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Re: Facilitation the Provision of Spectrum-Based Services to Rural Areas, WT Docket 02-381

UTStarcom, Inc. is a US Corporation based in Alameda, California that is in the business of providing very low cost communications infrastructure to service providers around the world. One of our most popular products is our wireless local loop/limited mobility system marketed as our Personal Access System. Most of our systems are deployed in developing countries and in Mainland China, starting in smaller communities. As a result, UTStarcom has considerable experience with the provision of limited mobility (Mobile Local Loop) and fixed (Wireless Local Loop) systems to support voice and data service. UTStarcom has introduced our limited mobility solution in the United States in primarily fixed wireless PCS applications and, as a result has learned a great deal about US Spectrum Policy, how it differs from policies in other countries, and how that policy leads to a restriction of choices for US consumers and for small operators.

One of the more significant statements in the NOI is the comment on Page 8 stating that it is in the larger public interest to promote seamless wireless service throughout the country. Clearly, US spectrum policy has been and continues to be slanted toward that objective. One result of this is that almost all carriers offer the same "seamless national roaming" service packages with few distinctions in either price or service. These services target the same 50% of the population that is willing to pay for them while leaving the rest of the population without much service, including some people in very small and isolated communities. In contrast, other countries have recognized that while many people in the population are highly mobile, others do not go that far from home. In those environments, limited mobility service offers, at prices that are equal to local wire line prices, have proven to be very popular and have put the first wireless phones into the hands of individuals who would otherwise not be able to afford this useful service. In some places, the limited mobility or fixed wireless phones have been the first and only phone available to many individuals. The United States has the opportunity to make the same type of service, provisioned by Independent Phone Companies, Tribal Authorities, or even true local small businesses, including Rural Telephone Companies, available on existing, unlicensed spectrum with minor technical changes to current rules.

To address some of the specific questions posed in the NOI:

Services Offered: With respect to services offered to rural subscribers, UTStarcom has observed that, where services are offered in rural areas, those services do not differ sharply from those in urban areas. Some of these services are provided on Cellular Spectrum, some on PCS Spectrum but very few consumers know the difference. On the other hand, the number of providers offering such services to rural subscribers is lower and, in extreme cases there may be no service offered at all. In one extreme case, where UTStarcom has had preliminary discussions with a local carrier from rural Alaska, an isolated town of less than 1000 population has no Cellular or PCS service at all after the only CMRS carrier shut down their AMPS cell. The local carrier is interested in offering local mobile services but does not have access to appropriate spectrum.

By observation, the “standard” wireless package available to US consumers includes bundled long distance at an average price (otherwise stated as ARPU) of \$40 to \$60 per month. This includes both PCS and Cellular service offers, which in the US are indistinguishable from each other. In contrast, profitable operators offering service based on UTStarcom equipment in developing countries offer services at prices of approximately \$15 ~ \$20 per month.

Bidding Credits: With respect to Bidding Credits, our observation has been that this had been somewhat helpful to small carriers when initially offered. However, as seen in Auction 35, the application of bidding credits lent itself to undermining of the process with “small businesses” such as Salmon PCS (Cingular), Alaska Native Wireless (AT&T), and Cook Inlet (T-Mobile) being treated similarly to actual small businesses and bidding prices to levels that no true small business could ever afford or hope to recover by serving economically disadvantaged segments of the population. While Bidding Credits seemed to be a good idea, the operation of Auction 35 seems to have demonstrated that they were a failure.

Geographic Service Areas: With respect to Geographic Service Areas, UTStarcom’s experience has been that the areas are far too large to be useful to rural providers. In some instances, particularly where no major city is included in a BTA, groups of Rural Telephone Companies have banded together to purchase licenses covering their areas. In most cases, however, any carrier interested in obtaining spectrum to cover a geographic area that does not include the primary city in a BTA was not in a position to bid high enough to obtain a license. One clear example of this is that of Alaska Power & Telephone which, to serve its isolated towns, entered Auction 35 to bid on the Juneau BTA. As they did not intend to serve Juneau itself, and as the resulting price for the license was far in excess of what could be expected to be recovered from just the population of their served communities, AP&T did not gain access to spectrum and has not provided this type of service. In order to allow this type of service to be provided by rural carriers or other small businesses, license areas should be on the order of a single county, or even smaller. Alternately, and much more simply, coordinated unlicensed spectrum

between 1910MHz and 1920MHz could be used as is done in much of Latin America and the Caribbean. Extending current UPCS rates to this service would result in a cost of approximately \$20 per subscriber for spectrum instead of hundreds of thousands for a BTA and would be very manageable by most small operators.

Partitioning and Disaggregation: The initially proposed rules for partitioning and disaggregation seemed to be intended to allow for small carriers to obtain small amounts of spectrum covering their areas. The reality of the implementation of this has been that license holders do not see a reasonable economic return in partitioning and have expressed little interest in participating. In fact, looking at comments in the proceeding on disaggregation, most of the large carriers, who would be expected to be sellers in this environment, were more interested in how buying or otherwise gaining access to additional spectrum would be possible under spectrum caps. Our overall experience has been that license holders are very reluctant to partition as that would devalue the overall license should they decide to sell, even if they are not operating in remote areas. With respect to disaggregation, our experience has been that carriers operating in licensed spectrum are not at all inclined to make spectrum available to new competitors. Considering that in most rural situations, carriers operating CDMA technology typically transmit on one, or at most on two carriers, there seems to be considerable spectrum left over for others to use. When looking at the, now retiring, spectrum cap of 55MHz, it is not at all clear what a single operator would do with so much spectrum in a rural area. Since a low power Mobile Local Loop system would operate on 5MHz, in a technical sense, it would seem very practical to operate on unused frequencies in a rural area but current rules do not allow for this. One possible rule change would be to require operators not using their spectrum to lease it at some reasonable terms to small businesses interested in operating locally. Of course, the definition of "reasonable" would be questioned and would likely yield no significant change in current practice. Alternately, Unlicensed PCS spectrum could be used for this service.

Performance Requirements: Our observation on performance requirements has been that they are more likely to preclude delivery of service to rural areas than encourage it. The PCS performance requirements are expressed in the form of "signal strength over population". If a carrier has an objective of providing a signal to 25% of the population of a BTA, then the best way to meet that requirement is to serve the largest city in the BTA. In the case of any of the three Alaska BTAs, the construction requirements can easily be met with deployment of a single cell system in Juneau, Fairbanks, or Anchorage while leaving the entire rest of the state with no coverage at all.

UTStarcom has experience with one potential operator, in Corvallis, Oregon, which contacted the PCS license holders for the area, which is part of the Salem BTA (BTA395). Only one of the license holders returned phone calls or e-mail and that one returned a response that they were not interested in serving Corvallis and also not interested in partitioning, due to potential devaluation of the license. They also indicated that they already met their construction requirements for the BTA so that

providing service to Corvallis was not necessary. One potential change to the PCS rules, which would facilitate provision of service to unserved communities, would be to require operators to serve each county in their BTA or make spectrum available to someone who would be interested in serving. As with disaggregation, the entire issue could also be avoided by making Unlicensed PCS spectrum available for this type of service.

Band Manager Licensing and Unlicensed Spectrum: This method of licensing is likely to show promise should the band manager be a truly independent organization that is interested in leasing small amounts of spectrum in limited geographical areas. When looking at the Unlicensed PCS spectrum from 1910MHz ~ 1930MHz, the mechanism for Band Manager licensing already exists with UTAM as the band manager. Small modifications to the current technical rules of the UPCS band as proposed by UTAM and UTStarcom, to make them more consistent with rules for the same band in the Americas, as defined by CITELE, would instantly make spectrum available in small amounts for small carriers. Using UTAM mechanisms would also mitigate the financial burdens faced by small carriers with respect to fixed microwave relocation. UTStarcom has had experience with several small carriers who, as a result of deploying UTStarcom equipment in a fixed wireless environment, were faced with microwave relocation liabilities that exceeded the amount paid for their licenses as well as the amount spent on equipment. In one extreme case, a rural operator in Nebraska, which was part of a consortium holding PCS licenses for their area, was interested in Mobile Local Loop deployment only in Unlicensed Spectrum where they could obtain the combination of Spectrum Use and Microwave Relocation liability at the UTAM rate of \$20 per radio instead of the far higher costs associated with the original relocation cost sharing plan. When considering allocating additional spectrum to unlicensed applications, the Commission should consider what spectrum is available and what equipment is available and already in service in other countries. While the overall US market for telecommunications equipment is very large, the rural US market is not. As a result, making the same spectrum available in the US that is used for Voice and Data applications in other countries is likely to lead to very cost effective solutions for US consumers. Allocation of spectrum in the US intended only for use in rural markets will likely result in low volume, expensive solutions that will be impractical for deployment in most places. As the opportunity exists now to make spectrum available for these applications, the Commission should immediately accept the proposed Unlicensed PCS rule changes proposed by UTAM and UTStarcom.

UTStarcom appreciates the opportunity to comment in this proceeding and to explain our view of how new and different services could be made available to US consumers by local operators. By making a small change to the technical requirements of Unlicensed PCS spectrum between 1910 and 1920MHz, the Commission could enable development of the local mobility services originally envisioned when PCS spectrum was first allocated in the early 1990's.

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