

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Amendment of Part 101 of the Commission's	)	WT Docket No. 10-153
Rules to Facilitate the Use of Microwave for	)	
Wireless Backhaul and Other Uses and to	)	
Provide Additional Flexibility to Broadcast	)	
Auxiliary Service and Operational Fixed	)	
Microwave Licensees	)	
	)	
Request for Interpretation of Section	)	WT Docket No. 09-106
101.141(a)(3) of the Commission's Rules Filed	)	
by Alcatel-Lucent, Inc., et al.	)	
	)	
Petition for Declaratory Ruling Filed by	)	WT Docket No. 07-121
Wireless Strategies, Inc.	)	
	)	
Request for Temporary Waiver of Section	)	
101.141(a)(3) of the Commission's Rules Filed	)	
by Fixed Wireless Communications Coalition	)	

**REPLY COMMENTS OF AT&T INC.**

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November 22, 2010

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**REPLY COMMENTS OF AT&T INC.**

AT&T Inc., on behalf of itself and its affiliates (“AT&T”), hereby submits its reply to comments on the Federal Communications Commission’s (“FCC”) Notice of Proposed Rulemaking and Notice of Inquiry (“Notice”) in the above-referenced proceeding.<sup>1</sup> In the

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<sup>1</sup> *In the Matter of Amendment of Part 101 of the Commission’s Rules to Facilitate the Use of Microwave for Wireless Backhaul and Other Uses and to Provide Additional Flexibility to Broadcast Auxiliary Service and Operational Fixed Microwave Licensees; Request for Interpretation of Section 101.141(a)(3) of the Commission’s Rules Filed by Alcatel-Lucent, Inc., et al.; Petition for Declaratory Ruling Filed by Wireless Strategies, Inc.; Request for Temporary Waiver of Section 101.141(a)(3) of the Commission’s Rules Filed by Fixed Wireless Communications Coalition*, Notice of Proposed Rulemaking and Notice of Inquiry, WT Docket No. 10-153, WT Dkt. No. 09-106, WT Dkt. No. 07-121, FCC 10-146 (Aug. 5, 2010).

*Notice*, the Commission seeks comment on ways to increase the efficient use of spectrum for wireless backhaul and ensure the continued availability of backhaul for the future.<sup>2</sup>

## **I. Introduction and Summary**

As detailed below, AT&T and other commenters widely applaud the Commission’s decision to tackle wireless backhaul issues in a comprehensive manner—especially given the skyrocketing demand for mobile broadband and the impact that will have on wireless backhaul needs. In particular, commenters strongly support the Commission’s high-level goal of increasing spectrum below 10 GHz available for fixed service (“FS”) operations, as well as the Commission’s proposal to increase flexibility by permitting the use of “adaptive modulation” techniques.<sup>3</sup> Commenters also support additional review of the Commission’s proposal to permit smaller FS antennas. AT&T, and the overwhelming majority of other commenters, however, strongly oppose the “auxiliary” station proposal, a proposal that would produce harmful interference in the FS bands—particularly in the vital and densely-used 6 GHz and 11 GHz bands—while offering no offsetting public benefits. AT&T accordingly urges the Commission to act consistent with the recommendations herein.

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<sup>2</sup> The proposals include: (1) allowing FS operations to share certain spectrum bands currently used by the Broadcast Auxiliary Service (“BAS”) and the Cable TV Relay Service (“CARS”), while also providing broadcasters greater access to Part 101 FS spectrum by eliminating the “final link” rule; (2) permitting “adaptive modulation”; (3) authorizing “auxiliary” fixed stations; (4) lowering the current efficiency standards in rural areas; and (5) allowing smaller antennas in certain bands.

<sup>3</sup> In its opening comments, AT&T also urges the Commission to revise its full-band, full-arc licensing and coordination procedures for Fixed Satellite Service (“FSS”) earth stations in bands shared on a co-primary basis with FS operations. These changes would achieve in practice the co-equal sharing specified in Parts 25 and 101 of the Commission’s rules. Comments of AT&T, Inc. at 14 (“AT&T Comments”).

## **II. Commenters Widely Agree that Increased Spectrum Below 10 GHz Is Needed to Meet the Anticipated Backhaul Demands of Next Generation Wireless Broadband.**

Commenters strongly support setting aside additional spectrum below 10 GHz for point-to-point services to ensure that backhaul does not limit the ongoing transition to data-intensive fourth-generation mobile broadband services.<sup>4</sup> Commenters agree, for example, that existing copper T1s will not satisfy future backhaul needs.<sup>5</sup> Commenters highlight that “while fiber backhaul will be invaluable, wireless backhaul will be similarly important” and “may be the ‘only practical high-capacity backhaul solution available to serve certain rural and remote locations’.”<sup>6</sup> AT&T and other commenters also emphasize the specific importance of backhaul spectrum below 10 GHz, explaining that lower frequency spectrum “is preferred for long-link backhaul because signals can overcome the rain fading effects that limit transmission distances at higher frequencies.”<sup>7</sup>

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<sup>4</sup> Motorola explains that “[a]dditional spectrum is desperately needed to satisfy the current and future wireless backhaul demands of next generation wireless broadband services.” Comments of Motorola, Inc. at 2 (“Motorola Comments”). And Clearwire agrees that “[t]his explosion of mobile broadband demand can only be met if carriers increase their backhaul capacity, including microwave backhaul, to accommodate that traffic.” Comments of Clearwire Corp. at 7 (“Clearwire Comments”); *see also* Comments of the National Spectrum Management Association at 3, 16-17 (agreeing that allocation of additional spectrum to fixed services is needed to meet the increased demand for wireless backhaul) (“NSMA Comments”); Comments of PCIA—the Wireless Infrastructure Association at 1-2; Comments of T-Mobile USA, Inc. at 1-2, 4-5 (“T-Mobile Comments”); Comments of Verizon and Verizon Wireless at 2-3 (“Verizon Comments”); Comments of the Telecommunications Industry Association at 2 (“TIA Comments”).

<sup>5</sup> Commenters agree that existing copper T1s will not satisfy future backhaul needs. Comments of WCAI at 2 (noting “[t]he transition to next generation mobile wireless broadband technologies with bandwidth capacities per base station in the range of 100 to 300 Mbps is rapidly rendering today’s backhaul solutions, such as T1 lines, obsolete.”); *see also* Motorola Comments at note 6; Clearwire Comments at 4.

<sup>6</sup> Motorola Comments at 3.

<sup>7</sup> *Id.* (Spectrum below 10 GHz “is preferred for long-link backhaul because signals can overcome the rain fading effects that limit transmission distances at higher frequencies.”); TIA

Given the important role of FS for wireless backhaul, especially in rural areas, commenters support planning for future FS backhaul capacity. Many commenters echo the proposal by the Fixed Wireless Communications Coalition (“FWCC”), supported by AT&T, that the Commission coordinate with NTIA to permit commercial FS licensees to share the 7125-8500 MHz band with government licensees. Commenters, however, are less supportive of the Commission’s proposal to allow FS licensees to share the 6875-7125 MHz and 12700-13200 MHz bands with existing BAS and CARS licensees. As discussed below, commenters note that this spectrum is currently used for mobile service and coordination is done on an informal basis, two factors that limit the possibility of extensive backhaul deployment in these bands.

**A. Many Commenters Support the FWCC Proposal for Shared Use of the 7125-8500 MHz Band Between Commercial and Government Licensees.**

AT&T and many other commenters ask the Commission to urge NTIA to consider allowing commercial FS licensees to share the 7125-8500 MHz band with government users, consistent with a request by FWCC. FWCC, for example, explains that the “Commission could greatly expand the available Fixed Service spectrum for backhaul and other uses by pursuing this possibility.”<sup>8</sup> And Comsearch “agrees that the fixed microwave service proposed by FWCC to share the 7125-8500 MHz band [is] compatible with the existing government uses of the band and that sharing is possible on a co-primary basis using a first-come first-served frequency coordination approach.”<sup>9</sup>

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Comments at 6 (“Due to its low frequencies and resulting heightened resistance to rain attenuation, the band is ideal to provide longer distances between backhaul hops, which is of particular benefit to cellular sites located in rural areas that must connect with urban switching facilities.”); NSMA Comments at 16.

<sup>8</sup> Comments of the Fixed Wireless Communications Coalition at 15 (“FWCC Comments”).

<sup>9</sup> Comments of Comsearch at 37 (“Comsearch Comments”); *see also* Motorola Comments at 5-6; NSMA Comments at 17; T-Mobile Comments at 5-6.

Commenters explain that public-private sharing has been successful in other bands and can be accomplished without harmful interference to existing government licensees. Specifically, the Commission should model the 7125-8500 band sharing after the “successful federal/non-federal sharing in the 23 GHz band.”<sup>10</sup> In the 23 GHz band, spectrum is allocated for both private FS licensees and government users. To facilitate sharing, the FCC and NTIA have struck an effective balance where NTIA permits conditional authorization of fixed microwave links by FS users, but only on specified channel pairs.<sup>11</sup> This conditional authorization allows applicants for fixed microwave links to begin operating a link once an application is filed and the link has been frequency coordinated; this greatly enhances the utility of the band. Here, commenters urge the Commission to request that NTIA permit the use of conditional authorizations for certain channel pairs in the band. By “implementing coordination processes that employ simultaneous processes, coordination applicants will enjoy faster use approvals and increased certainty, ensuring efficient use of this spectrum for backhaul.”<sup>12</sup>

**B. Commenters Agree that Allowing Fixed Service Operations in the 6875-7125 MHz and 12700-13200 MHz Bands Will Not Noticeably Increase Usable Spectrum for Wireless Backhaul.**

Many commenters agree that the *Notice*'s proposal to allow FS users to share the 6875-7125 MHz and 12700-13200 MHz bands with existing BAS and CARS licensees will not

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<sup>10</sup> Motorola Comments at 5-6 (“[T]he proposed sharing is feasible, as evidenced by the successful federal/non-federal sharing in the 23 GHz band.”); AT&T Comments at 7-8; TIA Comments at 6.

<sup>11</sup> *Amendment of Part 101 of the Commission’s Rules to Accommodate 30 Megahertz Channels in the 6525-6875 MHz Band; Amendment of Part 101 of the Commission’s Rules to Provide for Conditional Authorization on Additional Channels in the 21.8-22.0 GHz and 23.0-23.2 GHz Band*, Report and Order, 25 FCC Rcd 7760 (2010).

<sup>12</sup> TIA Comments at 6.

significantly expand the use of these bands for long haul wireless microwave services.<sup>13</sup>

Currently, these television and radio station licensees often transmit across an entire band and over broad geographic areas, and the coordination process among these licensees is informal and rapid. Indeed, commenters point out that temporary “sites near news events or any large-scale televised event for relay to fixed receive sites are not going to be found anywhere except in the SBE market coordinator’s database, which is updated in real time, often multiple times in a given 24-hour period.”<sup>14</sup> While existing BAS licensees have operated effectively under these informal conditions, the introduction of a large number of FS links in these bands does not appear feasible.<sup>15</sup> Specifically, FS users “may not find the proposed method of coordination with [BAS] mobile (temporary fixed) uses to be sufficiently rigorous to protect their systems,” and “Part 74 local coordinators may be unable to take on the additional responsibility of coordinating with Part 101 fixed systems.”<sup>16</sup> Similarly, Motorola raises concerns “[g]iven the critical traffic transmitted over wireless backhaul—and the fact that interference to a backhaul link impacts service to a significant number of users.”<sup>17</sup> With respect to the 12700-13220 MHz band, FWCC

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<sup>13</sup> Motorola Comments at 4 (noting that “this spectrum, by itself, will not satisfy the expected surge in wireless backhaul”).

<sup>14</sup> SBE Comments at 6.

<sup>15</sup> Comsearch remarks that “the exemption of mobile (temporary fixed) stations from these [notify-and-response] procedures (and the use, instead, of less formal local coordination procedures) will make it difficult for Part 101 users to share the bands.” Comsearch Comments at 20; *see also* SBE Comments at 6-7 (Principal “among the numerous obstacles to the addition of interference-free Part 101 FS facilities in the 7 and 13 GHz bands is that, because mobile BAS operates at unpredictable locations ... co-channel FS stations will receive interference from these mobile facilities and there will be no good way to address it in real time.”); FWCC Comments at 4-5 (The FWCC “has reservations” about sharing in the 6875-7125 MHz band, “forsee[ing] problems in frequency coordination with TV pickup operators.”).

<sup>16</sup> Comsearch Comments at 20.

<sup>17</sup> Motorola Comments at 4-5

is concerned that “the discrepant channel widths between existing BAS/CARS facilities ... and Fixed Service [licensees] ... would magnify the frequency coordination problems, and even when coordination is successful, would block large amounts of spectrum from productive use.”<sup>18</sup> Given this, many commenters do not anticipate significant FS deployment in these bands even if the proposed rules were adopted.

Commenters also highlight that the Commission’s parallel proposal to eliminate the “final link” rule—and thus allow broadcasters access to existing FS bands—could actually decrease the spectrum available for wireless backhaul. T-Mobile, for example, remarks that “overcrowding, which could limit or prevent the use of microwave stations for backhaul, remains a valid concern,” and the “final link rule should therefore be retained . . . if its deletion would result in unacceptable congestion in the band.”<sup>19</sup> Similarly, the National Spectrum Management Association does “not support elimination of the Final Link rule if no additional BAS spectrum were to be opened up for Part 101 use, since this would merely add additional users competing for the limited Part 101 spectrum.”<sup>20</sup>

### **III. Commenters Strongly Support the Commission’s Adaptive Modulation Proposal.**

The record evidence shows that the Commission’s “adaptive modulation” proposal offers several immediate public interest benefits. First, commenters highlight that adaptive modulation “could improve reliability and performance by allowing links to remain operational when they would otherwise be out of service.”<sup>21</sup> Specifically, it would allow FS links subject to anomalous

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<sup>18</sup> FWCC Comments at 7.

<sup>19</sup> T-Mobile Comments at 7-8.

<sup>20</sup> NSMA Comments at 6.

<sup>21</sup> T-Mobile Comments at 9.

signal fading to briefly fall below the minimum capacity requirements established in Section 101.141 the Commission’s rules.<sup>22</sup> By “permitting a lower data rate at the appropriate times,” adaptive modulation “preserv[es] some service when otherwise there would be no service at all for some period of time.”<sup>23</sup> In particular, adaptive modulation could “aid the survivability of critical traffic across a microwave link during periods of deep fading,” including “rain-induced fading on microwave links operating above 10 GHz” and fading “during ducting episodes on long paths in certain climates operating in the 6 to 8 GHz bands.”<sup>24</sup> Commenters agree that this functionality “is vital to secure greater communications reliability for public safety, critical infrastructure, homeland security, and rural areas.”<sup>25</sup>

Second, adaptive modulation could “promote more efficient spectrum use by maximizing the data carrying capabilities of backhaul infrastructure.”<sup>26</sup> Indeed, adaptive modulation would

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<sup>22</sup> *Id.*

<sup>23</sup> USCC Comments at 5; *see also* AT&T Comments at 11 (Adaptive modulation can enhance efficiency by “allowing for the continued transport of critical network timing information in situations where a link would otherwise be inoperable.”); *Id.* (“[B]y allowing the link to remain in service—even if no significant data traffic is being transmitted—a temporary atmospheric fade might result in an effective outage of seconds or minutes, rather than hours.”); OEM Comments at 2 (“it is much better to transmit data at slower data rates for short periods of time, during deep path fading, than to have slow transmission rates one hundred percent of the time.”).

<sup>24</sup> Ceragon Comments at 5; *see also* Aviat Networks Comments at 2 (“Aviat Networks supports the use of Adaptive Modulation (ACM) as a means of maintaining link integrity in the event of phenomena such as rain fade, etc. that would otherwise cause the link to cease transmission.”); FiberTower Comments at 7 (“By facilitating greater use of adaptive modulation, the Commission can increase the reliability of fixed service links.”); WISPA Comments at 3.

<sup>25</sup> TIA Comments at 4. This is “especially critical in cases of traffic related to public safety—such as the provision of 911 service—and homeland security, where the intermittent signal interruption caused by atmospheric fading would otherwise impair or result in the loss of these vital communications.” AT&T Comments at 11.

<sup>26</sup> T-Mobile Comments at 9.

allow FS link operators to “maintain[] ... network synchronization” during fading, and thereby prevent “time-consuming reboot[s].”<sup>27</sup> And enhancing the efficiency of the links would, in turn, make the links a “more viable option for wireless backhaul communications.”<sup>28</sup> This functionality would be particularly valuable for transmitters outside of urban centers. In rural areas, microwave systems are more likely than in urban areas to have long path lengths. As a result, fixed links in rural areas are more likely to face difficulties with signal fades. Commenters agree that the aforementioned benefits of adaptive modulation would improve availability to data and voice communications service in these rural areas.<sup>29</sup>

Third, commenters agree that adaptive modulation could help FS operators “save operational costs associated with loss of service and reinstatement of the link.”<sup>30</sup> Sprint, for example, explains that “adaptive modulation ... would reduce costs and allow for better microwave performance over longer distances.”<sup>31</sup> And WISPA highlights that “[p]ermitting adaptive modulation for atmospheric and other events beyond the licensee’s control will reduce overall system costs by mitigating the need for alternate and duplicative system hardware.”<sup>32</sup>

At the same time, the proposal to modify the adaptive modulation rules carries some risk of misuse. To prevent such misuse, several commenters support the Commission proposal—

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<sup>27</sup> FWCC Comments at 8.

<sup>28</sup> T-Mobile Comments at 9.

<sup>29</sup> *See, e.g.*, Mimvi Comments at 6 (“There are many cases in which fade is going to be more present in some areas than others, especially in rural long-link areas that are desperate for communication links.”); FiberTower Comments at 7 (“Moreover, as the Commission recognizes, it can also facilitate the use of wireless backhaul in rural areas.”).

<sup>30</sup> T-Mobile Comments at 9.

<sup>31</sup> Sprint Comments at 5.

<sup>32</sup> WISPA Comments at 4.

previously articulated by AT&T<sup>33</sup>—to require licensees that wish to use adaptive modulation to “state that fact in their prior coordination notices.”<sup>34</sup> Commenters agree that this proposal leverages the Commission’s existing licensing framework to ensure that licensees properly use adaptive modulation to support the Commission’s goals of spectrum efficiency and continuity of communications. FWCC, for example, explains that “[p]lacing adaptive modulation data in the coordination notice will . . . help the industry to self-police and prevent abuse of the rules.”<sup>35</sup> Specifically, NSMA notes that this solution will “allow/encourage coordinators and other interested parties to review the link design to verify compliance with the high availability requirement,” “discourag[e] non-compliance,” and “launch[] any debate regarding the design well in advance of licensing or implementation.”<sup>36</sup>

#### **IV. Commenters Urge the Commission to Proceed with Caution Before Allowing Fixed Service Licensees to Use Smaller Antennas in Additional Spectrum Bands.**

The record unquestionably supports increasing flexibility to promote the efficient use of FS spectrum. However, AT&T and others note that the Commission’s proposal to permit smaller antennas—while potentially increasing flexibility—requires further study before implementation. As commenters recognize, without careful technical restrictions, smaller

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<sup>33</sup> The Commission notes that this proposal is based on an earlier proposal from AT&T in the adaptive modulation docket. *See* NPRM, ¶ 39.

<sup>34</sup> The Commission has previously taken similar action in its treatment of Automatic Transmit Power Control (“ATPC”). ATPC is another method used by licensees to mitigate signal fades and/or communications loss, as it allows for the temporary automatic adjustment of transmitter output power when path fading is detected. Interference Criteria for Microwave Systems, Telecommunications Industry Association Telecommunications Systems Bulletin TIA10-F § 4.3.1 (June 1, 2009).

<sup>35</sup> FWCC Comments at 8.

<sup>36</sup> NSMA Comments at 7.

antennas could produce harmful interference and decrease spectral efficiency.<sup>37</sup> Comsearch, for example, explains that “[u]sing smaller antennas . . . can result in an increase in interference potential as a result of the wider beamwidth, reduced sidelobe suppression, and possibly worse front to back ratio [of] smaller antennas.”<sup>38</sup> Similarly, FWCC notes that “smaller antennas produce a broader front radiation pattern, and more side and back radiation, all of which raises interference potential and allows successful coordination of fewer links overall in a crowded environment.”<sup>39</sup> And T-Mobile notes that permitting smaller antennas “could . . . reduc[e] the efficient use of the spectrum and increase[] congestion because such antennas allow more radio frequency (‘RF’) energy to transmit in directions other than the target point-to-point link, resulting in larger coordination zones.”<sup>40</sup>

If, despite these legitimate concerns, the Commission concludes that small antennas will serve the public interest, AT&T proposes several restrictions to reduce potential interference and to ensure efficient spectrum use. First, the Commission should not permit small antennas in the densely-used 6 GHz band.<sup>41</sup> Second, the Commission should limit small antenna transmitter power to 0.5 or 1 watt, which should prevent designers from increasing power to overcome lost gain from the smaller antenna, and should apply the minimum path length requirements of

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<sup>37</sup> Small antennas are likely to cause interference to nearby established and future legitimate point-to-point links if they are close-by. Co-location would aggravate the interference problem.

<sup>38</sup> Comsearch Comments at 3-4.

<sup>39</sup> FWCC Comments at 14-15.

<sup>40</sup> T-Mobile Comments at 3-4; *see also* Ceragon Comments at 16.

<sup>41</sup> Smaller antennas already are permitted in the 11 GHz band. “The only band where we see an opportunity to relax an antenna standard is the 18.7 GHz band.” Ceragon Comments at 16.

Section 101.143 to transmit power (not EIRP) to small antenna use.<sup>42</sup> Third, small antenna links should cause no more than 1 dB of receiver threshold degradation in legitimate point-to-point links assuming co-channel operation. This requirement will protect existing paths' channel growth opportunities. Fourth, small antenna installations should be at least five miles away from the closest point-to-point installation to ensure separation in all areas, whether rural or not. Fifth, all small antenna links in the same area should use the same channel—and both polarizations—before expanding into other channels.<sup>43</sup>

#### **V. Commenters Strongly Oppose the Use of Auxiliary Stations.**

Commenters not only commend the FCC for rejecting Wireless Strategies' petition, but also document several fatal flaws with the revised auxiliary station proposal in the *Notice*.<sup>44</sup> First, commenters detail the severe interference that this proposal would cause in the densely-used 6 GHz and 11 GHz FS spectrum bands.<sup>45</sup> FWCC, for example, explains that “it is self-evident that increasing the number of high-power licensed stations, deployed with the intent of increasing side-lobe radiation to as large an area as possible ... will increase the potential for interference to licensed incumbent and prospective point-to-point operations.”<sup>46</sup> USCC “is

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<sup>42</sup> If the Commission authorizes a path shorter than the minimum path length pursuant to a waiver, the Commission should use power reduction scaling for such paths.

<sup>43</sup> Current antenna standards were established to facilitate close-packed spectrum use, but smaller antennas spread more interference and potentially interfere with close-packing.

<sup>44</sup> AT&T Comments at 17; Verizon Comments at 13 (“The Commission has correctly determined that the Request for Declaratory Ruling submitted by Wireless Strategies, Inc. (WSI) is inconsistent with multiple sections of Part 101 rules and should be denied.”).

<sup>45</sup> TIA explains that interference “would be particularly devastating in the 6 GHz band – one of the few remaining bands nominally affected by precipitation.” TIA Comments at 9.

<sup>46</sup> FWCC Supplemental Response at 6. TIA agrees that “the resulting increase in point-to-multipoint use under the WSI proposal would disadvantage point-to-point users with interference

especially concerned with the potential for increased interference ... created by the return paths of the newly created authorizations, which would preclude the licensing of many new full service FS facilities.”<sup>47</sup> And the potential for interference is compounded by the fact that auxiliary stations will use time division duplexing (“TDD”) operations in FS bands that traditionally have used frequency division duplexing (“FDD”). As NSMA explains, the “[i]ntroduction of TDD operation into this environment would conflict with FDD operation by creating bucking interference (closely located, co-channel or adjacent channel transmit-to-receive interference) due to the lack of adherence to a high-low frequency plan.”<sup>48</sup>

Second, commenters detail how the auxiliary station concept is spectrally inefficient. Verizon explains that “the WSI deployment strategy illustrates the high-level of spectral *inefficiency* likely to be deliberately caused by future main links that create pseudo-geographic ‘service areas’ and that radiate enough off-path energy to communicate with undefined potential remote sites.”<sup>49</sup> NSMA agrees that auxiliary multipoint station operators will have a “strong incentive” to “wast[e] spectrum” by creating a “primary link operating at the maximum permissible power ... which is far in excess of that necessary to provide high-availability point-to-point communications.”<sup>50</sup> And RTG explains that the proposal “will severely undermine the efficiency of ... carriers’ rural wireless operations.”<sup>51</sup>

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... and hamper the desired effects of spectrum relocation efforts, such as those done as part of the 2006 AWS auction.” TIA Comments at 9.

<sup>47</sup> USCC Comments at 7.

<sup>48</sup> NSMA Comments at 12.

<sup>49</sup> Verizon Comments at 17.

<sup>50</sup> NSMA Comments at 12.

<sup>51</sup> RTG Comments at 2.

Third, commenters agree that preventing and resolving interference from auxiliary stations would be a significant burden on point-to-point licensees. Verizon explains that “[u]sing measurements to evaluate interference into an operating system is *already* intrusive, inconvenient, and expensive.”<sup>52</sup> With “tens or hundreds of intermittently transmitting cochannel auxiliary stations as potential sources, the situation will be considerably worse and possibly unmanageable.”<sup>53</sup> Similarly, NSMA explains that “[i]nterference monitoring (including real-time measurements) on a full-time basis will be required to ensure that interference (whether predicted or not) is not received from ... Auxiliary Stations.”<sup>54</sup> While “detailed on-going measurements and field activities are currently only needed on occasion,” allowing transmitting devices that “are unregulated (no required pattern performance, cross-polarization requirement, etc.) will undoubtedly require costly on-going methods to identify and mitigate the interference.”<sup>55</sup>

#### **VI. The Commission Should Disregard Sprint’s Meritless Assertion that the “Broader” Special Access Market Is “Broken.”**

Unsurprisingly, Sprint has used this proceeding to once again make allegations about special access—calling the “broader” special access marketplace “broken” and in need of “immediate[.]” repair.<sup>56</sup> Sprint’s conclusory assertion, as usual, fails to address the mountain of

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<sup>52</sup> Verizon Comments at 18.

<sup>53</sup> *Id.*

<sup>54</sup> NSMA Comments at 12.

<sup>55</sup> *Id.* NSMA further notes that “making Auxiliary stations Secondary licensed status does not solve the problem. Most interference problems are present all the time and only discovered when the wanted signal is experiencing a deep fade.” *Id.*

<sup>56</sup> Sprint Comments at 2-3 (“Sprint notes, however, that regardless of the Commission’s actions in this docket, the broader issue of special access service must be addressed if the rapid expansion of wireless broadband is to be achieved. Microwave alternatives will not correct the

record evidence confirming the widespread availability of alternatives to ILEC special access services. The record in the special access proceeding confirms that CLECs, cable companies, and microwave wireless providers have deployed extensive alternative facilities, both in the downtown areas where special access demand is traditionally concentrated, and in suburban and rural areas where broadband wireless backhaul demand has attracted extraordinary investment by alternative backhaul providers.<sup>57</sup> Even the most ardent proponents of regulation of special access services have conceded that they have widespread alternatives to ILEC special access.<sup>58</sup> Just this month, T-Mobile's chief technology officer, Neville Ray, speaking at the Wells Fargo Securities Technology, Media & Telecom Conference, explained that T-Mobile now uses 14 different backhaul providers, including local exchange carriers, Ethernet wireless providers and cable companies.<sup>59</sup> According to a reporter covering the event, "Ray said that beginning in 2007 when T-Mobile started to upgrade its backhaul many of the incumbent backhaul providers were struggling to upgrade to fiber, so T-Mobile had to work with smaller providers to get the right mix of technology and price. 'It was a combination of scheduling and pricing to bring it together

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broken special access market and Commission action on this critical input to wireless services needs to be taken immediately.").

<sup>57</sup> See, e.g., Letter from Gary Phillips, AT&T, to Marlene Dortch, FCC (filed Aug. 5, 2010) ("AT&T August 2010 Letter"); Letter from Christopher Heimann, AT&T, to Marlene Dortch, FCC (filed April 15, 2010); Reply Comments of AT&T Inc., WC Docket No. 05-25, at 28-38 (filed Jan. 29, 2010); Letter from Donna Epps, Verizon, to Marlene Dortch, FCC, WC Docket No. 05-25 (filed June 7, 2010); Letter from Christopher Heimann, AT&T, to Marlene H. Dortch, FCC, WC Docket No. 05-25 (filed June 17, 2010).

<sup>58</sup> AT&T August 2010 Letter at 4.

<sup>59</sup> Sue Marek, "T-Mobile: myTouch 4G Is Averaging 5 Mbps Download Speeds," Fierce Wireless (Nov. 10, 2010), <http://links.mkt1985.com/servlet/MailView?ms=MzIxNzE1NgS2&r=MTg5NTE2OTg2NTAS1&j=MTAwMDc2OTQxS0&mt=1&rt=0> (last visited Nov. 18, 2010).

and create a capable network,' Ray said."<sup>60</sup> Not surprisingly, therefore, Sprint continues to offer nothing in this proceeding but bare assertions, with no support or documentation, that it lacks competitive alternatives to ILEC special access services. Thus, its claims should be rejected.

## **VII. Conclusion**

Commenters commend the Commission's decision to address wireless backhaul issues in a comprehensive manner, especially given the upcoming transition to data-intensive 4G technologies. Commenters also agree that while some of the *Notice's* proposals will prove very valuable, including the Commission's recognition of the need for additional FS spectrum and the use of adaptive modulation, other proposals, like the use of smaller antennas, require further study. Commenters also recommend the immediate rejection of the auxiliary station proposal.

Respectfully submitted,

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November 22, 2010

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<sup>60</sup>

*Id.*