

Before the
Federal Communications Commission
Washington DC 20554

In the Matter of)
)
Comment on Spectrum Issues) Public Notice DA 98-1703
Related to Third Generation)
Wireless/IMT-2000)

**COMMENTS OF
FIXED POINT-TO-POINT COMMUNICATIONS SECTION,
WIRELESS COMMUNICATIONS DIVISION OF THE
TELECOMMUNICATIONS INDUSTRY ASSOCIATION**

The Fixed Point-to-Point Communications Section, Wireless Communications Division, of the Telecommunications Industry Association (the Fixed Section)¹ hereby comments on the Commission's Public Notice² cited above. In the comments below, the Fixed Section addresses only questions 13, 14, 19, and 20. The remaining sixteen questions do not impact directly upon terrestrial fixed wireless communications services.

I. INTRODUCTION

The Fixed Section is interested in this proceeding only to the extent that IMT-2000 threatens further encroachments into the already congested spectrum on which the fixed services depend. (See footnote (1) supra.)

¹ The Telecommunications Industry Association (TIA) is the principal industry association representing telecommunications equipment manufacturers, including manufacturers of terrestrial fixed point-to-point microwave radio service (AFS) equipment. Fixed Section members serve, among others, companies, including telephone carriers, utilities, railroads, state and local governments, and cellular carriers licensed by the Commission to use private and common carrier bands for provision of important and essential telecommunications services. This comment reflects only the views of the Fixed Point-to-Point Section. It does not necessarily reflect the views of other divisions or committees of TIA.

² DA 98-1703 was released as Report No. IN 98-48 on August 26, 1998.
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The fixed services are an unsung but vital part of the nations' economic infrastructure. They provide communications essential to the energy, transportation, and telecommunications industries, among others, and play a key role in public safety and other governmental operations. An important, emerging application for fixed service radio links is infrastructure and backhaul in the increasingly competitive commercial wireless mobile and local access markets.

The demand for fixed microwave services continues to expand, but the available spectrum has been severely depleted in favor of the mobile wireless and satellite industries. Over the years, the terrestrial fixed services have maximized efficiency of spectrum usage through the use of improved antennas and sophisticated transmitter equipment that yields improved bits/Hertz ratios. Nevertheless, despite operation at the highest practicable measures of spectrum efficiency, the fixed services are approaching frequency gridlock in the nation's urban areas. The Fixed Section urges the Commission to meet the needs of IMT-2000 without further recourse to spectrum allocated to the fixed services.

In addition to promoting more spectrally efficient uses of wireless spectrum, as urged below, the Commission should consider encouraging the expanded deployment of wireless applications in auctioned spectrum. The technical rules governing many of the auctioned bands are extremely flexible. They should support at least some of the wireless applications contemplated here, without putting unnecessary demand on spectrum allocated to other uses.

II. QUESTION 13

If additional frequency bands are made available for IMT-2000 services, what approaches should be used to reaccommodate or compensate existing users of those bands?

It is no longer realistic for IMT-2000 proponents **C** or any other users of the spectrum **C** to expect that even well-supported showings of need will automatically yield additional spectrum allocations. Today, spectrum allocation is a zero sum game. There is not enough to go around. Except perhaps at millimeter wavelengths, where practical applications are limited, any additional allocation to one service means a subtraction from another. The Commission's prior experience with relocating fixed microwave users from the 2 GHz band to accommodate a mobile service has signalled a serious shortage of available spectrum in the remaining fixed service bands. Any further efforts at relocation would worsen the situation.

Rather than expect more spectrum, IMT-2000 interests must find more efficient ways of using spectrum already allocated either to mobile services or for flexible use.

III. QUESTION 14

Must each of the IMT-2000 services operate below 3 GHz? If so, why? If not, what IMT-2000 services might be amenable to different spectrum and why?

Decisions on appropriate spectrum for IMT-2000 involve not only the factors intrinsic to IMT-2000 operations **C** antenna size, propagation characteristics, equipment costs, and the like **C** but also consideration of how the candidate spectrum is presently used. In fact, there is little vacant spectrum suitable for mobile use either above or below 3 GHz. Expansion above 3 GHz, as well as below, will inevitably involve displacement of existing users. As the 2 GHz relocation made clear, there are no safe havens for those users.

IV. QUESTION 19

What technological advances are available today, or will be available in the near future, that may be expected to improve spectrum efficiency for third generation wireless/IMT-2000 systems?

One way the Commission can encourage technological advances for spectrum efficiency is through an incentive mechanism that favors those who use the spectrum efficiently. Other things being equal, costs tend to increase with higher efficiency, so a provider maximizes profit by deploying the lowest-efficiency equipment possible. Providing more spectrum for the asking thus discourages efficiency, while requiring providers to work within available allocations tends to increase it.

Another way to increase efficiency is simply to mandate it by regulation. New equipment in the fixed service bands up to 11 GHz, for example, must deliver up to 4.5 bits for each Hertz of bandwidth, 47 C.F.R. ' 101.141(a)(3), and licensees must actually load to required levels within 30 months of licensing. 47 C.F.R. ' 101.141(a)(3) (note 3 in table).

The Fixed Section acknowledges that higher spectrum efficiencies typically entail higher equipment costs. But fixed service providers, and their customers, are already paying those costs. As the demand for spectrum increases, other services will have to do likewise.

V. QUESTION 20

What techniques might be required to facilitate sharing between IMT-2000 and other services?

The Fixed Section believes development of new technologies would be essential to accommodate sharing between IMT-2000 and other services. With present technology, sharing between a fixed and a widely deployed mobile service is not practicable. However, the Fixed

Section would consider sharing in situations where doing so would not significantly impede either of the shared services. The Fixed Section would also be pleased to work with the proponents of new technologies that may improve the prospects for sharing.

Respectfully submitted

FIXED POINT-TO-POINT COMMUNICATIONS
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Certificate of Service

I, Mitchell Lazarus, an attorney with the law firm of Fletcher, Heald & Hildreth, P.L.C., hereby certify that on this 5th day of October, 1998, I caused copies of the foregoing **A**Comments of Fixed Point-to-Point Communications Section, Wireless Communications Division of the Telecommunications Industry Association**@** was delivered by hand to the following:

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