

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

In the Matter of)	
)	
Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands)	WT Docket No. 03-66 RM-10586
)	
Part 1 of the Commission's Rules - Further Competitive Bidding Procedures)	WT Docket No. 03-67
)	
Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and the Instructional Television Fixed Service to Engage in Fixed Two-Way Transmissions)	MM Docket No. 97-217
)	
Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Licensing in the Multipoint Distribution Service and in the Instructional Television Fixed Service for the Gulf of Mexico)	WT Docket No. 02-68 RM-9718
)	

To: The Commission

JOINT COMMENTS OF ITFS PARTIES

Alliance for Higher Education, Anaheim City School District, Arizona Board of Regents for Benefit of the University of Arizona, Boise State University, California State University (CALNET), California State University, Sacramento, Gonzaga University, Greenville Technical College, Hampton Roads Educational Telecommunications Association, INTELECOM Intelligent Telecommunications, KCTS Television, Kern Educational Telecommunications Consortium (consisting of California State University, Bakersfield, Kern Community College District, Kern County Superintendent of Schools, Kern High School District, and Panama-Buena

Vista Union School District), Kirkwood Community College, Long Beach Unified School District, Milwaukee Area Technical College, Northeastern Educational Television of Ohio, Inc., Oklahoma Educational Television Authority, Oregon Wireless Instructional Network (consisting of Lane Community College, Linn-Benton Community College, Oklahoma Educational Television Authority, Oregon State University, Oregon University System, Portland State University, University of Oregon, Western Oregon University), Pasadena Unified School District, Pueblo Community College, Pueblo School District # 70, Regents of the University of New Mexico, Richardson Independent School District, San Diego State University, Santa Ana Unified School District, South Carolina Educational Television Commission, Spokane Community College, Spokane Falls Community College, St. Louis Regional Educational and Public Television Commission, Tarrant County College, University of Maine System, University System of Maryland, University of South Florida, University of Wisconsin System, Valencia Community College, and Wisconsin Educational Communications Board (collectively, the “ITFS Parties”), by their counsel, hereby provide these Comments in support of the position of the Wireless Communications Association International, Inc. (“WCA”), Catholic Television Network (“CTN”), and National ITFS Association (“NIA”) (the “Coalition Proposal”) reflected in the Comments filed by those groups in response to the *Notice of Proposed Rule Making and Order* in the above-captioned proceeding (“NPRM”). The NPRM addresses issues regarding the spectrum currently allocated for and used by stations operating in the Instructional Television Fixed Service (“ITFS”) and the Multipoint Distribution Service (“MDS”).

The ITFS Parties are public and private colleges, universities and university systems, state and county boards or offices of education, school districts, community colleges, consortia of educators engaged in distance learning, public broadcasters and governmental or non-profit

educational telecommunications entities. Many of the ITFS Parties are experienced providers of educational services over ITFS stations, providing critical educational services to students and other learners in schools, workplaces and homes. Indeed, among the ITFS Parties are operators of some of the oldest, largest and most innovative ITFS systems in the country. Others are applicants for ITFS licenses or licensees whose facilities and operations are authorized but in the process of construction and activation. The Appendix to these Comments provides brief descriptions of the ITFS Parties and their educational services. Each of the ITFS Parties has an important interest in any revised band plan, technical rules, service rules and other elements of the Coalition Proposal.

The ITFS Parties wholeheartedly support the Coalition Proposal. The ITFS Parties and many other ITFS licensees across the country have been using the ITFS band for many years to provide valuable educational services to students, teachers and other learners at K-12 schools, universities, community colleges and governmental agencies and institutions. The ITFS Parties collectively reach millions of students and adult/workforce learners, principally through video programming and other related services, but increasingly through interactive digital educational materials. The ITFS Parties' foremost interests are in the preservation of these services, and their enhancement going forward with technological and operational advances. The Coalition Proposal, representing the massive effort of ITFS licensees, MDS licensees, commercial operators, consulting engineers, and technology and equipment suppliers, successfully implements these goals.

Recent developments in technology have made it possible for ITFS and MDS stations to provide high-speed, two way wireless data transmission services, including for broadband Internet access. It is critical for the Commission to understand that these technological

innovations are particularly timely for the ITFS Parties, given the explosion in online education and other data services, which increasingly requires broadband access to rich-media content. The technical and regulatory proposals in the Coalition Proposal for the ITFS/MDS band support a broad range of such services, including two-way real-time video and other bandwidth intensive applications necessary for effective distance learning. If the FCC fails to adopt the proposed new band plan and rules for the ITFS/MDS spectrum, the capacity, usefulness, and value of the band for these purposes would be significantly diminished.

Furthermore, many of the ITFS Parties have become “partners” of wireless communications companies through the practice of sharing excess capacity, which the FCC first allowed in 1983. Leasing capacity makes possible ITFS access to shared networks – essentially allowing ITFS facilities to be deployed and operated at the expense of the commercial partner (who uses them to provide valuable services to the community) while generating additional funds for schools to use in developing their distance learning programs. The FCC has strongly encouraged this practice and has developed rules currently in place governing educational use and excess capacity leasing. These rules should remain unchanged. The ITFS Parties therefore also support fully the separately-filed Joint Comments of CTN and NIA on those issues.

The NPRM explores other possible changes to the ITFS regulatory structure, including the “open eligibility” for ITFS licenses. The ITFS Parties are fundamentally opposed to changing the eligibility standards for ITFS station licenses, either for parties applying for new licenses, or for parties seeking to acquire existing licenses. The ITFS Parties believe that allowing for-profit, commercial entities to become licensees would likely result in the ultimate destruction of the ITFS service as an educational asset. For this reason, the ITFS Parties support the Joint Comments of CTN and NIA on this issue as well.

Conclusion

For all these reasons, the ITFS Parties support the Comments of WCA, CTN and NIA, as well as the Joint Comments of CTN and NIA, and urge the FCC to swiftly adopt rules consistent therewith.

Respectfully submitted,

ALLIANCE FOR HIGHER EDUCATION

ANAHEIM CITY SCHOOL DISTRICT

ARIZONA BOARD OF REGENTS FOR
BENEFIT OF THE UNIVERSITY OF ARIZONA

BOISE STATE UNIVERSITY

CALIFORNIA STATE UNIVERSITY (CALNET)

CALIFORNIA STATE UNIVERSITY,
SACRAMENTO

GONZAGA UNIVERSITY

GREENVILLE TECHNICAL COLLEGE

HAMPTON ROADS EDUCATIONAL
TELECOMMUNICATIONS ASSOCIATION

INTELECOM INTELLIGENT
TELECOMMUNICATIONS

KCTS TELEVISION

KERN EDUCATIONAL
TELECOMMUNICATIONS CONSORTIUM
(CALIFORNIA STATE UNIVERSITY,
BAKERSFIELD, KERN COMMUNITY
COLLEGE DISTRICT, KERN COUNTY
SUPERINTENDENT OF SCHOOLS, KERN
HIGH SCHOOL DISTRICT, AND PANAMA-
BUENA VISTA UNION SCHOOL DISTRICT)

KIRKWOOD COMMUNITY COLLEGE

LONG BEACH UNIFIED SCHOOL DISTRICT

MILWAUKEE AREA TECHNICAL COLLEGE

NORTHEASTERN EDUCATIONAL
TELEVISION OF OHIO, INC.

OKLAHOMA EDUCATIONAL TELEVISION
AUTHORITY

OREGON WIRELESS INSTRUCTIONAL
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LINN-BENTON COMMUNITY COLLEGE,
OREGON STATE UNIVERSITY, OREGON
UNIVERSITY SYSTEM, PORTLAND STATE
UNIVERSITY, UNIVERSITY OF OREGON,
WESTERN OREGON UNIVERSITY)

PASADENA UNIFIED SCHOOL DISTRICT

PUEBLO COMMUNITY COLLEGE

PUEBLO SCHOOL DISTRICT # 70

REGENTS OF THE UNIVERSITY OF NEW
MEXICO

RICHARDSON INDEPENDENT SCHOOL
DISTRICT

SAN DIEGO STATE UNIVERSITY

SANTA ANA UNIFIED SCHOOL DISTRICT

SOUTH CAROLINA EDUCATIONAL
TELEVISION COMMISSION

SPOKANE COMMUNITY COLLEGE

SPOKANE FALLS COMMUNITY COLLEGE

ST. LOUIS REGIONAL EDUCATIONAL AND
PUBLIC TELEVISION COMMISSION

TARRANT COUNTY COLLEGE

UNIVERSITY OF MAINE SYSTEM
UNIVERSITY SYSTEM OF MARYLAND
UNIVERSITY OF SOUTH FLORIDA
UNIVERSITY OF WISCONSIN SYSTEM
VALENCIA COMMUNITY COLLEGE
WISCONSIN EDUCATIONAL
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September 8, 2003

CERTIFICATE OF SERVICE

I, Nadine Curtis, hereby certify that copies of the foregoing Joint Comments of ITFS Parties have been served by Hand or First Class Mail this 8th day of September, 2003, on the following:

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/s/ Nadine Curtis

Appendix

Description of the ITFS Parties and their ITFS Operations and Plans

Alliance for Higher Education

Alliance for Higher Education (“AHE”) is a consortium of 29 accredited colleges and universities located in Texas. AHE is committed to increasing the educational opportunities of the residents of the Dallas/Fort Worth area by using telecommunications to make quality educational courses more available to them. AHE was one of the earliest ITFS users. It is the licensee of eight ITFS channels in both the Dallas and Fort Worth markets. It has for years operated a comprehensive interactive instructional television network in the Dallas/Fort Worth metroplex which connects students at the AHE member universities with each other and with other member universities, as well as major corporations, hospitals and medical centers with the AHE member universities. Since the AHE Dallas/Fort Worth ITFS network began operating in 1970, more than 4,000 courses have been transmitted to more than 50,000 course enrollees. While AHE does not itself award degrees, it is informed by its member institutions that more than 10,000 graduate degrees have been awarded to students who received AHE-delivered courses. AHE has worked with CS Wireless, now a subsidiary of WorldCom, to digitize its channels as part of a commercial/educational wireless system. Because of a digital lease agreement with CS Wireless Systems, a subsidiary of WorldCom, the ITFS system generates revenue supporting AHE’s educational activities.

Through its facilities, AHE is currently making educational programming capacity available to Dallas County Community College District (“DCCCD”). DCCCD provides over 3,000 hours per year of college credit courseware, in addition to programming to support the use of telecourses, including scheduling information, study assistance and retention support. Although DCCCD has its own ITFS transmission facilities in Dallas, its use of AHE’s facilities in Fort Worth provide an additional avenue of distribution of its programming to the Tarrant County area of the Dallas/Fort Worth metroplex.

Anaheim City School District

The Anaheim City School District (“ACSD”) is the public school district serving the city of Anaheim, California. ACSD includes 23 elementary K-6 schools which are on a four-track, year-round schedule with Class Size Reduction in Kindergarten, grades 1 and 2. The student population of approximately 24,000 students represents a diverse population which includes a large Hispanic enrollment.

ACSD has been using ITFS for over 40 years to transmit educational programs to 24,000 elementary students simultaneously. In addition to Music and Art programs, ACSD broadcasts state-mandated curriculum in Reading ("Reading Rainbow"), Social Studies (State and local history, Map Reading, current events, "Voyage of the Mimi" and "Truly American" Biographies), Science (Atoms, Electrons, Weather, Oceans, Space, "Observing Living Things", "Here's How", Health - "Slim Goodbody") and Math ("Mathica's Mathshop").

ACSD is the licensee of ITFS Station KVP-26, Channels F1-F4 at Modjeska Peak, California. ACSD is a party to a Digital Transmission Development and Lease Agreement with Cross Country Wireless, Inc, a subsidiary of WorldCom (“WorldCom”). Because of the agreement, the ITFS system also collects revenues for numerous core curriculum expenditures and obtains more capacity for simultaneous video streams than if operated in analog mode. This agreement with private industry also relieves a portion of the financial burden of state and local governments. ITFS positively impacts the delivery of education to an underprivileged and educationally-challenged community.

Pursuant to the Agreement, WorldCom provides fiber optic connectivity for ACSD’s video instructional programming service consisting of six (6) simultaneous programs, from the ACSD head-end facility in Anaheim to WorldCom’s El Monte, California head-end facility. From there, the signals are distributed via fiber optic and/or microwave to digital transmission facilities of other ITFS stations at Mt. Wilson, California. The signal is transmitted from one of the Mt. Wilson transmitters (selected by WorldCom) and viewable throughout the Los Angeles area. The signals are received off air at ACSD’s ITFS transmitter site at WorldCom’s Modjeska Peak digital transmission facility and re-transmitted throughout the Orange County and North San Diego County areas over Station KVP-26. Through these facilities, the ACSD’s service is received at sites serving ACSD’s 23 schools, with approximately 1,500 viewers daily. All the equipment necessary to transport, encode, process and transmit the digital signal, and most of the receive site equipment, is provided and owned by WorldCom, and maintained by WorldCom as well.

Through these facilities, ACSD provides over 80 hours per week of instructional programming focusing on core state and district curriculum subjects. ACSD uses a state of the art video on demand system allowing teachers to access programming immediately via a video broadcast server.

Arizona Board of Regents for Benefit of the University of Arizona

The University of Arizona is the licensee of multiple ITFS channels and 3 MMDS channels in the Tucson, Arizona area. The University partnered with People's Choice of Tucson, now a subsidiary of Sprint, to build a wireless system on these ITFS and MMDS channels serving educational sites, homes and businesses.

The University, thanks in significant part to the operational and financial support of PCTV, provides educational programming over the system to over 25,000 students in 35 K-12 schools, in addition to hundreds of University and community college students each semester. The system is used to link the medical staff at seven Tucson area hospitals and at the Federal prison in Tucson, as well as numerous doctors in private practice, to medical lectures and courses. The system also enables PCTV to serve over 20,000 subscribers to its video/data system in Tucson, making both their commercial service and educational fare (credit courses, including those leading to a GED, and professional training) available to the public in their homes.

The University and PCTV, working together, have rolled out high speed Internet access services for education and for the public, making Tucson one of the early successes in two-way fixed wireless broadband.

Boise State University

Boise State University's ITFS system is known as the Knowledge Network. The Knowledge Network courses are live, interactive courses received at selected sites throughout the Treasure Valley in Idaho. Students get the same high quality Boise State courses at locations convenient to them. This system enables students at off-campus sites to interact and participate "live" with the on-campus classroom. The coursework is transmitted via one-way video and two-way audio to the off-campus site. Cable subscribers can access Knowledge Network courses in their own home with the flexibility to record a course and view it at a time that fits their schedule. The current ITFS class schedule can be found at this link:
<http://itc.boisestate.edu/KNET/times.htm>

California State University (CALNET)

California State University (“CSU”) is the largest degree granting institution of higher education in the United States. A consortium of five CSU campuses in the greater Los Angeles area operate four ITFS stations and provide joint educational services under the name CALNET. CALNET combines five Los Angeles area CSU campuses’ ITFS operations – those of Cal State Los Angeles, Cal Poly Pomona, Cal State, Domingues Hills, Cal State Long Beach and Cal State Fullerton. CalNet uses the ITFS frequencies at both Los Angeles and Orange County to deliver a variety of services and college courses to high school students enrolled in the Young Scholar Program, a Bachelor of Science in Fire Science program to fire departments throughout southern California, teacher education courses to more than 100,000 school teachers, a Master of Arts in Behavioral Science and a Negotiation and Conflict Management program to police officers and law enforcement personnel. CalNet’s use of ITFS makes a college education accessible to people who are unable to leave their homes.

CSU is the licensee of ITFS Stations WHG-268 on Channels E1-E4 at Mount Wilson, California and WNC-705 on Channels E1-E4 at Modjeska Peak, California. CSU/LA is licensee of ITFS Station WHR-463 on Channels A1 and A4 at Mount Wilson, and Cal Poly is licensee of ITFS Station WHR-505 on Channels A2 and A3 at Mount Wilson. On behalf of the CALNET consortium, CSU is a party to a Digital Transmission Development and Lease Agreement with Cross Country Wireless, Inc., a subsidiary of WorldCom (“WorldCom”). The Agreement with WorldCom digitized the Los Angeles and Orange County Channels as part of a commercial/educational wireless cable system. CalNet was also working with WorldCom on conversion of the wireless cable system to offer wireless broadband services.

Pursuant to the Agreement, WorldCom provides fiber optic connectivity for CALNET’s video instructional programming services, from the five CALNET campus head-end facilities to WorldCom’s El Monte, California head-end facility. From there, the CALNET signals is distributed via fiber optic and/or microwave to the WHR-268, WHR-463 and WHR-505 digital transmission facilities at Mt. Wilson, California. The signals are transmitted from Mt. Wilson and viewable throughout the Los Angeles area. The signals are also received off air at a second ITFS transmitter site at WorldCom’s Modjeska Peak digital transmission location and re-transmitted over the WNC-705 facilities throughout the Orange County and North San Diego County areas. Through these facilities, the CALNET services are received at sites serving CALNET member campus students in Los Angeles County, Orange County and North San Diego County areas. All the equipment necessary to transport, encode, process and transmit the digital signal, and most of the receive site equipment, is provided and owned by WorldCom, and maintained by WorldCom as well.

Through these facilities, CALNET provides hundreds of hours per week of college credit courses and other educational material on its channel. The CALNET services provide accredited college courses to thousands of students per year. The service is also received and retransmitted by local cable providers to a subscriber and community base well in excess of a quarter million people.

California State University, Sacramento

California State University Sacramento ("CSUS") has a model ITFS system, providing 4 channels of educational programming 24 hours a day, 365 days a year in association with a consortium of local school districts, junior colleges and universities. ITFS courses also are aired on local and regional cable television systems as a part of the basic cable programming package, providing continuing education to the general population. In addition, CSUS is working with a commercial partner to make wireless broadband available throughout the Sacramento area, and hopes to have a fully two-way system available after issues relating to the band plan are worked out.

CSUS, with a student body of over 27,000, serves the state capital and surrounding areas, which includes impoverished urban neighborhoods, wealthy suburbs and rural farmlands. The university's commitment to distance and distributed education has inspired an expanded schedule of approximately 60 courses in the 2001/02 academic year. A planned movement from analog to digital technology will provide an even greater number of program and course offerings. Working with its commercial partner, CSUS hopes to move aggressively to bring two-way wireless broadband to students, faculty and the local community.

As the People's University, California State University, Sacramento remains committed to extending higher undergraduate and graduate education opportunities and access to adults throughout the greater Sacramento metropolitan region and providing continuing and professional services to business, education, government, and industry. One means to accomplish this is to continue to exploit the use of the ITFS spectrum as an educational and institutional transport system.

What began 14 years ago as televised instruction now represents an annual enrollment of 6,000 students and four channels of broadcast service operating 24x7x365. With the same enthusiasm, CSUS is prepared to develop its own local cellular 2500 MHz network that will establish a digital two-way ISP operation through multiple phases to serve the greater Sacramento metropolitan region. Phase I will begin with campus itself. Phase II and thereon will encompass elementary and secondary school district sites as neighborhood cells directly into the community. The university and these sites are already inter-connected through a Gig-E backbone. Programming activities will include two-way voice, data, and video applications; most specifically providing mobile and portable services for students, faculty, and staff. CSUS has made excellent use of its ITFS frequency spectrum and will continue to do so upon the issuance of the final rules and regulations from the FCC.

Gonzaga University

Gonzaga University has been the licensee of ITFS station WLX-516, Spokane, Washington since 1998 and has been operating its ITFS Station since 2001.

Gonzaga is a private, four-year comprehensive university. It is owned and operated by the Society of Jesus, the Jesuit order of the Catholic Church. Gonzaga's educational philosophy is based on the 450-year Ignatian model that aims to educate the whole person -- mind, body and spirit -- an integration of science and art, faith and reason, action and contemplation. Gonzaga was founded in 1887, and enrolls about 5,400 students in 92 undergraduate and 21 graduate programs. The Gonzaga School of Law is one of three in the state of Washington. Spokane enjoys a population of 190,000 within city limits, and more than 400,000 in the greater Spokane area.

Greenville Technical College

Founded in 1962, Greenville Technical College (“Greenville Tech”) is a four-campus system located in the growing Charlotte-Atlanta corridor. More than 10,700 students are served each year with hands-on training for business, health, engineering and industrial careers along with the university transfer option that provides an economical route to a four-year degree. The college's continuing education division offers classes that improve skills in specific areas, last year meeting the needs of 75,000 individuals and 2,000 companies.

In support of the College's academic and community mission, Greenville Tech operates a four-channel ITFS system that provides live, college credit classes at four campuses within the service area of Greenville County. An average of thirty classes per semester are delivered to over three hundred students taking classes at a distance while another hundred students participate in Greenville Tech's main campus broadcast classrooms. Courses include Mathematics, History, English, Geography, Sociology, Criminal Justice, Paralegal and Political Science. In addition, programming is provided to the Palmetto Exposition Center in an effort to assist with community development activities and video programming.

Hampton Roads Educational Telecommunications Association

Hampton Roads Educational Telecommunications Association (“HRETA”) is a nonprofit Virginia corporation that owns and operates the public television and radio stations in the Norfolk, Virginia market, as well as an extensive instructional television network consisting of 34 licensed ITFS channels covering eastern Virginia and northeastern North Carolina. HRETA is the licensee of, among others, ITFS Stations WHF-350, Channels A1 and A2, WHR-941, Channels A3 and A4, WLX-256, Channels B3 and B4, WLX-255, Channels C1-C4, WHR-526, Channels D1-D4, and WHR-940, Channels G1-G4 at Driver, Virginia. With respect to these ITFS stations, HRETA is a party to an Excess Capacity Lease Agreement with Atlantic Microsystems, Inc., a subsidiary of WorldCom (“WorldCom”).

Pursuant to the Agreement, WorldCom provides microwave facilities to and from local school districts and HRETA’s studios, and from HRETA’s studios to the ITFS transmission facilities, as well as analog and digital transmission equipment at 6 different locations, digital receive equipment at 25 locations, and analog receive equipment at 107 locations. This equipment is leased to HRETA to enable HRETA to provide its educational services.

Through its ITFS facilities, HRETA provides six (6) channels of instructional and educational programming on a full-time basis (24 x 7) (over 1000 hours per week) to 154 receive locations in Virginia and North Carolina. These locations include K-12 school systems with nearly 400,000 students, the Eastern Virginia Medical School which provides medical instruction and “grand rounds” for up to 250 doctors and 450 medical interns, college preparatory programming and other programming supported by seven area colleges serving 65,000 students, and local cable systems having about 1.6 million subscribers.

INTELECOM Intelligent Telecommunications

INTELECOM is an internationally renowned non-profit, 501(c)(3) organization owned by 45 southern California community colleges and a producer of television-based college credit courses. The organization is in its 32nd year. Its purpose is to produce and distribute nationally and internationally telecommunications-based college credit and adult education courses. INTELECOM uses its ITFS channel to deliver over 130 hours of lower division, undergraduate credit courses to upwards of 500,000 cable subscribers and college students each week. Its service has been operational since 1984 and has served thousands of students since its inception. INTELECOM is also a participant in the ITFS/MMDS digital wireless system in Los Angeles and Orange County, now operated by WorldCom.

INTELECOM is the licensee of ITFS Station WHR-802, Channel C4 at Mount Wilson, California. INTELECOM is a party to a Digital Transmission Development and Lease Agreement with Cross Country Wireless, Inc., a subsidiary of WorldCom (“WorldCom”).

Pursuant to the Agreement, WorldCom provides fiber optic connectivity for INTELECOM’s video instructional programming service, the Community College Instructional Network (“CCIN”), from the INTELECOM head-end facility at Mt. San Antonio College in Walnut, California to WorldCom’s El Monte, California head-end facility. From there, the CCIN signal is distributed via fiber optic and/or microwave to the WHR-802 digital transmission facility at Mt. Wilson, California. The signal is transmitted from Mt. Wilson over INTELECOM’s ITFS station and viewable throughout the Los Angeles area. The signal is also received off air at a second ITFS transmitter site at WorldCom’s Modjeska Peak digital transmission facility and re-transmitted throughout the Orange County and North San Diego County areas. Through these facilities, the CCIN service is received at sites serving INTELECOM member college students in Los Angeles County, Orange County and North San Diego County areas. All the equipment necessary to transport, encode, process and transmit the digital signal, and most of the receive site equipment, is provided and owned by WorldCom, and maintained by WorldCom as well.

Through these facilities, INTELECOM provides approximately 110 hours per week of lower division, undergraduate, transfer-level college credit courses on its channel. The CCIN service provides accredited college courses to approximately 35,000 students per year. The service is also received and retransmitted by local cable providers and colleges to a subscriber and community base well in excess of 1,000,000 people.

KCTS Television

KCTS Television is the licensee of 12 ITFS channels in the greater Seattle area. KCTS is currently using 4 of its ITFS channels to supply educational engineering information to 104 Boeing sites in the greater Seattle area. The remaining channels are leased to Wireless Holdings, a subsidiary of Sprint. The programming is engineering coursework that originates from the University of Washington School of Engineering (three program streams) and from Boeing (one program stream). The stream from Boeing originates from various sites, including Stanford University. Boeing receiver sites are located in Everett, Seattle, Renton, Tukwila, Auburn, Kent and in unincorporated areas of King County. The service has been provided since early 1992.

Kern Education Telecommunications Consortium

California State University, Bakersfield
Kern Community College District
Kern County Superintendent of Schools
Kern High School District
Panama-Buena Vista Union School District

Kern Education Telecommunications Consortium (“KETC”) operates five ITFS channel groups (A, B, C, D and G) licensed to California State University, Bakersfield, Kern Community College District, Kern High School District, Panama-Buena Vista Union School District and Kern County Superintendent of Schools respectively. KETC provides educational programming for four of the twenty channels in Bakersfield and provides “cradle-to-grave” instruction. Members of the consortium also operate 8 ITFS channels in Tehachapi and Ridgecrest.

The ITFS bandwidth is used to transmit educational programming to urban and rural schools and homes through Kern County. Without the ITFS bandwidth, efforts to deliver instruction to students and adults in rural communities via distance education would be seriously hampered. KETC broadcasts educational programming 24 hours per day, seven days per week in Kern County, an area which is larger than the State of Massachusetts. The geography of Kern County is so diverse that some residents require more than three hours of commuting to reach urban areas where face-to-face classroom instruction is offered. Distance learning, through ITFS channels, helps bridge this educational gap between rural and urban communities. The recent rule changes that permit two-way video and broadband data services, including high-speed Internet access, for the ITFS spectrum provides virtually unlimited potential for KETC. These developments will allow KETC to provide, through ITFS, affordable access to broadband Internet for student and adult learning in the classroom, at home or on-the-job.

KETC was working with excess capacity partner, WorldCom, on the build out of a 2-way system, which would allow KETC to provide instruction via the Internet and to provide video on demand to its schools. KETC has beta tested a new system that will provide full screen broadcast quality streamed video to the desktop. This will allow teachers to take the output of the computer and project it on a large screen for viewing by an entire class.

Pursuant to each excess capacity lease agreement, WorldCom constructed the KETC members’ ITFS transmission facilities at a common transmission tower site in Bakersfield. The facilities included microwave Studio to Transmitter Links (STLs) to connect the members’ head-end facilities to WorldCom’s transmission facilities, transmission equipment consisting of transmitters, combiners, wave-guide and antenna, as well as receive equipment at the schools’ receive sites. This equipment was leased to the KETC members to enable them to provide their educational services.

Through these facilities, KETC members provide well over 500 hours per week of instructional and educational programming, including:

For CSUB: live university courses offered towards a Masters in Education and BTSA programs, lower division general education courses for regularly matriculated students and high

school juniors and seniors, and upper division general education courses for regularly matriculated students;

For KCCD: telecourses for high school students seeking to obtain a head start on their associates for four-year degrees, and students taking courses for professional or personal growth;

For KHSD, PBVUSD and KCSS: telecourse material and staff development programming for students and teachers, including programming for advance placement classes.

The programming is used by over 80,000 students and adult learners during each academic year, at 175 school and education sites in the greater Bakersfield area.

Kirkwood Community College

Kirkwood Community College serves seven counties in east central Iowa, covering 4,300 square miles and a population of over 350,000 people. Kirkwood Community College broadcasts 67 hours a week of live, interactive (through two way audio) classes that can be applied towards a general associates degree. In service since 1980, Kirkwood Community College's ITFS system includes 11 channels and 35 receive sites. In the spring semester of 2001, 519 students are taking 18 classes, with the vast majority attending class at remote receive sites. The continuing education classes enrolled 1200 students in 25 classes during the year 2000. Through ITFS links with cable TV, educational programming is available to communities in a 35-mile radius from the main campus in Cedar Rapids, and can be seen in over 81,000 homes subscribing to cable television. The Cable TV network offers college credit tele-courses allowing students to earn college credit at their own pace and in their own homes. Kirkwood Community College is currently negotiating with a private telecommunications company to lease its excess ITFS capacity in exchange for providing affordable high-speed Internet access to K-12 schools in the seven county area. Kirkwood also hopes to expand its ITFS system to provide video on demand to the 10 College off-campus Learning Centers and to local K-12 schools.

Long Beach Unified School District

Long Beach Unified School District (“LBUSD”) is the third largest public school district in the State of California, providing enrollment for over 97,500 students. LBUSD serves ninety four (94) K-12 schools in Long Beach, Signal Hill, Lakewood, and Catalina Island in California.

LBUSD has been a long-time ITFS licensee, offering instructional programming, literacy programs for adult learners, staff development for teachers and administrators, and even some college level programming for District high schools. Principals and administrators also use the ITFS system for meetings and workshops.

In the mid-1990’s, running out of capacity on its four analog channels, LBUSD entered into an excess capacity arrangement (described below) to convert the ITFS station (along with stations licensed to other educators with similar arrangements) to digital service, thereby increasing the number of channels available to the schools while making possible the construction of a digital wireless cable system serving the entire Los Angeles and Orange County metropolitan area. That digital system has been operating now for years, generating revenues used by the School District to fund its educational activities.

LBUSD is the licensee of ITFS Station KZH-31, Channels D1-D4 at Modjeska Peak, California. LBUSD is a party to a Digital Transmission Development and Lease Agreement with Cross Country Wireless, Inc., a subsidiary of WorldCom (“WorldCom”).

Pursuant to the Agreement, WorldCom provides fiber optic connectivity for LBUSD’s video instructional programming service consisting of six (6) simultaneous programs, from the LBUSD head-end facility in Long Beach, California to WorldCom’s El Monte, California head-end facility. From there, the signals are distributed via fiber optic and/or microwave to digital transmission facilities of other ITFS stations at Mt. Wilson, California. The signal is transmitted from one of the Mt. Wilson transmitters (selected by WorldCom) and viewable throughout the Los Angeles area. The signals are received off air at LBUSD’s ITFS transmitter site at WorldCom’s Modjeska Peak digital transmission facility and re-transmitted throughout the Orange County and North San Diego County areas over Station KZH-31. Through these facilities, the LBUSD’s service is received at sites serving LBUSD’s 97 schools. All the equipment necessary to transport, encode, process and transmit the digital signal, and most of the receive site equipment, is provided and owned by WorldCom, and maintained by WorldCom as well.

Through these facilities, LBUSD provides over 100 hours per week of instructional programming, with emphasis on language arts, math, history, social sciences, art, and career programming for Grades K-12 and for staff development. The programming is used by over 97,500 students, 5,000 teachers and 3,000 classified personnel. One channel of the service providing school news and community, student and parent education is also received and retransmitted by local cable providers to 500,000 people in the cities of Long Beach, Lakewood, Signal Hill and Avalon on Catalina Island.

Milwaukee Area Technical College

Milwaukee Area Technical College ("MATC") is the licensee of an ITFS Station in the Milwaukee market. The ITFS programming originates in "The Classroom of the Future" at the downtown campus of the Milwaukee Area Technical College and is received at MATC's Mequon, Oak Creek and West Allis locations, as well as additional sites. Students see and hear the teacher, plus video illustrations, on two ITFS monitors in the televised classroom, which is designed for interactive teaching. Dedicated telephone technology allows them to ask questions of the instructor at any time, providing personal contact that recorded television classes can't match. Classroom fax machines also permit exchange of paperwork with the instructor. Increasing student interest in televised courses has encouraged MATC to explore greater use of the technology. In particular, this ITFS technology allows students to learn from a more convenient location, and MATC to utilize different campuses for a single course. MATC also offers remote access to primarily math courses for high school seniors, college students and employees of companies located in the greater Milwaukee area.

Use of the ITFS capacity allows approximately 1,000 additional students to take courses at Milwaukee Area Technical College. MATC has 83 receive sites for its 4 ITFS channels and programs 24 hours a day, 7 days a week. Milwaukee area public and private high schools, located as far away as 30-40 miles away attend "virtual classes." The ITFS channels are also used to provide faculty professional development and continuing education certification. Recognizing that different courses need different methods of delivery, Milwaukee Area Technical College offers online courses in addition to televised courses. Students may obtain an AA degree accomplishing a combination of remote delivery courses. To meet the demand for online courses and to move data between campus locations, Milwaukee looks forward to developing two-way capabilities on ITFS.

Northeastern Educational Television of Ohio, Inc.

Beginning in January 1999, Northeastern Educational Television of Ohio (“NETO”) began to program its Youngstown, Ohio ITFS station with a mix of three programming services. The PBS overnight schedule provides repeats of prime-time PBS programming. The Annenberg/CPB Channel is used primarily during weekdays and provides educational programming for adults and educators along with some materials for high school curriculums. The Classic Arts Showcase fills the weekends with a mix of cultural programming and performances from around the world. These services are provided to approximately 14,625 students in five Youngstown area school districts, and 5,000 subscribers of the wireless cable system in the Youngstown area. Along with three local school districts that also have ITFS licenses in the Youngstown and Akron, Ohio area, NETO is working on the construction and operation of these facilities in conjunction with a wireless operator.

Oklahoma Educational Television Authority

Oklahoma Educational Television Authority (“OETA”) is the licensee of ITFS Station WHR-559, Oklahoma City, Oklahoma. OETA acquired this ITFS station from the Public Broadcasting Service (“PBS”) in 1988.

OETA has a long history of operating FCC-licensed educational facilities. In May 1953, Oklahoma became the first state to provide by law for a statewide educational television system. Thus, OETA has been the FCC licensee of educational television facilities since the early 1950s, when its flagship station went on the air as the 20th educational television station in the United States - and the 2nd in the Southwest.

Today, due to low state funding, the OETA staff continues to be the smallest among all the statewide public television networks in the country, but produces more local programming and has the largest audience (1.8 million weekly viewers) among statewide networks.

OETA has an excess capacity lease arrangement with Sprint that will provide for the transition of its ITFS facility to two-way use.

Oregon Wireless Instructional Network (Oregon WIN)

Lane Community College
Linn-Benton Community College
Oregon State University
Oregon University System
Portland State University
University of Oregon
Western Oregon University

The Oregon Wireless Instructional Network (“Oregon WIN”) is at the forefront of advancing the new learning services made possible by recent FCC rule changes and has invested a great deal of time and resources to develop the ITFS spectrum for educational outreach in Oregon. Oregon WIN is a consortium of nine universities and community colleges that operates a multi-channel ITFS network in Oregon’s Willamette Valley capable of serving over 65% of Oregon’s population. Oregon WIN was formed in 1993 for the purpose of jointly developing the ITFS spectrum in Oregon as a much needed "last mile" network solution. The consortium recently completed a \$1.8 million network after spending years filing for ITFS licenses, building the consortium, issuing a national RFP for a commercial partner to develop the spectrum and designing an interconnected, shared network.

Oregon WIN operates three ITFS transmission sites in Eugene, Salem and Portland. The sites are linked with multiple, two-way microwave paths, allowing educational providers to serve all three ITFS networks from a single location. Inexpensive ITFS receive antennas are easily installed directly to schools, government offices, businesses and homes. The flexible system allows the delivery of a diverse range of programs including live interactive courses, telecourses, information boards and cultural events. Oregon WIN members, participating members, and associated institutions offer over 2500 distance learning courses in 65 degree programs to over 29,000 students per year.

The Oregon WIN ITFS network is of growing importance in meeting Oregon’s distance education needs. With the imminent rollout of two-way broadband data services over the ITFS spectrum, Oregon WIN will provide the full range of video, data and Internet services critical to quality distance education programs and services provided by Oregon’s universities and community colleges. In addition to meeting important, “last mile” networking needs, ITFS is attractive because system development occurs by partnering with the private sector. Through an excess capacity lease agreement with Sprint, Oregon WIN members are able to focus their resources on educational programming and services and not on telecommunication infrastructure development and operations.

Pasadena Unified School District

Pasadena Unified School District (“PUSD”) is the public school district in Pasadena, California. PUSD operates 24 elementary schools, 3 middle schools and 5 high schools enrolling over 33,000 students. PUSD acquired its ITFS license in the early 1960’s.

PUSD recently invested in upgrading its broadcasting control system and studio and has also invested in the capability of providing live coverage of its School Board Meetings. The studio is used to produce staff development, educational programs and district and community informational programs. It has also been used to coordinate district integration plans and earthquake and disaster communications. Eighty percent of PUSD’s students qualify for a free breakfast and lunch program and 40 percent of PUSD’s students come from single parent families. Thus, the facility gives an important additional means of educational opportunities and homework assistance during after-school hours. Recently, the community approved a \$240 million bond to upgrade and improve the infrastructure and to provide new video and audio distribution equipment in all of PUSD’s schools and classrooms. Technological advances have provided PUSD with the opportunity to lease a portion of its bandwidth in order to generate revenue. This additional money is directly used to support educational materials, textbooks, and curriculum resources in support of our young peoples’ needs.

PUSD is the licensee of ITFS Station KQI-29, Channels C1, C2 and C3 at Mount Wilson, California. PUSD is a party to a Digital Transmission Development and Lease Agreement with Cross Country Wireless, Inc., a subsidiary of WorldCom.

Pursuant to the Agreement, WorldCom provides fiber optic connectivity for PUSD’s video instructional programming from the PUSD head-end facility in Pasadena, California to WorldCom’s El Monte, California head-end facility. From there, the signals are distributed via fiber optic and/or microwave to the KWI-29 digital transmission facility at Mt. Wilson, California. The signal is transmitted from Mt. Wilson over PUSD’s ITFS station and viewable throughout the Los Angeles area. The signal is also received off air at a second ITFS transmitter site at WorldCom’s Modjeska Peak digital transmission facility and re-transmitted throughout the Orange County and North San Diego County areas. Through these facilities, PUSD’s service is received at 33 official sites. All the equipment necessary to transport, encode, process and transmit the digital signal, and most of the receive site equipment, is provided and owned by WorldCom, and maintained by WorldCom as well.

Through these facilities, PUSD provides nearly 200 hours per week of instructional and educational programming on its channels. One channel of the service is also received and retransmitted by local cable providers and colleges to a subscriber and community base well in excess of 30,000.

Pueblo Community College

Pueblo Community College, in Pueblo, Colorado, is part of the Colorado Community College System. Of the students attending the College, 65 percent are female and 34 percent represent a minority. About half of the student body are first-time college students, with the remainder being either transfer or re-admitted students. More than half of the students are employed.

Enrollment at Pueblo Community College has more than doubled over the past decade, and the College now has campuses in Pueblo, Canon City, Durango and Cortez. PCC offers more than three dozen certificate and degree programs including 13 Health programs.

Pueblo Community College is a recent ITFS licensee interested in utilizing ITFS for the delivery of college course work throughout its service area. It has entered into an excess capacity agreement with a subsidiary of Sprint. Pueblo Community College envisions ITFS as a valuable asset for the constituents that it serves.

Pueblo School District # 70

Pueblo Rural School District # 70 in Pueblo, Colorado. It intends to use ITFS channels recently granted to the District to implement high speed data, voice and video capabilities to many of the schools and administrative buildings within its district where technology infrastructure is non-existent or outdated. These services are to be offered to approximately 8,000 students, 500 staff members and the entire public community within the Pueblo Rural School District boundaries. These services will help provide educational opportunities to all people within the district as well as provide increased communication for both the public, private and commercial sectors in Pueblo County. Pueblo School District #70 is relying heavily on these frequencies to provide much needed services in this area.

Regents of the University Of New Mexico

The University of New Mexico (“UNM”) operates nine ITFS television channels. The Distance Education Center (“DEC”) at UNM provides remote access to selected programs in Engineering, Nursing, Education, Public Administration, Management and Arts and Sciences. Access is provided to New Mexico students in their local communities through technologies such as instructional television transmissions and the Internet. Students are able to participate in the courses at classroom sites throughout New Mexico (in the case of the nursing program, at several out-of-state sites as well).

Distance education at UNM started in the mid 1980’s with a televised course in engineering robotics. The program has grown since then to include over 80 courses per semester in six academic areas. Distance education courses can now be received in over 70 communities in the state and serve almost 1,000 students per semester. This approach to university outreach is a priority in New Mexico, due to such factors as the presence of sophisticated national laboratories, the diversity of the population and its educational needs, and the immense, rugged geography of the state. The DEC has worked diligently over the years to determine program needs, to develop appropriate programs and delivery systems, and to work with faculty and academic departments to ensure that the programs are successfully implemented. The university's program offerings are now among the broadest and most sophisticated higher education offerings to be found in American universities. Through distance education students can take full-credit courses from their home communities, which are sometimes located several hundred miles from the main campus.

Richardson Independent School District

Richardson Independent School District (“RISD”) is a public K-12 school district in Richardson, Texas. RISD is the licensee of ITFS Stations WHR-882, Channels A3 and A4, and WEF-69, Channels B1-B4, at Dallas, Texas, and WHR-881, Channels D1-D4, at Fort Worth, Texas. RISD is a party to two essentially identical Excess ITFS Capacity Lease Agreements with CS Wireless Systems, Inc. (“WorldCom”), one for its Dallas channels and one for its Fort Worth Channels.

Pursuant to the Agreements, WorldCom has replaced RISD’s analog ITFS transmission system with a co-located digital transmission system in both Dallas and Fort Worth. The digital system includes encoding equipment to digitize RISD’s programming, microwave Studio to Transmitter Links (STLs) to connect RISD’s head-end facility to WorldCom’s Dallas digital transmission facilities at Preston Towers and its Fort Worth digital transmission facilities at Burnett Plaza, and transmission equipment consisting of transmitters, combiners, wave-guides, antennas, as well as receive antennas and digital converter boxes at over 100 RISD receive sites. This equipment is leased to RISD to enable RISD to provide its educational services.

Through these facilities, RISD and Region 10 Education Service Center (a cooperative effort of public and private schools in the Dallas and Fort Worth metroplex), through their Regional Instructional Television Consortium, provide over 800 hours per week of instructional programming. The programming is transmitted to an eight county area of more than 120 public, private and Charter schools, and used by about 175,000 students during the academic year. The instructional programming is curriculum-based and correlated to the Texas standards. Evening hours are devoted to college credit courses, continuing education and staff development.

San Diego State University

San Diego State University (“SDSU”) is one of the 23 campuses of the California State University system, located in San Diego, California. It enrolls over 34,000 students each semester. SDSU is the licensee of ITFS Stations WHR-611, Channels B1-B4, and WHQ-403, Channels G1-G4, at San Diego, California, and Stations WHG-345, Channels B3 and B4, and WHG-344, Channels C3 and C4, at San Marcos, California. SDSU is a party to a Digital Transmission Development and Lease Agreement with WorldCom Broadband Solutions, Inc. (“WorldCom”).

Pursuant to the Agreement, WorldCom is required to provide an extensive technical system that transports educational programming from a number of educational entities in the San Diego area including SDSU to an operations and control center operated by the San Diego County Office of Education, encodes, compresses and stores the programming on a digital server, switches and transports the programming to two separate transmission sites (Mt. San Miguel in San Diego and Mt. Whitney in San Marcos), and transmits the signal over the ITFS stations of SDSU and five other entities. All the equipment necessary to transport, encode, process and transmit the digital signal, and most of the receive site equipment, is provided and owned by WorldCom, and maintained by WorldCom as well.

Through these facilities, SDSU provides over 40 hours per week of instructional programming, including programming focusing on international education. The programming is used by thousands of students and professionals for professional development and training purposes.

Santa Ana Unified School District

Santa Ana Unified School District (“Santa Ana”) is the public school district serving the city of Santa Ana, California, providing enrollment for over 60,000 students, a vast majority of which are Hispanic, inner city students who are eligible for free or reduced lunch program under Federal guidelines.

Since 1973, Santa Ana has used ITFS to deliver basic and supplementary instruction to students in grades K through 12. With over 60,000 students, Santa Ana is the seventh largest public school district in California. Its student population is 96% Hispanic and approximately 2/3 of those students have limited or non-existent English skills. The visual aspect of classroom television is vital to helping students understand concepts and invaluable to Santa Ana’s teachers. The ITFS programming is also closely correlated to science, health and social studies textbook materials. Language arts, English language development and education in the arts are enriched and enhanced with ITFS programming. Because of its partnership with Cross Country Wireless, a subsidiary of WorldCom, which has built out a digitized video system, Santa Ana currently programs six program tracks continuously throughout the school year and accommodates varying bell schedules and year-round school tracks.

Using these ITFS channels, expert teachers and motivating videos have enhanced the education of almost one million students since in Santa Ana over the past 28 years. The District has invested heavily in hardware to make this valuable resource readily accessible to all students at its 55 schools and other District facilities. In addition, the Orange County Department of Education also utilizes one of the District’s channels to delivery in-service programs to schools throughout Orange County. The partnership has also been of significant financial benefit to Santa Ana.

Santa Ana is the licensee of ITFS Station WSJ-70, Channels C1-C4 at Modjeska Peak, California. Santa Ana is a party to a Digital Transmission Development and Lease Agreement with Cross Country Wireless, Inc. (“WorldCom”).

Pursuant to the Agreement, WorldCom provides fiber optic connectivity for SAUSD’s video instructional programming service consisting of six (6) simultaneous programs, from the SAUSD head-end facility at 1601 E. Chestnut Avenue, Santa Ana, California to WorldCom’s El Monte, California head-end facility. From there, the signals are distributed via fiber optic and/or microwave to digital transmission facilities of other ITFS stations at Mt. Wilson, California. The signal is transmitted from one of the Mt. Wilson transmitters (selected by WorldCom) and viewable throughout the Los Angeles area. The signals are received off air at SAUSD’s ITFS transmitter site at WorldCom’s Modjeska Peak digital transmission facility and re-transmitted throughout the Orange County and North San Diego County areas over Station WSJ-70. Through these facilities, the SAUSD’s service is received at sites serving SAUSD’s 55 schools. All the equipment necessary to transport, encode, process and transmit the digital signal, and most of the receive site equipment, is provided and owned by WorldCom, and maintained by WorldCom as well.

Through these facilities, SAUSD provides over 250 hours per week of instructional programming focusing on core curriculum subjects. The programming is used by students and teachers for staff development.

South Carolina Educational Television Commission

South Carolina Educational Television Commission, an agency of the State of South Carolina, is perhaps the nation's single largest ITFS user. Its network, paid for by nearly 30 million dollars of public funds made available by the State of South Carolina, consists of 68 ITFS stations and related infrastructure facilities that virtually blanket the State of South Carolina. (SCETV has separately filed comments in this proceeding which provide more information on its facilities, operations and future plans).

SCETV's service currently reaches 686 schools, 469,359 K-12 students, and 43,408 teachers. South Carolina is largely a rural state, and home to over 4 million people. SCETV has established 35 Distance Education Learning Centers (DELCS) that use ITFS as broadcast hubs that provide programming to all 85 schools districts in South Carolina, and operate as extensions to ETV's broadcast delivery facilities. Recognizing that 63% of the student populations live in rural areas, the ITFS system has a great impact in answering the educational needs of each district.

All programming used in the schools is approved by the State Department of Education, and each of the Learning Centers receives about 1500 hours of new programming each year. Through the Learning Centers, studio facilities are also available for each local ITFS station to provide live, interactive classroom instruction using one-way video and two-way audio.

Spokane Community College and Spokane Falls Community College

Spokane Community College and Spokane Falls Community College are part of Community Colleges of Spokane, which is one of 32 community college districts in the State of Washington. Community Colleges of Spokane encompasses Spokane, Pend Oreille, Stevens, Whitman, Ferry and portions of Lincoln counties.

SCC has one of the largest two-year professional/technical enrollments in Washington state, as well as a broad liberal arts program. The campus of 98 acres and 10 major buildings is located five miles east of the city center on the Spokane River. SFCC has broad liberal arts program, which supports many of our graduates in transferring to four-year college and universities, as well as two-year professional/technical programs. The 118-acre campus is located along the west edge of town on the Spokane River

More than 90 professional/technical programs are offered at SCC and SFCC varying in length from one quarter to two years. Students enrolled in these programs may earn a certificate or an associate in applied science (A.A.S.) degree. Both schools offer a broad range of liberal arts classes leading to an associate of arts (A.A.) degree.

SCC and SFCC are each licensees of ITFS stations in Spokane, and have each entered into ITFS excess capacity agreements with a subsidiary of Sprint. They are looking towards the activation of two-way broadband data facilities, which they will use for a variety of direct education and institutional support purposes.

St. Louis Regional Educational and Public Television Commission

The St. Louis Regional Educational and Public Television Commission's ("KETC") ITFS service is educational, instruction curriculum support, provided primarily by the Cooperating School Districts of the Suburban St. Louis Area and the Higher Education Consortium of Metropolitan St. Louis. Approximately 194,000 students are served by this ITFS service in the St. Louis City, St. Louis County and St. Charles area. This geographic area is roughly 650 square miles. KETC has leased excess capacity on its ITFS station to a subsidiary of Sprint. Revenue generated by the ITFS frequencies helps support the nonprofit educational mission of KETC. KETC's future intention is high speed two-way Internet access to provide Internet delivery of course work and other information.

Tarrant County College

Tarrant County College (“TCC”) is a public college with four campuses serving residents of Tarrant County, Texas. Tarrant County College has used ITFS frequencies to transmit community college programming to over thirty communities in the Fort Worth, Texas area for over 18 years. The Center for Distance Learning at Tarrant County College manages the program for approximately 6,600 students who participate in the largest community college distance education program in the state of Texas. Subjects such as Anthropology, Biology, Business Management, English, Government, Health, History, Music, Philosophy, Psychology and Sociology are among the 27 courses provided in a seven-day per week, twenty-four hours per day program schedule.

TCC is the licensee of ITFS Station WHR-506, Channels A1-A4 at Fort Worth, Texas. TCC is a party to an Excess ITFS Capacity Lease Agreement with CS Wireless Systems, Inc. (“WorldCom”). Tarrant County College has implemented new digital technology in broadcast operations with the financial and technical assistance of WorldCom.

Pursuant to the Agreement, WorldCom has replaced TCC’s analog ITFS transmission system with a co-located digital transmission system. The digital system includes encoding equipment to digitize TCC’s programming, a microwave Studio to Transmitter Link (STL) to connect TCC’s head-end facility to WorldCom’s Fort Worth digital transmission facilities at Burnett Plaza, leased T1 lines for control data, and transmission equipment consisting of transmitters, combiners, wave-guide, antenna, as well as receive antennas and digital converter boxes at TCC receive sites. This equipment is leased to TCC to enable TCC to provide its educational services.

Through these facilities, TCC provides over 100 hours per week of instructional programming that airs between 6:00 am and 11:00 pm Monday through Sunday. Additionally, TCC uses ITFS transmissions to offer professional development programs to its own staff, the management staff at a local private firm, and a neighboring four-year University. The programming is used by about 10,000 students during each academic year.

University of Maine System

The University of Maine System (“UMS”) operates one of the premier statewide distance education systems in the United States using ITFS. UMS uses its ITFS system to support distance learning programs originating from each of its seven (7) universities throughout the State of Maine. Over 100 Instructional Television credit courses are delivered each semester to more than 80 locations throughout the state of Maine. Due to this system, over 28,000 credit hours were received by students last year.

UMS has received high praises for this innovative system in the educational community. To accomplish its distance education mission, UMS has planned for four channels of interactive television that virtually blanket the entire State of Maine. To date, the four southern regions of the state (Portland, Farmington, Augusta and Orono) have all four channels of ITFS operating. In the three northern-most regions (Machias, Presque Isle and Fort Kent) there were three ITFS channels in operation and a fourth channel was recently built out and activated. All of the channels continue to be used full-time for educational purposes. Presently, UMS offers nine Associate’s Degree programs, five Bachelor’s Degree programs and four Master’s Degree programs over its ITFS network.

University of Maryland

The University of Maryland, College Park (“UM”) is a public research university, the flagship campus of the University System of Maryland, and the original 1862 land-grant institution in Maryland. For 21 years the University of Maryland, Instructional Television System (“ITV”) has been broadcasting courses over the ITFS frequencies in engineering, computer science and management. The programming is received by students and by employees in companies and government organizations all over the state of Maryland, particularly in the Baltimore and Washington metropolitan areas. In addition, many of these courses are transmitted over the National Technological University network by satellite to students all over the United States. Each year more than 1,000 students receive University of Maryland credit for these ITV courses and more than 2,000 students take non-credit courses.

UM and WorldCom had planned to use this excess capacity to construct a high-speed two-way Internet access system which would serve citizens in the Baltimore/Washington metropolitan areas. In exchange for the use of the excess channel capacity WorldCom provides the University of Maryland with royalties and, in addition, will digitize the University’s ITV system so that the University will be able to double its present capacity. Doubling the capacity and receiving royalties would greatly enhance the capability of the University to offer courses.

UM is the licensee of, among others, ITFS Stations WDT-881, Channels A1-A4 in Washington, D.C., and WNC-708, Channels A1-A4, WHR-807, Channels B1-B4, and WLX-789, Channels C1-C4, at Baltimore, Maryland. With respect to these four ITFS stations, UM is a party to ITFS excess capacity lease agreements with WorldCom Broadband Solutions, Inc. (formerly WorldCom Wireless Solutions, Inc.) (“WorldCom”):

Pursuant to the three Agreements, WorldCom provides ITFS transmission equipment at locations in College Park, Maryland, Bethesda, Maryland and Baltimore, plus receive equipment, and certain signal generation and interconnection equipment to digitize programming and deliver it to the transmission sites. This equipment is leased to UM to enable UM to provide its educational services.

Through its ITFS facilities, UM provides about 80 hours a week of instructional and educational programming, including undergraduate and graduate level courses in electrical, mechanical, civil, reliability and environmental engineering, communications, psychology and computer science to 25 government and business locations in the greater Washington and Baltimore metropolitan areas.

University of South Florida

More than 14,700 enrollments in distance learning courses makes the University of South Florida home to the largest distance learning program among Florida's public universities. Licensed for 20 ITFS frequencies, USF has been providing the communities of Tampa, St. Petersburg, Sarasota and Lakeland with academic programs for the past 15 years. Today, 100 college credit courses are offered via ITFS annually. This is a significant portion of the 400 courses delivered each year via some form of distance learning technology. Over the past several years, the University has been involved with some exciting developments in ITFS technology including opposite polarization of the same frequency and beta testing of 8:1 digital compression.

Additionally, as a direct result of its partnerships with wireless operators, the University has been able to fund faculty development focusing on the integration of technology into instructional models. This activity has resulted in a 63% increase in student enrollments in distance learning courses since 1998. These same funding resources contributed to the University obtaining a 5 year, three million dollar federal award to advance the national research agenda on distance education involving digital technologies and anytime/anyplace learning options.

The University is looking forward to adapting the many possible applications of 2-way digital technology to the educational services it provides via ITFS including the development of shared network involving three K-12 school districts, two community colleges and a private university.

University of Wisconsin System

The University of Wisconsin System's Milwaukee campus is a public, educational institution that enrolls 25,000 students per year in undergraduate, graduate and professional programs.

The UWM is the long-time licensee of ITFS Station WDG-56, Milwaukee, Wisconsin. This ITFS Station is part of the distance learning program at UWM, operating by Instructional Media Services. Instructional Media Services provides video and multimedia production, multimedia classroom support, AV equipment distribution, TV engineering, and distance education support services for the campus and its students.

Valencia Community College

Valencia Community College, founded in 1967, is a multi-campus college serving over 52,000 students a year.

Valencia Community College operates a four channel ITFS station in Orlando, Florida. It receive sites include six at Valencia Community College, approximately 70 at Orange County Public school sites and six for local cable companies. The cable companies remodulate the signal received for broadcast to the community on the local cable network. Programming on Valencia Community College's ITFS station includes Telecourses, public service messages, distance learning and other educational material (addressing issues such as drug and alcohol awareness).

Wisconsin Educational Communications Board

The State of Wisconsin Educational Communications Board (“WECB”) is an agency of the State of Wisconsin with the mission to provide a statewide telecommunications system and to assist in the diffusion of advanced technologies in support of education. In pursuit of that mission, WECB is the long-time licensee of over forty (40) ITFS stations that virtually blanket the State of Wisconsin. Given its public charter and funding, and its mission, WECB has a strong interest in ensuring that its ITFS facilities – and the state’s investment in them (spanning decades) -- are used to the best possible advantage.

WECB is one of the nation’s oldest and largest ITFS operators. Its 40 ITFS stations cover approximately 45% of the K-12 districts in the State of Wisconsin and provide coursework to rural schools and areas throughout the State. Some of the ITFS systems in the State are used to connect live instruction from a studio site to students residing many miles away in several different locations. Other ITFS systems have also been used to deliver programming on request. One big advantage of wireless delivery of signals currently is that ITFS receive equipment can be purchased for under \$100 per site.

WECB has identified ITFS as a “transitional” technology and looks forward to the revised ITFS band plans as a means of repurposing its use of ITFS for statewide educational telecommunications (two-way data) purposes.