Dec. 8, 2015

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th St, SW
Washington, D.C. 20554

Ex Parte: Terrestrial Use of the 2473-2495 MHz Band for Low-Power Mobile Broadband Networks – IB Docket No. 13-213

Dear Ms. Dortch:

The Schools, Health & Libraries Broadband (SHLB) Coalition is pleased to offer the following perspective on the Federal Communication Commission’s proposal to improve wireless broadband access by permitting Globalstar to provide Terrestrial Low Power Service (TLPS) over a combination of licensed and unlicensed spectrum. TLPS would enable use of Channel 14 in addition to the existing Wi-Fi channels 1, 6 and 11 operating in the 2.4 GHz band. While TLPS could be helpful to some anchor institutions, especially those that encounter congestion in the 2.4 GHz band, the precise terms and conditions under which TLPS will be made available on a retail basis are not yet known, and some anchor institutions are shifting to the 5 GHz band. In addition, several parties have raised questions about potential interference and public interest considerations. The SHLB Coalition urges the Commission to resolve these issues as quickly as possible.

Although the SHLB Coalition has not previously filed comments in this proceeding, we have spent a fair amount of time learning about this proposed service. In addition to reading through the record of comments, and discussing the issues with several interested parties, the undersigned has personally visited the TLPS trial deployments at two anchor institutions – a university in Chicago and the Washington School for Girls, an all-scholarship private school in a low-income region of Washington D.C. My observations and opinions of the trials were as follows:

- When integrated with existing Wi-Fi networks, TLPS appeared to significantly increase the total wireless throughput, in some cases by over 50%.
The TLPS access points (made by Ruckus) were added to the school's existing Wi-Fi networks and did not require a reconfiguration of the already-deployed access points operating over channels 1, 6 and 11.

The use of the TLPS access points did not appear to interfere with other Wi-Fi channels or with Bluetooth devices.

The TLPS access points could be re-tuned to operate over any of the available channels 1, 6, 11 and 14, to avoid interference with other access points, if necessary.

If allowed by Globalstar, at least some existing mobile devices (laptops, tablets and smartphones) could be configured to operate over the new Channel 14 with a software change that does not require a change in hardware/firmware. This indicates that mobile devices capable of using Channel 14 service could come onto the market relatively quickly once Channel 14-capable access points are deployed.

These results appear to indicate that integrating TLPS with existing Wi-Fi service could increase wireless broadband capacity for those anchor institutions operating in the 2.4 GHz band relatively simply and perhaps cost-effectively. Affordability has been identified by schools as the single most significant factor limiting Internet access in schools;\(^1\) for this effort to be successful it is important that the cost for Channel 14 services and equipment be affordable for community anchor institutions. We recognize that many anchor institutions are shifting to the 5 GHz band and that the addition of Channel 14 may not benefit these institutions. Nonetheless, wireless spectrum in general is in short supply, and more channels are needed at all frequency bands.\(^2\)

As the recent E-rate modernization proceeding amply demonstrates, U.S. libraries and schools greatly need to increase their broadband and wireless capacity to best meet their Internet needs. Schools are encountering a shortage of wireless broadband access, especially as they adopt one-to-one device programs and as cloud computing becomes more commonplace for homework assignments. No-fee public Wi-Fi access through America’s public libraries is now nearly ubiquitous, and is often (particularly in rural communities) the only free public Wi-Fi access point for residents.\(^3\) Further, libraries’ public Internet access is used disproportionately by

---


2 See, “The Next Gen Classroom: Spectrum Policies for the 21st Century School,” written for WiFiForward by Bill Maguire, Partner in Reluminati, LLC, November 2014, p. 3, available at http://www.wififorward.org/wp-content/uploads/2014/01/Next-Gen-Classroom-Spectrum-Policies.pdf. (“Today, schools depend heavily on the 2.4 GHz frequency band for Wi-Fi . . . [E]ducators’ access to the next generation of Wi-Fi speeds . . . will depend on adequate spectrum resources in the 5 GHz frequency bands. Each of these bands solves a different connectivity challenge, . . . Because spectrum policy changes can take many years to enact, it is critical that education leaders initiate efforts to secure more unlicensed spectrum at a number of frequencies in order to support connectivity in K-12 schools.”)

African-Americans and Latinos. Relieving Wi-Fi congestion is increasingly important for these public institutions as more people and more devices rely on these Wi-Fi networks to advance education, employment, entrepreneurship and social connection. The addition of Channel 14 as proposed by Globalstar could make it easier for some schools, libraries, health providers and other anchor institutions to improve their access to and provision of Internet cloud-based services.

We recognize that some parties have raised concerns about the possibility that TLPS could cause interference to existing users of licensed and unlicensed spectrum. While the undersigned did not observe any technical interference at the two trials, we do not have the expertise to evaluate whether interference may arise in other settings. The FCC should make sure that TLPS does not cause harmful interference to existing wireless users.

We also recognize that parties have raised public interest considerations regarding the proposed combination of licensed and unlicensed spectrum. Evaluating the public interest benefits of TLPS must take into account that Globalstar intends to operate Channel 14 service as a commercial wholesale provider, and it is not entirely clear how the service will be provided by retail service providers to anchor institutions and others. We appreciate that Globalstar has offered to provide 20,000 free access points to schools, libraries, health providers and other anchor institutions. We believe these public interest considerations deserve to be explored and we urge the Commission to resolve them as quickly as possible.

---


6 We note that Globalstar has proposed to mitigate any interference, should it occur. See, Globalstar ex parte filed by Barbee Ponder on September 10, 2015.

7 See, Google ex parte letter filed by Austin Schlick of Nov. 13, 2015 and Public Knowledge ex parte filed by Harold Feld on Nov. 20, 2015.
We would be pleased to participate in further discussions with the Commission and all parties to determine how TLPS could be deployed in a manner that does not create interference to other users and operates under the right conditions to serve the needs of anchor institutions and the public interest.

Sincerely,

[Signature]

John Windhausen
Executive Director
SHLB Coalition
(202) 256-9616
jwindhausen@shlb.org