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

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

In the Matter of )  
Federal-State Joint Board on )  
Universal Service )

CC Docket No. 96-45

**COMMENTS OF iSCAN, L.P.**

iSCAN, L.P. ("iSCAN") by its attorney, hereby submits these comments in response to the recommendations made by the Federal-State Joint Board on Universal Service to the Federal Communications Commission (the "Commission") on November 7, 1996.<sup>1/</sup>

**I. Description of the Commenter**

iSCAN is a provider of high-speed, wide-bandwidth digital communication services that are capable of conveying commingled voice, data, video, and static images through common transmission channels. Most of iSCAN's existing customers are business, government, and institutional users in South Carolina using dedicated transmission channels with a capacity of 6- to 8-megabits per second ("MBPS"). iSCAN is preparing to expand its network throughout the Southeastern region of the United States. The company hopes that it will eventually be able to

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<sup>1/</sup> See Public Notice, "Common Carrier Bureau Seeks Comment on Universal Service Recommended Decision," DA 96-1891 (rel. November 18, 1996); *Recommended Decision*, Federal-State Joint Board on Universal Service, CC Docket No. 96-45 (rel. November 8, 1996) ("*Recommended Decision*").

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offer affordable wide-bandwidth services to residential users, as competition and advancing technology drive down the cost of hardware and underlying transmission channels.

Formed in 1996 as a limited partnership owned by twenty-two local exchange telephone companies and an interexchange carrier in South Carolina, iSCAN uses existing fiber optic infrastructure as its transmission backbone, enhancing those channels with switching and control equipment using asynchronous transfer mode ("ATM") technology. Unlike the frame relay technology that is widely deployed in the Internet, ATM is well adapted to the delivery of high-quality voice and video as well as data. Properly implemented, ATM service can replace multiple networks that are currently in use for voice telephony, data, image relay, and video transmission.

## **II. The Commission Should Clarify Its Competitive Bidding Requirement to Ensure that Schools, Libraries, and Rural Health Service Providers Will be Free to Choose High Quality Communications Services**

The *Recommended Decision* advises the Commission to require schools and libraries to seek competitive bids for all services eligible for section 254(h) discounts. Schools and libraries would be required to submit their requests for services to a fund administrator, who would then post a description of the services sought on a website for all providers of services to see and respond to as if they were requests for proposals.<sup>2/</sup> The *Recommended Decision* goes on to say, "Posting on the website would satisfy the competitive bid requirement."<sup>3/</sup>

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<sup>2/</sup> *Recommended Decision* at ¶ 539.

<sup>3/</sup> *Id.*

iSCAN commends the Joint Board for its website proposal and agrees that such a mechanism would help to stimulate the widest possible range of competing bids. However, iSCAN urges the Commission to clarify that its competitive bidding requirement will not necessarily require requesters to accept the lowest-priced bids, and that bidders will not be required to conform their proposals rigidly to the exact specifications of requests for proposals (RFPs). Rather, requesters should be at liberty to compare the features and capabilities being offered to them, and to make their final choices on the basis of quality as well as price.

In an unregulated competitive environment, bidders are free to inform potential customers of alternative ways to meet a given set of requirements. For example, in South Carolina, a company might issue an RFP for a T1 channel (with a capacity of 1.544 MBPS) between Columbia and Charleston for the purpose of establishing a videoconferencing link between two sites. An incumbent carrier serving that route might respond with an offer to provide the requested service for \$1,968 per month. iSCAN could respond to the same RFP with an offer to provide an 8 MBPS channel over the same route for \$4,340 per month, and iSCAN might win the bid.

Why would such a paradoxical result be reached in an unregulated, fully competitive market? The answer is very simple. iSCAN would be capable of demonstrating that its proposal would produce both lower costs and higher quality. Customers transmitting video over 1.544 MBPS channels often spend as much as \$30,000 to \$60,000 for sophisticated video compression equipment using proprietary technology. An 8 MBPS iSCAN channel requires no compression equipment on the customer's premises and provides video signals with significantly better

quality.<sup>4/</sup> By spending more for a smarter, higher data-rate transmission service, the customer avoids having to buy customer premises video compression equipment and obtains a better quality picture.

Of course, it is not always so easy to demonstrate the savings that can be achieved with an advanced, high-quality data communications service. How, for example, does one answer the complaints of community college instructors who assert that they simply cannot teach with the quality of video that many of them are obtaining through an existing network of T1 connections? Although a T1 channel might provide sufficient bandwidth in theory, in practice many of the colleges involved must use much of the available capacity for administrative traffic, leaving only a half-T1 or perhaps even a quarter-T1 channel available for video communication. The result is a degraded level of quality that cannot be salvaged even with expensive, proprietary compression equipment.

In such cases, iSCAN may candidly advise a requesting institution that the kind of service requested in its RFP will not achieve the results that it seeks in the classroom. A wider bandwidth channel may be required and could be fully justified in the overall context of the institution's needs. Community colleges are not eligible for the discounts proposed in the *Recommended Decision*, but K-12 schools are eligible, and the same kind of analysis would apply to them.

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<sup>4/</sup> The iSCAN service in this instance would incorporate video compression capabilities built into iSCAN's network. Because iSCAN provides channels with bit rates that are several times that available on T1 channels, iSCAN is able to "squeeze" video throughput less severely, using industry-standard MPEG II chip sets rather than proprietary compression equipment. MPEG II, which stands for "Motion Picture Experts Group II," is a widely accepted, publicly available video compression standard that is being implemented in mass-produced chips.

A final example will illustrate how wider bandwidth can achieve savings in the context of health care delivery. Hip replacement surgery is an ordeal for patients and a challenge for physicians. The results are sometimes less than ideal, because of improper fit, and patients have traditionally been advised that artificial hips will not last forever. They face the prospect of a second round of hip replacement surgery a few years later.

iSCAN is helping to achieve a better result. Hospitals in Charleston and Greenville, SC, transmit data files containing CT-scanned and MRI-scanned images to engineers in the Department of Bioengineering at Clemson University in Clemson, SC. Clemson engineers build three-dimensional computer models of hip replacements using headsets that display three-dimensional holographic images. Beginning in January, 1997, the engineers will be able to observe hip replacement operations remotely, providing real time advice to surgeons in Greenville or Charleston. This example is not hypothetical; it will be available next month, using 8-MBPS channels provided by iSCAN.

Hospitals in Greenville or Charleston may or may not be eligible to receive the subsidies recommended by the Joint Board, and precisely comparable services may not be required for rural health care providers, but nearly every health care institution relies on imaging technology to some degree. In fact, ordinary X-ray machines can produce much higher resolutions than CT-scanners or MRI-scanners, because X-rays are still developed on photographic film, which is an extremely high-resolution medium.<sup>5/</sup> Capturing a hairline fracture on a digital reproduction

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<sup>5/</sup> CT- and MRI-scanners do not produce photographic images. They construct digital, three-dimensional representations that can be displayed in various formats.

of an X-ray image may require a very large data file, transmission of which would be impractical over narrow bandwidth telecommunication channels.

The bandwidth required for adequate transmission of medical imagery may initially discourage some rural health service providers from seeking the level of service necessary to meet their real needs. A country doctor may or may not be able to discern a spot indicative of lung cancer, or to know that another X-ray should be taken from a different angle. An experienced radiologist at a remote location could provide a useful second opinion, and suggest that a second picture be taken before the patient goes home – if an adequate communications channel is made available. The net result could be a substantial reduction in overall medical costs, more than enough to justify an additional investment in telecommunications service. iSCAN hopes that the Commission will preserve its ability to make that case to health service providers in its region, including those that seek support from the Universal Service Fund.

### **III. Conclusion**

The Commission should clarify that eligibility for universal service subsidies will not require issuers of RFPs to accept lowest-priced bids, and that bidders will not be required to conform their proposals rigidly to the exact specifications of RFPs. Rather, the Commission should specify that posting of RFPs on a widely accessible and heavily publicized website will satisfy the Commission's competitive bidding requirement, and that issuers of such RFPs will thereafter be at liberty to compare the features and capabilities being offered by service

providers, and to make their final choices on the basis of quality as well as price, provided that the requesting entities comply with any locally applicable laws or regulations concerning competitive bids.

Respectfully submitted,

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December 19, 1996

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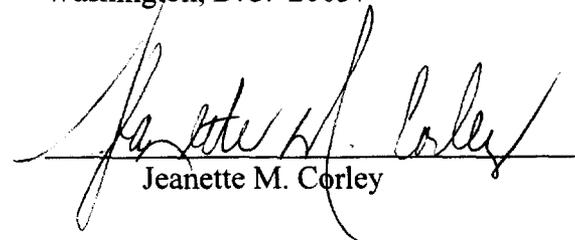
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