-1 access points are permitted a conducted power level of 1 Watt with up to 6 dBi antenna gain (36 dBm EIRP), but must limit their

Alliance Comments"). According to the Commission's Electronic Comment Filing System, the Commission did not receive IEEE 802's comments until February 28, a day after the February 27 comment deadline for Amtrak's Petition. See [https://www.fcc.gov/ecfs/search/filings?q=\(proceedings.name:\(\(16-415*\)\)%20OR%20proceedings.description:\(\(16-415*\)\)&sort=date_disseminated,DESC](https://www.fcc.gov/ecfs/search/filings?q=(proceedings.name:((16-415*))%20OR%20proceedings.description:((16-415*))&sort=date_disseminated,DESC). Amtrak will nonetheless respond to IEEE 802's comments to ensure that the Commission has a complete record on this matter.

⁷ See Request at 13.

⁸ See 47 C.F.R. § 15.407(a)(1)(iv).

⁹ See *Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, First Report and Order, 29 FCC Rcd 4127, 4141 (2014) ("U-NII First Report and Order").

power above 30 degrees from the horizon to 125 mW (21 dBm EIRP).¹⁰ Because access points are typically installed in fixed locations, the antenna can be oriented to limit the emissions above 30 degrees. The Commission required a lower power limit for client devices based in part on the fact that many client devices are hand-held devices that may be positioned and operated in any orientation, and therefore reduced emissions towards a Globalstar satellite cannot be guaranteed by controlling antenna gain in a specific direction.¹¹

Furthermore, the requested waiver will allow operations on a moving train that otherwise would be authorized under existing rules. As a train moves along the tracks, it is passing through an infinite number of points where operation of the Amtrak system under the fixed point-to-point rules would be permitted if the train were stationary. In other words, today fixed point-to-point operators can deploy transceivers along the Northeast Corridor using the Part 15 fixed point-to-point power levels. Ironically, the Wi-Fi Alliance makes this point in noting that Amtrak's system may be active for several minutes at a time when resting in downtown stations.¹² In that case, the Amtrak train is no different than any other fixed point-to-point operation, and other unlicensed 5 GHz devices would have to tolerate Amtrak's operation. To second-guess the interference potential of Amtrak's system would call into question all of the fixed point-to-point systems already operating under the Part 15 rules. And, there is no basis for asserting that any unlicensed 5 GHz operator has superior interference protection rights as against these systems.

¹⁰ 47 C.F.R. § 15.407(a)(1)(i).

¹¹ *U-NII First Report and Order*, 29 FCC Rcd at 4141; *Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, Memorandum Opinion and Order, 31 FCC Rcd 2317, 2326 (2016) (“[W]e have treated client devices as subject to the 250 mW limit because it is generally more difficult to control the use and location of these devices . . .”).

¹² See Wi-Fi Alliance Comments at 4.

Lastly, the Commission should reject the Wi-Fi Alliance’s request that Amtrak “commit to building any U-NII band system using only Wi-Fi Certified equipment.”¹³ The Commission’s rules do not impose such a requirement, and in any case a private entity has no right to impose its own equipment certification requirement as a waiver condition in a Part 15 proceeding.

In sum, to satisfy the Commission’s “good cause” waiver standard, a waiver request must serve the public interest without undermining the purposes of the rule being waived. The Amtrak waiver request meets this standard. Amtrak therefore asks that its Request be granted promptly

Respectfully submitted,

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¹³ *Id.*

CERTIFICATE OF SERVICE

I, Karla E. Huffstickler, hereby certify under penalty of perjury that the foregoing Reply Comments were served this 15th day of March, 2017, by depositing a true copy thereof with the United States Postal Service, first class postage pre-paid, addressed to:

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