

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

In the Matter of	)	
	)	
Amendment of Part 101 of the Commission's	)	
Rules to Facilitate the Use of Microwave for	)	WT Docket No. 10-153
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., <i>et al.</i>	)	
	)	
	)	
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 THE  
NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION**

The National Cable & Telecommunications Association (NCTA)<sup>1</sup> hereby submits these reply comments pursuant to the Notice of Proposed Rulemaking and Notice of Inquiry issued in the above-captioned proceeding.

In this proceeding, the Commission seeks to explore ways to increase the “flexibility, capacity and cost-effectiveness of the microwave bands located below 13 GHz, while protecting

---

<sup>1</sup> NCTA is the principal trade association for the U.S. cable industry, representing cable operators serving more than 90 percent of the nation's cable television households and more than 200 cable program networks. The cable industry is the nation's largest provider of broadband service after investing over \$160 billion since 1996 to build two-way interactive networks with fiber optic technology. Cable companies also provide state-of-the-art competitive voice service to more than 23 million customers.

incumbent licensees in these bands.”<sup>2</sup> It proposes, among other things, to make 750 additional MHz of spectrum available to Fixed Service (“FS”) licensees to provide wireless backhaul and other point-to-point and point-to-multipoint communications by sharing existing bands reserved for Broadcast Auxiliary Service (“BAS”) and Cable TV Relay Services (“CARS”). In particular, FS operations would be permitted to share spectrum bands at 6875-7125 MHz and 12700-13200 MHz.

The cable industry supports the Commission’s objective, consistent with the National Broadband Plan, to expand the availability of spectrum for wireless broadband services through greater spectrum flexibility and band-sharing opportunities.<sup>3</sup> NCTA believes that wireless backhaul deployment in the CARS band may be accommodated, *provided* existing cable CARS facilities are protected through rigorous adherence to a formal frequency coordination process. Without such protection, cable service to consumers across the country could potentially be disrupted or subject to harmful interference. Moreover, the impact of wireless backhaul communications on mobile BAS and CARS services, particularly electronic news gathering operations, deserves further study given the special challenges with frequency coordination for those services.

The Commission should reject Wireless Strategies Inc.’s proposal for an “auxiliary station” which would expand the operating area of auxiliary stations to the detriment of other licensees. And it should not address FiberTower’s proposal to operate a fixed wireless backhaul facility in the vacant channels of the TV band (“white spaces”), which is not the subject of this

---

<sup>2</sup> *In the Matter 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 Licenses*, WT Docket No. 10-153, Notice of Proposed Rulemaking and Notice of Inquiry, rel. August 5, 2010 at ¶ 4 (“NPRM”).

<sup>3</sup> As cable operators expand and transform their services to meet marketplace demands, they too may need additional flexibility and spectrum resources to augment services in the future.

proceeding. More importantly, as NCTA has shown in the ‘white spaces’ proceeding, deployment of FiberTower’s wireless backhaul service will cause serious interference to cable systems.

**I. CABLE SYSTEMS THAT CURRENTLY USE CARS SPECTRUM SHOULD BE GRANDFATHERED UNDER ANY NEW CARS/WIRELESS BACKHAUL BAND-SHARING ARRANGEMENT**

---

As described in the NPRM, CARS stations, licensed under Part 78 of the Commission’s rules, are “point-to-point or point-to-multipoint microwave systems used by cable systems to receive signals from remote locations or to distribute programming to microwave hubs where it is impossible or too expensive to run cable to those hubs.”<sup>4</sup> Cable companies rely on CARS microwave transmissions, particularly at 13 GHz, to provide critical links in a fully integrated end-to-end service to their customers, particularly in mountainous and other challenging terrain.

In addition, some cable operators utilize CARS spectrum for purely locally-originated and regional programming, particularly the transmission of electronic newsgathering (“ENG”) for local news channels and other programming from remote locations. Cable’s coverage of on-the-spot breaking news events enriches local and national news coverage and provides emergency information to television viewers. But breaking news, by its very nature, is unpredictable. As with broadcasters’ BAS operations, cable operators wish to ensure that their ENG operations are not disrupted by new wireless backhaul services.

In light of the importance of CARS, the Commission appropriately emphasizes that any rule changes must first and foremost preserve and protect existing CARS licensees in these bands and that any new licenses must be frequency-coordinated with existing licenses.<sup>5</sup> Cable operators often invest in CARS facilities and technology in order to meet their franchise

---

<sup>4</sup> NPRM at ¶ 12.

<sup>5</sup> *Id.* at ¶ 17.

obligations to deliver high quality cable television service to entire communities.<sup>6</sup> Moreover, as noted above, the continued unimpaired use of CARS frequencies is particularly critical for cable operators serving hard-to-reach rural communities.

None of the parties that filed comments in this proceeding disputed the importance of protecting existing CARS operations. This issue appears settled: If the Commission proceeds with its proposal to allow additional services in the relevant bands, cable systems and others that currently use CARS spectrum should be grandfathered.

The success of this course of action, however, requires strict adherence to the frequency coordination process. These procedures involve FS operators giving prior notice to nearby licensees and applicants of the technical details of proposed operations, taking steps to avoid interference and resolve conflicts, and certifying that the proposed operation has been coordinated.<sup>7</sup> The Commission notes in the NPRM that the frequency coordination process has been successful in allowing maximum utilization of shared bands and eliminating potential interference problems. NCTA agrees that frequency coordination has generally worked well, but once the BAS and CARS bands are opened up to FS operations, the bands could quickly become saturated with new users, making the frequency coordination process more complex and all the more critical to avoid harmful interference.

Therefore, NCTA urges the Commission to make clear that new FS entrants in the CARS band must follow *every* step of the frequency coordination process *to the letter* to protect incumbent licensees. Moreover, the burden of proof should rest with FS operators, who should be able to demonstrate that no technical or operational problems are posed by their use of the

---

<sup>6</sup> 47 U.S.C. § 541(a)(4)(A) (requires cable operators to provide cable service to all households in the franchise area).

<sup>7</sup> 47 C.F.R. §§ 101.21(e), (f), 101.103; 47 C.F.R. § 78.36.

CARS frequencies (including the submission of technical studies and analyses if an existing CARS licensee raises colorable interference concerns). Proper frequency coordination requires use of a reputable frequency coordination and protection company with the requisite engineering resources to provide these services.

**II. THE COMMISSION SHOULD, AT A MINIMUM, STUDY THE IMPACT OF WIRELESS BACKHAUL USERS ON EXISTING MOBILE BAS/CARS OPERATIONS PRIOR TO ADOPTING FINAL RULES**

---

Apart from ensuring that existing fixed CARS stations are protected going forward, the existing *mobile* BAS and CARS licensees present special challenges under a frequency coordination scheme. While many parties support the Commission’s proposal to permit wireless backhaul sharing of the spectrum, many of those same parties expressed concerns about the limited feasibility of shared use given the presence of mobile or temporary fixed uses in the bands, particularly itinerant electronic news gathering and remote programming transmissions.<sup>8</sup>

Comsearch, for example, one of the leading providers of spectrum management and wireless engineering products and services, noted that coordinating with existing mobile stations that provide important electronic news gathering will make it difficult for FS users to share the bands.<sup>9</sup> It recommended devising “an effective coordination method that would both protect fixed systems with precise interference analysis and also allow near real time access to channels

---

<sup>8</sup> See e.g. Comments of Verizon and Verizon Wireless at 3-4, AT&T Inc. at 8-9; Motorola at 4-5 (“the Commission should fully vet these interference concerns before adopting its proposal”). The Association of Maximum Service Television Inc. (“MSTV”) and the National Association of Broadcasters (“NAB”) urged the Commission to confirm that wireless backhaul operations will be secondary to broadcasters’ mobile newsgathering operations and existing fixed operations, as well as reserve a portion of the 7 GHz and 13 GHz bands in certain congested markets for broadcaster uses. It argued that while sharing between fixed point-to-point operations is feasible technically, “there is a basic incompatibility between broadcasters’ itinerant newsgathering operations (which rely on the ability to establish longhaul and shorthaul links at unpredictable locations and times) and permitting wholesale sharing of these frequencies with substantial numbers of new fixed, point-to-point backhaul operations.” Joint NAB/MSTV Comments at 2.

<sup>9</sup> See e.g. Comments of Comsearch, National Spectrum Management Association, and Motorola.

for electronic newsgathering (“ENG”) requirements.”<sup>10</sup> As noted above, broadcast and cable ENG operations provide breaking news and emergency information to the public. The Commission should fully explore potential interference and coordination concerns before permitting new users to enter the band. Moreover, proposals to consider partitioning the band between fixed and temporary services (*i.e.* band segmentation), revising channel plans, and other approaches require further study. Such analysis is necessary to ensure that these proposals do not have a negative impact on existing CARS facilities.<sup>11</sup>

### **III. OTHER SPECTRUM PROPOSALS IN THIS PROCEEDING WOULD RESULT IN HARMFUL INTERFERENCE AND SHOULD BE REJECTED**

#### **A. Wireless Strategies, Inc. Proposal**

In the NPRM, the Commission denied a petition for declaratory ruling filed by Wireless Strategies, Inc. (“WSI”) which sought approval for a Part 101 FS service that rests on “the premise that once a microwave link is successfully coordinated and licensed, additional auxiliary links can be designed to re-use the same frequency near the coordinated/licensed transmitter without causing harmful interference to other microwave links.”<sup>12</sup> The Commission determined that the proposal is not consistent with its rules but found it worthy of further consideration because of potential efficiencies. It asks whether changes to its Part 101 rules would allow operation without harm to other licensees.

Numerous parties, including NCTA, opposed WSI’s initial petition and reiterated their opposition in this proceeding.<sup>13</sup> WSI’s proposal claims to enable the main beam of the WSI

---

<sup>10</sup> *Id.* at 21.

<sup>11</sup> *See e.g.*, Comments of National Spectrum Management Association.

<sup>12</sup> NPRM at ¶ 44.

<sup>13</sup> *In the Matter of Wireless Strategies Inc. Request for Declaratory Ruling on Compliance of Fixed Microwave Antennas Having Distributed Radiating Elements*, WT Docket No. 07-121, NCTA Reply Comments, August 20,

antenna and its side lobe transceivers to automatically coordinate frequency transmissions so as to avoid interference with other users of the spectrum. WSI's "concurrent coordination" scheme is fundamentally flawed because it fails to fully coordinate multiple links.<sup>14</sup>

Specifically, WSI's proposed fixed microwave antenna has a main transceiver and additional transceivers that radiate to the left and right of the main beam. WSI asserted that as long as the user of its antenna coordinates the frequency of the main beam of a point-to-point link within FCC rules 101.103, the additional transceivers to the left and right of the main beam will be concurrently coordinated and there is no risk of interference to other authorized users in the spectrum.<sup>15</sup> This "automatic coordination" results, WSI asserts, because the Radiation Pattern Envelope (RPE) of the antenna falls within the same parameters of a typical parabolic dish microwave antenna under the Commission's rules.<sup>16</sup>

As we previously explained, side lobe radiation pattern emissions of a typical microwave antenna do *not* act as a transceiver, which is able to communicate in a two-way fashion with other transceiver locations at unspecified and unknown locations. However, this type of two-way multipoint operation is inherent in the design of WSI's antenna. WSI's so-called "concurrent coordination" concept should not be allowed under any modification of the Commission's rules because coordination of these additional paths will not occur.

NCTA agrees with those parties, such as Comsearch, who assert that even allowing for the Commission's proposed improvements to the WSI proposal, it would still "undercut the basic

---

2007. *See e.g.*, Comments of Fixed Wireless Communications Coalition, Verizon and Verizon Wireless, AT&T Inc. in the instant docket.

<sup>14</sup> *See e.g.* Comments of Verizon, Alcatel-Lucent, Harris-Stratex Networks, Terrastar Networks, Fixed Wireless Communications Coalition, Society of Broadcast Engineers, and National Spectrum Manager's Association in WT Docket No. 07-121.

<sup>15</sup> *See e.g.* Declaratory Ruling Request at 4-6.

<sup>16</sup> 47 C.F.R. § 101.115.

spectral efficiency principles of the Part 101 Rules. . .” and harm existing licensees.<sup>17</sup> As Verizon and Verizon Wireless point out, the “auxiliary station” proposed by WSI “still fails to provide for reliability, payload capacity and surety of continuing service required for cellular backhaul services.”<sup>18</sup> From the cable industry’s perspective, if WSI auxiliary stations are permitted to operate, cable operators and programmers utilizing the same spectrum will be at risk for interference from WSI transceivers that are not properly coordinated under the Commission’s long-standing frequency coordination rules.

NCTA urges the Commission to give no further consideration to WSI’s proposal to operate its fixed antenna because of the potential for harmful interference to the operations of cable operators and programmers.

## **B. FiberTower Proposal**

In addition to supporting wireless backhaul deployment in the CARS band, FiberTower Corporation took the opportunity to promote the deployment of wireless backhaul uses on a licensed basis in the so-called TV band “white spaces,” which is not the subject of this proceeding. As NCTA explained in the ‘white spaces’ proceeding, FiberTower’s proposal to operate a fixed service to deploy additional wireless backhaul facilities would have a deleterious effect on cable systems.<sup>19</sup> The proposed transmission power levels in FiberTower’s proposal would cause harmful interference directly to consumers and to cable headends. Based on our technical analyses, for example, cable consumers’ digital cable-ready television sets would be adversely affected from distances as far as three miles away. In any event, the Commission

---

<sup>17</sup> Comments of Comsearch at 5.

<sup>18</sup> Comments of Verizon and Verizon Wireless at 14.

<sup>19</sup> See *In the Matter of Unlicensed Operation in the TV Broadcast Bands*, ET Docket No. 04-186, NCTA *ex parte*, filed August 1, 2008, submitting technical analysis by David Large Consultants; NCTA *ex parte*, ET Docket No. 04-186, filed September 8, 2008.

declined to set aside TV channels for fixed licensed use, as requested by FiberTower, in the “white spaces” proceeding.<sup>20</sup> It is considering this proposal in the context of future spectrum-related proceedings and need not address it here.

### CONCLUSION

CARS spectrum still plays an important role in the provision of cable service to millions of cable customers nationwide. These frequencies have been used for decades to supplement and make seamless the cable industry’s coaxial cable and fiber-based facilities – particularly for consumers in rural areas. The Commission should only accommodate FS users in the CARS band if its procedures preserve the ability of cable systems and other eligible users to continue to utilize the CARS band in its intended manner with no additional burdens. We also urge the Commission not to take any action on various band-sharing proposals that impact mobile CARS uses without further analysis and opportunity for comment among affected stakeholders.

Respectfully submitted,

/s/ **Rick Chessen**

William A. Check, Ph.D  
CTO & Senior Vice President  
Science & Technology

Andy Scott  
Vice President, Engineering  
Science & Technology

Rick Chessen  
Loretta P. Polk  
National Cable & Telecommunications  
Association  
25 Massachusetts Avenue, N.W. – Suite 100  
Washington, D.C. 20001-1431  
(202) 222-2445

November 22, 2010

---

<sup>20</sup> *In the Matter of Unlicensed Operation in the TV Broadcast Bands*, Second Memorandum Opinion and Order, ET Docket No. 04-186 at ¶ 137.