February 18, 2015

Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, SW
Washington, DC 20554

Re: Notice of Oral *Ex Parte* Presentation
Terrestrial Use of the 2473-2495 MHz Band for Low-Power Mobile Broadband Networks, IB Docket No. 13-213
Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band, GN Docket No. 12-354

Dear Ms. Dortch:

On February 12, 2015, Michael Calabrese of New America's Open Technology Institute (OTI) and Harold Feld of Public Knowledge (PK) met with Priscilla Delgado Argeris, senior legal advisor to Commissioner Jessica Rosenworcel, concerning the above-referenced proceedings.

The OTI and PK representatives began by asking for an update on the stakeholder meeting that OET convened the previous week concerning testing to assess the impact of Globalstar's proposed Terrestrial Low Power Service (TLPS). The public interest advocates explained that they are supportive of greater use of Channel 14 and could support TLPS, but only if the Commission can ensure it will create a net benefit for the public interest. Before the FCC allows Globalstar to incorporate the top 10.5 megahertz of the unlicensed 2.4 GHz band in a proprietary Wi-Fi Channel 14, the Commission should ensure the company does so in a manner that *both safeguards and enhances* the enormous economic and social value of unlicensed operations on that band. Without appropriate testing and conditions to ensure Globalstar does not receive a gratuitous windfall that forecloses existing and future public use of the unlicensed spectrum at 2473 to 2483.5 MHz, the Commission will both endanger the established Wi-Fi ecosystem and forfeit the opportunity to enable more intensive unlicensed use and innovation on the 2.4 GHz band in the future.

OTI and PK agree that, as a first step, cooperative testing must precede any Commission authorization of Globalstar's proposed TLPS to determine the interference impact on tens of millions of deployed unlicensed devices in the 2.4 GHz band. While Part 15 devices are not entitled to protection against incidental interference, the FCC should not authorize a new licensed service that overlaps the

intensively-used 2.4 GHz unlicensed band without the benefit of objective and conclusive testing of whether TLPS will potentially disrupt existing Wi-Fi operations on Channel 11 and thereby reduce the number of non-overlapping Wi-Fi channels from three to two.

The advocates stated that the record clearly does not support adoption of the proposed rules at this time.[1] The OTI and PK representatives mentioned their understanding that Globalstar has repeatedly refused overtures by Wi-Fi stakeholders to conduct cooperative and transparent testing, and therefore Globalstar bears ultimate responsibility for any delays in a final decision on their proposal.

If the OET-supervised testing confirms that TLPS does not negatively impact existing Wi-Fi operations (or that of other Part 15 devices), OTI and PK urged the Commission to consider alternatives that seek an affirmative return to the public for the multi-billion dollar grant of enhanced spectrum rights sought by Globalstar. The public interest advocates outlined two alternatives that could yield a return to the public and result in a win-win for Globalstar and enhanced unlicensed operations.

First, the Commission could condition Globalstar's enhanced spectrum rights on its choice to internalize a guard band (e.g., 3 megahertz) immediately above their boundary with the unlicensed band at 2.483.5 GHz. MSS licensee DISH agreed to a similar and far more costly obligation in 2012 with respect to internalizing a guard band on its AWS-4 spectrum to prevent interference with the adjacent 1900 MHz PCS H Block.[2] This obligation would have two beneficial impacts: It would enhance the utility of the 2.4 GHz unlicensed band by relaxing the strict unwanted emissions limits that currently prevent robust public use of Channels 12 and 13 for Wi-Fi and other services.[3] It could also allow extremely low-power Bluetooth operations an option to operate in that new guard band. The advocates noted that if Globalstar needs to pay for changes to MSS handsets (more robust filtering, for example), this would be a small price to pay for a multi-billion spectrum rights windfall and would be similar to the sort of concessions that the Commission extracted initially from Lightsquared for a similar waiver.

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[1] The Jarvinian testing commissioned by Globalstar is cloaked in secrecy, since Globalstar provided only summary results with no description of test conditions or observations by interested parties. Conversely, testing results in the record indicate significant mutual interference between Channel 11 and Globalstar's TLPS, with as much as a 60-to-70% reduction in Channel 11 throughput*See, e.g.*, Letter and Presentation of Sahm Adrangi, Chief Investment Officer, Kerrisdale Capital Management LLC (Dec. 2, 2014), *available at http://apps.fcc.gov/ecfs/document/view?id=60000989134* .

[2] Phil Goldstein, "DISH Relents, Says it Will Accept 5 MHz Guard Band," *FierceWireless* (Dec. 4, 2012), available at http://www.fiercewireless.com/story/dish-relents-says-it-will-accept-5-mhz-guard-band/2012-12-04.

[3] The stringent OOBE limits imposed on unlicensed operations by the Commission in 1989 were not even adopted to protect MSS and need to be revisited given the changed circumstances and the outcome of this proceeding. "The limits stem from a Commission decision in 1989 to designate the 2483.5-2495 MHz band as a 'restricted band' to protect the separate radiodetermination satellite service." Comments of National Cable & Telecommunications Association, *Terrestrial Use of the 2473-2495 MHz Band for Low-Power Mobile Broadband Networks*, IB Docket No. 13-213 (May 5, 2014), at 7-8, citing *Revision of Part 15 of the Rules Regarding the Operation of Radio Frequency Devices without an Individual License*, GEN. Docket No. 87-389, RM-5193, RM-5250, RM-5575, First Report and Order, 4 FCC Rcd. 3493 ¶ 66 (1989); NPRM ¶ 39 n.106. *See also* Comments of the Wi-Fi Alliance, IB Docket No. 13-213 (May 5, 2014), at 11, 14; Comments of Cisco, IB Docket No. 13-213 (May 5, 2014), at 3; Comments of the American Radio Relay League, IB Docket No. 13-213 (May 5, 2014), at 8; Comments of WISPA, IB Docket No. 13-213 (May 5, 2014), at 8.

A second alternative noted by the advocates would be to require Globalstar to accommodate shared use of Channel 14 by other unlicensed operations that can avoid harmful interference to MSS handsets. Even if the Commission determines that Globalstar should have 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. At a minimum other unlicensed operations should be able to use that underutilized capacity on an opportunistic basis, as the Commission has adopted for the 600 MHz band post-incentive auction. The OTI advocate noted that International Bureau staff has stated that Globalstar will deploy a real-time coordination technology to ensure that TLPS does not interfere with MSS handsets. When OET tests that system, it can also determine if it will accommodate shared use by other parties in a manner that increases overall spectrum use and efficiency. The OTI representative stated that even if this sharing is not immediately possible, the Commission should reserves the option to revisit whether the 3.5 GHz Spectrum Access System, or some other authorized database solution, can coordinate unlicensed operations with MSS operations above 2.483.5 MHz [4]

Finally, the OTI and PK representative inquired about the status of the proceeding to create a Citizens' Broadband Radio Service (CBRS) at 3.5 GHz. The advocates asked OET specifically about the status of exclusion and/or coordination zones that might be needed to protect Navy and C-Band satellite incumbents on the band. OTI and PK also inquired whether the Commission intends to include a coexistence etiquette for the shared-use General Authorized Access (GAA) spectrum and/or licensing conditions that ensure Priority Access License (PAL) holders will not use technology that fails to fairly share GAA spectrum on an equal basis with unlicensed users. The advocates expressed their concern about reports that companies, including Qualcomm and Verizon, may be testing pre-certification versions of LTE-U technology that could be used by licensed services to dominate GAA and/or other unlicensed spectrum in an anti-competitive manner. Since the CBRS will apparently be licensed by rule, OTI and PK suggested there is a strong need for preemptive "rules of the road" concerning the shared nature of the GAA bands in order to avoid another Section 333 Wi-Fi blocking controversy down the road.

Respectfully submitted,

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[4] *See* Ex Parte Letter from Michael Calabrese and Stephen Coran to Marlene H. Dortch, IB Docket No. 13-213 (Jan. 8, 2015), at