October 12, 2017

Ex Parte

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

Re: *Promoting Investment in the 3550-3700 MHz Band*, **GN Docket No. 17-258, 12-354**;
Petition for Rulemaking to Amend and Modernize Parts 25 and 101 of the Commission's Rules to Authorize and Facilitate the Deployment of Licensed Point-to-Multipoint Fixed Wireless Broadband Service in the 3700 – 4200 MHz Band, **RM-11791**
Expanding Flexible Use in Mid-Band Spectrum 3.7 and 24 GHz, **GN Docket No. 17-183**
Use of Spectrum Bands Above 24 GHz for Mobile Radio Service, **GN Docket No. 14-177**

Dear Ms. Dortch:

On October 10, 2017 Michael Calabrese, representing the Open Technology Institute at New America (OTI), met with Louis Peraertz, Senior Legal Advisor to Commissioner Mignon Clyburn, concerning the above-listed proceedings.

With respect to the draft NPRM proposing to re-open and revise the licensing rules for the new **Citizens Broadband Radio Service**, I noted that at least 9 out of every 10 companies and associations filing comments opposed the preclusive changes to the Priority Access License (PAL) rules proposed by CTIA and T-Mobile in their petitions for rulemaking.[1] Most commenters agreed that the particular PAL changes proposed by CTIA and T-Mobile should be rejected because they would refashion the rules for the exclusive benefit of one type of provider (a handful of wide-area cellular providers) to the detriment of thousands of other users and use cases, some of which would compete directly with CTIA's members.

I emphasized that PAL areas as large as counties or PEAs are neither necessary for mobile carriers, nor a good fit for this band. Relatively low power levels make it an inherently small cell band, particularly in urban areas. Mobile carriers will not use CBRS to extend the *coverage* of their networks, but solely to enhance the *capacity* of their networks in targeted high-traffic areas. This distinction between *spectrum for coverage* (which fits the traditional cellular licensing model) and *spectrum for capacity* in localized areas (which is the rationale for the PAL licensing scheme) is critical. The draft NPRM seems blind to the

[1] *See OTI and Public Knowledge Reply Comments, GN Docket No. 12-354, (Aug. 8, 2017),* available at *https://ecfsapi.fcc.gov/file/10809019113786/OTI_PK_CBRS_ReplyComments_OppoPetnsRM_Final_080817.pdf*.

likelihood – or even the possibility – that the "5G" wireless ecosystem, just like the present 4G wireless ecosystem, will rely on a combination of centralized carrier networks (that are truly 'mobile') and a far larger number of complementary, high-capacity and customized networks deployed by individual business firms, property managers and individual households to meet their particular needs at a lower cost. Today Wi-Fi, deployed at the edge, makes mobile data more fast and affordable. In a 5G world, private, indoor and customized small cell networks using LTE and possibly other technologies will further enhance the ecosystem.

This distinction between spectrum for coverage (traditional cellular networks) and spectrum for capacity (small cells, whether CBRS or Wi-Fi) is even more relevant for 5G when we consider that an increasing share of mobile device data traffic (currently over 80 percent) is consumed indoors, on a nomadic and not mobile basis. The benefits of "5G" – high throughput, low latency, and the ability to connect hundreds of different devices and sensors in a local area (e.g., IoT) – will be relevant almost entirely to *indoor* and *high-traffic* areas. Indoors – as well as on corporate, school and other campuses – three of the ingredients most essential to traditional cellular networks (backhaul, power and siting) will be entirely under the control of the property owner. The missing ingredient is spectrum access. CBRS, with its current combination of small area PALs and GAA, provides an opportunity for small operators, individual venues, and neutral host and private LTE deployments to use the same interoperable equipment to access to both spectrum with interference protection (PALs) and much greater capacity on a best efforts basis (GAA).

I noted that license areas as large as PEAs or counties are not necessary to stimulate investment in mid-band spectrum and could easily lead to both a narrowing and a net reduction in overall investment and use of the band by excluding localized uses. I summarized some of the use cases presented at OTI's recent policy forum on CBRS by General Electric (real-time data connectivity for critical infrastructure and industrial use), CBRE and the hospitality industry (neutral host LTE networks and customized private LTE networks), rural WISPs and other small ISPs (to address the rural broadband gap), and enterprise wireless equipment makers (e.g., for sporting arenas, such as NASCAR's recent trial using CBRS to broadcast 360-degree HD live video views from inside Richard Petty's race car). All of these localized uses of CBRS, to the extent they need or would benefit from PALs with interference protection, would be precluded under the Commission's draft NPRM.

Even if a carrier decides to use PALs to enhance capacity over an entire city (an enormous capital investment considering the density of the access points), there is no reason to secure a license that extends beyond the city, into exurbs, rural areas and neighboring counties, as PEAs would. The Los Angeles PEA covers not only the entire metro area, but includes Riverside County and extends to the border of Nevada. It would be far easier for carriers to assemble larger contiguous areas by acquiring census tracts than it would be for hundreds or thousands of other potential users noted above to either win a PEA or county license at auction. Subleasing small areas of spectrum from a big mobile carrier, through a secondary market transaction, is unrealistic both because of high transaction costs and because carriers have a disincentive to allow competitors with or substitutes for their services to access spectrum at a reasonable price.

Concerning the **3700 MHz–4200 MHz band**, I emphasized that as in the 3.5 GHz band, relatively small and flexible licensing areas would permit both fixed and mobile wireless operators to coordinate use

in the unused portions of this large and grossly underutilized band. I noted that the record strongly supports a rulemaking that could immediately address the high-capacity rural broadband gap by adding a new, licensed, point-to-multipoint fixed wireless service in the band to share spectrum with the largely unused airwaves occupied by Fixed Satellite Services. OTI filed the Petition for Rulemaking as part of the Broadband Access Coalition (BAC) calling for the Commission to issue a rulemaking to create the shared spectrum framework for fixed wireless services in June.[2] In the petition, the coalition (comprising more than 20 wireline and wireless service providers, equipment vendors, trade associations and non-profit public advocacy groups) explained that the spectrum in the band can be made available for broadband deployment rapidly and simply, making it a simple move in improving advanced telecommunications capability.

With respect to the **Spectrum Frontiers** proceeding, I briefly summarized why OTI strongly supports maintaining open, shared access to the lower segment of the 37-39 GHz band (37-37.6 GHz) and therefore opposes the Petitions for Reconsideration filed by CTIA, T-Mobile, CCA, TIA and 5G Americas, each of which rehash their previous arguments for exclusive geographic-area licensing across the entire 37-39 GHz band, a one-size-fits-all outcome the Commission rejected in the 2016 *Report & Order*. Since wireless carriers are likely to use spectrum at 37–39 GHz to enhance network capacity only in heavily-trafficked areas, limiting access to exclusive, wide-area and expensive licenses tailor-made for the largest mobile carriers would inevitably result in leaving most millimeter wave ("mmW") spectrum unused for many years, and perhaps permanently, in small town, rural, and other low-density environments outside of central urban areas and other high-traffic venues.

Finally, I reiterated OTI's recommendation that Spectrum Access Licenses (SALs) on 37 – 37.6 should be as similar as feasible to General Authorized Access within the Part 96 framework adopted for the new Citizens Broadband Radio Service. We also see no public interest justification for the proposed five-year waiting period before fallow spectrum can be put to use.

Respectfully submitted,

/s/ *Michael Calabrese*
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cc: Louis Peraertz

[2] *Petition for Rulemaking to Amend and Modernize Parts 25 and 101 of the Commission's Rules to Authorize and Facilitate the Deployment of Licensed Point- to-Multipoint Fixed Wireless Broadband Service in the 3700 – 4200 MHz Band*, Broadband Access Coalition, https://na-production.s3.amazonaws.com/documents/3.7_GHz_Band_Petition_for_Rulemaking-FINAL_with_Exhibits-06.21.17.pdf.