In reference to DA 18-446, HR 4986 section 705, seeking public comment for usage on the 3.7-4.2 GHz band:

* On 2 February 2018 in accordance with section 706 of the Telecommunications Act of 1996 the FCC reported the following benchmark: “The FCC retains the existing speed benchmark of 25 Mbps download/3 Mbps upload (25 Mbps/3 Mbps) for fixed services and examines the deployment of mobile services with minimum advertised speeds of 5 Mbps/1 Mbps, and those with a median speed of 10 Mbps/3 Mbps or higher.” (FCC, 2018) Following the key findings in the report, the FCC found some very interesting statistics: “
* Rural and Tribal areas continue to lag behind urban areas in mobile broadband deployment. Although evaluated urban areas saw an increase of 10 Mbps/3 Mbps mobile LTE from 81.9% in 2014 to 90.5 % in 2016, such deployment in evaluated rural and Tribal areas remained flat at about 70% and 64%, respectively. Approximately 14 million rural Americans and 1.2 million Americans living on Tribal lands still lack mobile LTE broadband at speeds of 10 Mbps/3 Mbps.
* Approximately 92% of the population has access to both fixed terrestrial services at 25 Mbps/3 Mbps and mobile LTE at speeds of 5 Mbps/1 Mbps. In rural areas, 68.6% of Americans have access to both services, as opposed to 97.9% of Americans in urban areas. With respect to fixed 25 Mbps/3 Mbps and 10 Mbps/3 Mbps LTE services, 85.3% of all Americans have access to such services, including 61% in evaluated rural areas and 89.8% in evaluated urban areas.” (FCC, 2018)

Another excerpt of the FCCs goal is important to note as well: “Although the deployment of broadband services slowed dramatically in the wake of the 2015 Title II Order, the Commission has taken many actions to accelerate deployment, including removing barriers to infrastructure investment, promoting competition in the telecommunications market, and by restoring the longstanding bipartisan light-touch regulatory framework for broadband Internet access services. Thanks to these efforts, the Report concludes that broadband services are now being deployed to all Americans on a reasonable and timely basis. Nonetheless, closing the digital divide and furthering the deployment of advanced telecommunications capabilities remains the top priority for the FCC and the Report concludes there is much work still to be done.” (FCC, 2018) According to these reports the FCC increased the speed requirements for fixed broadband from 4 Mbps/1 Mbps to 10 Mbps/3 Mbps to 25 Mbps/3 Mbps over the last few years. Mobile broadband has seen speed requirements from 5 Mbps/1 Mbps to 10 Mbps/3 Mbps as well.

While reading these FCC reports and various other government documents pertaining to this comment, I find a massive gap in what the FCC says and actually does to “promote competition” to close the “digital divide” as a “top priority”. As a Wireless Internet Service Provider (WISP), we have seen and been promised frequency bands licensed/unlicensed to facilitate the increasing broadband speed requirements. Looking at the history of spectrum allocation, the complete opposite is actually true. According to the latest example of CBRS that was supposed to provide non-line of sight licensed/unlicensed spectrum to fixed broadband as a way to close the digital divide, promote freedom of competition and conform to FCC broadband speed requirements. The Citizens Broadband Radio Service quickly turned into the Cellular Broadband Radio Service. This is critical since the 3.65 GHz band that WAS really the only licensed point-to-multipoint (ptmp) spectrum allocated to fixed wireless broadband, was taken away and auctioned off to cellular. Now, fixed wireless broadband has no other options but to continue using the unlicensed and oversaturated 2.4 GHz and 5 GHz bands to provide service to the customer just to be competitive. Then the FCC ups the bandwidth requirements for fixed wireless from 4 Mbps/1 Mbps to 25 Mbps/3 Mbps while cellular only receives an increase from 5 Mbps/1 Mbps to 10 Mbps/3 Mbps. Looking back into the FCC report, the FCC finds “Although evaluated urban areas saw an increase of 10 Mbps/3 Mbps mobile LTE from 81.9% in 2014 to 90.5 % in 2016, such deployment in evaluated rural and Tribal areas remained flat at about 70% and 64%, respectively. Approximately 14 million rural Americans and 1.2 million Americans living on Tribal lands still lack mobile LTE broadband at speeds of 10 Mbps/3 Mbps.” (FCC, 2018) There is your answer as to why rural areas still lack proper bandwidth and access. Even thou the cellular companies are given new licensed spectrum regularly, it is always used as a tool to expand in highly dense urban areas with almost complete disregard for the rural and tribal areas that require the most need. The cellular ROI (return on investment) is too great for them to expand/upgrade into these areas since the population is much less. As a WISP, this is what we do! However, we need the spectrum to be competitive and meet the FCC bandwidth requirements. As cable providers now set their dual band and even tri-band routers to maximum power at the widest channels ( I’ve seen 160 Mhz) for a 5 Mbps speed package as the default setting, it’s just a matter of time before we will no longer be able to use this band due to oversaturation. With the hefty speed increase from the FCC, WE NEED HELP NOW! 3.7-4.2 GHz should be only a start to making up the disproportionate competition that fixed wireless has fell victim to. It’s even more astounding that 100 Mhz of this band is trying to be allocated to cellular as well after the high jacking of the CBRS band. When is enough going to be enough?

Since the FCC has already reported that no federal users are on this band it appears to be a moot point on how to protect them on the 3.7-4.2 GHz band. For the comments sake, this new band should be lightly licensed to ensure that it is affordable and put to use in speedy manner instead of over a lengthy period of time due to cost restraints. This band should ONLY be point-to-multipoint (ptmp). The ptmp base station should be required to be lightly licensed and coordinated according to part 101. This will allow the protection of federal and non-federal users that will be operating on this band. The license period should be valid for 10 years and allow renewal license fees to continue use and reoccurring income back to the government. Directional ptmp antennas should only be used to allow the reuse of that frequency in the same creating efficiency of the spectrum and effectiveness of the possible bandwidth to the customer. Omni-directional antennas should not be allowed to waste the spectrum by blasting it in every direction negating the reuse of the frequency readily available with todays technology. Allow the spectrum licenses to be in increments of 20 Mhz each license with up to 4-5 licenses initially authorized giving 80-100 Mhz of licensed ptmp spectrum to initial companies. Require a 1 year build out time to have the spectrum in useage (allow exceptions to equipment awaiting FCC certification) while restrict transfer of the sprectrum during this time to prevent speculators from interfering and prolonging the availability of the spectrum. Allow 47-55 Dbm EIRP limit as per part 101 with no gain limit on the customer units but with the same EIRP limit. Directional antennas should be limited to 20 Dbi with transmit power between 27-32 Dbm. When a licensed ptmp unit reaches 80% capacity, allow additional licenses to be awarded for spectrum usage. Allow the unlicensed usage of this band to have the same power requirements and hopefully only allow direction antennas to promote efficient usage of this band for spectrum reallocation in the same area. This efficient and effective usage of this band will help provide the bandwidth requirements the FCC is trying to instill into our industry. I believe this entire band should restrict cellular usage from sharing in an attempt to somewhat level the freedom of competition the fixed wireless industry has really never seen. The fixed wireless industry can very much help close the digital divide if we are given the proper tools and resources to do so. According to the FCC reports that is very much the reality. Help us to help our citizens gain the access they deserve!

Thank you for your time and consideration in this matter,

Sean Markis

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