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February 22, 2001

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

VIA HAND DELIVERY

Magalie Salas Roman, Esq.
Office of the Secretary
Federal Communications Commission
445 12th Street, S.W., Room TW-A325
Washington, D.C. 20554

Re: **Comments**
ET Docket No. 00-258
University of Colorado

Dear Ms. Salas:

On behalf of the University of Colorado, please accept an original, four copies, a stamp-return copy and a 3" diskette in Word 97 format of the attached Comments in ET Docket No. 00-258. These Comments are filed in response to the *Notice of Proposed Rule Making*, which was released on January 5, 2001.

If you have any questions, please contact the undersigned at (202) 639-5603. Thank you for you attention to this matter.

Respectfully submitted,

Edwin N. Lavergne

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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

To: The Commission

COMMENTS OF THE UNIVERSITY OF COLORADO

The University of Colorado (the "University") hereby submits these comments in response to the Notice of Proposed Rulemaking in the above-captioned proceeding.[1] The Notice seeks comment on ways to support the introduction of new advanced wireless services, including third generation ("3G") mobile wireless services, in bands below 3 GHz. These comments focus on the Commission's proposals concerning the possible use of the 2500-2690 MHz band (the "2.5 GHz band") for the provision of advanced wireless services. The 2.5 GHz band is currently allocated to the Instructional Television Fixed Service ("ITFS") and Multichannel Multipoint Distribution Service ("MMDS"). For the reasons discussed below, the University strongly opposes the reallocation of the 2.5 GHz band for 3G mobile services.

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[1] 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 Services, including Third Generation Wireless Systems, *Notice of Proposed Rulemaking*, FCC 00-455 (rel. Jan. 5, 2001) ("Notice").

The University, with campuses in Boulder, Denver and Colorado Springs, uses the 2.5 GHz band to provide valuable educational services to students, teachers, and the local community. The University relies on its ITFS licenses to deliver educational programs to locations spanning approximately 100 miles along Colorado's Front Range. These programs, some of which are described below, should not be sacrificed for a new generation of sophisticated cell phones.

The University of Colorado at Boulder utilizes its ITFS channels to distribute undergraduate and graduate level courses within the City of Boulder and to dozens of technology and engineering companies along the Front Range. Many of Colorado-based information technology and engineering corporations rely on the graduate education opportunities offered by the University. Graduate courses in telecommunications, engineering management, electrical and computer engineering, computer science, and aerospace engineering are delivered live each semester to working professionals at company sites. These successful distance learning programs are necessary to meet the workforce needs of Colorado's growing information technology industry.

Similarly, the University of Colorado at Colorado Springs relies on its ITFS system to offer educational opportunities to students in the Colorado Springs area who cannot easily come to campus. These courses enable matriculating students to earn additional credits towards their degree while others in the community enjoy the programming for its lifelong learning benefits.

While the above description of how the ITFS/MMDS band is being used is important, it is primarily of historical interest for purposes of the Notice. What is of crucial importance and decisional significance for the Commission now is the *new* use of ITFS resulting from

Commission actions over the past few years to grant increased flexibility to ITFS licensees and their commercial partners in the way they collectively use the ITFS/MMDS band.[2]

The Commission's actions have made it possible for ITFS licensees to provide high-speed, two way fixed wireless data transmission services, including broadband Internet access in the 2.5 GHz band. Wireless broadband will support a broad range of new services including two-way real-time video, streaming video, and other bandwidth intensive applications necessary for effective distance learning. Educators are just beginning to realize the enormous potential of this technology. For example, a high-speed wireless infrastructure would allow the University to deliver content to rural schools in the Pikes Peak region that do not have access to broadband connections to the Internet. Some of the other University programs that would benefit from the continued roll out of broadband services in the 2.5 GHz band are described below.

- The Principal Licensure Program. The Principal Licensure program grants principal licenses to K-12 educators wishing to take a leadership position in education. In the summer of 2000, this program went online allowing far greater flexibility for the students. Threaded discussions, chat rooms, web sites, and email form the basis of the delivery methods. However, visits to schools are still needed. The additional travel time associated with such visits could be reduced through the use of two-way, wireless broadband services.
- Teacher Training. Colorado Springs has a number of academic departments that offer K-12 teacher training in their disciplines. Much of this training involves the use of

[2] Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees To Engage In Fixed Two-Way Transmissions, *Report and Order*, 13 FCC Rcd 19112 (1998), *recon.*, 14 FCC Rcd 12764 (1999), *further recon.*, 15 FCC Rcd 14566 (2000).

technology and how it is effectively used in the classroom. The Center for Applications and Technology in the Mathematics Classroom ("CATME") is such an example. Started in 1994, CATME offers a certificate program that intertwines the teaching of mathematical applications with technology training with mathematical-specific technology applications. Courses in the CATME program are usually taught during the summer. As a result, the program can interrupt the summer plans of many teachers since they must travel to campus. A significant number of students have been asking that this program be offered online. The CATME program could be offered at a distance through the use of two-way audio and shared applications. A ubiquitous wireless network connection to rural schools would offer some of the greatest benefit to this teacher training.

- University Mathematics Courses In Rural Colorado. Since 1998, the University's Department of Mathematics has been offering sophomore and junior-level University mathematics courses to talented high school students at a distance under the Mathonline program. This distance education opportunity includes two-way audio, synchronized web browsing and power point presentations, as well as application sharing. Traditional mathematics lectures in calculus, discrete mathematics, linear algebra, differential equations and statistics are broadcast in real time and archived for later playback. The online students see and participate in the class in much the same way that the traditional students do. This program has been particularly successful with students at high schools having robust Internet connections. However, it is the students at the rural schools that

often do not have reasonable access to these courses. Two-way wireless broadband access would give these students at rural schools this learning opportunity.

- Advanced TeleHealth Applications. Through a myriad of hospital affiliates, rural health care centers, community outreach programs, and a renowned program in telemedicine, the University's Health Sciences Center delivers a range of programs and services to communities statewide, including correctional institutions. In medical consultations in particular, the ability to transfer high quality images is essential but often is limited by lack of an adequate telecommunications infrastructure in many regions of the state. The two-way broadband capabilities of the next generation of ITFS would support genetic oncology consultants, bone marrow transplant consultations, ultrasound and echocardiogram interpretation and consults, teleradiology image transfers, correctional care consultations, and ongoing patient assessment and monitoring of patients who are unable to travel to Denver.

Clearly, two-way broadband Internet access will enable the use of technology in places and ways which where not previously envisioned. As technologies develop many more applications will emerge. Deployment of ITFS broadband capability will enhance the University's teaching, learning and research activities in exciting ways, affecting 30,500 students and 7,000 faculty and staff combined.

It is important to emphasize that the ability of the University to exploit these opportunities is dependent on its strategic partnership with Sprint. The University leases some of its ITFS transmission capacity to Sprint (which has other ITFS/MMDS channel rights in Colorado) in return for funding, facilities, and services that the University uses to further its

educational goals. Any reallocation of spectrum now to make room for 3G mobile services would jeopardize this critical relationship.

Simply moving the University to another block of spectrum or replacing its ITFS channels with other technologies is not the answer. If the University were moved to another block of spectrum, it would lose the important benefits generated through its commercial partnership with Sprint. Moreover, replacing ITFS channels with fiber, wire, or cable is not adequate because wired technologies do not permit the ubiquitous delivery of educational services within a wide geographic area. Educators need the ability to provide ubiquitous service because, as demonstrated in the examples above, the traditional model of learning in the "classroom" is changing. Increasingly, educators need to take the "classroom" to the student.[3] ITFS systems that are owned, managed, and controlled by schools themselves empower educators to use this valuable resource in ways that best meet their students' changing needs.

The University urges the Commission to act quickly to eliminate the uncertainty created by this proceeding. The continued deployment of fixed broadband services in the band will help ensure the success of the important educational initiatives that are currently underway. Moreover, reaffirming the use of the 2.5 GHz band for advanced fixed wireless services is consistent with the Commission's prior actions. The Commission encouraged ITFS licensees to lease spectrum to commercial service providers; and it encouraged commercial service providers

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[3] The NEA has made the development of systems to support a decentralized approach to education a top priority, noting the importance of "the development of a user-friendly infrastructure which can accommodate a decentralized approach to program and product development so that the interaction among educators, students, researchers, and those outside of the educational community can occur." National Education Association Resolutions 1997-1998, http://www.nea.org/cet/briefs/brief10.html.

to invest billions of dollars in acquiring MMDS channels and ITFS channel lease rights. It would be wrong for the Commission to change course now, just as new broadband services are being introduced to the public.

Accordingly, the University opposes any reallocation of channels in the 2.5GHz band from ITFS and MMDS, and urges the FCC to move 3G mobile services into other available spectrum.

Respectfully submitted,

THE UNIVERSITY OF COLORADO

By:_____

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Dated: February 22, 2001

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I, Shelia Wright, hereby certify that on this 22nd day of February, 2001, I caused copies of the foregoing Comments by the University of Colorado to be hand-delivered to the following:

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