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November 19, 1998

VIA HAND DELIVERY

Magalie Salas, Esquire
Secretary
Federal Communications Commission
1919 M Street, N.W. - Room 222
Washington, D.C. 20554

Re: Redesignation of the 17.7-19.7 GHz Frequency Band
IB Docket No. 98-172

Dear Ms. Salas:

On behalf of the Fixed Wireless Communications Coalition, we are filing an original and nine (9) copies of its Comments in the above-referenced proceeding.

If additional information is required, please communicate with us.

Very truly yours,

FLETCHER, HEALD & HILDRETH, PLC

Leonard R. Raish
George Petrutsas
Of Counsel

GP:cej
Enclosures
cc: All Commissioners (w/enc.)
Chief, International Bureau (w/enc.)
Chief, WTB (w/enc.)
Chief, Engineer (w/enc.)

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ORIGINAL

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Redesignation of the 17.7-19.7 GHz Frequency	)	
Band, Blanket Licensing of Satellite	)	IB Docket No. 98-172
Earth Stations in the 17.7-20.2 GHz and	)	RM-9005
27.5-30.0 GHz Frequency Bands,	)	RM-9818
and the Allocation of Additional Spectrum	)	
in the 17.3-17.8 GHz and 24.75-25.25 GHz	)	
Frequency Bands for Broadcast	)	
Satellite-Service Use	)	

COMMENTS OF THE FIXED WIRELESS COMMUNICATIONS COALITION

Respectfully submitted,

FIXED WIRELESS COMMUNICATIONS COALITION

Leonard Robert Raish
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Date: November 19, 1998

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Summary

The Fixed Wireless Communications Coalition ("FWCC" or " Coalition") recognizes the need for separate allocations for the terrestrial fixed (FS) and for the satellite fixed (FSS) services in the 18 GHz band. However, the Coalition disagrees with the Commission's specific segmentation and sharing proposals.

Briefly, the FWCC believes that adoption of the Commission's specific proposals would result in widespread interference to terrestrial fixed and to satellite earth stations, costly dislocations of thousands of existing terrestrial systems, and would seriously restrict the ability of the fixed services to continue to serve the many communications requirements of existing and emerging communications providers and users. In addition, the FWCC is very concerned that the reallocation proposals in this proceeding continue a sequence of FCC actions in recent years that are bringing about unacceptable erosion of spectrum available to the terrestrial fixed service at a time when competitive local market demands and the demands of new and emerging wireless technologies require that the fixed services have access to more spectrum instead of less. These new wireless technologies and the introduction of increased competition made possible thereby are consistent with established FCC policies.

It is clearly desirable that all categories of services be able to meet their respective spectrum needs. However, as we have learned from past experience, sharing the same spectrum by incompatible services becomes increasingly difficult, and in many cases this results in one of the sharing services having to vacate the shared bands. This generally has resulted in the relocated services having to move to a less desirable frequency allocation. As we are now approaching frequency gridlock, there

are no new suitable alternative frequencies, other than those that would require sharing with other services. The FWCC, therefore, believes that, as a matter of policy where a new service is proposed, the new service should share with similar services in the same category. Here, FWCC submits that the new satellite fixed services should be required to share spectrum with other FSS services.

FWCC endorses a modified version of the Commission's proposed band segmentation plan which has been proposed in the proceeding by the Fixed Point-to-Point Section, Wireless Communications Division of the Telecommunications Industry Association. That modified plan would minimally accommodate FS needs and, at the same time, provide significant specific allocations for GSO/FSS, NGSO/FSS and MSS/FL proposed systems, and would reduce the potential for interference. Finally, the importance of efficient use of the spectrum must be underscored. The FS have been forced to maximize spectrum usage because of congestion in the FS bands, particularly in metropolitan areas. The various satellite services should be held to equally high standards of efficient spectrum usage.

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use	)	IB Docket No. 98-172 RM-9005 RM-9818

COMMENTS OF THE FIXED WIRELESS COMMUNICATIONS COALITION

The Fixed Wireless Communications Coalition ("FWCC" or "Coalition")[1] files its comments[2] in response to the Commission's Notice of Proposed Rulemaking ("NPRM"

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[1]The Fixed Wireless Communications Coalition (FWCC) is a broad coalition of diverse entities with vital interest in terrestrial fixed communications. Its membership includes manufacturers of microwave equipment, licensees of terrestrial fixed microwave systems and their associations, communication service providers and their associations. Its membership also includes railroads, public utilities, petroleum and pipeline entities, public safety agencies, the broadcast industry and their respective associations, telecommunications carriers, landline and wireless, local and interexchange, and others. A list of FWCC's members supporting this filing is in Appendix A.

[2]TR-14, a technical committee of the Fixed Point-to-Point Section, Wireless Communications Division of the Telecommunications Industry Association (Fixed Section), assisted FWCC in the preparation of its comments. FWCC is aware of the separate comments filed by the Fixed Section in this proceeding and supports and endorses the Section's proposals in its comments. It should be noted, however, that the views of the Fixed Section are not necessarily the views of other Sections of the Telecommunications Industry Association nor of the TIA as a whole.

or "Notice") in the above-referenced proceeding.[3] Briefly, the Coalition appreciates the Commission's desire to provide separate spectrum allocations for the fixed satellite and for the terrestrial fixed services. However, the Coalition disagrees with the Commission's specific proposals and offers a number of changes which would better serve the interests of all of the services now sharing the 18 GHz band.

I. GENERAL

A. The Commission's microwave reallocation decisions in recent years are threatening the viability of the terrestrial fixed service

At the outset, FWCC wishes to register the very serious concern of the terrestrial fixed ("FS") community about the continuing sequence of apparently independent policy decisions and unrealistic Commission expectations that are effectively precluding access by FS operators to spectrum required for their continued viability. These reallocation policies which, when taken together, are producing onerous constrictions in necessary spectrum include, among others: the reallocation of the 12.2-12.7 GHz band from the fixed services to the direct satellite broadcast service,[4] reallocation of the 1850-1990 or 2110-2200 MHz from the fixed services to "emerging technologies," PCS

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[3] In the Matter of Redesignation of the 17.7-19.7 GHz Frequency Band . . . Notice of Proposed Rulemaking, FCC 98-235, released September 18, 1998 ("NPRM" or "Notice"). The Notice was published in the Federal Register on October 8, 1998, 63 Fed. Reg. 54100.

[4] Report and Order, Gen. Docket No. 80-603, 51 RR 2d 1341 (1982).

and mobile satellite services;[5] reallocation of the 27.7-29.7 and 31 GHz band to LMDS and to satellite services;[6] and the designation of the upper 6 GHz (6700-7075 MHz) for mobile satellite feeder links.[7] Particularly discouraging have been the Commission's expectations that incumbents displaced by its reallocation decisions were to move to "other" bands, which had been made available to services and operations that are incompatible with terrestrial fixed operations, thereby displacing even more incumbent FS users. FWCC is also concerned about the Commission's lack of recognition that spectrum is needed and will continue to be needed to accommodate growth of existing licensed facilities as well as new and developing terrestrial fixed systems and services.

B. The Commission's proposed band segmentation of the 18 GHz band is of serious concern to FWCC

In its Notice, the Commission proposes to reduce the spectrum available to the FS by 53.3%. Further, in the 46.7% of the spectrum remaining, FS point-to-point services would be required to share with FS point-to-multi-point one way video distribution services, something that is not done today. This effectively further reduces

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[5]Redevelopment of the Spectrum to Encourage Innovation in the New Telecommunications Technology, ET Dkt. 92-2, First Report and Order, 7 FCC Rcd 6886 (1992); Second Report and Order, 8 FCC Rcd 6495 (1993); Third Report and Order, 8 FCC Rcd 6589 (1993).

[6]Amendment of Parts 1, 2, 21 and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, CC Docket No. 92-297, First Report and Order, FCC 96-311, 11 FCC Rcd 19005 (1996).

[7]Amendment of Parts 2, 25 and 97 of the Commission's Rules with Regard to Mobile Satellite Service Above 1 GHz, Notice of Proposed Rulemaking, ET Docket 98-142, released on August 4, 1998.

the FS point-to-point and point-to multi-point available frequencies because sharing is virtually impossible due to the coordination difficulties between these services in the metropolitan areas where these services both reside. This point is clearly acknowledged by the Commission.[8] Finally, whereas the video distribution services only require one-way frequencies, the frequencies paired with the one-way frequencies would be lost to the point-to-point FS services. The total impact of this could be a loss of an additional 560 MHz of FS point-to-point frequencies in areas where video distribution services operate. The ultimate impact of this action would be either the loss of 84% of FS point-to-point frequencies where full video distribution services are deployed, or the loss of 53% of FS point-to-point frequencies and the loss of 100% of the video distribution services.[9] This is clearly unacceptable to video distribution and to the terrestrial point-to-point fixed services.

C. FWCC supports the alternative band segmentation plan for the 18 GHz Band proposed by TIA's Fixed Point-to-Point Section

As an alternative to the Commission's proposed segmentation plan,[10] FWCC

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[8]See, Notice, Par. 27, where the Commission observed: "Due to the difficulties of coordinating these point-to-multipoint operations with typical point-to-point terrestrial fixed service operations, these services have generally been licensed in separate portions of the 17.7-19.7 GHz band."

[9]It is emphasized that the 18 GHz is the only band available to the non-franchised video distribution industry, private cable operators (PCOs) which compete with the wired, franchised cable industry. The 12.7-13.2 GHz band is not available to PCOs.

[10]The Commission's proposed band plan for the 18 GHz band is summarized in Par. 27 of the NPRM.

endorses a modified plan proposed by the Fixed Point-to-Point Section, Wireless Communications Division of the Telecommunications Industry Association ("Fixed Section"). The plan proposed by the Fixed Section is a modification of the Commission's proposed plan and would:

> Preserve the existing 17.7-18.14 and 19.26-19.76 GHz paired FS primary allocations; preserve the existing 18.14-18.58 GHz primary CARS allocation; grandfather incumbent licensees as primary in the paired 18.58-18.82 and 18.92-19.16 GHz FS allocation; allocate the 18.58-18.8 GHz band as primary for GSO/FSS gateways and ubiquitous blanket licensed satellite receivers; allocate the 18.8-19.26 GHz band as primary for NGSO/FSS ubiquitous blanket licensed receivers; and rechannelize the 17.7-18.14 and 19.26-19.7 GHz paired FS primary allocation to (a) accommodate growth from the narrow band grandfathered systems in the paired 18.58 -18.82 and 18.92-19.16 GHz FS band and (b) accommodate the demand for new systems in this band.

The Coalition also agrees with TIA's Fixed Section's position that the de facto freeze on further licensing FS systems on a co-primary basis should be lifted.

As discussed below, the FWCC believes that this plan, which represents a loss of 35% of FS spectrum in this band, will provide the minimum necessary spectrum for continued viability of 18 GHz band FS and video distribution services while providing significant allocations to the proposed satellite services. In summary, the modified band segmentation plan proposed by the TIA Fixed Section provides 880 MHz for FS needs, 440 MHz for CARS/PCO licensees and 1120 MHz for proposed satellite systems.

II. COMMENTS ON THE COMMISSION'S 18 GHz PROPOSAL

A. The 18 GHz band is critically important to the terrestrial fixed services

The 18 GHz band is a short-haul band used heavily by the FS for local service customer links, campus links, cell-site interconnects, backbone point-to-point, and video distribution. In addition, the band accommodates such traditional microwave users as public safety agencies, public utilities, railroad, broadcasters, and the general business community. Traditional short-haul private operational fixed microwave remains extremely important to the U.S. economy and its uses continue to expand, sponsored in part by significant structural changes in such basic industries as banking and health care, among others. Microwave facilities in the 18 GHz band provide increasingly essential links for cellular and PCS backbone networks, local area and competitive network interconnection, high speed internet access, video distribution, and other advanced technology applications.

Terrestrial fixed point-to-point users (18.58-18.82 GHz, 18.92-19.16 GHz and 17.7-18.14 GHz, 19.26-19.7 GHz) deploy digital radios with high spectral efficiencies of at least 1 b/s/Hz. These radios currently have traffic capacities ranging from 4-DS 1's (6 Mb/s) to 1-DS3 (45 Mb/s). New highly spectrally efficient radios (OC3/155 Mb/s) are planned for introduction when the 18 GHz allocations become stable. Video distribution radios (18.14-18.58 GHz) are analog AM radios which transmit the block-upconverted cable video channels to multiple locations using multiple point-to-point systems frequently configured in a hub-to-spoke topology.

The 18 GHz band has been, and will continue to be, an important 2.1 GHz relocation and growth band for cellular, PCS, and private users for path lengths that are appropriate to the rain region. The Commission's decision in ET Docket 92-9 made growth in the 2.1 GHz band by common carrier and private users impossible by relegating new systems to secondary status. The current primary users at 2.1 GHz will eventually need to be moved as the 2.1 GHz mobile satellite service is implemented. Terrestrial fixed point-to-point licensees currently use, and must use in the future, the popular, and already heavily congested, 6- and 11-GHz bands for long path. Utilization of the 6- or 11-GHz bands for short paths is spectrally inefficient and would accelerate congestion in those lower bands. Short paths should be accommodated in the 18 GHz and in higher bands.

The private cable video distribution operators are able to use only 18 GHz band spectrum to deliver their services. These private cable operators provide competitive video alternatives to the franchised CATV providers, and distribute educational video signals. In addition, franchised CATV companies use these frequencies for back-bone connections into areas where fiber or cable is not available or impractical. This is a significantly different service than the point-to-point service since the minimum bandwidth required for the video distribution service is the entire 440 MHz of contiguous spectrum.

B. The proposals in this proceeding would reduce significantly the frequencies available to the FS, continuing the trend of erosion of FS spectrum by the Commission over the last several years.

The FS currently has 440 MHz paired go/return (880 MHz total) spectrum (17.7-18.14 GHz, 19.26-19.7 GHz), and 240 MHz paired go/return (480 MHz total) spectrum (18.58-18.82 GHz, 18.92-19.16 GHz) for a total of 680 MHz paired (1360 MHz total) spectrum for two-way communications. Additionally, there is 440 MHz of spectrum (18.14-18.58 GHz) available for one-way video distribution.

The proposals in the proceeding would make FS access to the 18.92-19.16 GHz band secondary since the Commission has correctly determined that FS sharing with ubiquitous satellite earth stations is impossible, a lesson well learned by the FS community through its inability to coordinate new FS links in the 3.7-4.2 GHz band.[11] While the Commission would leave the FS co-primary in the 18.55-18.8 GHz band, this would be of no use to the FS since this is half of a go/return frequency band and reallocation of the upper part to secondary status results in the elimination of pairing capability and consequent loss of the lower part as well. Additionally, co-primary use of the 18.55-18.8 GHz spectrum for the FS will lead to the elimination of the FS for future growth as experienced by the FS at 4 GHz due to the effective ubiquitous nature of the licensed GSO/FSS gateway locations. This one proposed action would result in an immediate loss of 35% of the available FS go/return frequencies in the 18 GHz

[11]Because of the widespread use of the band by satellite receive stations, significant use of the band by terrestrial fixed systems has been impossible, although it is also available to FS on a co-primary basis.

band.

The NPRM would place the FS into a secondary status in the 19.26-19.3 GHz frequency range. This effectively eliminates use of the 17.7-17.74 GHz band since this is also a paired band. This constitutes another 5% loss of frequencies to the FS.

The NPRM would also eliminate 280 MHz, or 64% of the one-way video distribution band. This service cannot operate competitively with a reduced bandwidth since this band is used in its entirety on each link to upconvert the full 72 channel complement. It is not possible to reduce the necessary bandwidth without much more complex equipment with its attendant higher cost, thereby making the independent cable operator non-competitive. Sharing between point-to-point and full band point-to-multi-point services is virtually impossible. Therefore, adoption of this one element of the reallocation proposal would eliminate one of these services in any given geographical area. This represents another 16% loss of the currently available FS frequencies at 18 GHz.

Finally, the NPRM proposes to allocate 17.7-17.8 GHz to the Broadcast Satellite Service (BSS) in the year 2007 on a co-primary basis with the FS. Ubiquitously deployed BSS earth receiving stations cannot share with the FS, as the Commission acknowledges in Paragraph 19 of this NPRM. Therefore, the allocation of 17.7-17.8 GHz would require FS stations to be relocated, and would also freeze future FS growth in this band. Additionally, allocation of this frequency range would also effectively eliminate use of the paired frequencies from 19.3-19.36 GHz. This would represent another 7% loss of FS 18 GHz frequencies.

C. "Grandfathered" digital and analog FS systems would suffer interference and serious performance degradation

The Commission proposes to grandfather FS systems now operating on frequencies in the band segments to be re-designated for primary satellite use. However, as shown below, both analog and digital grandfathered FS systems will be harmfully interfered with by the proposed satellite systems. GSO/FSS systems will cause continuous interference for certain antenna alignments, and the NGSO/FSS systems will unacceptably degrade FS performance periodically. Thus, even under the current pfd limits, grandfathered digital and analog FS systems will suffer severe performance degradation in the presence of the proposed satellite systems.

The proposed pfd allowed to illuminate the earth by the satellites is - 118 $dBW/m^2/MHz$. As it is fully demonstrated in the Comments filed in this proceeding by TIA's Fixed Section, this level of interference causes a significant degradation of the threshold of a digital receiver, and makes an AM video distribution receiver unworkable.

It is very important to note that any type of interference, and especially intermittent interference, is extremely difficult to identify, locate, and resolve. An interfering signal 14-30 dB (depending on modulation complexity and error-correct coding employed) below a digital radio spectrum can cause complete loss of synchronization of the radio. This interference is not visible with a spectrum analyzer since it is completely obscured by the desired digital radio received spectrum. Most of the many thousands of 18 GHz FS users would be unaware of the satellite interference potential. This is known primarily by the frequency coordination houses. In general,

cases of intermittent interference usually result in users spending many weeks or months changing out suspected defective radio modules. Finally, in frustration, the user calls the equipment manufacturer who dedicates field service engineers for extended periods of time to the problem. These field service engineers first must check out the radio (again) before looking for interference, since finding interference normally entails taking the hop off the air for an extended period of time thereby disrupting the customer's traffic.

D. As demonstrated in the comments of the TIA's Fixed Section, ubiquitous satellite receivers in the 18.3-18.55 GHz, and from 18.92-19.16 GHz bands will be unable to co-exist with the "grandfathered" FS systems

For a full discussion of this issue, See Comments of the Fixed Section of TIA in this proceeding, Sections IV and V. Briefly, fixed transmitters operate with relatively high effective EIRPs (up to +55 dBw), whereas satellite receivers are very sensitive and operate very close to threshold. The band segmentation proposal of this proceeding is based on the fact that sensitive satellite receivers cannot co-exist with the high EIRP FS transmitters. This incompatibility between the FS transmitters and satellite receivers is well known to the FS and has been demonstrated time and again by the inability of FS applicants to coordinate new FS transmitters in the 3.7-4.2 GHz FS/Satellite "shared" band, due to the ubiquitous nature of licensed satellite receivers in that band. At 18 GHz, there is a large number of high EIRP point-to-point FS transmitters as well

as a large number of high EIRP point-to-multipoint video distribution transmitters. These high power FS transmitters will cause large "exclusion zones" in which the satellite receivers will be unable to operate. This is exactly the problem experienced at 3.7-4.2 GHz. However, since the satellite receivers were already in place at 4 GHz, new FS systems have been kept out of that band. Obviously, this is not acceptable either to the FS or satellite interests.

E. While new services should be accommodated in the radio spectrum, they must be required to use the spectrum efficiently

The FWCC supports fully the Commission's policy to provide frequencies for new emerging technologies, but notes that new technologies must compete for access to finite radio spectrum. No new spectrum is being created so that more efficient use of the spectrum is required. The FS has been a technology leader in the efficient use of the diminishing spectrum available to it. FS radio manufacturers have implemented modulation technologies which permit up to 9 bits/sec/Hz of spectrum efficiency in the bands below 12 GHz. The technology to implement spectral efficiency greater than 1 b/s/Hz, currently required by the Commission for Part 101 digital radios above 12 GHz, is becoming available at reasonable cost for radios operating above 12 GHz. Additionally, through the Telecommunications Industry Association (TIA) and the National Spectrum Managers Association (NSMA), the FS has developed comprehensive and effective coordination methodologies for coordination of FS routes with maximum frequency re-use. The FWCC believes that satellite systems must be held to reasonable spectral efficiency standards and to efficient coordination methods

as well.

F. The Commission's band segmentation proposals should be modified

FWCC supports the Commission's efforts to provide frequencies for new, emerging services. In recognition of the necessity for substantial compromises so as to accommodate new and emerging satellite services, FWCC endorses the modification of the Commission's band segmentation plan proposed by TIA's Fixed Section. That modification proposal would provide for future growth of the FS, and will also allow the satellite services to be accommodated adequately at 18 GHz.

FWCC supports the proposal of the Fixed Section that FS should be given primary status from 17.7-18.58 GHz, and co-primary status with MSS/FL from 19.26-19.7 GHz. This would permit paired (go/return) FS operation with 17.7-18.14 GHz paired with 19.26-19.7 GHz. These bands will accommodate (1) the growth of existing wideband systems, (2) new wideband systems, (3) growth of the grandfathered narrowband systems, and (4) new narrowband systems. In addition, FWCC believes that the satellite services will find that interference into their systems from grandfathered narrow band FS transmitters is unacceptable, and will opt to sponsor relocation of grandfathered narrowband FS systems to these bands.

The band 18.14-18.58 should remain for the video distribution services. Since point-to-point bi-directional FS cannot share with point-to-multi-point one-way video distribution services, these two types of FS services must have their own separate frequency allocations. FS spectrum loss from 19.26-19.3 GHz is not an option because

this would cause the paired loss of FS spectrum from 17.7-17.74 (80 MHz total additional FS loss). Similarly, the loss of FS spectrum below 17.8 GHz causes a loss of spectrum in the paired band below 19.36 GHz resulting in loss of an additional 120 MHz to the FS.

FWCC also supports Fixed Section proposal for FS to give up 18.58-18.82 GHz, and 18.92-19.16 GHz. FWCC agrees with the Commission that sharing between FS and the NGSO/FSS ubiquitous terminals is not possible. Accordingly, since the 18.92-19.16 GHz band is paired with the 18.58-18.82 GHz band, the 18.58-18.82 GHz band is of no future use to the FS once the 18.92-19.16 GHz band becomes unavailable. Additionally, due to the expected effective ubiquitous nature of the licensed GSO/FSS gateways in the 18.55-18.8 GHz band, FWCC believes that this band will become unavailable for future growth of the FS due to the same exclusion zone problem experienced by FS at 4 GHz. However, existing FS systems between 18.58-18.82 GHz and 18.92-19.16 GHz must be grandfathered on a co-primary basis. Relocation of these existing links when it becomes necessary should be at the expense of the satellite operator or operators involved.

FWCC also endorses Fixed Section's proposal that the 18.3-18.55 GHz allocation proposed in the NPRM for GSO/FSS ubiquitous satellite terminals should be moved to the 18.58-18.8 GHz range. This places GSO/FSS ubiquitous terminals in a sharing scenario with the GSO/FSS coordinated gateways. This should be possible if the coordinated gateways can be remotely located since the bulk of the ubiquitous terminals would most likely be located in high population areas. For remote areas

where ubiquitous terminals are required, some frequencies could be set aside in the 18.58-18.8 GHz band specifically for these ubiquitous terminals. Even with simple QPSK modulation, the 220 MHz from 18.58-18.8 GHz would provide a data capacity of over 400 Mb/s. Surely this entire capacity is not needed by each licensed earth station terminal. More effective modulation technologies (such as those being introduced by the FS today at 18 GHz in new FS products) would permit up to three times this data capacity (over 1.2 Gb/s). There would no longer be co-primary usage by the FS in this band, other than the grandfathered existing FS links. This should further facilitate sharing between the GSO/FSS ubiquitous and gateway terminals since they would not also have to share with co-primary FS systems.

G. The FS segments of the 18 GHz band should be re-channelized for more efficient use, as recommended by the Fixed Section

FWCC also supports the Fixed Section's proposal that the 17.7-18.14 GHz and 19.26-19.7 GHz frequency ranges be re-channelized in 2.5, 5, 10, 20, and 40 MHz channels, and permit concatenation. With the current spectral efficiency rules in Part 101, radio capacities of less than 8-DS1s would be spectrally inefficient in the existing 10 MHz channel bandwidths. These low capacity radios have been used effectively in the 18.58-18.82 GHz and 18.92-19.16 GHz range where 5 MHz channels have been available. Additionally, FWCC believes that higher spectral efficiency radios will be required as demands for spectrum continue to increase and, therefore, a 2.5 MHz channeling plan is also recommended.

H. Sharing by FS and MSS/FL systems must be well managed

In order for the FS to ensure reasonably reliable operation and growth in the significantly reduced spectrum at 18 GHz, FWCC agrees with the Fixed Section that the MSS/FL co-primary users in the 19.26-19.7 GHz band must be required to use the available spectrum efficiently so as to not hinder growth of the co-primary Fixed Service. Therefore, the FCC should require:

1. MSS/FL sites be located in remote areas. This will minimize the "exclusion zone" problem experienced by the FS at 4 GHz, which effectively eliminated the FS from the 4 GHz band;
2. MSS/FL sites must include 360 degree integral shielding of at least 25 dB for protection from FS transmitters; and
3. MSS/FL sites must only coordinate the frequencies and arcs necessary.

Full-band, full-arc coordination is nothing short of spectrum warehousing and cannot be tolerated when spectrum is at such a premium. While the satellite interests may argue that they need full band coordination for growth, terrestrial fixed licensees may only coordinate frequencies they can justify. And yet, the FS has been able to successfully grow in bands where they do not share with satellite services.

III. CONCLUSION

FWCC agrees with the Commission that spectrum should be made available for emerging satellite services. FWCC also recognizes the need to harmonize domestic US spectrum allocations for the various services. In so doing, however, the Commission must consider the impact of its proposal on all services to be affected.

The FS community, through TIA's Fixed Section and FWCC, has proposed significant concessions in the interests of spectrum efficiency and in order to accommodate future services. FWCC submits that the modified band segmentation and sharing plan proposed by the Fixed Section is an eminently reasonable compromise and should be adopted.

As an overall policy matter, the Commission should require proponents of new services that propose to use spectrum currently fully utilized by existing services, to develop and use technologies which will permit the new services to operate successfully in an sharing environment by the use of interference cancellation techniques. In short, satellite system operators have a burden to design and operate their systems in a manner that would enhance compatibility with other telecommunications systems in the same parts of the radio frequency spectrum.

FWCC respectfully submits the foregoing comments and requests the Commission to adopt the changes to its proposals recommended herein and in the Comments of TIA's Fixed Section.

Respectfully submitted,

FIXED WIRELESS COMMUNICATIONS COALITION

By: _____
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Date: November 19, 1998

APPENDIX A

THE MEMBERS OF FIXED WIRELESS COMMUNICATIONS COALITION SPONSORING THE COALITION COMMENTS

Association of Public-Safety Communications Officials
UTC - The Telecommunications Association
National Association of Broadcasters
Independent Cable Telecommunications Association
American Petroleum Institute
Wireless Communications Association International
Norfolk-Southern Railroad
Union Pacific Railroad
Burlington-Northern Railroad
BellSouth
People's Choice TV
Wireless One Inc.
Harris Corporation -- Farinon Division
Digital Microwave Corporation
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California Microwave, Microwave Data Systems
Tadiran Microwave Networks