

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

In the Matter of	)	
	)	
Amendment of Part 2 of the Commission's	)	ET Docket No. 00-258
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	)	
	)	
Petition for Rulemaking of the Cellular	)	RM-9920
Telecommunications Industry Association	)	
Concerning Implementation of WRC-2000;	)	
Review of Spectrum and Regulatory	)	
Requirements for IMT-2000	)	
	)	
Amendment of the U.S. Table of Frequency	)	RM-9911
Allocations to Designate the 2500-2520/	)	
2670-2690 MHz Frequency Bands for the	)	
Mobile-Satellite Service	)	

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, Austin Community College, Belmont University, Board of Regents of the University of Nebraska, California Polytechnic University, Pomona, California State University (CALNET), California State University, Bakersfield, California State University, Domingues Hills, California State University, Fresno, California State University, Fullerton, California State University, Long Beach, California State University, Los Angeles, California State University, Sacramento, California State University, San Bernardino, California State University, Stanislaus, Charlotte Public Schools, Coastal Educational Broadcasters, Inc.,

Cooperating School Districts of Greater St. Louis, Creighton University, Dallas County Community College District, Daytona Beach Community College, Eaton Rapids Public Schools, Educational Broadcasting Corporation, Focus on Education, Fresno County Superintendent of Schools, Friends of WLRN, Inc., George Mason University Foundation, Global Community High School, Grant Ledge Public Schools, Greater Dayton Public Television, Greenville Technical College, Hawkeye Community College, Humanities Instructional Television Educational Center, Inc., Imperial County Office of Education, INTELECOM Intelligent Telecommunications, KCTS Television, Inc., Kentucky Authority for Educational Television, Kern Community College District, Kern County Superintendent of Schools, Kern High School District, Kirkwood Community College, Lee County School System, Long Beach Unified School District, Manatee Community College, Manatee County School Board, Maryland State Department of Education, Miami-Dade County Public Schools, Milwaukee Area Technical College, New Orleans Educational Telecommunications Consortium, Northeastern Educational Television of Ohio, Inc., Oceanside Unified School District, The Ohio State University, Oregon Wireless Instructional Network (Lane Community College, Linn-Benton Community College, Oregon State University, Oregon University System, Portland State University, University of Oregon, Western Oregon University), Palomar College, Panama-Buena Vista Union School District, Pasadena Unified School District, Portland Community College, Pueblo Community College, Pueblo School District No. 60, Pueblo School District # 70, The Regents of the University of California, Regents of the University of Minnesota, Regents of the University of New Mexico, Revere Local Schools, Rock Valley College, San Diego Community College District, San Diego County Superintendent of Schools, San Diego State University, Santa Ana Unified School District, Sistema Universitario Ana G. Mendez, South Carolina Educational

Television Commission, South Suburban College, St. Louis Community College, St. Louis Regional Educational and Public Television Commission, St. Petersburg Junior College, Tarrant County College, Thumb Area Television, Trident Technical College, University of Iowa, University of Maine System, University System of Maryland, University of Southern California, Valencia Community College, Valley Lutheran High School, Ventura County Superintendent of Schools, Vista Unified School District, Washington State University, West Central Illinois Educational Telecommunications, Inc. and WITF, Inc. (collectively, the “ITFS Parties”), by their counsel, hereby provide these Comments in support of the position of the National ITFS Association (“NIA”) reflected in the Comments filed by NIA in response to the *Notice of Proposed Rule Making and Order* in the captioned proceeding, FCC 00-455 (released January 5, 2001) (“NPRM”). The NPRM explores the possibility of introducing new advanced mobile and fixed services (including Third Generation mobile services, or “3G”) in various frequency bands, including the 2500-2690 MHz band currently allocated for and used by stations operating in the Instructional Television Fixed Service (“ITFS”) and the Multichannel Multipoint Distribution Service (“MMDS”).

The ITFS Parties urge strongly that the FCC’s introduction of new services cannot and must not be accomplished at the expense of ITFS and MMDS allocations in the 2500-2690 MHz band. Preservation of these ITFS and MMDS allocations is necessary both for the continuation of the pervasive and invaluable licensed uses by incumbent stations in these services and the expanding rollout of advanced wireless broadband services to schools, homes and businesses. The ITFS Parties believe that the Commission has identified, and can make available, other spectrum to satisfy demand for 3G mobile, without any incursion into the 2500-2690 MHz band.

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. Other of the ITFS Parties 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 obviously has an important interest in the preservation of the entire 2500-2690 MHz band for ITFS and MMDS licensees.

The ITFS Parties oppose the reallocation of any of the 2500-2690 MHz bands for 3G services on a number of grounds. First, the ITFS Parties and many others ITFS licensees across the country have been using the 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. These services cannot be sacrificed in any drive for more capacity for cell phones.

Recent developments in technology have made it possible for ITFS and MMDS stations to provide high-speed, two way wireless data transmission services, including for broadband Internet access. These technological innovations are particularly timely given the explosion in

online education, which increasingly requires broadband access to rich-media content. Wireless broadband in the 2500-2690 MHz band utilizing ITFS and MMDS channels is fast enough to support a broad range of such content, including two-way real-time video and other bandwidth intensive applications necessary for effective distance learning. Moreover, wireless broadband provides the capability for educational institutions to build wide area networks at a reasonable cost. Educators are just beginning to realize the enormous potential of this technology. A significant number of two-way systems are already in operation, hundreds of ITFS and MMDS licensees (including many of the ITFS Parties) have applied for licenses to provide two-way service as of August, 2000, and many more are expected to apply when the opportunity arises again within the next several months.

Furthermore, many of the ITFS Parties have become valuable “partners” of wireless communications companies through the practice of sharing capacity, which the FCC first allowed in 1983. The commercial counterpart of ITFS, MMDS, has provided a variety of transmission services to communities around the country. Because MMDS licensees only have a limited amount of bandwidth, many ITFS licensees have joined with them to create shared networks – essentially allowing ITFS systems to be deployed and operated at the expense of the commercial partner while generating additional funds for schools to use in developing their distance learning programs. The FCC has strongly encouraged this practice. However, if the FCC now takes channels away from these providers to make room for 3G services, the advantages of this public/private, educational/commercial collaboration will be lost.

Finally, the new ITFS/MMDS broadband wireless services are critical to bridging the Digital Divide – the chasm between those in the United States that have access to broadband Internet offerings and those that do not. The benefits of high-speed Internet access do not reach

most Americans. DSL and cable modem services are primarily serving new, affluent, suburban neighborhoods, leaving inner cities, rural areas, and other insular communities behind.

However, with the highly favorable signal transmission and reception range of stations operating in the 2500-2690 MHz band, ITFS/MMDS stations can reach rural areas, inner-city neighborhoods, Indian reservations and other underserved communities that cable modem and DSL providers cannot or will not serve. Thus, wireless broadband – provided through ITFS and MMDS in the 2500-2690 MHz band by entities such as the ITFS Parties – has the power truly to bridge the Digital Divide.

If the FCC reallocates all or part of the ITFS/MMDS spectrum for 3G services, the capacity, usefulness, and value of the ITFS spectrum would be significantly diminished, if not destroyed. Even if only part of the spectrum is taken, many of the ITFS Parties would lose their ITFS service altogether, while others would face new equipment costs, service disruptions and cutbacks, lower quality service and signal interference. Moreover, the deployment of wireless broadband services through ITFS/MMDS shared networks would be stopped in its tracks, and for many communities, the promise of high-speed advanced services – either at all or at any reasonable price -- would remain beyond reach.

In its Comments in this proceeding, the National ITFS Association effectively explains and documents the nature and scope of ITFS operations in the United States, the educational and commercial value provided by ITFS and MMDS-based systems, the fact that the 2500-2690 MHz band cannot be shared with 3G mobile systems, and the immense damage that would be caused by the reallocation of *any* of the 2500-2690 MHz band for 3G mobile services. The ITFS Parties support the position of NIA in this proceeding.

Conclusion

For all these reasons, the ITFS Parties support the Comments of NIA and oppose any reallocation of the 2500-2690 MHz band from ITFS and MMDS to 3G services.

Respectfully submitted,

ALLIANCE FOR HIGHER EDUCATION

ANAHEIM CITY SCHOOL DISTRICT

ARIZONA BOARD OF REGENTS FOR  
BENEFIT OF THE UNIVERSITY OF ARIZONA

AUSTIN COMMUNITY COLLEGE

BELMONT UNIVERSITY

BOARD OF REGENTS OF THE UNIVERSITY  
OF NEBRASKA

CALIFORNIA POLYTECHNIC UNIVERSITY,  
POMONA

CALIFORNIA STATE UNIVERSITY (CALNET)

CALIFORNIA STATE UNIVERSITY,  
BAKERSFIELD

CALIFORNIA STATE UNIVERSITY,  
DOMINGUES HILLS

CALIFORNIA STATE UNIVERSITY, FRESNO

CALIFORNIA STATE UNIVERSITY,  
FULLERTON

CALIFORNIA STATE UNIVERSITY, LONG  
BEACH

CALIFORNIA STATE UNIVERSITY, LOS  
ANGELES

CALIFORNIA STATE UNIVERSITY,  
SACRAMENTO

CALIFORNIA STATE UNIVERSITY, SAN  
BERNARDINO

CALIFORNIA STATE UNIVERSITY,  
STANISLAUS

CHARLOTTE PUBLIC SCHOOLS

COASTAL EDUCATIONAL BROADCASTERS,  
INC.

COOPERATING SCHOOL DISTRICTS OF  
GREATER ST. LOUIS

CREIGHTON UNIVERSITY

DALLAS COUNTY COMMUNITY COLLEGE  
DISTRICT

DAYTONA BEACH COMMUNITY COLLEGE

EATON RAPIDS PUBLIC SCHOOLS

EDUCATIONAL BROADCASTING  
CORPORATION

FOCUS ON EDUCATION

FRESNO COUNTY SUPERINTENDENT OF  
SCHOOLS

FRIENDS OF WLRN, INC.

GEORGE MASON UNIVERSITY FOUNDATION

GLOBAL COMMUNITY HIGH SCHOOL

GRANT LEDGE PUBLIC SCHOOLS

GREATER DAYTON PUBLIC TELEVISION

GREENVILLE TECHNICAL COLLEGE

HAWKEYE COMMUNITY COLLEGE

HUMANITIES INSTRUCTIONAL TELEVISION  
EDUCATIONAL CENTER, INC.

IMPERIAL COUNTY OFFICE OF EDUCATION

INTELECOM INTELLIGENT  
TELECOMMUNICATIONS

KCTS TELEVISION, INC.

KENTUCKY AUTHORITY FOR  
EDUCATIONAL TELEVISION

KERN COMMUNITY COLLEGE DISTRICT

KERN COUNTY SUPERINTENDENT OF  
SCHOOLS

KERN HIGH SCHOOL DISTRICT

KIRKWOOD COMMUNITY COLLEGE

LEE COUNTY SCHOOL SYSTEM

LONG BEACH UNIFIED SCHOOL DISTRICT

MANATEE COMMUNITY COLLEGE

MANATEE COUNTY SCHOOL BOARD

MARYLAND STATE DEPARTMENT OF  
EDUCATION

MIAMI-DADE COUNTY PUBLIC SCHOOLS

MILWAUKEE AREA TECHNICAL COLLEGE

NEW ORLEANS EDUCATIONAL  
TELECOMMUNICATIONS CONSORTIUM

NORTHEASTERN EDUCATIONAL  
TELEVISION OF OHIO, INC.

OCEANSIDE UNIFIED SCHOOL DISTRICT

THE OHIO STATE UNIVERSITY

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

PALOMAR COLLEGE

PANAMA-BUENA VISTA UNION SCHOOL  
DISTRICT

PASADENA UNIFIED SCHOOL DISTRICT

PORTLAND COMMUNITY COLLEGE

PUEBLO COMMUNITY COLLEGE

PUEBLO SCHOOL DISTRICT NO. 60

PUEBLO SCHOOL DISTRICT # 70

THE REGENTS OF THE UNIVERSITY OF  
CALIFORNIA

REGENTS OF THE UNIVERSITY OF  
MINNESOTA

REGENTS OF THE UNIVERSITY OF NEW  
MEXICO

REVERE LOCAL SCHOOLS

ROCK VALLEY COLLEGE

SAN DIEGO COMMUNITY COLLEGE  
DISTRICT

SAN DIEGO COUNTY SUPERINTENDENT OF  
SCHOOLS

SAN DIEGO STATE UNIVERSITY

SANTA ANA UNIFIED SCHOOL DISTRICT

SISTEMA UNIVERSITARIO ANA G. MENDEZ

SOUTH CAROLINA EDUCATIONAL  
TELEVISION COMMISSION

SOUTH SUBURBAN COLLEGE

ST. LOUIS COMMUNITY COLLEGE

ST. LOUIS REGIONAL EDUCATIONAL AND  
PUBLIC TELEVISION COMMISSION

ST. PETERSBURG JUNIOR COLLEGE

TARRANT COUNTY COLLEGE

THUMB AREA TELEVISION

TRIDENT TECHNICAL COLLEGE

UNIVERSITY OF IOWA

UNIVERSITY OF MAINE SYSTEM

UNIVERSITY SYSTEM OF MARYLAND

UNIVERSITY OF SOUTHERN CALIFORNIA

VALENCIA COMMUNITY COLLEGE

VALLEY LUTHERAN HIGH SCHOOL

VENTURA COUNTY SUPERINTENDENT OF  
SCHOOLS

VISTA UNIFIED SCHOOL DISTRICT

WASHINGTON STATE UNIVERSITY

WEST CENTRAL ILLINOIS EDUCATIONAL  
TELECOMMUNICATIONS, INC.

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## **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 now operates 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. The network also connects major corporations, hospitals and medical centers with the AHE member universities. Interactive graduate and undergraduate courses originate in classrooms at the offering institutions and can be transmitted live to students at other campuses and off-campus sites equipped to receive the signal. The courses offered are diverse and in high demand. They include, among others, management; mathematics; aeronautical, electrical, mechanical, civil and industrial engineering; computer science and operations research. 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. Currently, the AHE Dallas/Fort Worth ITFS network delivers educational courses to students 14 hours a day on each channel Monday through Thursday and nine hours per channel on Friday. Demand for programming continues to rise, not only from students but from high technology businesses interested in using the system to deliver professional training and seminars to the Dallas/Fort Worth workforce. 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. AHE is in active negotiations with Worldcom regarding two-way use of the spectrum.

#### **Anaheim City School District**

The Anaheim City School District (“ACSD”) has been using ITFS for over 40 years to transmit educational programs to 23,000 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”). Because of a digital lease agreement with Cross Country Wireless, a subsidiary of Worldcom, the ITFS system also collects significant 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. If the ITFS spectrum is taken away from ACSD, it will

gravely impact the delivery of education to an already underprivileged and educationally-challenged community.

### **Arizona Board of Regents for Benefit of the University of Arizona**

The University of Arizona has partnered with People's Choice of Tucson, now a subsidiary of Sprint, to build a wireless system on 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, are now rolling 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.

### **Austin Community College**

Austin Community College, working with its partner Nucentrix Broadband Networks, operates an ITFS station as part of a wireless video/broadband system developed by Nucentrix. The College uses the ITFS station to provide a variety of telecourses to over 2,000 students per semester. The College also uses ITFS as a communications vehicle to its students, providing college news, class schedules, campus updates, as well as videoconferences and special campus events.

### **Belmont University**

Belmont University ("Belmont") is a private comprehensive institution of higher education bringing together the best of liberal arts and professional education in a Christian community of learning and service. Belmont's ITFS station currently provides educational services to the Nashville community. Belmont is planning to convert its channels from one-way video to two-way data communication in partnership with Sprint. It anticipates delivering distance education services to day care workers, medical professionals and other care providers in the senior living industry. In addition, Belmont will provide courses to undergraduate and graduate students enrolled in its degree programs.

### **Board of Regents of the University of Nebraska**

The University of Nebraska has one ITFS channel in Lincoln and two ITFS channels in Omaha. Its ITFS channels are used primarily for a service called CorpNet, which provides employee training and adult learning for mostly private industry and others. CorpNet's programming includes courses that are provided by several sources, including Nebraska

institutions of higher learning. The network is used to foster economic growth for the state through training programs.

### **California Polytechnic University, Pomona**

California Polytechnic University, Pomona (“Cal Poly Pomona”), has been using its ITFS spectrum to provide a wide range of distance learning classes for students throughout Los Angeles, San Bernardino, Riverside, and Orange Counties. Through its Young Scholar Program, about 7000 high school students have been able to participate, via ITFS, in 135 university courses. These students, 95% of whom are minorities, pay just \$4 for a course and receive college credit for participating in a standard college course. For most of these students, this is their first exposure to college, and for many it is a life-changing experience. Cal Poly Pomona uses its ITFS license to broadcast 24 hours a day, seven days a week. Recently, Cal Poly Pomona has contracted with the Annenberg CPB Project to rebroadcast teacher training and classroom resources. In conjunction with these transmissions, Cal Poly Pomona is planning to offer programming “on-demand” via Internet video streaming. By combining its broadcast channel and Internet-based services, Cal Poly Pomona can provide the best of both worlds in meeting community needs.

### **California State University**

With some 370,000 students and more than 2 million graduates, the California State University (“CSU”) is the largest comprehensive public postsecondary system in the United States, spanning 23 campuses and 8 satellite campuses. CSU employs over 17,000 faculty who are dedicated to teaching excellence, outstanding research and public service. CSU alumni make up approximately 10 percent of California's labor force. CSU prepares two-thirds of the public school teachers educated in California and about 10 percent of the nation's educators. The extent of ethnic, cultural, and economic diversity of the CSU student body ranks high among institutions of higher education throughout the country. CSU relies upon its 14 ITFS licenses to help deliver educational services to its enrolled students, K-12 students, and adult learners in California's rural and urban communities. Over the years, this service has been used to provide advanced placement college courses to thousands of students. In addition, today, many campuses use ITFS to deliver part of the teacher credential program -- California is suffering from a severe shortage of credentialed teachers. Partnerships with fixed wireless operators for use of capacity or for digital development of existing capability has returned funds to the institutions, which, in turn, have been used to develop instructional programming.

### **California State University (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. CalNet has partnered with Cross Country Wireless, now a subsidiary of Worldcom, to digitize the Los Angeles and Orange County Channels as part of a commercial/educational wireless cable system. CalNet is working with Cross Country on conversion of the commercial system to offer wireless broadband services.

### **California State University, Fresno**

California State University, Fresno ("CSUF") is a member of the California State University System. Over a decade ago, CSUF's ITFS system was conceptualized and designed to serve the entire San Joaquin Valley region. CSUF has been operating its ITFS Stations since 1987. In January, 1996, CSUF and the Fresno County Office of Education (which provides oversight to a total of 35 school districts in the area), and State Center Community College District (with 5 campus sites), began working on a Joint Power Agreement to create the Central Valley Technology Center ("CVTC"). The CVTC exists to facilitate an across-the-board sharing of resources and talent in the conduct of staff development, distance education, technology support and other programs and operations. CSUF plans that the CVTC will act as the "operator" of an integrated ITFS network consisting of the ITFS facilities of each of the member institutions for the delivery of individual and cooperative programming.

### **California State University, Fullerton**

ITFS is a reliable, flexible and cost effective delivery mechanism that allows California State University, Fullerton ("CSUF") to meet its institutional mission and be responsive to the educational needs of its community. Students at off-campus sites rely on ITFS-delivered courses in order to complete degree requirements. In addition, professionals at area corporations participate in timely training and learn important job skills. The community at large also benefits from enriching non-credit programming. In the future, CSUF plans to continue use of wireless technologies for the delivery of credit and non-credit programs. CSUF is also currently planning several new off-campus sites and new distance education programs, all which will utilize ITFS for course delivery. If ITFS technology were no longer at its disposal, CSUF would have to suspend delivery of credit courses, rebuild classrooms to accommodate other technologies, expand network capabilities and make major investments while students are without access to important courses. In addition, CSUF would lose a substantial revenue stream from sharing capacity on its access ITFS channels. Such revenue directly supports the development and maintenance of distance learning programs.

### **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

expects to have a fully two-way system available in Spring, 2002. 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 movement from analog to digital technology in the next year will provide an even greater number of program and course offerings. Working with its commercial partner, CSUS is moving aggressively to bring two-way wireless broadband to students, faculty and the local community.

### **California State University, San Bernardino**

California State University, San Bernardino ("CSUSB") serves approximately 1000 students annually through its distance learning program. CSUSB has been maintaining its ITFS frequencies for over 15 years in the Palm Desert and Victorville areas. The university has satellite campuses in Victorville, Palm Desert and Palos Verdes. Programs include matriculated courses in Education, Psychology, Criminal Justice and Accounting. The proposal to reallocate the spectrum to support third generation (3G) cellular phone service would be devastating to the university's ability to provide interactive television courses to distance learning students in the Riverside/San Bernardino counties. Even if only part of the spectrum is taken away, CSUSB's institutions could lose their ITFS service altogether, or could face new equipment costs, service disruption and cutbacks, lower quality of service and signal interference. CSUSB is currently working with a commercial partner who will be leasing the university's excess capacity in return for providing wireless data services to communities in Riverside and San Bernardino counties. The leasing agreement would provide CSUSB with revenue sharing opportunities, equipment, and technical support to help build its educational programs and facilities.

### **California State University, Stanislaus**

California State University, Stanislaus ("CSUS") is the only public four-year university serving California's northern central valley, a mostly rural service territory roughly the size of Massachusetts. CSUS uses ITFS to transmit courses to receive sites in Merced, Sonoma, Stockton and Tracy. These courses consist of approximately 80 hours of live programming per week with nearly 600 students per semester enrolled at the receive sites. Since 1981, CSUS has generated 13,344 enrollments in 1,105 courses delivered by ITFS. CSUS's service territory is characterized by high rates of poverty, persistently high unemployment, low rates of educational attainment and large numbers of recent immigrants. Over 90 languages are spoken in Stanislaus County alone and approximately 60 percent of the public school (K – 12) students in the territory represent ethnic groups typically under-represented in higher education. Only 70 percent of the adult population are high school graduates, and only 27 percent of the adults in the area hold college degrees. The Higher Education Consortium of Central California, of which CSUS is the lead institution, has received a planning grant from the U.S. Department of Commerce for the current academic year, and intends to expand the telecommunicated delivery of instruction within the CSUS service area.

**Charlotte Public Schools**  
**Grand Ledge Public Schools**  
**Eaton Rapids Public Schools**

Charlotte Public Schools, Grand Ledge Public Schools and Eaton Rapids Public Schools are rural districts in Eaton County, Michigan, each within 20 miles of Lansing, Michigan. Charlotte Public Schools has 3,340 students in 6 schools, grades K-12. Eaton Rapids Public Schools has 3,345 students in 7 schools, grades K-12. Grand Ledge Public Schools has 5,284 students in 9 schools, grades K-12. Grand Ledge Public Schools is an ITFS licensee. Charlotte Public Schools and Eaton Rapids Public Schools have applied for ITFS licenses.

**Coastal Educational Broadcasters, Inc.**

Coastal Educational Broadcasters, Inc. (“Coastal”) is a recent grantee of an ITFS station in Daytona Beach, Florida. Coastal already owns and operates an educational television station. As a service organization of Daytona Beach Community College, Coastal places its highest priority on educational programs and services. Approximately 40% of its broadcast schedule is devoted to television programs students enrolled at Daytona Beach Community College can take for course credit. Coastal has plans to use its ITFS station for the provision of educational programming to the Central Florida area.

**Cooperating School Districts of Greater St. Louis**

Since 1989, Cooperating School Districts of Greater St. Louis, Inc. (“CSD”) has utilized ITFS for electronic dissemination of video programming to over 300 schools in 24 districts throughout a three county area in metropolitan St. Louis. CSD distributes curriculum-correlated video programs, conducts two-way interactive video conferences, distance learning delivery of foreign language courses and current event programs using this medium. The loss and/or reassignment of this spectrum to other than educational programs would be very injurious to almost one-third of the K-12 children in the State of Missouri. CSD is in the process of making arrangements with PCTV of St. Louis, a subsidiary of Sprint, to share capacity and utilize two-services of Sprint’s broadband system in the market.

**Creighton University**

Creighton University, one of 28 Jesuit colleges and universities in the nation, enrolls more than 6,000 students annually. It is located in Omaha, Nebraska, and has been ranked Number One in the Midwest Region by *U.S. News and World Report*. Creighton University is the applicant for an ITFS station on the D channel group in Omaha.

**Dallas County Community College District**

The Dallas County Community College District (“DCCCD”) is the licensee of 5 ITFS channels in the Dallas market. These channels carry programming which serves nearly 10,000 adult learners every year who take television-based courses, or “telecourses.” These telecourses are also transmitted via ITFS to cable headends and delivered to thousands of homes in the

Dallas metropolitan area. In addition to students, citizens who enjoy the educational programming also view these programs. DCCCD also uses the channels to deliver staff development programming to each of its seven colleges. DCCCD has an arrangement with CS Wireless, a subsidiary of Worldcom, that has resulted in the conversion of the ITFS stations to digital operations.

### **Daytona Beach Community College**

Daytona Beach Community College (“DBCC”), a state-accredited community college in Florida, is the licensee of ITFS facilities on three channel groups at Daytona Beach, and one each at Deland, New Smyrna Beach and Flagler Beach. DBCC operates these facilities as an integrated ITFS system delivering interactive educational programming between its various campuses.

### **Educational Broadcasting Corporation**

Educational Broadcasting Corporation is the licensee of WNET, the leading public TV station in New York. It is also the licensee of an ITFS station in New York City. This station provides video service to a number of parochial schools in the inner-city of New York City, consisting of instructional programming and selected, time-shifted, national public broadcasting programs.

### **Focus on Education**

Focus on Education is the licensee of four ITFS channels in the New Orleans, Louisiana area. In 1997, Focus on Education, along with three other New Orleans ITFS licensees (St. Bernard Public Schools, Network for Instructional Television and New Orleans Educational Telecommunications Consortium) entered a partnership to share capacity with BellSouth, which operates a digital wireless cable system in New Orleans. The BellSouth agreements led to a digital upgrade of the system, and provided revenues to Focus on Education and the other licensees to help fund programming, microwave interconnection and antenna space leasing costs. There are now over 100 receive sites in New Orleans area schools. The Orleans and Jefferson Parish school districts provide a portion of the programming for the Focus on Education ITFS channels, which includes school board meetings and K-12 and staff development programs. In fact, one Focus on Education ITFS channel is programmed exclusively by these school districts and has been set aside for that purpose. New Orleans PBS station WLAE-TV with the CPB/Annenberg Channel also provide ITFS programming for the Focus on Education ITFS channels. In addition, the channels feature special programming such as the U.S. Dept. of Education Satellite meeting, Electronic Field Trips, TEAMS programming from California Dept. of Education and other significant satellite educational teleconferences.

### **Fresno County Superintendent of Schools**

The Fresno County Office of Education transmits eight educational channel streams each day over its ITFS system. The programs range from foreign language classes for primary children to advanced placement courses for high school students. The Fresno ITFS station was

one of the first in the nation in the 1960's. The current system started with special educational programming from satellite feeds. The more that programming was provided, the more it was requested until finally, eight channels were operating on a daily basis. The most popular current programming is a mathematics homework hotline that originates from the Fresno County Office of Education broadcasting studios and is picked up by the local cable office for regional home distribution. The success of the math hotline has created plans for a variety of similar programming in different curricular areas such as science and literature, among other subjects. Educational courses for teachers through local universities are planned for next year. Fresno County shares capacity on its ITFS stations with a subsidiary of Sprint.

### **Friends of WLRN, Inc.**

The Friends of WLRN, Inc. ("Friends") is the licensee of ITFS channels in Miami and provides learning services to the classroom, the workplace and the home through innovative communications technologies. Friends manages the relationship between the Miami-Dade School Board and the subsidiaries of BellSouth that lease excess capacity on the ITFS channels. In collaboration with other ITFS licensees in the area (including the Miami-Dade School Board), Friends programs 20 educational ITFS channels that provide programming exclusively to Dade County Public School students and teachers. This means that each year the station exposes the growing minds of nearly 350,000 students to high-quality, curriculum-based educational programming right in their classrooms. Through WLRN's Learning Network, the system offers a complete schedule of professional development and skills building courses for business professionals in its community.

### **George Mason University Foundation**

Reflecting its unique location near the nation's capital, George Mason University ("GMU") utilizes ITFS to enlarge participation in the Washington policy-making process and to expand access to higher education. GMU's "Capitol Connection" airs a wide variety of policy-relevant channels, including CSPAN, CNBC, and hearings from crucial agencies such as the FCC and FERC. Currently, The Capitol Connection serves patrons in more than 570 office buildings in Metropolitan Washington, with more than 1,750 patrons, and over 25,000 television sets connected to our service. Subscribers include Federal Cabinet Level Secretaries and Undersecretaries, news organizations such as The Washington Post and the New York Times, trade associations, law firms, communications and energy companies, embassies, and educational institutions. Subscribers to The Capitol Connection can also view courses offered by GMU. About two courses a week are aired to government employees using this system. GMU, in cooperation with a local community college, also offers over 50 college courses a semester for credit; the courses reach 425,000 cable homes in the greater Washington, D.C. area. Its partnerships with the private sector and leasing of excess bandwidth to CS Wireless, a subsidiary of Worldcom, has helped make ITFS an important source of revenue for the otherwise publicly-funded university. In addition, GMU allows Northern Virginia Community College to use its ITFS system to air a combined total of over 50 classes a semester, airing seven days a week. Several hundred students are currently enrolled in these courses. These courses reach more than 425,000 cable homes in Arlington, Fairfax, Loudoun, and Prince William Counties, as well as the city of Alexandria, Virginia as cable channel GMU-TV. The far reach of this system is made

possible by the over 20 ITFS transmitters maintained by GMU in Maryland, Virginia, West Virginia and the District of Columbia.

### **Global Community High School**

Global Community Institute (“GCI”) is a nonprofit educational organization based in Bellingham, Washington. GCI operates Explorations Academy, a fully-accredited independent school serving students in grades 6-12. Explorations Academy has been in operation for six years and has had an ITFS license for the past three years. Since GCI obtained its FCC license, it has been working with Sprint to build the school's capacity for television programming. As a direct result of its ITFS license GCI has added a video production lab which offers students an opportunity for learning about media. GCI has also been able to train teachers in videography and to position itself to make good use of the bandwidth once its system is fully functional.

### **Greater Dayton Public Television**

In 1991, Greater Dayton Public Television, Sinclair Community College and Wright State University, licensees of the Dayton ITFS Channels, established a consortium to develop the Dayton system and to provide community-wide, educational service. Today, that service, known as LEARNing Works, reaches approximately 60 sites including area schools, post-secondary institutions, local cable providers, and governmental agencies. The LEARNing Works programming services include: high school post-secondary option courses, adult education offerings, early childhood, education workshops, continuing education for teachers, professional training for area fire departments and distribution of Ohio Statehouse legislative coverage. LEARNing Works is supported, in part, by revenue from an excess capacity agreement. The Dayton ITFS system is integral to the licensees’ educational mission and services. These Dayton ITFS licensees anticipate deployment of their licensed spectrum for broadband delivery in the next year.

### **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.

### **Hawkeye Community College**

Hawkeye Community College (“HCC”) serves all or parts of ten counties in Northeast Iowa, covering 2,740 square miles with a population of approximately 195,000. Since becoming a comprehensive community college in 1992 HCC has experienced record-breaking enrollments. Given the vast area and low population density, ITFS has become an ideal, low cost delivery mechanism for those students seeking to attain a degree or for those exploring continuing education opportunities. With the advent of two-way broadband services on the horizon, HCC envisions providing even more educational services to the communities it serves.

### **Humanities Instructional Television Educational Center, Inc.**

Humanities Instructional Television Educational Center, Inc. (“Humanities”) is the licensee of an ITFS station in the St. Louis metropolitan area. Humanities currently has receive sites located at nine primary and middle public schools in the City of St. Louis, at John Burroughs School (a private high school in St. Louis County) and at Eden Theological Seminary. Humanities is particularly interested in providing electronic learning services to disadvantaged areas. To that end, Humanities is working with one of its City of St. Louis elementary schools sites and with NITV (also a licensee in St. Louis) on a pilot project - a studio for original programming from the site, as well as transmission to all Humanities sites and NITV sites, of video educational courses for K-12 in the areas of Art, Environment, Foreign Language, Geography, Government, Health, Language Arts, Math, Science and Social Studies, and programming for teachers and administrators in Professional Development.

### **Imperial County Office of Education**

Imperial County, located in the rural and isolated desert of Southern California, faces tremendous geographic obstacles when it comes to professional development and instructional media for teachers and students. ITFS is a window of opportunity to overcome these obstacles and deliver much needed instructional services through distance learning. Given its remote area, low population density and highly underserved population, the county has few resources that provide the significant impact of ITFS.

### **INTELECOM Intelligent Telecommunications**

INTELECOM is an internationally renowned non-profit, 501(c)(3) organization owned by 48 Southern California Community Colleges. 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, operated by Cross Country Wireless, a subsidiary of Worldcom.

**KCTS Television, Inc.**

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, Sattle, Renton, Tukwila, Auburn, Kent and in unincorporated areas of King County. The service has been provided since early 1992.

**Kentucky Authority for Educational Television**

The Kentucky Authority for Educational Television (“KET”) is the licensee of an ITFS station in the Louisville, Kentucky market. KET was established by the Kentucky legislature in 1962. KET has been the statewide educational TV network in the State of Kentucky since commencing broadcast operations in 1968. As part of its educational mission, KET operates noncommercial educational TV stations serving the citizens of its state. At least 98% of Kentucky households receive the KET signal, while only 63% of Kentucky households have cable service. With its statewide reach, KET is able to link Kentuckians together as no other medium can. In a recent survey, 83% of Kentuckians identified KET as an "important educational institution," 69% said KET is a "valuable cultural resource," and a majority said it was "an agent for positive change in Kentucky." KET shares capacity on its ITFS station with BellSouth, which operates a wireless cable system in Louisville.

**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. The consortium is also the licensee of 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. Its partner, WorldCom, intends to build out a 2-way system, which will allow KETC to provide instruction via the Internet and to provide video on demand to its schools. KETC is currently beta testing a new system that will provide full screen broadcast quality 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.

### **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.

### **Lee County School System**

The Lee County School System in Ft. Myers, Florida, operates a three channel ITFS system providing educational programming to support the instructional program in all schools in Lee County. The ITFS signal reaches all 68 school sites and into every classroom. This system gives all students in all schools access to 245 Instructional Television series totaling over 6,000 individual programs. Satellite downlinks from three dishes are taped or can be broadcast live to make interactive distance learning possible. Currently, the channels are operated from 7:30 a.m. to 4:30 p.m. each school day, plus evening operation for specialized programs. Lee County School Board meetings are also telecast live twice per month. In addition, live conferences are periodically televised from the district's School Board Meeting Room utilizing this system to provide video and audio out to the viewing audience and return audio from the viewing audience by speaker phone. L.E.A.R.N. TV, the school district's educational cable channel, is operated 24 hours a day, 7 days a week on the two local cable companies. Thus the ITFS channel programming is available to the local cable of community of more than 100,000 subscribers.

### **Long Beach Unified School District**

Long Beach Unified School District (“LBUSD”) serves 94,590 students in 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 arrangement with Cross Country Wireless, now a subsidiary of Worldcom, 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 substantial revenues used by the School District to fund its educational activities. The parties are also now working out arrangements for the conversion of the system to provide two-way broadband data services, while preserving several highly compressed digital video channels for continued instructional video programming.

### **Manatee Community College**

Manatee Community College, in Bradenton, Florida, is a recent ITFS licensee interested in utilizing ITFS for the delivery of college course work throughout its service area. Manatee Community College envisions ITFS as a valuable asset for the constituents that it serves.

### **Manatee County School Board**

Using its ITFS channels, Manatee County Public Schools has been transmitting daily instructional programming to approximately 38,000 students at 41 schools in Manatee County, Florida since 1988. The channels permit the Manatee County schools to participate in distance learning activities via satellite, which would otherwise be unavailable at the individual school level. Programming produced by the Title One department is broadcast to reach a population of migrant students (approximately 15% of enrollment). Programs teaching Spanish, German, Japanese and French are also aired. Manatee County Public Schools anticipate that digital compression will enable us to provide additional programming and data to our schools in the near future. One channel is dedicated to Manatee Educational Television (METV), a nonprofit consortium which operates the educational access channel on Time Warner Cable system. The channel provides daily instructional programming in English and Spanish to approximately 125,000 subscribers on behalf of Manatee County Schools, Manatee Community College, the University of South Florida and community organizations such as the Deaf Services Center, the Chamber of Commerce, Neighborly Senior Services and the Public Library.

### **Maryland State Department of Education**

As an ITFS licensee, the Maryland State Department of Education (“MSDE”) is licensed to operate eight ITFS channels in the Washington, D.C. and Baltimore, Maryland corridor. Through ITFS, the MSDE can provide numerous learning opportunities for both Maryland

students and teachers based on the needs of the school community. Instructional television programming and ITFS two-way data communications will enhance cost effective student and teacher access to the Internet and other data resources in the Maryland schools. Through a collaboration of State and local education agencies with the business community, MSDE shares a commitment to use ITFS technology effectively to improve education in Maryland. Use of the ITFS channels will enable the MSDE to attain one of its stated goals, namely an increase in student access to, and use of, technology in K-12 classrooms and schools.

### **Miami-Dade County Public Schools**

Miami-Dade County Public Schools is the licensee of ITFS channels in the Miami area. The channels are used in conjunction with WLRN Instructional Television, which has developed ITFS services to all the public schools. At present all schools receive 20 channels of Instructional Television. WLRN has developed ITFS delivery for educational programming to correctional institutions. WLRN is also planning to work with the Juvenile Justice System to provide a similar service. In addition, WLRN televises staff development programming that can be received at schools and is often scheduled on a cable channel to be received at home. With the eventual conversion to digital transmission, WLRN will have 32 ITFS channels.

### **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.

### **New Orleans Educational Telecommunications Consortium**

The New Orleans Educational Telecommunications Consortium (“NOETC”) is a non-profit membership corporation whose members include public and private colleges and universities in New Orleans. NOETC offers educational programming and college telecourses regionally to over 6,000 households and 75 institutional (educational) sites via ITFS. This programming includes 40 college credit telecourses each year, enrolling between 1,500 and 2,000 students annually. NOETC’s ITFS system services an eight parish wide area as well as Stennis Space Center in Mississippi. NOETC shares capacity on its ITFS station with BellSouth, which operates a digital wireless cable system in New Orleans.

### **Northeastern Educational Television of Ohio, Inc.**

Beginning in January 1999, Northeastern Educational Television of Ohio (“NETO”) began to program its Youngstown, Ohio ITFS channel 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.

### **The Ohio State University**

The Ohio State University (“OSU”) is the flagship public educational institution in the State of Ohio, serving over 55,000 students with campuses in Columbus, the State Capital, and in Mansfield, Marion, Newark and Lima. OSU’s four-channel ITFS system is operated for the University by its Telecommunications Center in Columbus, which also operates public radio and television stations in several cities, including Columbus. OSU is exploring exciting new ITFS ventures with Sprint, that will focus on distance education and high speed data access.

### **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**

The Pasadena Unified School District ("PUSD") acquired its ITFS license in the early 1960's. PUSD is a K-12 district with 33 individual school sites and approximately 23,000 students. 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 to Cross Country Wireless, now a subsidiary of Worldcom, in order to generate substantial revenue. This additional money is directly used to support educational materials, textbooks, and curriculum resources in support of our young peoples' needs.

### **Portland Community College**

Portland Community College ("PCC") is the licensee of the B group channels in Portland, Oregon. PCC has used the ITFS channels since 1986 to provide distance learning to

college centers, business and industry, community centers and residences in its five county, 1,500 square mile district. Currently, the college enrolls over 14,000 students in distance learning courses, using a variety of technologies. In addition to providing connections to isolated rural locations in the district, the ITFS system has been used to deliver programming to local industries like Intel, Tektronics and Bonneville Power. The promise of interactive Broadband on ITFS is a central piece of PCC's plans to build community-based distance learning access centers in under served communities in the district. PCC shares capacity on its ITFS station with Sprint, which operates a wireless system in the Portland market.

### **Pueblo Community College**

Pueblo Community College, in Pueblo, Colorado, is a recent ITFS licensee interested in utilizing ITFS for the delivery of college course work throughout its service area. Pueblo Community College envisions ITFS as a valuable asset for the constituents that it serves.

### **Pueblo School District # 60**

Pueblo School District #60 is currently designing a significant ITFS deployment for use in Professional Development and curriculum delivery. The District includes 17,000 students in 21 Elementary Schools, 6 Middle Schools, 4 High Schools and 1 Alternative High School. Through ITFS, the District is planning to deliver a significant part of its foreign language curriculum, AP curriculum, and ABE/GED programming for the community. Pueblo School District # 60 is located in southern Colorado, south of Colorado Springs, and maintains a strong partnership with Pueblo Community College and the University of Southern Colorado. The District has been educating students for over one hundred years.

### **Pueblo School District # 70**

Pueblo Rural School District # 70 in Pueblo, Colorado, has been involved in a project to use ITFS channels 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. The use of these services is to be offered to approximately 7,000 students, 500 staff members and the entire public community within the Pueblo Rural School District boundaries. These services are utilized to 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 relies heavily on these frequencies to provide much needed services in this area.

### **The Regents of the University of California**

The University of California ("UC") campuses at Berkeley ("UCB"), Davis ("UCD"), Riverside ("UCR"), Santa Barbara ("UCSB") and San Francisco ("UCSF") operate ITFS stations that provide UC-produced instructional, educational and cultural programming for thousands of students, health care professionals, engineering professionals and wireless cable television subscribers throughout the state of California. UCB currently transmits engineering classes via analog video to San Francisco Bay Area industry and educational institution sites. UCSF

currently transmits health sciences video programming, primarily medical and other grand rounds, to hospitals and educational institution sites in the San Francisco Bay Area. UCB and UCSF are leasing excess capacity on their A-channels and F-channels to Bay Area Cablevision. UCD is currently transmitting video engineering classes to Sacramento area industry sites and leasing excess ITFS capacity on their B-channels in Sacramento to WBSS, which operates a wireless cable television system and which is also now owned by Sprint. UCD has an ITFS channel which it uses to transmit analog video engineering classes and videoconferences to California State University, Chico. UCR is currently transmitting UCR classes, southern California community college classes and UCR cultural and administrative video programming to educational institution sites and the subscriber homes of Cross Country Wireless Cable, which is leasing excess ITFS capacity on UCR's channels in Riverside and San Bernardino Counties and which is now owned by Worldcom. UCSB is currently transmitting primarily University Extension and other UCSB classes as video programming to educational institution sites in Santa Barbara and Ventura Counties. UC submitted a license application to the FCC in the first window of two-way ITFS applications in August 2000 for the San Francisco Bay Area. Other UC ITFS systems will request two-way licensing beginning with the next application window in April 2001. Once UC's ITFS systems are licensed for two-way operations, UC will be able to add Internet and other two-way digital video, data and voice operations to these systems.

### **Regents of the University of Minnesota**

For thirty years, the University of Minnesota, UNITE Instructional Television has been dedicated to providing quality educational opportunities for engineering and science professionals through distance education via live broadcasts over ITFS. On average, approximately 700 professionals, from among thirty-eight member receive sites in the Minneapolis, St. Paul and Rochester, Minnesota communities, register each term for courses leading to Master's degrees in Computer Science, Computer Engineering, Electrical Engineering, Mechanical Engineering and, beginning next fall, Biomedical Engineering. Additional offerings include selected undergraduate science and engineering courses and a wide range of seminars and short courses. Each year approximately thirty-five students obtain their Master's Degree, with many others taking courses for career development, by attending one or more of the typically fifty-five courses offered each semester. The University has an agreement with CS Wireless, a subsidiary of Worldcom, to incorporate ITFS capacity into a digital wireless system in the Minneapolis market.

### **Regents of the University Of New Mexico**

The University of New Mexico ("UNM") operates eight 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.

### **Revere Local Schools**

The Revere Local School District (“Revere”) in Ohio is a K-2 school district consisting of 2,884 students located in four buildings. Revere is currently negotiating a contract to build an ITFS system for educational use. The project will enable Revere to improve communication between its building and its community. The potential loss of the ITFS channels granted to Revere by the FCC would seriously hinder the implementation of Revere’s goals in the fields of technology and communications.

### **Rock Valley College**

Rock Valley College (“RVC”) intends to utilize ITFS services to provide video-based interactive coursework to students in approximately 20 high schools in its northern Illinois service district. In the past RVC has accumulated numerous requests from its feeder schools for such services, but has been unable to comply due to lack of technical infrastructure. However, in the last 18 months RVC has made significant investments in funding and human resources to upgrade its information technology. The high schools in the area have simultaneously renewed their interest in receiving broadcast classroom instruction from RVC. It is timely, therefore, for RVC to proceed with a substantial slate of ITFS programming. In the absence of such provision, high schools - especially those in small or rural districts – would be unable to offer instruction in advanced or specialized topics (including select science and technology disciplines), and students would be directly disadvantaged.

### **San Diego ITFS Market Consortium**

San Diego Community College District  
Oceanside Unified School District  
Palomar College  
San Diego County Superintendent of Schools  
San Diego State University  
Vista Unified School District

Several educational institutions in the San Diego market have formed a consortium for purposes of developing their ITFS system. The educators have agreements with Cross Country Wireless, a subsidiary of Worldcom, which would permit the activation of 24 digital video channels from two mountain peaks serving the San Diego area. In addition, the lease agreement

would permit educational access to 2-way Internet services offered by the ITFS/MMDS system. Over 700 educational receive sites are planned as part of this project. The San Diego County Office of Education's ("SDCOE") instructional channels have provided almost 600 schools and one million homes with instructional programming for more than two decades. SDCOE transmits more than 15,000 hours annually of valuable instructional programs and distance learning courses throughout San Diego County. Regularly scheduled daily programming includes vital instruction for grades K through 12.

### **Santa Ana Unified School District**

Since 1973, the Santa Ana Unified School District ("Santa Ana") has used ITFS to deliver basic and supplementary instruction to students in grades K through 12. With nearly 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.

### **Sistema Universitario Ana G. Mendez**

Since 1993, Sistema Universitario Ana G. Mendez ("Mendez") has been an ITFS licensee in Puerto Rico. Along with a network of public and private agencies, Mendez has been providing credit courses, continuing education programs and general audience programming to the community through ITFS. The Mendez ITFS network covers about 90% of Puerto Rico, including Vieques and Culebra. Through the use of the spectrum, Mendez has connected its outer campus centers with its main campuses by developing distance education programs in areas such as Social Sciences, Business Spanish, Accounting, Puerto Rico's Tax Law, Assessment and Evaluation in Education, Puerto Rican Narrative, Nursing Foundations, Toddler and Infants Curriculum and a Certification Program in Teaching English at Elementary School. Mendez has also been serving, since 1995, 40 public schools with programming for students & teacher training sessions. This initiative is joint effort between Mendez and government agencies such as the U.S. Department of Education, the Puerto Rico Department of Education, the Solid Waste Management Agency, Puerto Rico's Department of Health and the Administration for Family and Children's Social Services. Educational programs targeted to the students have been developed in areas such as Healthy Life Styles, Recycling and Waste

Management, Youth Pregnancy, Sexual Transmission Diseases and “HIV and your peers.” Over 50,000 students and 450 teachers benefit from this programming. These 40 schools and the Mendez outer campus centers also serve as training centers to teachers and other professional staff. Last year 3,900 teachers were trained using the ITFS network. The Puerto Rico Department of Health (“PRDH”) also uses the ITFS spectrum. Since 1996 to 2000, the PRDH has conferred 14,158 continuing education certifications. The PRDH has developed eleven (11) receive sites at Health Care Center and hospitals. In addition, the Administration for Family and Children has developed eleven (11) receive sites located at its regional offices. Thus, diverse professional groups receive continuing education sessions through the ITFS network. Mendez also hopes to convert its transmitter to digital in coordination with its Telecommunications and Distance Education Center. This would enable Mendez to expand its services to the communities in the inner part of the Island. High speed Internet connection would also provide a new opportunity to low income communities and students. By providing an irreplaceable means of education, use of the ITFS spectrum has helped to minimize the digital divide in Puerto Rico over the last seven years.

### **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 64 ITFS stations consisting of 49 ITFS transmitters, 15 ITFS studio to transmitter links and 35 Distance Education Learning Centers. It reaches 793 public schools in the state, serving over 417,000 students. Recognizing that 63% of the state’s students reside in rural areas, and that other factors affect the specific educational needs of particular districts, SCETV’s network was designed to give each school district some control over local scheduling and programming availability. 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.

### **South Suburban College**

South Suburban College is using ITFS to reach a community of approximately 175,763 prospective viewers by feeding its instructional programming to cable television headends. In addition, South Suburban College uses ITFS to feed its satellite campus. The College’s programming includes telecourses, satellite downlinks and original programming from both the high school and college level.

### **St. Louis Community College**

St. Louis Community College (“SLCC”) has been using its ITFS spectrum since 1994. SLCC entered into a partnership shortly after that date with other higher education institutions in the St. Louis area (Washington University, the University of Missouri at St. Louis, St. Louis University and Webster University) to provide instructional programming via the wireless cable

system to broadcast programming purchased from the SCOLA (Satellite Communications for Learning Association) I and SCOLA II networks. The use of the SCOLA channels has continued to grow with individual viewers and through the use of the channels' content in formal instructional settings. In addition to the aforementioned higher education institutions, the SLCC receipt of the SCOLA signal is directly sent via wireless cable to approximately fifteen hundred households in the St. Louis metropolitan area. The signal is also sent to the St. Louis Higher Education Channel which has an audience of wired or hard cable subscribers that exceeds 300,000 in the St. Louis area. In addition to the SCOLA channels, SLCC's wireless spectrum is currently used in partnership with a wireless cable provider and has a subscriber base of approximately 1,500 households. These households receive a number of cable and premium cable channels via this wireless network. With the advent of digital broadcast capability, two-way digital communication, and the development of the wireless cable industry and its related equipment, SLCC anticipates much greater use of the ITFS spectrum (such as Internet access, video streaming of SLCC instructional materials, delivery of educational materials to rural and other populations not currently being served by existing cable providers and wireless network access on its eight current campus and education center locations).

### **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. 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.

### **St. Petersburg Junior College**

Through the use of ITFS, St. Petersburg Junior College ("SPJC") has been able to dramatically upgrade its telecourse programming and to disseminate other educational information in the public interest 24 hours a day, 7 days a week. SPJC's ability to share its ITFS capacity with commercial partners has also benefited the College by providing revenue which allows SPJC to maintain its educational programming. SPJC is currently working with its commercial partners to provide broadband wireless access to college educational materials. In addition, SPJC intends to use its ITFS frequencies to facilitate improved access to and dissemination of a wider diversity of materials to SPJC students and the public in general. Without ITFS, it would be technically difficult and financially unfeasible for SPJC to transmit its educational programming to the community and to provide the necessary and vital services that it envisions ITFS making possible.

### **Tarrant County College**

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. Tarrant County College recently implemented new digital technology in broadcast operations with the financial and technical assistance of WorldCom Broadband Solutions. Working together, WorldCom Broadband Solutions and Tarrant County College have provided a vehicle for students to take their own educational voyage. Together they are laying the foundation for all students in the 21st century to have equal access to information and technology in a way that best provides them educational content so that they may achieve their own personal and educational goals.

### **Thumb Area Television**

Thumb Area Television (“TATV”), a consortium of K-12 school districts, has been successfully operating an ITFS system in the tri-county area of Michigan for more than five years. TATV was developed with funding assistance from the U.S. Department of Commerce and has been supported by member school districts through annual participation fees. TATV is the sole source for many educational resources in Huron, Tuscola and Sanilac counties and plays a significant role in disseminating information in an isolated part of the Michigan. TATV maintains a 24 hour a day, 7 day a week schedule of programming that includes science, math, language arts, teacher professional development, MEAP test administration training, health education, history, geography and government. All classroom programming is aligned with the Michigan Curriculum Framework, making TATV a particularly appropriate tool for teachers. The interface of compressed video codecs with the ITFS system also supports student participation in virtual field trips and other enrichment activities.

### **Trident Technical College**

Trident Technical College (“TTC”), with an enrollment of over 10,000 credit students, is one of the largest two-year technical colleges in South Carolina. TTC is the licensee of eight ITFS channels in the Charleston, South Carolina area. TTC uses its ITFS channels as part of its distance learning program, which uses nontraditional course delivery methods to make college classes available to individuals who, for a variety of reasons, may not be able to attend traditionally scheduled classes. TTC uses ITFS broadband technology to transmit courses from its main campus to the Berkeley and Palmer campuses as well as the Charleston Air Force Base. TCC hopes to work with an excess capacity lessor to make high-speed data access capabilities available through the use of its ITFS channels.

### **The University of Iowa**

The University of Iowa programs an educational access channel for the Iowa City cable franchise. The programming is largely educational in nature, such as telecourses and foreign language programming. The University’s ITFS license is used to distribute the channel to the Cedar Rapids school district and to cable companies in small outlying towns.

### **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 universities. 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 presently are three ITFS channels in operation and a fourth channel planned. 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**

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. WorldCom has leased from the University excess channel capacity on the University’s ITFS channels. WorldCom will 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 will provide 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.

### **University of Southern California**

Upper division and graduate level Engineering courses leading to a Masters and PhD are broadcast live from studios on the University of Southern California (“USC”) campus to USC students at member companies in Greater Los Angeles on 8 ITFS (wireless) channels from two transmitter locations. All channels are operated and programmed 24 hours per day, seven days per week. Los Angeles and Orange County channels 1-7 are programmed 7:00 a.m. to 10:00 p.m., Monday through Friday with upper division and graduate engineering courses, and several course from the School of Business. Approximately 2,500 credit students are served per year by these channels. The ITFS Channels also broadcast professional development courses and

selected courses from other USC academic units. One of the USC wireless channels (Channel 8) is known as the "USC Channel" and is programmed 24 hours per day, seven days per week with educational programs from Annenberg CPB, international news programs direct from the country of origin, and a nightly 90-minute live USC news program. USC is also a participant in the ITFS/MMDS digital wireless system in Los Angeles and Orange County operated by Cross Country Wireless, a subsidiary of Worldcom.

### **Valencia Community College**

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).

### **Valley Lutheran High School**

Since 1981, Valley Lutheran High School has provided the Phoenix, Arizona metropolitan area with a private college preparatory high school alternate. Valley Lutheran emphasizes experimental learning and features programs in foreign languages, computer technologies, fine arts and varsity sports. Valley Lutheran envisions using its ITFS station to provide long distance learning and additional curriculum choices to its students and the students of local elementary schools.

### **Ventura County Superintendent of Schools**

After more than five years of sustained effort, Ventura County Superintendent of Schools ("VCSS") was successful in obtaining FCC licensing for ITFS last year. VCSS has now begun the process of negotiating with Worldcom for the installation of appropriate infrastructure to serve all 137,000 students in Ventura County's 20 school districts. The use of the frequencies for ITFS will allow VCSS the option of providing instructional television, video streaming or wireless Internet service to each and every one of the more than 200 school sites in Ventura County.

### **Washington State University**

Washington State University's ("WSU") ITFS channels are used primarily for credit courses delivered to non-traditional students in the greater Spokane, Washington area. This provides a cost effective, efficient alternative to these students who traditionally have been required to send or pick up videotapes for this educational experience. One of WSU's four ITFS channels is devoted to credit courses that support an upper division bachelor's degree completion program in the social sciences. Another channel is used to carry WSU's public television service, KWSU-TV in Pullman, to cable households outside the main station coverage area.

**West Central Illinois Educational Telecommunications Corporation**

West Central Illinois Educational Telecommunications Corporation (“CONVOCOM”) is a regional educational telecommunications consortium consisting of colleges and universities, businesses and industries, public telecommunications organizations, public school districts and health care organizations. It was chartered in 1976 at the recommendation of the Illinois Board of Higher Education as an Illinois 501(c)(3) not-for-profit corporation with the mission to engage in and encourage educational telecommunications in support of inter-institutional resource sharing. CONVOCOM offers high quality educational programming to approximately 450,000 people throughout the State of Illinois. As part of this effort, it operates an ITFS station in Moline, Illinois. CONVOCOM envisions using the Moline ITFS station for the delivery of workforce training and economic development programming in the Quad Cities area of Illinois.

**WITF, Inc.**

As a current ITFS licensee, WITF utilizes the ITFS spectrum to provide distance-learning services to central Pennsylvania. WITF has partnered with York College to transmit an undergraduate nursing course to over 200 students per week at 5 sites. This course is offered 4 days per week and covers 45 hours per month of ITFS usage. WITF’s ITFS channels are also used 52 weeks per year by a consortium of central Pennsylvania hospitals. The Milton S. Hershey Medical Center (Penn State University), York Hospital and Chambersburg Hospital utilize ITFS to transmit a doctor’s information exchange. This communication link is an invaluable telemedicine tool for the doctors and hospitals involved. ITFS is also used to distribute Continuing Legal Education (CLE) credit courses to Pennsylvania lawyers as part of an on-going distance learning partnership between WITF and the Pennsylvania Bar Institute. These courses provide between 6 and 9 credit hours per course each month. Other examples of WITF’s ITFS system usage include feeding health education programs to the Pennsylvania Department of Health and last mile delivery of satellite fed chemistry courses to area businesses.