DOCKET FILE COPY ORIGINAL
RECEIVED
FEB 22 2001
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

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

In the Matter of	
Amendment of Part 2 of the Commission's Rules To Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems	ET Docket No. 00-258
Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Implementation of WRC-2000: Review of Spectrum and Regulatory Requirements For IMT-2000	RM-9920
Amendment of the U.S. Table of Frequency Allocations to Designate the 2500-2520/2670-2690 MHz Frequency Bands for the Mobile Satellite Service	RM-9911

THE K-12 COMMUNITY

AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS
NATIONAL SCHOOL BOARD ADMINISTRATION
ASSOCIATION OF EDUCATIONAL SERVICE AGENCIES
NATIONAL RURAL EDUCATION ASSOCIATION
NATIONAL ASSOCIATION OF FEDERAL EDUCATION PROGRAM ADMINISTRATORS
COUNCIL OF GREAT CITY SCHOOLS
AMERICAN FEDERATION OF TEACHERS
NATIONAL EDUCATION ASSOCIATION

Dated: February 22, 2001

No. of Copies rec'd 0+8
List A B C D E

SUMMARY

The K-12 Community, which consists of the American Association of School Administrators, the National School Board Association, the Association of Educational Service Agencies, the National Rural Education Association, the National Association of Federal Education Program Administrators, the Council of Great City Schools, the American Federation of Teachers, and the National Education Association, opposes any changes to the 2500-2690 MHz band to accommodate Third Generation ("3G") mobile systems. While the K-12 Community understands and appreciates the need to accommodate 3G, it should not come at the expense of America's most important resource – its schoolchildren.

Instructional Television Fixed Service ("ITFS") has been reserved for groups like the K-12 Community for over 30 years. During that time, through the use of ITFS, the K-12 Community has been able to expand and enhance the learning experience of hundreds of thousands of schoolchildren through distance learning and other technological advancements. With the recent advent of two-way voice and data transmission, along with other technological advances, ITFS use is currently expanding to enable the K-12 Community to reach more students and their families than ever before. These advances continue to bring exciting new technologies to school systems throughout the country. Unfortunately, sharing or reallocation of this band for 3G uses will destroy the current system.

Beyond the invaluable service that ITFS currently provides, the Commission's own report shows that 3G is incompatible with this band. The Commission's Interim Report, which analyzed the feasibility of sharing, reallocation, or relocation of ITFS providers, concluded that all of these options are rife with potential problems. Each option will decrease the necessary flexibility that ITFS licensees need to continue to make ITFS a success. In addition, Multipoint

Distribution Service ("MDS") providers, which provide much needed funding to ITFS licensees through lease agreements, have warned that they will not, and cannot, follow ITFS providers to different portions of the spectrum. Without the MDS providers' financial support, ITFS cannot continue to provide quality educational programming and services.

The K-12 Community understands that 3G services are important. When the Commission considers the technical difficulties of implementing 3G in this band, however, and the demonstrated invaluable service that ITFS currently provides to America's schools, the K-12 Community is confident that it will conclude that it should not alter the current successful balance.

TABLE OF CONTENTS

Summary ii

I. Introduction 2

II. ITFS/MDS Spectrum Should Not Be Divided Or Shared With 3G Services 4

A. Spectrum Sharing Presents Insurmountable Obstacles 6

B. Relocating ITFS Licensees Could Upset ITFS Systems 10

III. ITFS Licensees Must Be Able To Maintain Flexibility 11

A. Flexibility Allows IFTS To Rapidly Adapt To Technological Advances 12

B. ITFS Is Uniquely Situated To Service Rural Areas And Large Districts 12

IV. Continued Expansion Is Essential To ITFS' Success 13

V. Conclusion 14

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

In the Matter of	)	
Amendment of Part 2 of the Commission's Rules To Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems	)	ET Docket No. 00-258
Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Implementation of WRC-2000: Review of Spectrum and Regulatory Requirements For IMT-2000	)	RM-9920
Amendment of the U.S. Table of Frequency Allocations to Designate the 2500-2520/2670-2690 MHz Frequency Bands for the Mobile Satellite Service	)	RM-9911

COMMENTS OF THE K-12 COMMUNITY

The American Association of School Administrators ("AASA"), the National School Board Association ("NSBA"), the Association of Educational Service Agencies ("AESA"), the National Rural Education Association ("NREA"), the National Association of Federal Education Program Administrators ("NAFEPA"), the Council of Great City Schools ("CGCS"), the American Federation of Teachers ("AFT") and the National Education Association ("NEA"),

(collectively "the K-12 Community")[1], hereby comment on the Notice of Proposed Rulemaking[2] in the above-captioned proceeding, which seeks comment on suitable spectrum for advanced mobile and fixed services, including Third Generation ("3G") mobile systems. While the K-12 Community understands and appreciates the promise of 3G services, spectrum for such services should not be made available at the expense of a resource that is even more valuable than spectrum -- America's schoolchildren. The K-12 Community therefore supports keeping the 2500-2690 MHz spectrum reserved for its present uses, including Instructional Television Fixed Service ("ITFS").

I. Introduction

Together, the K-12 Community promotes excellence in public schools throughout our country. An important element in promoting educational excellence is the use of technology and

---

[1] AASA, founded in 1865, is the professional organization representing over 14,000 educational leaders across America and in many other countries. Its mission is to support and develop effective school system leaders who are dedicated to the highest quality public education for all children. The NSBA is the nationwide advocacy organization for public school governance, representing the Nation's 95,000 school-board members. NSBA's mission is to foster excellence and equity in public elementary and secondary education in the United States through local school-board leadership. The AESA is the national organization that represents over 500 educational service agencies throughout the United States, serving as the voice for educational service agencies at the federal level and supporting advances in learning, technical assistance, research and advocacy. The NREA is comprised of rural school advocates at the K-12 and higher education levels. Its goal is to further the improvement of educational opportunities for all children in rural areas --with additional attention to those for whom opportunities have been severely limited in the past-- and to serve as the national voice and advocate for rural schools and rural education programs in America. NAFEPA, with over 6,000 members, represents educators who administer and participate in federal programs. Its primary mission is to expand and protect the federal role in education. CGCS is a coalition of the nation's largest urban public school systems, whose Board of Directors is composed of the Superintendent and one School Board member from each city. The organization is dedicated to the improvement of public education in the nation's cities. The AFT, AFL-CIO, represents more than one million school support employees, higher education faculty, nurses and other healthcare professionals and state and local government employees. Its objective is to make high standards for conduct and achievement a reality for every public school. The NEA, founded in 1857, aims to elevate the character and advance the interest of the teaching profession and to promote the cause of public education in the United States. It currently has over 2 million members, including elementary and secondary teachers, higher education faculty, education support personnel, retired educators and students preparing to become teachers.

[2] Notice of Proposed Rulemaking, FCC 00-455 (released Jan. 5, 2001) ("*NPRM*").

technology-related tools to help children learn. Specifically, teachers and school systems rely heavily upon, and derive great benefits from, ITFS to provide a wide variety of services to K-12 students.[3] The K-12 Community strongly opposes reallocation or sharing of the 2500-2690 MHz band for 3G uses because of its incompatibility with the K-12 Community's current uses, the impediment it would place on future ITFS use, and the technical impediments.

The Commission has long recognized that the primary purpose of ITFS is to serve schoolchildren; the service is intended to provide a "formal educational and cultural development in aural and visual form to students . . . ."[4] Relying on this mandate, the K-12 Community has developed a comprehensive distance-learning network, allowing hundreds of thousands of schoolchildren to access cutting-edge technology and important beyond-the-classroom experiences in urban and rural areas throughout the country. Further, through the leasing of excess capacity to Multipoint Distribution Service ("MDS") providers,[5] the K-12 Community is able to fund these important ITFS programs. Through the combined efforts of ITFS and MDS providers, hundreds of thousands of students and over one million American households now have access to technological advances. Unfortunately, the desire by some to require reallocation or sharing of ITFS uses and spectrum with 3G services threatens this success.

The Commission itself has recognized that ITFS is a unique success for educators, commercial service providers and regulators alike, with approximately 1,275 entities, of which

---

[3] *See* Federal Communications Commission, *Interim Report; Spectrum Study of the 2500-2690 MHz Band*, at 19 (Nov. 15, 2000) ("*Interim Report*").

[4] 47 C.F. R. § 73.931(a)(1).

750 are K-12 licensees, holding over 2,175 ITFS licenses in urban and rural locations throughout America, and more than 70,000 locations serving as registered receive sites.[6] The Commission's current rules, which allow ITFS providers to lease excess capacity to MDS providers, have promoted a sensible and efficient system that provides needed funding to the K-12 Community. Combined with the Commission's recent rulings allowing ITFS and MDS providers to utilize digital technology and two-way transmission of voice and data, the 2500-2690 MHz band can now deliver up to 200 channels of programming and Internet access to schools and homes.[7] These rules, as currently in effect, demonstrate a successful combination of governmental and private use of limited spectrum. Displacing service providers and licensees, or attempting to impose unworkable sharing arrangements in the ITFS/MDS bands, however, would disrupt the substantial achievements that have been realized.

II. ITFS/MDS Spectrum Should Not Be Reallocated Or Shared With 3G Services

Among the numerous issues on which the NPRM seeks comment are whether the Commission should: (1) reallocate portions of the ITFS spectrum for 3G uses;[8] (2) make

---

(footnote continued from previous page)

[5] This band also supports Multichannel Multipoint Distribution Service providers. For purposes of these Comments, the K-12 Community refers to both as MDS.

[6] *See Interim Report* at 18.

[7] *See generally, The Mass Media Bureau Implements Policy for Provision of Internet Service on MDS and Leased ITFS Frequencies,* 11 FCC Rcd 22419 (1996).

[8] *NPRM* at ¶ 60.

available currently vacant ITFS channels for 3G services;[9] or (3) provide for the sharing of ITFS spectrum with 3G services.[10] The K-12 Community opposes each of these alternatives, any of which would, if implemented, upset the successful partnership that currently exists between ITFS and MDS providers and which directly and positively impacts the K-12 Community. The current partnership supports tens of thousands of schoolchildren and thousands of educators.

It is indisputable that ITFS provides invaluable services to schoolchildren in grades K-12. As the Commission recognized in its *Interim Report*:

> Distance learning via ITFS takes students beyond school walls by giving them access to experiences and instructions in locations anywhere in the world. Videoconferencing allows students and teachers to interact with presenters and ask questions by telephone and e-mail. *ITFS has become a crucial part of the curriculum of many educators.*[11]

The K-12 Community cannot emphasize enough how true this statement is. For over 30 years, the K-12 Community throughout the United States has used ITFS to expand and enhance classroom learning to higher levels. Further, ITFS provides children with access to innovative technology that they will use as adults.

Throughout this 30-year period, ITFS providers have developed a strong and productive relationship with MDS providers. By leasing excess capacity to MDS providers, the K-12 Community is able to directly fund ITFS programs, technology upgrades, and expansion. Without the MDS providers' financial support and technical competence, ITFS could not

---

[9] *Id.* ¶ 64.

[10] *Id.* ¶ 66.

succeed. Yet, MDS providers have made clear to the K-12 Community that, should the Commission require spectrum relocation to accommodate 3G services, the MDS providers are unlikely to continue their relationship with ITFS licensees.[12] MDS providers have already invested billions of dollars into the existing system and simply do not have the technology available to follow the K-12 Community to new areas of the spectrum.

The cost of technology development is often greater than what schools can afford. To overcome this obstacle, school districts partner with commercial entities such as Worldcom in exchange for equipment and money to develop ITFS systems. These shared networks allow ITFS licensees to acquire and benefit from advanced technologies. For many students, the school may offer their only access to advanced services. In this way, ITFS spectrum helps to bridge the "digital divide" between those with access to technology and those without such access.

A. Spectrum Sharing Presents Insurmountable Obstacles

The Commission's *Interim Report* demonstrates that sharing spectrum with 3G services is rife with problems. Due to the uniqueness of this spectrum, interference is an important consideration. Indeed, the Commission has previously recognized that co-frequency sharing has

---

(footnote continued from previous page)

[11] *Interim Report* at 19.

[12] *See, e.g., CTIA Petition for Rulemaking (RM-9920); SIA Petition for Rulemaking (RM-9911),* Worldcom, Inc.'s Preliminary Analysis of Spectrum Capacity Requirements for Two-Way Digital Broadband MMDS/ITFS Services, at 4 (Nov. 3, 2000).

a great potential for interference.[13] The *Interim Report* concluded that, if 3G systems were deployed independently in the 2500-2690 MHz band, the Commission would have to ensure that sufficient spectrum is available.[14] Further, that spectrum would need to be available in contiguous blocks of some minimal size to ensure success and competition.[15] Incorporating these requirements, the *Interim Report* considered the proper radius required to avoid interference between 3G services and ITFS. It concluded that, due to the unique nature of ITFS, large co-channel separation distances are required, averaging 100 miles.[16] Further, the *Interim Report* warns that even this large an "interference band" may be unrealistically small because it does not account for the possibility of interference from mobile units, which can potentially operate at any location at any time.[17] As plotted on a map of the contiguous United States, it is clear that co-channel sharing is an impossibility given the large interference range and the pervasiveness of existing ITFS licenses.[18] The Commission recognized this in its *Interim Report* and the *NPRM,* stating that "there are few geographic areas where incumbent systems are not operating, and that segmenting the band would raise technical and economic difficulties for incumbents *especially in*

---

[13] *See In re 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 Spectrum in the 17.3-1.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use,* FCC 00-212 at ¶ 17 (re. June 22, 2000).

[14] *See Interim Report* at 37.

[15] *See id.*

[16] *See id.* at 42.

[17] *See id.* at 39.

[18] *See id.* at 49 (Figure 5.16).

their ability to provide service to rural areas."[19] Because ITFS licensing is so pervasive, co-channel sharing could not accommodate both the K-12 Community and 3G, and would leave neither service with space to grow.

The *Interim Report* similarly concluded that using currently vacant ITFS channels for 3G service is not workable because there simply are not enough available channels to accommodate 3G services. And the few vacant channels that do exist are primarily located in rural or underpopulated areas that are not conducive to 3G services.[20] The K-12 Community, however, is able to use vacant channels to reach out to those rural areas and ensure that children growing up in those areas have the same educational opportunities as other students within their school district, their state, and their country.

The Commission also has studied the possibility of band segmentation and apportioning parts of the 2500-2690 MHz spectrum band to both ITFS and 3G services. That analysis reveals that band segmentation simply is not feasible. Specifically, the Commission looked at three options for band segmentation. Option One intersperses 3G spectrum and ITFS spectrum.[21] But Option One is problematic because all MDS channels already have been licensed and those licensees have been granted authority to build systems anywhere within their BTA.[22] Further, many existing ITFS/MDS channels would coincide with the 100-mile interference band of the

---

[19] *NPRM* at ¶ 62 (emphasis added).

[20] *See Interim Report* at 53.

[21] *See id.* at 56.

[22] *See id.* at 57.

newly added 3G services. This has led the Commission to recognize that it cannot pinpoint the actual effect that Option One will have on ITFS due to "the flexible nature of this band, [which] make[s] it *extremely difficult* to assess the actual impact that this segmentation option would have on currently deployed systems."[23]

Option Two, combining 3G services and ITFS/MDS spectrum in a contiguous block, is equally problematic because it would prevent both 3G and ITFS/MDS providers from implementing Frequency Division Duplex ("FDD") systems.[24] This would result in loss of crucial flexibility that the K-12 Community currently relies on.[25] Similarly, Option Three, which combines Options One and Two, would severely limit ITFS providers' flexibility by precluding the ability to implement FDD systems necessary for the K-12 Community's successful exploitation of the spectrum.[26]

The *Interim Report* sensibly concludes that under any segmentation option, "widespread relocation of a large number of stations" would be required.[27] A conservative estimate, which does not take into account future growth, predicts that at least 60,000 transmitters would have to be accommodated.[28] The *Interim Report* further recognizes that, absent more efficient

---

[23] *Id.* (emphasis added).

[24] *Id.* at 59.

[25] *See id.* at 58. The K-12 Community discusses the importance of ITFS flexibility *infra.*

[26] *See id.* at 59.

[27] *Id.* at 60.

[28] *See id.*

technology, ITFS and MDS providers would have to significantly reduce their cell sizes, and in turn, the number of people they can reach.[29] Unless MDS providers add many more transmitters (an unlikely scenario given the expenditures involved), ITFS/MDS coverage will shrink substantially, thereby severely restricting the expansion plans of the K-12 Community.

Further, the Commission must consider the important goal of harmonizing America's 3G spectrum with that of other countries. But other countries clearly do not favor the 2500-2690 MHz band for 3G uses. As the *Interim Report* recognizes, most countries in the Western Hemisphere advocate the use of the 1710-1850 MHz band because, as is the case in the United States, the 2500-2690 MHz band is already being used for MDS.[30] China and Malaysia have already reserved this band for satellite service.[31] Simply put, allocation of the 2500-2690 MHz band for 3G service will not achieve harmonization with other countries.

B. Relocating ITFS Licensees Could Upset ITFS Systems

The *NPRM* also seeks comment on relocating ITFS licensees to different spectrum bands. This idea, if implemented, would almost assuredly upset the successful system that exists today for the prompt and efficient delivery of educational instruction using advanced telecommunications technology. MDS providers already have made clear that they cannot continue their partnerships with educators if their operations are relocated.[32] Loss of their MDS

---

[29] *See id.* at 62.

[30] *See Interim Report* at 10.

[31] *See id.* at 14.

[32] *See supra* n.12.

partners would leave the K-12 Community without the essential funding that make successful operations possible. In considering such a drastic solution, the Commission must consider that the K-12 Community simply does not have the money to make the wholesale changes that relocation would necessitate without the support of MDS providers. While funding is not the main goal of the K-12 Community, without it the local licensee will be unable to continue to provide the comprehensive programs they now offer.

III. ITFS Licensees Must Be Able To Maintain Flexibility

Presently, ITFS licensees have substantial control over their systems. This flexibility has been crucial in developing ITFS. Relocation, or sharing spectrum with 3G services, however, would drastically reduce the K-12 Community's control because each licensee will have less spectrum to work with. Yet, it is this inherent flexibility, through local control, that enables ITFS to succeed.

ITFS licenses typically are held by local Boards of Education or Educational Service Agencies. This allows the local licensee to tailor its use of ITFS to accommodate local community needs and interests. Essential to this process is the local licensee's determination of the amount of excess capacity, if any, to lease to MDS providers. That decision is based on a number of variables, including the size of the school system, the number of students, the geographic location of the licensee and the students within its system, and the need to generate funding to support programming. This flexibility allows the local licensee to set aside the spectrum it needs for ITFS services and to lease the remainder to MDS providers. MDS providers, in turn, rely on the licensee for use of the spectrum through lease agreements. Payments under the leases go directly to fund ITFS services and programs. For many years, these arrangements – which long have been promoted by the Commission, but which also were

complicated to develop and implement -- have provided tremendous benefits to students as well as other segments of society.

A. Flexibility Allows IFTS To Rapidly Adapt To Technological Advances

Significantly, although the focus of the *NPRM* is to identify spectrum for advanced wireless systems, the Commission cannot overlook the fact that advanced broadband services and systems are thriving in, and will continue to be developed for, the ITFS and MDS bands. The flexibility of use that presently exists has allowed local licensee to adapt quickly to advances in technology. As a result, the growth in the availability of advanced ITFS services has exploded in the past two years. Indeed, ITFS' potential is finally being seen in an increase of Internet and other computer applications. ITFS can now support broadband applications that will be needed for 21st century distance learning, including two-way real-time video and streaming video. With the advent of two-way transmission, as the *Interim Report* recognizes, school systems are able to provide Internet access to students at speeds far faster than dial-up service.[33]

B. ITFS Is Uniquely Situated To Service Rural Areas And Large Districts

ITFS also helps bridge another form of "digital divide." Nearly two-thirds of all public school districts are designated as rural and small districts. Rural school districts seek to overcome the digital divide by finding new ways to gain Internet access. Fiber deployment is not realistic for cost reasons. ITFS offers the ability to serve rural areas through wireless Internet. Copper-based or cable solutions similarly are not viable because low population density cannot justify the cost of infrastructure, or because existing technology simply cannot

---

[33] *See Interim Report* at 20.

reach all areas. Without wireless broadband Internet service that ITFS can provide, high speed broadband Internet access may not be available at all.

The Commission has previously recognized that ITFS/MDS is uniquely qualified to serve rural and underpopulated areas.[34] Indeed, Palm Beach County, Florida represents a terrific example of how ITFS is used to reach large, geographically-dispersed districts. In that school district, which consists of over 154,000 students, local schools have partnered with higher education institutions to provide dual enrollment and Advanced Placement courses to many students who would not normally have such access. Further, in conjunction with Sprint Communications, Palm Beach is currently transitioning, via ITFS, to two-way digital access, which will make available interactive web-streaming activities and additional distance-learning activities. Thus, enhanced education is brought directly into the local schools. Absent such flexibility, successful programs like the Palm Beach, Florida program would be impossible.

IV. Continued Expansion Is Essential To ITFS' Success

The K-12 Community has developed important plans to continue to bring technological advances, through ITFS, to schoolchildren throughout the United States. For example, the K-12 Community expects advanced wireless capabilities to enable students to bring Internet and other capabilities into the home through the use of small handheld computers. Further, the K-12 Community has incorporated the advancement of technology directly into its platform, setting specific goals such as: planning, infrastructure, equipment and development of technology skills

---

[34] *See Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion,* Second Report, FCC 00-290 (rel. Aug. 21, 2000).

of educators, adequate technology funding, competent technical support and equal access to computers.

Forced relocation or sharing of the spectrum, however, will negatively impact the public interest by eliminating the ability to implement these technological advances. Reapportionment will force MDS providers to abandon their existing relationships with the K-12 Community. This will have the devastating effect of eliminating much of the necessary funding. Similarly, spectrum sharing will present impossible technical barriers that will preempt future expansion. Less capacity will result in less flexibility for school systems to establish programs that best fit their needs and interests.

V. Conclusion

The K-12 Community supports the Commission's efforts to develop a comprehensive record of viable alternatives for spectrum suitable for 3G uses. For the foregoing reasons, however, the K-12 Community strongly opposes reallocating or sharing ITFS and MDS spectrum for 3G uses.

Respectfully submitted,

THE K-12 COMMUNITY

AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS
NATIONAL SCHOOL BOARD ADMINISTRATION
ASSOCIATION OF EDUCATIONAL SERVICE AGENCIES
NATIONAL RURAL EDUCATION ASSOCIATION
NATIONAL ASSOCIATION OF FEDERAL EDUCATION PROGRAM ADMINISTRATORS
COUNCIL OF GREAT CITY SCHOOLS
AMERICAN FEDERATION OF TEACHERS
NATIONAL EDUCATION ASSOCIATION

By: _____

E. Ashton Johnston
Scott M. Perry
PIPER MARBURY RUDNICK & WOLFE LLP
1200 19th Street, N.W.
Washington, D.C. 20036
Tel: (202) 861-3900

Their Attorneys

February 22, 2001