Before the
Federal Communications Commission
Washington DC 20554

In the Matter of	)	
	)	
Amendment of Part 101 of the	)	
Commission's Rules to Facilitate the Use of	)	WT Docket No. 10-153
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	)	WT Docket No. 09-106
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	)	

COMMENTS OF THE
FIXED WIRELESS COMMUNICATIONS COALITION

The Fixed Wireless Communications Coalition (FWCC)[1] files these comments in response to the June 7, 2011 *Further Inquiry* in the above-captioned proceeding.[2]

[1] The FWCC is a coalition of companies, associations, and individuals interested in the fixed service—i.e., in terrestrial fixed microwave communications. Our membership includes manufacturers of microwave equipment, fixed microwave engineering firms, licensees of terrestrial fixed microwave systems and their associations, and communications service providers and their associations. The membership also includes railroads, public utilities, petroleum and pipeline entities, public safety agencies, cable TV providers, backhaul providers, and/or their respective associations, communications carriers, and telecommunications attorneys and engineers. Our members build, install, and use both licensed and unlicensed point-to-point, point-to-multipoint, and other fixed wireless systems, in frequency bands from 900 MHz to 95 GHz. For more information, see www.fwcc.us.

A. FREQUENCY COORDINATION ISSUES

Comsearch, a leading Fixed Service (FS) frequency coordinator, has expressed concern that the local coordination method used for electronic news gathering (ENG) operations would not sufficiently protect FS operations using the same bands.[3] The FWCC agrees. We are not confident that Part 74 local coordinators will be willing or able in all cases to take on the additional responsibility of coordinating with Part 101 fixed systems, or that Part 101 users can be assured that local coordination will protect their systems. If FS users have doubts of protection from ENG interference through an effective coordination process, then the bands become much less attractive for uses such as backhaul.

The Commission asks for comment on proposals to allow FS-only use of the bands outside the service area of any co-channel TV pickup station license and to preserve some segments of the bands for exclusive BAS and CARS use.[4] These ideas are helpful, but do not fully solve the fundamental problem of how to coordinate ENG operations with FS links. While making the bands available for FS use only outside the service area of co-channel TV pickup station licenses would mitigate the most serious interference concerns, there would nevertheless

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2 Wireless Backhaul: Further Inquiry into Fixed Service Sharing of the 6875-7125 MHz and 12700-13200 MHz Bands, WT Docket No. 10-153, DA 11-1011 (released June 7, 2011) ("Further Inquiry").

3 Comsearch at 20-21 (filed Oct. 25, 2010).

4 Further Inquiry at 3-4.

be potential for interference between systems in adjacent areas or with BAS systems operating under the "720 hour rule."[5]

Excluding FS operations from certain segments of the 7 and 13 GHz bands would enhance the availability of spectrum for ENG. But to also make the spectrum workable for FS usage, the FCC should designate channels for exclusive fixed (FS, BAS, and CARS) usage, or at least require BAS and CARS temporary fixed operations in the segments available to FS users to follow formal Part 101 coordination procedures. In particular, we believe that temporary usage in the 13 GHz band may be low enough that the proposed 13.15 -13.2 GHz exclusive segment would be sufficient to support all temporary operations in that band. It may be feasible to require Part 101 coordination for all uses, including temporary fixed operation under a TV pickup license, in the remaining 12.7-13.15 GHz portion of the band. In contrast, continuing to follow local coordination procedures for ENG in the shared segments will deter FS investment and usage. Even if ENG operations that use local coordination are confined to the proposed exclusive segments, there would still be potential for interference with FS systems on the adjacent channel.

B. CAPACITY AND LOADING ISSUES

There is no proposal in this docket to add any new capacity or loading requirements to Part 74,[6] but we agree with the Engineers for the Integrity of Broadcast Auxiliary Services Spectrum (EIBASS) that imposing such standards under Part 74 would enhance efficient use of the spectrum. Part 101 systems are considered to be 50 percent loaded when 50 percent of the

5 See 47 C.F.R. § 74.24 (broadcast or broadcast auxiliary licensee can operate certain Part 74 stations, subject to conditions, up to 720 hours annually per frequency without a license).

6 Further Inquiry at 6-7.

required capacity is connected to multiplex equipment.[7] There is no requirement that the system be 50 percent loaded with actual communications traffic. The Part 74 rules could be similarly crafted to address the concerns of EIBASS and the Society of Broadcast Engineers (SBE) about intermittent usage of BAS facilities. While these rules allow some measure of inefficiency, there is still a benefit to requiring the radio equipment to be capable of carrying greater capacity per unit bandwidth when feasible, even if that capacity is not used 100 percent of the time.

C. CHANNELIZATION ISSUES

Any permitted channelization should be listed in the rules and the specific channels should be identified in the coordination and licensing processes.[8] We disagree with EIBASS that operating under the present flexible interpretation of the channel plans would be efficient going forward.[9] For example, if licensees are permitted to change the offset of a narrowband channel within a licensed 25 MHz segment at will, a coordination analysis attempting to re-use the segment would have to assume the worst case—that there may be no frequency separation—whereas greater re-use would be possible by specifying non-overlapping channels within the 25 MHz segment. Furthermore, given the lack of capacity requirements, Part 74 users have little

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7 47 C.F.R. § 101.141(a)(6).

8 The FWCC agrees with Comsearch's initial comments that opposed adding channel plans of 3.75 MHz and narrower bandwidth to the rules because the channels would not be very useful either to Part 74 or to Part 101 users. Comsearch at 21-22 (filed Oct. 25, 2010).

9 "[W]e note that the Commission grants licenses for these [Part 74] bands by specifying a band of operation, not a specific operating frequency. TV BAS frequency assignments in these bands are licensed by channel band edges. Thus, specification of offset frequencies is not required and would not be identified in the ULS or on the license. Therefore, a licensee has flexibility to locate its emissions within a channel where it is most advantageous. In these instances, we note that spectral efficiency will be further enhanced if the presence of systems operating on frequencies other than the channel center is accounted for in the frequency coordination process." Broadcast Auxiliary Service Rules in Part 74, 18 FCC Rcd 21828 at ¶ 13 n.30 (2003).

motivation to request an emission bandwidth less than the full 25 MHz, even when their signal could fit in a narrower channel. Improving the efficiency of use of the bands requires more precision in specifying the channels and bandwidths used, even if the improvement comes at the expense of the present flexibility.

Moreover, channelization should align with the channel plans currently in use. This avoids the cost and delay otherwise required to develop new modem profiles for non-standard channel spacing and transmit/receive (T/R) spacing. A need for new hardware designs would call into doubt the business viability of the new spectrum for FS applications.

For the 7 GHz band, the FWCC proposes adoption of a 10/20/30 MHz channelization with a 100MHz T/R split. From a manufacturing standpoint, there are important benefits to preserving the channel widths used by the FS in other bands. For the 13 GHz band, we propose the adoption of the ITU channel plan with a 28 MHz channel spacing and 266 MHz T/R split.[10]

On the other hand, the Commission could adopt a 150 MHz T/R split by abandoning its proposal to exclude FS facilities from the upper 50 MHz segment of the 7 GHz band, 7075-7125 MHz, and instead reserving for BAS and CARS the middle of the band at 6975-7025 MHz. The resulting wider T/R split would ease filtering requirements and might result in the production of cheaper radio equipment. Moreover, a 150 MHz T/R split would allow the mid-band 6975-7025 MHz segment to serve as guardband between collocated transmitters and receivers.[11]

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[10] The Commission also seeks comment on this option. *Further Inquiry* at 5-6.

[11] If the Commission adopted the 25 MHz plan in the *Further Inquiry* and allowed concatenating adjacent channels, as suggested in text, the result would be only two 50 MHz pairs on adjacent channels. There might be enough isolation if the pairs were used on two separate paths, but it may be difficult or impossible to use both pairs on the same path. (The same problem of adjacent lows and highs exists with channels narrower than 50 MHz, but is eased somewhat by the fact of there being more such pairs.)

If the Commission chooses to preserve the current 25 MHz channels, it should also break those into 5, 8.33, and 12.5 MHz bandwidth channels. Finally, the Commission should allow licensees to combine adjacent 25 MHz segments into 50 MHz channels. The FWCC generally supports providing FS operators with the ability to stack channels to allow for higher-bandwidth systems, where needed.

D. LOW FREQUENCY LONG-HAUL BACKHAUL

The FWCC notes that spectrum sharing in the 7 and 13 GHz bands is not a comprehensive solution for long-haul fixed wireless microwave systems. Reallocation of the 2 GHz FS band, and frequency coordination problems in the 4 GHz FS band due to proliferation of C-band downlink earth stations, have created severe difficulties in constructing systems that must span large distances, and accordingly require relatively low frequencies.[12]

CONCLUSION

The FWCC supports the Commission's efforts to facilitate the use of wireless backhaul. Access to high capacity backhaul and transport systems is increasingly essential for broadband networks, particularly where wireline backhaul is limited or impractical, such as in rural areas.[13] Sharing of spectrum among users accustomed to different standards and procedures should be possible, but takes careful planning. Specifically, the Commission must address frequency

[12] The Commission is aware of these issues. *See, e.g., Bringing Broadband to Rural America: Update to Report on a Rural Broadband Strategy*, DA 11-1095, Docket No. 11-16 (released June 17, 2011) at 14-16.

[13] *Id.*

coordination, capacity and loading, and channelization issues in the proposed bands in order to truly achieve "more flexible and cost-effective microwave backhaul services."[14]

Respectfully submitted,

Mitchell Lazarus
Christine Goepp
FLETCHER, HEALD & HILDRETH, P.L.C.
1300 North 17th Street, 11th Floor
Arlington, VA 22209
703-812-0440
Counsel for the Fixed Wireless
Communications Coalition

June 27, 2011

[14] *Id.* at 15.

COURTESY SERVICE LIST

Chairman Julius Genachowski
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Commissioner Michael J. Copps
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Commissioner Robert McDowell
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Commissioner Mignon Clyburn
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Rick Kaplan, Chief
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

James Schlichting, Senior Deputy Chief
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

John S. Leibovitz, Deputy Chief
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Tom Peters, Chief Engineer
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Blaise Scinto, Chief
Broadband Division
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

John Schauble, Deputy Chief
Broadband Division
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Charles Oliver, Attorney Advisor
Broadband Division
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Brian Wondrack, Attorney Advisor
Broadband Division
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Stephen Buenzow, Deputy Chief
Broadband Division
Wireless Telecommunications Bureau
Federal Communications Commission
1280 Fairfield Road
Gettysburg, PA 17325

John Wong, Chief
Engineering Division
Media Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Wayne McKee, Deputy Chief
Engineering Division
Media Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Shabnam Javid, Senior Engineer
Engineering Division
Media Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Sean Yun
Engineering Division
Media Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554