

BEFORE THE
Federal Communications Commission
WASHINGTON, D.C.

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)
)
Allocation and Designation of Spectrum)
for Fixed-Satellite Services in the)
37.5-38.5 GHz, 40.5-41.5 GHz,)
and 48.2-50.2 GHz Frequency Bands;)
Allocation of Spectrum to Upgrade Fixed)
and Mobile Allocations in the)
40.5-42.5 GHz Frequency Band, Allocation)
of Spectrum in the 46.9-47.0 GHz)
Frequency Band for Wireless Services;)
and Allocation of Spectrum in the)
37.0-38.0 GHz and 40.0-40.5 GHz for)
Government Operations.)

IB Docket No. 97-95
RM-8811

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OPPOSITION OF WINSTAR COMMUNICATIONS, INC. TO
PETITIONS FOR RECONSIDERATION

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TABLE OF CONTENTS

I. INTRODUCTION AND SUMMARY..... 2

II. CONTRARY TO PETITIONER CLAIMS, THE COMMISSION MUST PROTECT THE 38 GHz BAND FROM UNNECESSARY UNCERTAINTIES..... 5

III. THE COMMISSION MUST DENY TRW'S PETITION FOR RECONSIDERATION..... 7

 A. Because Sharing Is Not Feasible, The Commission Must Reject TRW's Proposal. 8

 1. TRW's Proposal To Permit Sharing Of The 38 GHz Band Is Speculative. 8

 2. TRW's Proposal Would Impair Terrestrial Licensees' Ability to Fully Develop Their Services In The Band. 13

 B. TRW Is Effectively Seeking Underlay Licensing In The Fixed Services Band Which The Commission Already Rejected For The FSS Band. 14

IV. EXCLUSIVE LICENSING IN THE 38 GHz BAND WILL PROMOTE EFFICIENCY AND COMPETITION TO THE BENEFIT OF CONSUMERS.. 15

V. CONCLUSION..... 18

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**OPPOSITION OF WINSTAR COMMUNICATIONS, INC.
TO PETITIONS FOR RECONSIDERATION**

WinStar Communications, Inc. ("WinStar"), by its attorneys, hereby submits its Opposition to the Petitions for Reconsideration of TRW, Inc. ("TRW")¹ and GE American Communications, Inc. ("GE Americom") filed in the above-referenced proceeding.²

¹ While TRW's pleading is styled a "Petition for Reconsideration/Clarification," it really is a Petition for Reconsideration of the Commission's determination to segment the band; therefore, WinStar will refer to it as a Petition for Reconsideration.

² See In re Allocation and Designation of Spectrum for Fixed-Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz, and 48.2-50.2 GHz Frequency Bands; Allocation of Spectrum to Upgrade Fixed and Mobile Allocations in the 40.5-42.5 GHz Frequency Band; Allocation of Spectrum in the 46.9-47.0 GHz Frequency Band for Wireless Services; and Allocation of Spectrum in the 37.0-38.0 GHz and 40.0-40.5 GHz for

I. INTRODUCTION AND SUMMARY.

WinStar was one of the first companies to be licensed and to utilize spectrum in the 38.6-40.0 GHz ("38 GHz") band and is the holder of the largest amount of 38 GHz spectrum in the United States. Terrestrial licensees such as WinStar represent the competitive telecommunications companies Congress had in mind when enacting the Telecommunications Act of 1996 ("1996 Act"). WinStar is utilizing the 38 GHz band and other spectrum to provide a variety of wireless fixed services, including local exchange, Internet access, and broadband services, in 31 of the largest markets in the country. By the end of 2000, WinStar will provide services in a total of 60 U.S. markets. WinStar is in the process of fulfilling the 1996 Act by delivering to consumers across the country the next generation of advanced telecommunications services through its wireless technology.

WinStar strongly supports the Commission's decision to segment use of the 36.0-51.4 GHz band (the "V-band") and to install an FCC use designator in the 38.6-40.0 GHz band for terrestrial wireless operations on a primary, exclusive basis.³ In addition, WinStar concurs with the Commission's determination that sharing between satellite systems and ubiquitous terrestrial wireless systems is not currently feasible.⁴

Government Operations, Report and Order, IB Docket No. 97-95, RM-8811, FCC 98-336 (rel. Dec. 23, 1998) ("Order").

³ See Order, at ¶ 2-3.

⁴ Id., at ¶ 18.

Three Petitions for Reconsideration were filed against the Commission's Order. Generally, the Petitioners seek to reargue fundamental points already studied and concluded in the Order by requesting that the Commission allocate/designate additional spectrum for satellite systems. Hughes, recognizing that the 38 GHz band already is occupied by terrestrial licensees, recommends that the FCC designate additional spectrum above the 40 GHz band to satellites.⁵ GE Americom requests that the Commission allocate an additional 2 GHz of spectrum for satellite services in the V-band and segment the V-band so it better correlates with international allocation tables.⁶ TRW seeks satellite licensing in the terrestrial wireless bands (including the 38 GHz band)⁷ despite the Commission's findings in the Order that terrestrial/satellite sharing of the same spectrum is not feasible.⁸

TRW specifically proposes satellite licensing in the terrestrial wireless bands on a secondary basis. However, WinStar is perplexed that satellite operators would spend substantial sums investing in a system that would have secondary status in the 38 GHz band. WinStar believes that satellite operators would leverage this secondary status in the future and

⁵ Hughes Petition, at 2, 5 & 9.

⁶ GE Americom Petition, at 2-3.

⁷ TRW Petition, at 1.

⁸ Order, at ¶ 18.

claim their systems will be jeopardized unless the FCC determines that there will be "exclusion zones" around their earth stations where terrestrial operators are prohibited from providing service. The overarching purposes for segmentation is to protect licensees from interference so that they have the incentive to fully build out their systems. TRW's proposal is inconsistent with the Commission's Order and must be denied.

Moreover, the Commission must reject TRW's and GE Americom's Petitions to the extent that they seek to reargue the same issues raised in the original V-band rulemaking concerning the use of the 38.6-40.0 GHz band for broadband satellite services.⁹ It is simply premature for Petitioners to claim that an additional allocation for FSS is necessary in the 38 GHz band when satellite licensees have not even launched their systems in the Ka-band. Furthermore, the Commission should not designate use in the 38 GHz band for future satellite services based on no proven demand when terrestrial licensees already are providing services to consumers in that band. Entire telephone companies and broadband Internet service operations have been formed, are operating, and are rapidly growing in the 38 GHz band.

Virtually all participants in this proceeding (terrestrial and satellite) agree that sharing of the 38.6-40.0 GHz band is

⁹ It is well-settled that reconsideration will not be granted merely to reargue matters previously considered and resolved. See WWIZ, Inc. et. al, 37 FCC 685 (1964), aff'd sub nom., Lorain Journal Co. v. FCC, 351 F.2d 824 (D.C. Cir. 1965), cert. denied, 383 U.S. 967 (1966).

not appropriate because of the technical and commercial limitations that would be imposed upon licensees. The entrenched, area-wide, robust FS systems in the 38.6-40 GHz band simply cannot accommodate co-frequency commercial FSS operations. The Commission's decision to segment the band will promote efficiency and competition to the benefits of consumers, and it must be upheld. Segmentation will provide terrestrial licensees, and indeed satellite licensees, with the protection they need from interference and give them the incentive to maximize the spectrum to the ultimate benefit of consumers.

II. CONTRARY TO PETITIONER CLAIMS, THE COMMISSION MUST PROTECT THE 38 GHz BAND FROM UNNECESSARY UNCERTAINTIES.

The terrestrial licensees that currently operate wireless networks in the 38 GHz band must be protected from satellite systems that will threaten the design, build out, operation and financing of terrestrial networks. Terrestrial licensees are presently offering services that the market demands; therefore, the Commission must reject satellite demands to designate use in this spectrum for satellite services.

Unlike the other spectrum blocks of the V-band considered in the Commission's Order, the 38 GHz band already is licensed and being used to provide terrestrial services. Indeed, licensees such as WinStar are actively deploying their systems throughout their license areas and providing broadband services to the public. Even Hughes recognizes that the present operation of terrestrial services in the 38 GHz band limits satellite

operations in this band, and it specifically excludes this portion of the V-band from its Petition for Reconsideration.¹⁰

The FCC should not allow satellite interests such as TRW and GE Americom to encumber the 38 GHz band and thereby place additional uncertainty on the future of incumbent terrestrial licensees. Indeed, to do so because satellite operators "need" the spectrum would be egregious.¹¹ GE Americom states that "[b]elow the V-band, existing allocations are unable to satisfy the ever-growing demand for broadband satellite applications."¹² Terrestrial wireless licensees actually are providing services in the 38 GHz band. The claims that FSS allocations below the V-band cannot satisfy the growing market demands for satellite "applications" are disingenuous.¹³ Satellite licensees have not even launched their proposed systems in the Ka-band. They cannot possibly determine at this stage what the market demand is for

¹⁰ Hughes Petition, at 5 & 9.

¹¹ See TRW Petition, at 4 ("TRW is concerned that the current spectrum plan could fall short of meeting the needs of the FSS").

¹² GE Americom Petition, at 4.

¹³ By their own standard, the filing of 15 applications after the Notice was released constitutes evidence of demand for FSS services. See, e.g., GE Americom Petition, at 5. Applying this logic, the number of applications that are filed (i.e., the level of interest) should determine the amount of spectrum the Commission designates to a particular service. In this regard, terrestrial licensees have filed thousands of applications for licenses in the 38 GHz band. In fact, the 38 GHz band already has over 65 fixed service licensees with over 1400 licenses.

services in the V-band.¹⁴ Terrestrial operators, on the other hand, already have invested large sums in the 38 GHz band, and are actively providing services to the public and building out their networks according to current market demands.

To encumber spectrum that is already being used to provide competitive services by designating the spectrum for future satellite use would hamper the efforts of the present licensees to the detriment of consumer welfare. Moreover, a change in the designated use of the 38 GHz band would introduce uncertainties that would affect the ability of 38 GHz licensees to attract investors in order to continue the deployment and growth of their systems. For this reason alone, the Commission should not include the 38 GHz band in its reconsideration of the V-band Order.¹⁵

III. THE COMMISSION MUST DENY TRW'S PETITION FOR RECONSIDERATION.

TRW requests that the Commission reconsider its decision to segment the V-band and to permit satellite operators to use the spectrum on a secondary basis, particularly the 38 GHz band,

¹⁴ In fact, if market demand for satellite services is as great as the satellite companies claim, it seems that they would accelerate their deployment schedules for systems that are currently licensed, but not launched.

¹⁵ GE Americom asserts that the FCC should make its allocations consistent with international allocations. GE Americom's Petition, at 3. The FCC's Order attempts to do just that; however, the Commission is not always able to designate spectrum use entirely consistent with international allocations. This is especially true when licensees already are operating in the band, such as the terrestrial licensees in the 38 GHz band.

which the Commission's Order primarily designated for terrestrial use.¹⁶ The Commission should reject TRW's requests.

A. Because Sharing Is Not Feasible, The Commission Must Reject TRW's Proposal.

TRW claims that satellite operators should be permitted to operate in bands designated for terrestrial use if satellite operators: (1) meet international power flux density ("pfd") limits, and (2) accept interference caused by fixed service transmitters into FSS earth stations.¹⁷ In addition, TRW states that satellite operations should be permitted in areas outside of fixed service licensed areas.¹⁸ TRW appears to be the only satellite company that continues to argue for the rights to share spectrum with terrestrial operators; even Hughes and GE Americom recognize that sharing is not desirable.¹⁹

1. TRW's Proposal To Permit Sharing Of The 38 GHz Band Is Speculative.

The Commission must reject TRW's proposal as inconsistent with its finding that "sharing is not possible at this time."²⁰

¹⁶ See generally TRW Petition.

¹⁷ TRW Petition, at 5.

¹⁸ Id.

¹⁹ Hughes Petition, at 7 & 8; GE Americom Petition, at 8 (opposing the underlay plan). Hughes argues that sharing issues in the 47.2-48.2 GHz band (where the Commission purports to keep spectrum available for satellite use) will impede satellite operators' ability to use this spectrum. Hughes Petition, at 8. Similarly, sharing is not appropriate in the 38.6-40 GHz band.

²⁰ Order, at ¶ 18. To the extent that sharing may be possible in the future, the Commission should permit licensees to

TRW fails to recognize that pfd limits alone will not solve the sharing problems discussed at length in this proceeding. WinStar believes that the ground equipment of satellite operators and terrestrial licensees also must be coordinated in order to truly avoid interference issues between satellite and terrestrial operations. However, the substantial economic and logistical burden of such coordination resulting from sharing ultimately defeats the well-recognized benefits of band segmentation. Such coordination would require "exclusion zones" where the other service would be unable to operate. Competitive local telephone companies providing ubiquitous services cannot have exclusion zones in their service areas. In addition, TRW fails to note that the international pfd limits have not been determined. As the Commission's Order stated, the pfd limits are currently being studied in international fora and are the subject of considerable debate.²¹ Also, current and proposed pfd limits cannot account for emerging FS technologies that will be in place in three to five years -- well before any commercial V-band satellite system would be operational. Consequently, it is inappropriate at this time for TRW to recommend that the FCC permit satellite operations in terrestrial bands simply based on compliance with international pfd limits.

agree to sharing arrangements through private contract. See infra note 35.

²¹ Id.

Moreover, WinStar questions the sincerity of TRW's claim that it will accept interference from terrestrial licensees. TRW asserts in its Petition that satellite services can operate on a secondary basis and accept interference from terrestrial equipment; however, TRW fails to explain exactly how satellite systems would operate on such a basis. For satellite operators to use the same band as terrestrial licensees, earth stations must be distanced from terrestrial transmitters in order to avoid interference from those transmitters. Observing the necessary separation distances prevents the deployment of countless FS transceivers near the FSS earth station. If TRW were truly secondary, FS operators would be able to deploy their stations without considering their interference into TRW's earth stations. Typically, the necessary separations create large areas where terrestrial equipment may not operate ("exclusion zones"); otherwise, these terrestrial stations would interfere with the earth stations. It is highly unlikely that TRW will spend significant resources to develop and launch a satellite system, but then be willing to accept interference from terrestrial wireless providers.

As discussed in the underlying proceeding, if satellite operators were permitted in the 38.6-40 GHz band, the exclusion zones around the satellite earth stations would create "holes" in the networks of terrestrial providers and interrupt their ability to provide ubiquitous service. The Commission's Order specifically set out to promote licensees' incentives to fully build out their systems. However, terrestrial licensees would be

prevented from maximizing their licenses if there are exclusion zones where they cannot provide service.

WinStar questions TRW's motives in seeking secondary status in the 38.6-40 GHz band. Why would satellite operators be willing to spend several billions of dollars in building their systems if they do not receive protection from interference? In fact, WinStar believes satellite operators would insist on interference protection from terrestrial licensees in order to protect their satellite systems. The Commission must reject TRW's backdoor attempt to receive primary status in the 38 GHz band.

It is instructive to examine TRW's claim that satellite services can operate on a secondary basis in terrestrial bands, but that terrestrial services similarly cannot operate in satellite bands on a secondary basis.²² Specifically, TRW states that:

while FSS receivers can operate under circumstances where they can be protected from fixed service interference either by separation or other mitigation techniques, there is no way that a fixed service facility can offer protection as a way of making use of a band that is already allocated or in use for FSS. Any single geographic area can and will have FSS receivers from multiple systems, and it is likely that these terminals will be 'blanket licensed.'

This too is an issue for satellite operators sharing the terrestrial band. By the time TRW's satellite system is in place, there may be hundreds of thousands of terrestrial

²² TRW Petition, at 6.

transmitters operating in the 38 GHz band. Because terrestrial equipment also is blanket licensed, it will be difficult for satellite operators to operate their earth stations without interference from all terrestrial transmitters.

Finally, TRW claims that satellite operators can place their earth stations in areas where terrestrial licensees do not operate to avoid interference from terrestrial providers.²³ Simply put, TRW would prefer to limit terrestrial licensees to their current areas, rather than give them a full opportunity to build out their systems. However, this is contrary to the Commission's finding that licensees should be encouraged to fully develop their bands. The Commission deliberately segmented the band in its Order to avoid interference issues in the future.²⁴ TRW's Petition is contrary to this finding, and simply re-argues the same issues in the underlying proceeding.

For the foregoing reasons, the Commission must deny TRW's proposal to allow satellite operators to use the 38 GHz band on a secondary basis.

²³ TRW's proposal ignores the Commission's stated plan to auction the remaining terrestrial licenses in the 38.6-40 GHz band. See generally In re Amendment of the Commission's Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz Bands; Implementation of Section 309(j) of the Communications Act - - Competitive Bidding, 37.0-38.6 GHz and d38.6-40.0 GHz, Report and Order and Second Notice of Proposed Rule Making, 12 FCC Rcd 18600 (1997).

²⁴ See Order, at ¶ 18.

2. TRW's Proposal Would Impair Terrestrial Licensees' Ability to Fully Develop Their Services In The Band.

Were the Commission to permit satellite systems to operate on a secondary basis, the flexibility of terrestrial licensees in the 38 GHz band to tailor service offerings to consumer demand would be severely impacted. WinStar fully believes that satellite operators will attempt to use their secondary status as a means to establish exclusion zones around earth stations. These exclusion zones would impair terrestrial licensees' ability to offer services in those areas. As demonstrated in this proceeding, sharing will substantially restrict terrestrial licensees in the build out and operation of their wireless networks.²⁵ For this reason, the Commission found that licensees should be provided with the best opportunity to operate free of interference, in order to encourage commercial development of the band.²⁶ Indeed, as discussed in Section IV below, band segmentation benefits both satellite and terrestrial services

²⁵ See, e.g., WinStar's Comments in this proceeding, at 3-5 (filed May 5, 1997) (citing Gene G. Ax, Dale N. Hatfield, Hatfield and Associates, Inc., Technical Considerations in Sharing in the 37-40 GHz Band Between Fixed Satellite Service Downlinks and the Fixed Service, (Attachment to the Opposition of WinStar Communications, Inc. in RM 8811 (filed June 20, 1996))).

²⁶ Order, at ¶ 18 ("We conclude that designating separate spectrum for FSS and wireless services will provide the various proposed systems with the best opportunity to operate free of interference and will encourage commercial development of this band.")

because all licensees will be able to deploy their systems more efficiently.²⁷

B. TRW Is Effectively Seeking Underlay Licensing In The Fixed Services Band Which The Commission Already Rejected For The FSS Band.

To the extent that TRW, by its proposal, is seeking underlay licensing in the fixed service band, the Commission should reject outright its request.²⁸ Underlay licensing in terrestrial bands was not a Commission proposal in the Notice. Indeed, the Commission specifically rejected its previous proposal to permit underlay licensing in FSS bands because:

underlay licensing would be confusing and could undermine the benefits to be derived from providing separate spectrum for satellite and wireless services, including freedom from technical constraints, avoidance of complicated interference problems and the flexibility for technical innovation.²⁹

This same reasoning applies to the wireless band. Even GE Americom agrees that underlay licensing undercuts the Commission's overall framework in the V-band: "[t]he elimination of underlays . . . benefits the entire band plan."³⁰ Therefore,

²⁷ See Hughes Petition, at 7 ("[B]and segmentation at V Band benefits terrestrial wireless providers as well as satellite service providers, as both types of services arguably will be able to deploy more efficiently.")

²⁸ In its Petition, TRW praises the Commission for not adopting an underlay plan in the FSS band, (even noting that the Commission had not proposed such a plan in the fixed services band), yet ironically it now appears to be suggesting an underlay plan in the fixed services band for satellite operations. TRW Petition, at 4.

²⁹ Order, at ¶ 24.

³⁰ GE Americom Petition, at 8.

the Commission must reject TRW's proposal to permit satellite operations in bands primarily designated for terrestrial services, such as the 38 GHz band.

IV. EXCLUSIVE LICENSING IN THE 38 GHz BAND WILL PROMOTE EFFICIENCY AND COMPETITION TO THE BENEFIT OF CONSUMERS.

As a matter of fundamental fairness, the Commission should not take action at this time to restrict the growth of terrestrial fixed services in the 38 GHz band. It is appropriate that the Commission maintain its primary designation of the 38 GHz band for the exclusive licensing by terrestrial providers.³¹

³¹ Notably, the Commission has permitted exclusive licenses even in circumstances where sharing was feasible, primarily because of the efficiencies to be gained. For example, the Commission noted that with certain private radio services, spectrum sharing made it difficult to encourage spectrum efficiency. See Replacement Of Part 90 By Part 88, Report and Order and Further Notice of Proposed Rule Making, 10 FCC Rcd 10076, at ¶ 2 (1995). It found that "channel exclusivity generally translates into better service for the licensee and is necessary to facilitate the introduction of spectrum efficient technologies. . . Exclusivity also creates incentives to use spectrum efficiently by making users realize the opportunity cost of inefficient spectrum use. . . . Exclusivity creates 'ownership' rights, which motivate licensees to make more efficient use of spectrum because the advantages gained from exclusivity accrue directly to the licensee." Id. at ¶ 125.

Similarly, in the paging services, the Commission found that "while sharing [wa]s technically feasible, dividing air time among multiple licensees impose[d] significant constraints on the efficiency and quality of service in crowded markets," and rendered licensees "reluctant to invest in advanced paging technology. . ." Channel Exclusivity To Qualified Private Paging Systems at 929-930 MHz, Memorandum Opinion and Order, 11 FCC Rcd 3091, at ¶ 3 (1996) (citing Report and Order in PR Docket No. 93-35, 8 FCC Rcd 83118, at ¶ 6 (1993)); Channel Exclusivity to Qualified Private Paging Systems, Notice of Proposed Rule Making, 8 FCC Rcd 2227, at ¶¶ 14-17 (1993).

Moreover, such action is entirely consistent with current theories of spectrum management.

Recent commentators on the proper role of the Commission in spectrum management have found that in "most circumstances, exclusive spectrum licenses best promote efficiency and competition by giving each spectrum user maximum protection from interference."³² Spectrum sharing, on the other hand,

typically requires additional regulatory restrictions on users' operational flexibility in order to keep them from interfering with each other, especially where more than a very few users are involved, or else sharing is likely to result in lower service quality. Furthermore, . . . users under a sharing arrangement generally have less incentive to use spectrum efficiently than exclusive licensees. The Commission should carefully consider in each case whether these costs outweigh the gains of opening spectrum to more licenses.³³

This viewpoint on the benefits of exclusive licensing is shared by Dale N. Hatfield and Gene G. Ax in a technical and economic analysis prepared for WinStar in the 37-40 GHz proceeding.

Hatfield and Ax noted, among other things, that when spectrum is

³² Gregory L. Rosston & Jeffrey S. Steinberg, Using Market - Based Spectrum Policy to Promote the Public Interest, 50 Fed. Comm. L.J. 87, 96 (Dec. 1997) ("Rosston & Steinberg"); see also Reed E. Hundt & Gregory L Rosston, Spectrum Flexibility Will Promote Competition and the Public Interest, IEEE Communications Magazine, 40, at 43 (Dec. 1995) ("spectrum rights should generally be exclusive. With the exception of spectrum allocated for low-powered, non-interfering uses and the grandfathering of some existing users, licensees should have exclusive use of the spectrum within a geographic area. In this way they have the incentive to make efficient use of the spectrum and be able to take advantage of the flexibility to provide various services.")

³³ Rosston and Steinberg at 97.

shared among several users "there is little incentive for an individual licensee to adopt a more spectrally efficient technology because he or she does not capture the economic benefits of doing so."³⁴

Given the particular suitability of this spectrum for terrestrial uses, exclusive licensing for terrestrial uses maximizes output by removing potentially detrimental interference. As economic experts have indicated, the aim of regulation of the radio industry should be to maximize output, and not merely to reduce interference *per se*.³⁵ On balance, exclusive use of this spectrum by companies such as WinStar maximizes resources to the ultimate benefit of consumer welfare.

³⁴ See Dale N. Hatfield, Gene G. Ax, Hatfield Associations, Inc., Technical and Economic Considerations in the Allocations of Radio Spectrum at 37-40 GHz: Lessons from the DEMS/DTS Technical Rules, at 2 & 12 (Attachment to the Comments of WinStar Communications, Inc. in ET Docket No. 95-183, RM-8553, and PP Docket No. 93-253 (filed Mar. 4, 1996)).

³⁵ R. H. Coase, The Federal Communications Commission, 2 J. L & Econ. 1, at 27 (Oct. 1959) ("It is sometimes implied that the aim of regulation in the radio industry should be to minimize interference. But this would be wrong. The aim should be to maximize output. All property rights interfere with the ability of people to use resources. What has to be insured is that the gain from interference more than offsets the harm it produces.")

This result is entirely consistent with the Coase Theorem. It posits that market forces will drive resources to their highest and best use regardless of their initial placement provided that government regulations do not hinder such movement by, for example, restricting transfer or use or imposing excessive costs. See *id.* (arguing in favor of market forces to allocate licenses); R.H. Coase, The Interdepartment Radio Advisory Committee, 5 J. Law & Econ. 17, 40 (1962) (same).

V. CONCLUSION.

For the foregoing reasons, WinStar respectfully urges the Commission to deny the Petition for Reconsideration of TRW and exclude the 38 GHz band from GE Americom's request for additional allocated spectrum for satellite services. Among other things, the Petitions simply seek to reargue issues which were clearly addressed in the underlying proceeding.

Respectfully submitted,

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April 6, 1999

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I, Crystal Rogers-Starkey, do hereby certify that on this 6th day of April 1999, copies of the foregoing Opposition to Petitions for Reconsideration were delivered by mail, postage pre-paid, to the following parties:

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