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In the Matter of)
)
Redevelopment of Spectrum to)
Encourage Innovation in the)
Use of New Telecommunications)
Technologies)

ET Docket No. 92-9

COMMENTS OF TRX TRANSPORTATION TELEPHONE COMPANY

Raymond G. Bender, Jr.
Michael D. Basile

Counsel for
TRX TRANSPORTATION
TELEPHONE COMPANY

DOW, LOHNES & ALBERTSON
1255 Twenty-third St., N.W.
Suite 500
Washington, D.C. 20037
(202) 857-2500

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SUMMARY

TRX Transportation Telephone Company ("TRX TransTel"), a pioneer in the development of innovative mobile communications services, urges the prompt allocation of spectrum in the 1850 - 2200 MHz band for emerging technologies. TRX TransTel believes that the substantial benefits of these new technologies, particularly their contribution to improving the efficiency of American industry, could be lost unless such allocation is made as soon as feasible during the current year.

TRX TransTel concurs with the Commission's conclusion that the most suitable region of the spectrum for emerging technologies, including Personal Communications Services, is the 2 GHz band. Moreover, TRX TransTel supports the Commission's intention to avoid unnecessary disruption to the existing operations of private operational fixed and common carrier microwave licensees in the 2 GHz band. For this reason, TRX TransTel supports the relocation of these microwave operations to available frequencies in the 4 GHz band and to spectrum in the 1710 - 1850 MHz band currently reserved for government use.

TRX TransTel suggests that the Commission adopt a regulatory framework that permits privately negotiated migration arrangements that are subject to certain

principles. TRX TransTel's comments include a framework that it believes will balance the substantial public interest in expediting the delivery of new communications services with the need to avoid unnecessary disruption of existing fixed microwave operations.

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TRX Transportation Telephone Company ("TRX TransTel"), by its attorneys, hereby submits these Comments on the Commission's Notice of Proposed Rulemaking ("Notice") to allocate spectrum for emerging communications technologies, particularly advanced mobile communications services.^{1/} As a pioneer in the development of innovative mobile communications services, TRX TransTel supports the prompt allocation of spectrum in the 1850 - 2200 MHz band for Personal Communications Services ("PCS").^{2/}

I. TRX TransTel

TRX TransTel is a joint-venture between PWTC Holding Corporation and Advanced Wireless Communications Enterprises, Inc. The controlling principal of TRX TransTel is David A. Bayer, a telecommunications entrepreneur with

^{1/} New Telecommunications Technologies, 7 FCC Rcd 1542 (1992).

^{2/} The 1850 - 2200 MHz band is referred to herein as the "2 GHz" or "emerging technologies" band.

more than twenty years' experience in the mobile communications industry and former owner and operator of the CyberTel mobile communications companies.

In anticipation of the Commission's licensing of PCS, TRX TransTel has devoted substantial time, effort and resources to the introduction of a new and innovative nationwide communications network, the Nationwide Transportation Radiotelephone Service ("NTRS"), to serve the United States trucking industry.^{3/} By merging PCS technology and other advanced communications systems, NTRS will deliver a wide range of low-cost, two-way communications services through a network of low-power terrestrial base stations strategically situated at truck stops, rest areas and truck terminals throughout the continental United States. These services, such as two-way voice and mobile data, vehicle location reporting, and the delivery of truck performance data, are specifically designed to serve the unique and largely unmet communications requirements of the trucking industry.

By substantially improving the speed, efficiency and quality of information transfer between drivers and dispatchers, NTRS will enhance productivity and efficiency and revolutionize the way the trucking industry does

^{3/} On May 4, 1992, TRX TransTel filed a Request for Pioneer's Preference in the Commission's licensing of PCS for its development of NTRS (File No. PP-77).

business. Moreover, because it would allow motor carriers to provide better and less costly service to their customers, NTRS will also enhance the productivity of the nation's manufacturing, wholesale and retail sectors, thereby helping to strengthen the competitiveness of American industry.

In view of its efforts in developing the NTRS network, TRX TransTel has a significant interest in, and useful perspective on, the allocation of new spectrum that will permit the rapid introduction of advanced PCS services. Accordingly, TRX TransTel is filing these comments in support of the Commission's determination in the Notice that new spectrum should be allocated to PCS as soon as possible.

II. United States Consumers and Businesses Must Have Access to the Latest Mobile Communications Services

In recent years, substantial advances in communications technologies have made possible a new generation of services, particularly advanced personal communications services, that promise to change the way people communicate. The convenience, added functionality and greater affordability of Personal Communications Services will offer substantial benefits to consumers and businesses throughout the world. In some countries, such as the United Kingdom and Canada, telecommunications administrations and private enterprise have taken meaningful steps to ensure that PCS

reaches the marketplace as quickly as technology permits. Today, the Federal Communications Commission is at a crossroad in telecommunications policy making, and its decisions in this proceeding will have lasting implications for our nation. It is imperative that the Commission act decisively in identifying an ample, single range of spectrum for new mobile communications systems so that American consumers and businesses will have access to the same advanced communications services available in other countries.

The prompt introduction of more effective and economical mobile communications services will offer substantial tangible benefits to consumers. For individuals, the new mobile services hold the promise of more affordable and convenient telephones that allow voice and data communications anyplace, anytime and anywhere. The increased competition resulting from the deployment of these new services would also encourage mobile communications equipment manufacturers and service providers to lower prices, introduce new products and services, accelerate innovation and improve quality and customer service.

The new services will also benefit business by making its operations more efficient and improving employee productivity. TRX TransTel's proposal for an innovative, nationwide communications network to serve the special needs

of the United States trucking industry exemplifies how new PCS services can contribute to the greater efficiency and productivity of American business. Existing mobile communications services are not functionally adequate or cost-effective for this \$265 billion industry that plays such a critical role in our nation's economy. TRX TransTel's Nationwide Transportation Radiotelephone Service will provide the trucking industry with a wide range of affordable services, such as two-way voice and mobile data, including voice mail and facsimile, advance messaging, vehicle location reporting, truck performance data delivery, and regional weather and traffic reporting, at truck stops, rest areas and truck terminals located throughout the continental United States. With these features, dispatchers can provide drivers with more timely and accurate load information, routing instructions and directions. Drivers can also access traffic and weather reports to determine if alternate routing is required. NTRS services will help carriers reduce operating costs, maximize freight assignments by coordinating load and route management more effectively and estimate arrival and departure times with far greater certainty.

One specific benefit of NTRS will be its ability to transform the outdated "check-call" process, which requires a driver to stop every few hours to contact a dispatcher by

phone. NTRS will allow drivers to stop only when signalled by their dispatchers. TRX TransTel estimates that by eliminating the unnecessary downtime and other costs associated with the check-call process, NTRS can save the trucking industry at least \$1 billion in operating costs in this one area alone.

Chairman Sikes recently recognized the benefits that new mobile communications services, such as TRX TransTel's NTRS, would provide to U.S. business:

Many of these emerging services have the potential to produce substantial productivity gains. To cite another example, companies have proposed special communications networks designed to meet the specific needs of the surface transportation industry -- particularly the long-distance trucking business, for which conventional cellular, satellite, or other existing mobile offerings are not cost-effective. The American trucking industry -- for which there are currently few special communications or radio frequency allocations -- is a \$300 billion a year enterprise, so even modest productivity improvements in this sector represent very large national gains.^{4/}

TRX TransTel's NTRS is only one of many new PCS services that could address the specific communications needs of American business. Other PCS-based systems, such as specialized data networks and radio-based local loops, will

^{4/} Statement of Alfred C. Sikes before the Subcommittee on Communications, Committee on Commerce, Science and Transportation, United States Senate, June 3, 1992.

similarly help improve the productivity and efficiency of other American industries.

Making American industry more efficient and productive is critical in today's increasingly competitive global economy. In recent years, foreign businesses have made substantial inroads in markets that were once dominated by United States companies. By fostering the development and implementation of better and more affordable communications, the Commission would assist U.S. industry as it seeks to reclaim its lead in international markets. Once again, TRX TransTel's proposal provides a specific example of the contribution that PCS services can make in this critical area. To increase their competitiveness in foreign as well as domestic markets, many U.S. businesses are adopting cost-cutting "just-in-time" manufacturing and fluid inventory techniques. The shipping logistics required to support such operations are substantial. However, by allowing more effective and timely communications between dispatchers and drivers, TRX TransTel's NTRS will permit the trucking industry to provide the quick-response service and precision timing required to implement just-in-time techniques.

It is particularly important that the latest mobile communications tools be available to support these and other efforts to make American industry more competitive because other governments already are allocating spectrum in the 2

GHz band for advanced mobile communications services. As the Commission is aware, Japan has allocated 100 MHz and is contemplating allocating an additional 400 MHz in this band for new technologies, including mobile services. The United Kingdom has set aside 174 MHz of mobile communications frequencies in this range, and the European Community is considering as much as 320 MHz for new mobile technologies. Moreover, the deliberations of the 1992 World Administrative Radio Conference ("WARC-92") indicate that other countries will soon take steps to introduce PCS services. WARC-92 established a worldwide primary allocation for "future public land mobile telecommunications systems" in the frequency bands 1700 - 2690 MHz.^{5/}

The substantial benefits of more effective and economical mobile communications services, particularly their contribution to improving the efficiency of American industry, may be lost if the Commission fails to take prompt and decisive action in allocating sufficient spectrum for PCS. During the past three years, the mobile communications industry has taken important first steps toward the early introduction of PCS services in the United States. TRX TransTel and other companies have devoted substantial

^{5/} See Final Acts of the World Administrative Radio Conference (WARC-92), Addendum & Corrigendum, at 16-17; and Resolution COM 4/4, Implementation of Future Public Land Mobile Telecommunication Systems (FPLMTS).

resources and effort to developing new mobile communications equipment and services. A prompt Commission decision allocating spectrum for PCS will ensure that research and development firms, service providers, equipment manufacturers and financial institutions will continue to support and pursue the development of PCS. For these reasons, TRX TransTel strongly urges the Commission to allocate sufficient spectrum for PCS in the emerging technologies band as soon as feasible during the current year.

III. Relocating Private Operational Fixed
and Common Carrier Microwave Operations
in the Emerging Technologies Band

TRX TransTel concurs with the Commission's conclusion that the most suitable region of the spectrum for emerging technologies, including PCS, is the 2 GHz band.^{6/} As the Commission has found, several factors support this conclusion. First, the technical characteristics of these frequencies readily support advanced mobile communications services. The use of the 2 GHz band would also promote timely commercial availability of state-of-the-art equipment at reasonable costs. In addition, the international developments described above further confirm the advisability of using the 2 GHz band for PCS. Finally, the

^{6/} Notice at 1543-1544.

amount of spectrum in the 2 GHz band that will become available is sufficient to accommodate the development of PCS and other communications technologies on a cost-effective basis.

TRX TransTel also supports the Commission's intention to avoid unnecessary disruption to the existing operations of private operational fixed and common carrier microwave licensees in the emerging technologies band. For this reason, TRX TransTel supports the relocation of these microwave operations to available frequencies in the 4 GHz band and to spectrum in the 1710 - 1850 MHz band currently reserved for government use. Because of the relative proximity of these bands to microwave operators' current allocations, it is feasible to accomplish the requisite technical modifications at reasonable costs with little or no disruption to the incumbent's operations. In some cases, it may be possible to accomplish the necessary technical changes simply by installing new crystals in the microwave transmission system. In other situations, the use of spectrum in proximate bands means that other modifications required to accommodate relocated users, such as the installation of new radio transmitters and receivers, could be accomplished at somewhat greater but still relatively low costs.

The Office of Engineering and Technology ("OET") has concluded that sufficient unused capacity exists in the 4 GHz band to accommodate the relocation of substantially all of the 2 GHz fixed microwave facilities.^{7/} To identify the spectrum bands with sufficient capacity to accommodate the existing 2 GHz facilities, OET performed two studies, a nationwide study and a study of the top MSAs. Both studies considered three factors: (1) the number of facilities to be relocated; (2) the location of those facilities; and (3) the capacity available in the relocation spectrum at each location.^{8/} The nationwide study, which used a grid analysis and divided the country into 1027 blocks, found that in 1019 of the 1027 blocks all 2 GHz microwave facilities could be relocated to the 4 GHz band.^{9/} The MSA study, which reviewed the country's top 50 MSAs, found that in 41 of the top 50 MSAs all 2 GHz microwave facilities could be relocated to the 4 GHz band.^{10/} To the extent that 4 GHz frequencies are insufficient to accommodate relocated users, then government spectrum in the 1710 - 1850 MHz band could be made available as needed. In this regard, the

^{7/} Office of Engineering and Technology, Creating New Technology Bands for Emerging Telecommunications Technology, OET/TS 91-1.

^{8/} Id. at 18.

^{9/} Id. at Appendix A.

^{10/} Id. at Table 4.

Commission should continue to take whatever steps are necessary to promote private sector access to frequencies in the government's 1710 - 1850 MHz band.

IV. Any Migration Plan Adopted by the FCC Must Balance the Need to Foster New Services and the Interests of Existing Microwave Users

While the immediate allocation of sufficient spectrum for PCS is of primary importance, TRX TransTel supports the Commission's intention to permit existing fixed microwave users to relocate to other bands with minimum disruption to their operations.^{11/} However, protecting the legitimate interests of incumbent microwave users should not result in the imposition of unreasonable costs on PCS licensees or unnecessary delay in the implementation of new mobile communications services. The Commission should adopt a regulatory framework that permits privately negotiated migration arrangements that are subject to certain guiding principles.

Under TRX TransTel's proposal, existing fixed microwave users and PCS licensees should be afforded co-primary status for an appropriate period, such as seven years, following the Commission's adoption of final rules in this proceeding. At the end of this period, fixed microwave operations in the emerging technologies band would convert to secondary

^{11/} Notice at 1542.

operation. During the seven-year transition period, an incumbent microwave user would be required to migrate to an alternative band upon the satisfaction of two conditions.

First, the emerging technology user should pay all reasonable and necessary costs of the migration at the time the microwave system is modified. While TRX TransTel fully supports the principle that the new user should be responsible for the costs of an incumbent's relocation, the Commission's rules must expressly prohibit a relocated licensee from obtaining any additional consideration, financial or otherwise, as a result of the relocation. In other words, an existing microwave licensee should not be permitted to profit from a new user's requirement for spectrum by demanding an amount beyond system modification costs. Permitting existing users to profit from these arrangements would add unjustified and unreasonable costs to the introduction of PCS and other important new communications services and would result in protracted negotiations that could delay their implementation.

Second, an existing microwave user would be required to migrate if alternative frequencies were available to support new facilities of essentially the same or similar capacity and reliability. The Commission could apply appropriate technical criteria that would determine the satisfaction of this condition.

Subject to compliance with these fundamental conditions, an emerging technologies permittee and an incumbent microwave user would be free to negotiate the remaining terms of a migration arrangement. The parties would be required to cooperate in good faith and use their best efforts to agree upon and implement as soon as practicable the migration arrangement, but in no event later than a specified period prior to the expiration of the new user's construction authorization. The migration arrangement would include, for example, an interference analysis, a description of the equipment required, an estimate of the time required to complete the project and the estimated cost.

In the event that a new user satisfies the conditions for mandatory migration but the incumbent licensee fails to cooperate and the migration is not completed on or before a specified period prior to the expiration of the new user's construction permit, then the microwave user's operation shall automatically and immediately convert to secondary status. In the event that a secondary microwave user causes any interference to a new technology licensee, the microwave user would be required to immediately cease operations and relocate at its sole expense.

A migration mechanism such as specified above would seek to minimize the Commission's involvement in resolving

disputes among parties as to the actual arrangements for relocating existing users, including the terms and compensation therefor. However, in circumstances where necessary, the Commission must be available to resolve disputes on a formal and informal basis. In certain cases, the Commission could apply appropriate sanctions where a party fails to cooperate or negotiate in good faith the terms and conditions of a migration arrangement.

TRX TransTel believes that the foregoing framework adequately balances the substantial public interest in expediting the delivery of new communications services with the need to avoid unnecessary disruption of existing fixed microwave operations.

V. Conclusion

For the foregoing reasons, TRX TransTel strongly urges the Commission to allocate immediately a sufficient amount of spectrum in the 2 GHz band for PCS and other emerging communications technologies.

Respectfully submitted,

TRX TRANSPORTATION
TELEPHONE COMPANY

By: 

Raymond G. Bender, Jr.
Michael D. Basile

Its Counsel

DOW, LOHNES & ALBERTSON
1255 Twenty-third St., N.W.
Suite 500
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(202) 857-2500

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