



March 24, 2016

**Ex Parte**

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

**Re:** *Use of Spectrum Bands Above 24 GHz for Mobile Radio Service, GN Docket No. 14-177*  
*Amendment of Parts 15, 73 and 74 of the Commission's Rules to Provide for the*  
*Terrestrial Use of the 2473-2495 MHz Band for Low-Power Mobile Broadband*  
*Networks, IB Docket No. 13-213*  
*Preservation of One Vacant Channel in the UHF Television Band for Use by White Space*  
*Devices and Wireless Microphones, MB Docket No. 15-146*  
*Amendment of the Commission's Rules with Regard to Commercial Operations in the*  
*3550-3650 MHz Band, GN Docket No. 12-354*  
*OET and WTB Seek Information on Current Trends in LTE-U and LAA Technology, ET*  
**Docket No. 15-105**

Dear Ms. Dortch:

On March 22, 2016 Michael Calabrese of the Open Technology Institute at New America (OTI), and Harold Feld and Phillip Berenbroick of Public Knowledge (PK), met with Jonathan Wilkins, chief of the Wireless Telecommunications Bureau, and WTB staff members Brian Regan, Chris Helzer and Matthew Pearl, concerning the above-listed proceedings.

Concerning **the Vacant Channel NPRM**, OTI and PK strongly support the Commission's pending proposal to preserve at least one vacant television channel in every market nationwide for unlicensed use, as well as a second channel in any market where a TV station is repacked into the Duplex Gap post-auction. The public interest representatives reiterated the critical importance of an early Commission decision that ensures a minimum of at least three channels for unlicensed public access in the ongoing TV band after the incentive auction. Leading chipmakers and other tech industry stakeholders have steadfastly maintained that if the post-auction band plan and repacking policies do not ensure at least three channels of 6 megahertz of unlicensed access in every market, especially in the most populated metro markets, the Commission will be killing off many emerging unlicensed use cases and the economic and social benefits that depend on low-band spectrum. These important benefits include lower barriers of entry for competition and innovation, as well as civic engagement and democracy.

With respect to **Globalstar’s proposed Terrestrial Low Power Service (TLPS)**, the public interest advocates reiterated their longstanding view that they support expanded use of Wi-Fi Channel 14 and could support TLPS, but only if the Commission can ensure it will create a net benefit for the public interest. PK stated that should the Commission approve Globalstar’s application of a TLPS service, it should emphasize the importance of this decision with regard to the public interest framework previously discussed by Public Knowledge in its filing dated November 19, 2015.<sup>1</sup>

The OTI representative described a public interest condition, proposed last year in separate filings by OTI/PK and by Google that could yield a return to the public, enabling both TLPS and enhanced Wi-Fi for consumers more broadly.<sup>2</sup> Specifically, in exchange for the valuable terrestrial mobile waiver and the waiver of the strict OOB limits at the border between the 2.4 GHz unlicensed band and Globalstar’s spectrum, the Commission should authorize reciprocal public use of Wi-Fi Channel 14 in locations where Globalstar’s TLPS is not deployed and where Globalstar itself has determined that Channel 14 transmissions create virtually no risk of harmful interference to its mobile satellite device customers (e.g., indoors and generally within urban areas). Although Globalstar has a legitimate claim to exclusive use of the *licensed portion* of Channel 14 where and when it actually commences service, the advocates noted that Globalstar is highly unlikely to deploy immediately on a nationwide basis. In return for the auction-free windfall that Globalstar seeks, unlicensed operations should be able to use Channel 14 on an opportunistic basis, as the Commission has adopted for the 600 MHz band post-incentive auction.

Based on its filings, Globalstar’s Network Operating System will know the locations of its authorized access points, which would allow the NOS itself – or the Spectrum Access System the Commission is certifying for the 3.5 GHz band – to greenlight opportunistic use of Channel 14 where it is unused.

Concerning **LTE-U and its potential coexistence with the Wi-Fi ecosystem**, OTI and PK summarized the concerns that consumer groups raised in joint comments filed last June in response to the Commission’s Public Notice.<sup>3</sup> Mobile carriers have both the ability and strong incentives to use LTE-U to engage in anti-competitive behavior harmful to consumers, while for the first time being able to charge consumers for the use of unlicensed spectrum. Carriers have powerful incentives to use LTE-U to deter mobile market entry by “Wi-Fi First” providers, such as wireline ISPs, as well as to shrink the coverage areas of Wi-Fi hotspots that are already deployed, or planned for deployment, by cities, schools, retailers and other end users who leverage wireline backhaul to offload mobile device data traffic.

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<sup>1</sup> Ex Parte Letter from Harold Feld, Public Knowledge, *Terrestrial Use of the 2473-2495 MHz Band for Low-Power Mobile Broadband Networks*, IB Docket No. 13-213 (Nov. 19, 2015), available at <http://apps.fcc.gov/ecfs/document/view?id=60001339856>

<sup>2</sup> See Ex Parte Letter from Austin Schlick, Google, *Terrestrial Use of the 2473-2495 MHz Band for Low-Power Mobile Broadband Networks*, IB Docket No. 13-213 (Oct. 10, 2015); Ex Parte Letter from Michael Calabrese, New America’s Open Technology Institute, and Harold Feld, Public Knowledge, *Terrestrial Use of the 2473-2495 MHz Band for Low-Power Mobile Broadband Networks*, IB Docket No. 13-213 (Feb. 13, 2015).

<sup>3</sup> See Reply Comments of OTI, Public Knowledge, Free Press and Common Cause, *OET and Wireless Telecommunications Bureau Seek Information on Current Trends in LTE-U and LAA Technology*, ET Docket No. 15- 105 (June 26, 2015).

Concerning the Commission’s ongoing proceeding to make next generation Wi-Fi possible by authorizing unlicensed use of all or a portion of **the proposed U-NII-4 band at 5.9 GHz** with the auto industry, the advocates did not discuss the issue, but after the meeting the OTI representative gave Jon Wilkins a copy of the report on the band released in January by OTI: *Spectrum Silos to Gigabit Wi-Fi – Sharing the 5.9 GHz ‘Car Band.’* A copy of the report is attached.

With respect to the pending final order on implementation of the **3.5 GHz Citizens Broadband Radio Service**, the public interest advocates emphasized that rules facilitating robust opportunistic use of unused PAL spectrum on a GAA basis is critical to laying the foundation for dynamic and efficient sharing of unused capacity on underutilized bands. The advocates also emphasized that in keeping with last year’s historic Order and its 3-tier dynamic sharing framework, the Commission should certify only one or a small number of Spectrum Access Systems that are truly open to all GAA and PAL users nationwide, that are fully transparent, and that are willing and able to optimize intensive sharing of the band. It is critical that the Commission continue to be clear about the distinction between a Spectrum Access System (SAS) – to which the FCC will delegate its authority as a band access manager – and the far larger number of two-tier “authorized spectrum access” (ASA) systems that individual operators may choose to deploy to coordinate their own deployments on PAL and/or GAA spectrum.

With respect to the **Spectrum Frontiers NPRM**, the OTI and PK representatives summarized the main points from Reply Comments the two organizations filed jointly on February 26. First, OTI and PK recommend that the Commission extend its Part 96 framework for intensive, three-tiered sharing to at least the 37 GHz band. Extending the three-tier 3.5 GHz framework and the Spectrum Access System governance model to the mmW bands creates a flexible sharing framework that protects band incumbents, facilitates efficient spectrum re-use, and promotes lower barriers to entry and innovation.

Second, OTI and PK stated that the Commission can best address ISP concerns about the NPRM’s proposal to award *exclusive* indoor operating rights to property holders on a license-by-rule basis – and make 37 GHz a far more intensively-used innovation band – by modifying its proposal so that indoor use is licensed by rule on a *non-exclusive* General Authorized Access (GAA) basis. A separate GAA (or unlicensed) authorization for indoor use ensures that enterprises, households, schools and other public buildings can decide how best to use this particular band of mmW spectrum inside their own building and ensures that 1,600 megahertz of mmW spectrum does not lie fallow in the tens of millions of structures where carriers will not be deploying, or where a wide area licensee’s product or service does not meet the unimaginably diverse needs of business firms, home owners and public sector venues.

Third, OTI and PK strongly agree with commenters supporting the Commission’s proposal for a “use-or-share” obligation on mmW licensees that authorizes opportunistic access to unused spectrum capacity in the 28, 37 and 39 GHz bands. Widespread opportunistic access can enhance efficient reuse of mmW spectrum without any risk to licensee operations by relying on a geolocation database governance mechanism that is either an extension of, or similar to, the Spectrum Access System the Commission will certify to manage more intensive sharing of the 3.5 GHz band. Further, OTI and PK see no public interest justification for the proposed five-year waiting period before fallow spectrum can be put to use.

Finally, the advocates urged the staff to prioritize extension of the 57-64 GHz unlicensed band up to at least 71 GHz. The record reflects diverse and widespread agreement that the 64-71 GHz band should be allocated for unlicensed use under technical rules consistent with the existing unlicensed band at 57 to 64 GHz. OTI and PK agree with Microsoft's further recommendation that the Commission extend the upper boundary of the 60 GHz Band to 72.5 GHz, thereby creating an additional non-overlapping channel for consumer use of WiGig.

Respectfully submitted,

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