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

In re	)	
	)	
REDESIGNATION OF THE 17.7-19.7 GHZ FREQUENCY BAND, BLANKET LICENSING OF EARTH STATIONS IN THE 17.7-20.2 GHZ FREQUENCY BANDS, AND THE ALLOCATION OF ADDITIONAL SPECTRUM IN THE 17.3-17.8 GHZ AND 24.75-25.25 GHZ FREQUENCY BANDS FOR BROADCAST SATELLITE SERVICE USE	)	IB Docket No. 98-172 RM-9005 RM-9818

COMMENTS OF TELEDESIC LLC

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TABLE OF CONTENTS

SUMMARY OF ARGUMENT ii

I. Band Segmentation Benefits Both Satellite and Terrestrial Services. 3

II. The Commission Should Swiftly Adopt Rules for Blanket Licensing of Earth Stations 8

III. The Commission Should Replace Its Grandfathering Proposal with Relocation Rules that Are as Fair and Efficient as Possible. 11

A. The Commission Should Replace the Grandfathering Proposal with the Case-by-Case Approach of the *Emerging Technologies* Rules, as Amended. 12

B. The Compensation Obligation Should be Based on a Clear and Objective Standard. 15

C. The Commission Should Apply Basic Principles of Cost Mitigation. 20

IV. Conclusion 21

SUMMARY OF ARGUMENT

Teledesic strongly supports the Commission's proposal to segment the 17.7-19.7 GHz band. Band segmentation will permit both satellite and terrestrial services to flourish in their own respective portions of the band. Teledesic recommends, however, that the Commission abandon its proposal to license FS stations on a secondary basis in FSS spectrum, and phase out low-power point-to-multipoint FS operations in the 18.82-18.87 and 19.16-19.21 GHz bands. Teledesic proposes an alternative band plan incorporating these considerations.

Teledesic also agrees with the Commission that blanket licensing is critical if the satellite services in the 17.7-20.2 GHz band are to bring broadband capacity to every corner of the United States, no matter how remote. Teledesic therefore urges the Commission to adopt processing rules for blanket licensing of NGSO FSS earth station as soon as possible. The Commission should not delay and complicate this proceeding — which is fundamentally about earth stations — by importing technical arguments about sharing between NGSO FSS space stations.

Teledesic is concerned, however, that the proposed treatment of existing stations that do not conform to the band plan will not permit the public to realize the benefits of band segmentation and blanket licensing soon enough, because of the cost and delay invited by the "grandfathering" proposal. The Commission can make the transition to the new band plan faster, fairer, and more efficient for all concerned by replacing its "grandfathering" proposal with relocation rules based on the *Emerging Technologies* and *Cost Sharing* proceedings. Among other things, the Commission should:

- Replace permanent grandfathering with a phased approach, consisting of a temporary "right to stay" that gives way over time to a new entrant's "right to move," first with compensation and then without compensation;
- Base relocation payments on a clear and objective standard rather than subjective assessments of whether replacement facilities are "comparable"; and
- Apply fundamental principles of cost mitigation to reduce the relocation burden.

These rules are both fair and efficient, and by adopting them the Commission can hasten the day when the public will receive the full benefit of the segmentation and blanket licensing proposals.

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COMMENTS OF TELEDESIC LLC

Teledesic LLC hereby comments on the Notice of Proposed Rulemaking setting forth various Commission's proposals for 17.7-19.7 GHz band.[1]

Teledesic strongly supports the Commission's proposal to segment the 17.7-19.7 GHz band. Band segmentation will permit both satellite and terrestrial services to flourish in their own respective portions of the band. Teledesic also agrees with the Commission that blanket licensing is critical if the satellite services in the 17.7-20.2 GHz band ("the 18 GHz band") are to bring broadband capacity to every corner of the United States, no matter how remote. Although certain details of the segmentation and blanket licensing proposals can be improved in the final Report and Order, the overall direction of Commission policy in these areas is unimpeachable.

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[1] Notice of Proposed Rulemaking, FCC 98-235 (released September 18, 1998) (hereinafter, "NPRM").

Teledesic is concerned, however, that the proposed treatment of existing stations that do not conform to the band plan will not permit the public to realize the benefits of band segmentation and blanket licensing soon enough, because of the cost and delay invited by the "grandfathering" proposal. The Commission can make the transition to the new band plan faster, fairer, and more efficient for all concerned by replacing its "grandfathering" proposal with relocation rules based on the *Emerging Technologies*[2] and *Cost Sharing*[3] proceedings. Among other things, the Commission should:

- Replace permanent grandfathering with a phased approach, consisting of a temporary "right to stay" that gives way over time to a new entrant's "right to move," first with compensation and then without compensation;
- Base relocation payments on a clear and objective standard rather than subjective assessments of whether replacement facilities are "comparable"; and
- Apply fundamental principles of cost mitigation to reduce the relocation burden.

These rules are both fair and efficient, and by adopting them the Commission can hasten the day when the public will receive the full benefit of the segmentation and blanket licensing proposals.

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2 *Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies,* ET Docket No. 92-9.

3 *Amendment to the Commission's Rules Regarding a Plan for Sharing the Costs of Microwave Relocation,* WT Docket No. 95-157.

I. Band Segmentation Benefits Both Satellite and Terrestrial Services.

At the heart of the NPRM lies the Commission's recognition that densely deployed satellite earth stations cannot operate co-frequency with any considerable number of terrestrial stations. The Commission bases this conclusion on a sound assessment of the interference environment, espoused by terrestrial as well as satellite operators.[4] As the Commission notes repeatedly, band segmentation under these circumstances benefits both services[5] — and by extension, their users and the public at large.

The most obvious benefit of band segmentation is that it eliminates the need for interservice coordination. This results in faster and less expensive deployment for users of both services. But the Commission also cites another potential benefit that is often overlooked. As the Commission notes, designating separate segments for terrestrial and satellite services permits each service to deploy its stations more densely than would be possible for the two services combined in a shared band.[6]

In somewhat more technical terms, band segmentation avoids geographic area usage losses that would result from frequency coordination. Satellite earth stations, for example, do not interfere with each other, and can therefore be deployed essentially without limit if there is no other type of service in the same frequencies. But if even one FS transmitter is deployed in

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4 *See* NPRM ¶ 17 (noting that terrestrial interests including the Fixed Point-to-Point Section of TIA believed frequency sharing with FSS to be infeasible even if FSS terminals were not blanket-licensed). Because Teledesic knows of no party who seriously contends that terrestrial services may operate co-frequency with ubiquitously deployed FSS earth stations, we have not included a technical discussion of the interference environment in these comments. Teledesic will do so in reply comments if necessary.

5 *E.g.*, NPRM ¶¶ 20-21 (discussing separately the benefits to each service).

6 NPRM ¶ 20.

the same frequencies, it creates a long, narrow "exclusion zone" that may cover more than fifty square kilometers. The presence of that one FS transmitter therefore deprives the public of perhaps hundreds of FSS stations that could otherwise have been deployed within the exclusion zone.

The same is true for the FS. In the absence of any satellite use, it is possible to deploy FS stations extremely densely by choosing different channels, employing higher-performance antennas, or making small changes to link geometry. But because the required separation distance between an FS station and a satellite earth station is greater than between two FS stations, one FSS earth station in the band can preclude deployment of numerous potential FS stations that would otherwise be possible in a given area.[7]

Thus, while "band sharing" *sounds* spectrum-efficient, it actually constrains the growth of both services and limits the benefit the public can receive from the use of these frequencies. In short, segmentation allows operators in *both* services to take advantage of the higher deployment densities for which the 18 GHz Band is so well suited. For all of these reasons, the Commission's primary proposal[8] represents a much better band plan than any of the modified proposals on which the Commission also sought comment.

There are, however, several respects in which the Commission can improve upon its primary proposal. First, the Commission should abandon its proposal to license FS stations on a secondary basis in FSS spectrum. Secondary FS operation may be superficially attractive, but

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[7] *See also* NPRM ¶ 16 (noting that if FSS stations are blanket-licensed, the preclusive effect on FS use of shared bands is even more severe).

[8] NPRM ¶¶ 29-33.

in practice it would undercut the Commission's segmentation proposal by reintroducing the cost and delay associated with frequency coordination. Under the Commission's primary band plan, no coordination is required with existing FS users, even if they are grandfathered in an FSS band on a co-primary basis, because the interference is exclusively from FS into FSS.[9] However, in order to deploy new FS stations on a secondary basis, it would be necessary to establish and maintain a system for clearing potential frequency conflicts.[10] Although this new regulatory regime would not, strictly speaking, constitute "coordination,"[11] it would be just as burdensome. The costs it would impose, in both time and money, would far exceed whatever scant benefit there might be to permitting an inherently preemptable secondary assignment.[12] Worse yet, the NPRM suggests at one point that secondary FS stations would only be shut

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9 The Commission actually proposes that new FSS earth stations be coordinated with existing FS stations, NPRM ¶ 40, but such coordination is unnecessary. FSS earth stations will not cause inteference on the ground, no matter where they are placed. Accordingly, operators of grandfathered FS stations do not need to know where the earth stations are deployed, and FSS operators can determine for themselves whether it is possible to operate at a particular location without harmful interference from grandfathered FS stations whose locations are known.

10 Note that this is not true for secondary FSS use of FS spectrum, because FSS is always the victim of interference with FS and never the cause. The situation also contrasts instructively with the mutual "secondary" designations for NGSO and GSO FSS vis-a-vis each other. *See* NPRM ¶ 34. The compatibility of a GSO FSS system and an NGSO FSS system can be demonstrated once and for all to the satisfaction of both operators and the Commission at the network level. Nothing depends on the particular locations at which user terminals are installed, so there is no need for an ongoing coordination regime to facilitate secondary use.

11 As a definitional matter, coordination only occurs between users of equal status, not between a primary and a secondary user.

12 As the NPRM tentatively but aptly concluded with regard to blanket licensing, "[C]oordination between terrestrial fixed service facilities and a large number of satellite earth stations will significantly add to the cost and time to implement satellite services . . . and also delay terrestrial deployment." NPRM ¶ 43.

down after the user of an installed FSS terminal reported harmful interference that the FS operator could not cure,[13] implying "better than secondary" rights. Disagreement about the harmfulness of the interference is certain, and pleas for more time to "cure" the interference are almost as likely. The Commission must realize that if service to an FSS customer is disrupted for hours or days, let alone months, for resolution of such controversies, it scarcely matters that the FS operator is ultimately required to cease and desist. The marketplace reality is that the customer will find another solution to its communications needs. It is unreasonable to put operators or FSS users through such an ordeal when the Commission already knows the services are incompatible.

Second, the Commission should not leave low-power point-to-multipoint services in the 18.82-18.87 and 19.16-19.21 GHz bands on a permanent co-primary basis.[14] Although these low-power stations certainly have less interference potential than other terrestrial stations, a single low-power transmitter may periodically and unpredictably (since the nodal station locations are unknown) cause harmful interference into an NGSO FSS terminal located almost 2 km away. Aggregate interference from multiple such transmitters located in the vicinity of an NGSO FSS terminal can only compound the problem. Teledesic understands that the installed base of such stations is small and that the chief proponent of the technology is no longer promoting it. Accordingly, the best solution would seem to be to phase out the service and take it off the books rather than relocate it. The Commission could do this by refusing to accept any new applications for these low-power stations and halting the deployment of

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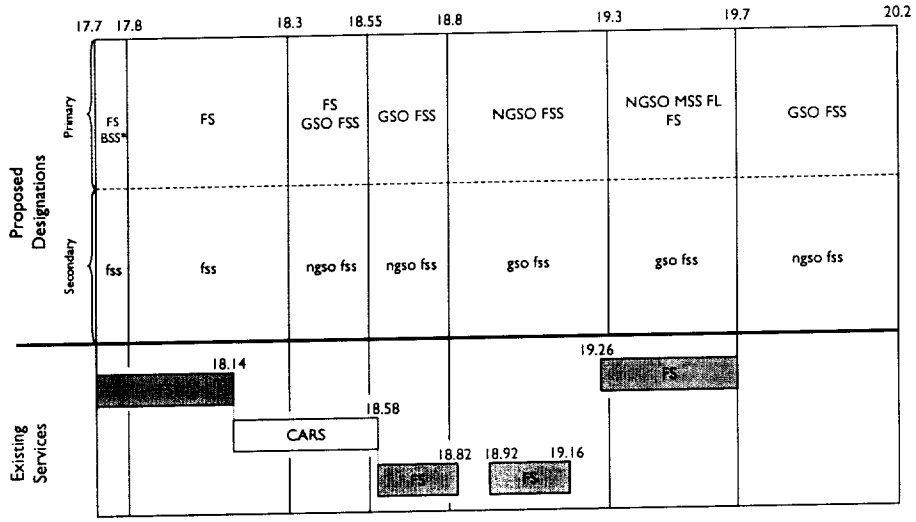
[13] NPRM ¶ 40.

[14] NPRM ¶ 42.

additional nodal stations by existing licensees. Existing stations would continue operating at the assigned frequencies for the full term of their licenses, or until January 1, 2003, whichever is earlier, but no new licenses and no renewals would be granted.

Finally, both GSO FSS operators and FS operators would appear to benefit if the 250 MHz of GSO FSS "gateway" spectrum ran from 18.3-18.55 GHz, rather than from 18.55-18.8 GHz. Switching these two 250 MHz segments would create a larger contiguous block of spectrum for FS, and might eliminate the need to relocate private cable operations in the 18.14-18.58 GHz band. This switch would require the relocation of the narrowband FS channels at 18.58-18.82 GHz, but the FS cannot effectively use that spectrum in any event because it is paired with the FS spectrum the Commission proposes to redesignate at 18.92-19.16 GHz. Assuming that the power flux-density limits applicable to FSS operations in the 18.6-18.8 GHz band can be relaxed by at least 6 dB, GSO FSS could then operate ubiquitously deployed user terminals in the 18.55-18.8 GHz band.

Incorporating these changes into the Commission's primary proposal yields the following band plan:



* BSS becomes co-primary in 2007. Teledesic is aware that some parties have opposed continued co-primary use by FS after 2007. Teledesic takes no position on that issue at this time.

Adopting the designations shown above would minimize the changes that would be made for any existing service in the 18 GHz Band. The narrowband point-to-point FS operations could be accommodated in the wideband FS, which would be operating at 17.7-18.14 GHz and 19.3-19.7 GHz.[15] CARS operations could continue at 18.14-18.55 GHz, unless relocated to another CARS band, such as the 12.7-13.25 GHz band.

The sooner the Commission adopts this band plan, the sooner operators will have the certainty they need to bring a whole new generation of fixed wireless services to the public.

II. The Commission Should Swiftly Adopt Rules for Blanket Licensing of Earth Stations.

In the NPRM, the Commission concludes "that it is in the public interest to develop blanket licensing procedures for NGSO/FSS systems in order to eliminate delay and undue administrative burden,"[16] and that the Commission should adopt such procedures "at the earliest possible date to permit licensees to move forward with their plans."[17] Teledesic strongly supports the Commission's conclusions on these points. Blanket licensing drastically reduces expense and delay, as the Commission notes. In addition, blanket licensing is necessary in order to permit users to benefit from the transportability of at least some FSS earth stations. This will also ease relocation of FSS user terminals when customers change addresses, thereby ensuring continuity of service.

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[15] Although the loss of 40 MHz from 19.26-19.3 GHz would leave an unmatched channel at the bottom of the 17.7-18.14 GHz band, some FS applications may be able to make use of this odd channel pair to fulfill asymmetric customer requirements.

[16] NPRM ¶ 67.

[17] *Id.*

One need look no further than the Direct Broadcast Satellite service to see what a difference these policies can make in terms of public acceptance. Blanket licensing has made it possible to sell satellite dishes at low cost through conventional retail electronics distribution channels. As a result, DBS receive antennas remain the most rapidly accepted consumer electronics device of all time. Similarly, the widespread use of Ku-band VSAT terminals as well as direct-to-home satellite data services would be impossible if those frequencies were shared with terrestrial services in North America. Band segmentation for 18 GHz FSS will minimize siting difficulties and make it possible for such user terminals to be "plug and play," installed by the end user (and not necessarily at only one location over the life of the equipment). This type of mass-market availability is essential if NGSO FSS is to fulfill its mission of bridging the gap between bandwidth "haves" in the most developed urban areas and bandwidth "have-nots" everywhere else.

The Commission seeks comment on what downlink power flux-density and uplink off-axis e.i.r.p. should be required for blanket-licensed NGSO FSS terminals,[18] in order "to facilitate sharing among multiple NGSO systems in the band."[19] Teledesic urges the Commission not to complicate this proceeding — which is fundamentally about earth stations — by importing all of the technical uncertainty that has appeared in various space station licensing proceedings regarding NGSO/NGSO sharing.

It is perhaps natural to hope that NGSO FSS earth station licensing standards will help solve NGSO FSS space station sharing problems, based on experience with GSO licensing.

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[18] NPRM ¶ 69.

[19] NPRM ¶ 68.

Blanket licensing standards for Ku-band VSATs do precisely that, serving as a sort of enforcement mechanism for the Commission's two-degree spacing policy for geostationary satellites. However, the question of NGSO/NGSO sharing is fundamentally different, for one simple reason: There is only one geostationary orbit, but there are an infinite number of potential non-geostationary orbits, comprising an infinite variety of altitudes, eccentricities, and inclinations. As a consequence, the power levels of NGSO FSS emissions will vary substantially from system to system.

This basic fact about the NGSO environment makes it doubtful whether the Commission can adopt standard earth station power levels that will guarantee the compatibility of two NGSO networks with different architectures. GSO FSS earth station rules promote sharing by ensuring that relative uniformity among space stations is mirrored with relative uniformity among earth stations. But in the NGSO world, unless the Commission requires uniformity among space stations and system architectures, there is no set of earth station standards that will invariably guarantee that two systems can share.

Fortunately, this need not prevent the Commission from adopting blanket licensing rules. Blanket licensing is possible wherever there is no need to regulate placement of earth stations, and as noted above, FSS earth stations do not interfere with one another and can be located anywhere if there are no other services using the same frequencies. At this time, therefore, the Commission should simply adopt a rule permitting blanket licensing of earth stations for use with NGSO FSS systems, processed on a system-by-system basis. If the Commission finds that a particular proposal inappropriately limits the possibilities for further NGSO FSS entry, the Commission has the option to deny the earth station application under

the public interest standard.[20] Given the relatively small number of blanket earth station applications that are likely to be submitted, system-by-system evaluation of the applications is likely to be a much better use of the Commission's resources than a quixotic search for a one-size-fits-all rule.

III. The Commission Should Replace Its Grandfathering Proposal with Relocation Rules that Are as Fair and Efficient as Possible.

In the NPRM, the Commission proposes to grandfather all existing terrestrial stations in the 18.3-18.55 GHz and 18.8-19.3 GHz bands on a permanent co-primary basis.[21] However, the Commission also requests comment on the conditions under which wholesale or case-by-case relocation might be necessary, as well as a procedure for carrying out such relocations.[22]

The Commission's grandfathering proposal appears inconsistent with the premise of the NPRM, which is that "the public interest is best served by *separating terrestrial fixed service operations from the operations of non-government ubiquitously deployed FSS earth stations.*"[23] Grandfathering "separates" the services only with respect to licenses granted after September 18, 1998, which as a practical matter requires continued co-frequency operation for the foreseeable future. Obviously, it is no easier to share with a station licensed prior to September 18, 1998 than with a station licensed after that date. Thus, grandfathering will constrain placement and density of FSS earth stations. And although grandfathering does not

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20 Note that this is tantamount to treating all applications for blanket-licensed NGSO FSS earth stations in the same way the Commission proposes to treat "non-compliant" GSO FSS earth stations.

21 NPRM ¶¶ 31, 40.

22 NPRM ¶ 41.

23 NPRM ¶ 1 (emphasis added).

necessarily require interservice coordination (as Teledesic has noted above),[24] the Commission proposes that such coordination continue for the express purpose of accommodating these grandfathered FS stations.[25]

Because of these inconsistencies, the grandfathering proposal is best viewed not as a permanent band plan, but as a transition plan toward the more efficient segmentation plan the Commission proposes elsewhere in the NPRM. However, the grandfathering proposal moves us toward that future far too slowly, and at far too much cost. In fact, the Commission has already developed a much better set of transition rules in the *Emerging Technologies*[26] and *Cost Sharing*[27] proceedings, and it is these rules that provide the best starting point for a transition to band segmentation.

A. The Commission Should Replace the Grandfathering Proposal with the Case-by-Case Approach of the *Emerging Technologies* Rules, as Amended.

In any reallocation, there are generally two types of rights to be assigned to the interested parties: the right of an incumbent to stay in the band, and the right of a new entrant to move the incumbent (either with or without compensation).[28] Compromise approaches are

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24 See note 9, *supra*.

25 NPRM ¶ 40.

26 *Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies*, ET Docket No. 92-9.

27 *Amendment to the Commission's Rules Regarding a Plan for Sharing the Costs of Microwave Relocation*, WT Docket No. 95-157.

28 Cramton, Kwerel, and Williams, *Efficient Relocation of Spectrum Incumbents*, __ JOURNAL OF LAW & ECON. ___, [3] (forthcoming in the October 1998 issue) (hereinafter "*Efficient Relocation*," with bracketed page number referring to the internal pagination of the article).

possible based on an adjustment of these rights over time. The grandfathering proposal is an unlimited "right to stay," with no potential entrant holding any "right to move."

It has been convincingly demonstrated that the unlimited right to stay (like the grandfathering proposal) is the worst possible state of affairs as far as efficiency is concerned. In the absence of negotiation with potential new entrants, incumbents with a permanent right to stay will in most cases do so even though another outcome is more efficient.[29] Where private negotiation is possible, transaction costs are likely to be highest when the incumbent has a right to stay.[30] Thus, the likely result of permanent grandfathering would be that a significant portion of the public would not receive innovative FSS services — even though the Commission finds it in the public interest for them to have the new services, and even though the efficient outcome is for the incumbent to relocate to another band so that the public can have both. Grandfathering therefore frustrates, rather than fosters, the public interest.

Fortunately, the Commission has much better public policy tools close at hand. The basic framework developed in the *Emerging Technologies* proceeding consists of a temporary right to stay, followed by a right to move with compensation, which matures into a right to move without compensation (otherwise known as a "sunset").[31] Although transaction costs

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29 *Efficient Relocation* at [6].

30 *Efficient Relocation* at [3]. The inefficiency stems from the obvious "holdout" problem, as well as the fact that neither the incumbent nor the entrant typically knows what the spectrum is really worth to the other party. *Id.*

31 The rules evolved over the course of two proceedings and at least five years. For a relatively recent summary of the basic framework see *Amendment to the Commission's Rules Regarding a Plan for Sharing the Costs of Microwave Relocation,* Second Report and Order, 12 F.C.C. Rcd. 2705 (1997).

under such a phased approach are likely to be higher than with an immediate right to move, the approach is justifiable where the new entrant does not need the spectrum immediately. Assuming that the rules permit clear and objective determinations of the appropriate relocation payment, this basic framework is much more efficient than permanent grandfathering.[32]

Stripped of economic jargon, this is just common sense. If the public interest is served by using the 18 GHz band to make *both* satellite and terrestrial services available to the public, then common sense demands that we do so as efficiently as possible. And if segmentation increases efficiency by permitting denser deployments and eliminating the burden of interservice coordination, then common sense demands that we implement segmentation as quickly and as inexpensively as possible. Teledesic therefore urges the Commission to replace permanent grandfathering with a phased approach based on the *Emerging Technologies* proceeding. Incumbent FS licensees should have an absolute right to stay in the band until January 1, 2001. Prior to that time, they could be moved only on a voluntary, case-by-case basis after private negotiations. Beginning in 2001, however, FS incumbents should be subject to mandatory relocation at the option of any FSS provider. The FSS provider would be required to compensate the FS operator for any relocation that occurs before January 1, 2004. On January 1, 2004, the compensation obligation should sunset, and all FS stations in the band should become secondary. This basic framework is much more efficient than permanent grandfathering because it will make *both* satellite and terrestrial services available to more of

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32 *See Efficient Relocation* at [13] (Making the right to stay temporary, followed by a right to move, "effectively limit[s] bargaining costs" and "has a dramatic effect on the bargaining outcome").

the public sooner, with lower transaction costs. This will serve the Commission's ultimate goal, which is to serve the *public* interest.

B. The Compensation Obligation Should be Based on a Clear and Objective Standard.

One of the important assumptions underlying the foregoing analysis is that the cost of relocating the incumbent must be publicly known.[33] When it is, each new entrant can make a case-by-case determination of whether the value of providing service in a given area exceeds the cost of relocating the incumbent FS operator to alternative spectrum. It also narrows the scope of negotiations by limiting the potential for an incumbent to become a "holdout" and demand an inflated relocation payment.

This is an area in which there is room for great improvement in the Commission's *Emerging Technologies* relocation approach. In the *Emerging Technologies* proceeding, the Commission started with the assumption that when relocation was necessary, the new entrant should be required to provide what was essentially turnkey relocation to a new facility. This obligation included (1) payment of all costs of relocation to a "comparable" facility; (2) completion of all activities necessary to place the new facility in operation, including engineering and frequency coordination; and (3) construction and testing of the new facility. The relocated incumbent was then given an entire year to evaluate whether the new facility was indeed "comparable," which the Commission defined to mean "equal to or superior to existing facilities." If the relocated operator could demonstrate that the new facility was not

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[33] *Efficient Relocation* at [7].

"comparable," the new entrant was required to alter the facility to the relocated operators' satisfaction or else move the operator back into the cleared spectrum.

There are a number of difficulties with this approach, stemming from the "in-kind" nature of the new entrant's obligation. The Commission is now familiar with these difficulties, because further Commission action was necessary to mitigate them. The Commission was required to clarify what makes new facilities "comparable," that new entrants need not provide upgraded facilities or cover transaction costs, and in general that the incumbents were not entitled to windfall recoveries.[34] Even with these changes, the Commission was forced to step in a year later and shorten the negotiating periods to speed up the relocation of reluctant incumbents.[35]

In the 18 GHz relocation, the Commission can prevent many of these difficulties from arising by articulating from the start a clear standard for relocation payments to incumbents. In this band, the Commission should *start* with the admonition it was forced to issue toward the *end* of the process at 2 GHz: that the goal of any relocation regime is "an *efficient* and *equitable* relocation process, which *minimizes transaction costs* and maximizes benefits for all parties."[36] To achieve these goals, the Commission should require relocation payments to incumbents based on the unamortized cost of the replaced equipment, plus 2% of these "hard costs" to help cover engineering and installation costs.

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34 *Amendment to the Commission's Rules Regarding a Plan for Sharing the Costs of Microwave Relocation,* First Report and Order, 11 F.C.C. Rcd. 8825 (1996).

35 *Amendment to the Commission's Rules Regarding a Plan for Sharing the Costs of Microwave Relocation,* Second Report and Order, 12 F.C.C. Rcd. 2705 (1997).

36 *Cost Sharing First Report and Order,* 11 F.C.C. Rcd. 8825 ¶ 9 (emphasis added).

Basing relocation payments on the unamortized cost of the old equipment is efficient because it compensates the incumbent for what has been lost without imposing constraints on the choice of a replacement.[37] This principle is familiar to anyone who has ever had to replace a car. Although the owner may need extra cash to purchase it, the new car can be expected to last longer, and may be substantially improved (new model) or better adapted to the driver's changed circumstances (minivan rather than coupe). In an analogous fashion, the Commission should adopt rules that compensate incumbents for microwave equipment without forcing them to replace it with any particular type of new equipment. Every FS operator carries the cost of its equipment on its books and takes tax deductions over time to recover for the depreciation of the equipment. If the equipment can no longer be used because of changes in the way the spectrum is used, allowing the operator to recover any more than the unamortized cost is inefficient because it results in making new entrants pay for costs that have already been deducted from the operator's tax returns.

Basing payments on unamortized cost is also fair to all parties. Relocated incumbents may be unhappy about the need to change over to new equipment in new frequencies, just as the owner in the car example may be unhappy. But just as in the car example, it is unfair to make the new entrant pay for "upgrades" of the incumbent's network,[38] and in this industry new equipment is virtually always an upgrade in one or more respects. Even in the absence of relocation, FS operators must periodically replace and/or upgrade their equipment, so it is not

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37 Because the FS operator would receive the full unamortized value of the equipment, the equipment itself should become the property of the FSS entrant. This will prevent the equipment from being sold to FS operators in other countries, where global FSS operators might be required to relocate the same equipment all over again.

38 *Cost Sharing First Report and Order,* 11 F.C.C. Rcd. 8825, ¶¶ 15, 32.

fair to shift this cost of doing business onto the satellite industry.[39] Furthermore, as the NPRM in this proceeding points out, the Commission's segmentation proposal benefits *both* satellite and terrestrial services. *Everyone will benefit* from reduced coordination costs and higher deployment densities, so it would be unfair to place all of the costs on the satellite industry.

Finally, basing relocation payments on unamortized cost lowers transaction costs for all parties. There may be no objective answer to whether new facilities are "comparable," and even if there is an objective answer the parties may have difficulty agreeing to it. But the books of every FS operator show how much each piece of equipment cost, when it was purchased, and how much it has been depreciated. There is no room for posturing, or holding out. By basing relocation payments on these objectively verifiable data, the Commission can ensure that the 18 GHz relocation is free of the delay, cost, and acrimony that characterized the PCS relocation at 2 GHz. Adopting this clear standard might even permit the Commission to accomplish this relocation with a single report and order, rather than the half-dozen separate Commission decisions that were necessary to relocate microwave operations from the PCS bands.

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[39] In addressing this issue, the Commission should be sensitive to the effects its decision will have outside the United States. It has been noted that political considerations may induce regulatory authorities to adopt relocation rules that are more generous to incumbents than what economic efficiency would dictate, in order to attract the support (or diminish the opposition) of politically powerful incumbent operators. *See Efficient Relocation* at [4], [16]-[19]. But the Commission must attend to the likelihood that regulators outside the U.S. will require at least as much from the U.S.-dominated satellite industry as the FCC requires. Because the FCC's rules may be replicated around the world, giving FS incumbents a windfall here in the U.S. could ultimately result in a huge and unjustified transfer payment from U.S. satellite companies to non-U.S. terrestrial operators. This would be an exceedingly expensive way to placate one domestic interest group.

The standard Teledesic proposes is especially appropriate for this particular band. This is not a situation in which a new service comes along and ejects a service that previously enjoyed exclusive access to the band. In the 18 GHz Band, both satellite and terrestrial services have been co-primary for years, and both will remain in the band. But instead of giving each service *shared* access to the *whole* band, the Commission's band plan gives each service *exclusive* access to a *portion* of the band. The Commission has concluded that this redesignation benefits both services, and the compensation rules should reflect this fact. In addition, it is noteworthy that FSS interests sought segmentation of this band as early as 1984, before either satellite or terrestrial services were deployed here. Fixed Service interests resisted, and the Commission adopted the co-primary allocations that the Commission now finds it in the public interest to alter. The relocation costs that are necessary now are therefore costs the satellite industry tried to prevent.[40]

In summary, the Commission has the opportunity in this proceeding to correct perhaps the single most significant shortcoming of the relocation rules developed in the *Emerging Technologies* and *Cost Sharing* dockets. The Commission should benefit from its all-too-extensive experience with "comparability" issues in those proceedings, and adopt instead a standard based on unamortized cost.[41]

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40 *Establishment of Spectrum Utilization Policy and Amendment to Commission Rules Regarding Digital Termination Systems,* 49 Fed. Reg. 37760, ¶¶ 37-41 (Sept. 26, 1984).

41 Teledesic also favors cost-sharing rules among FSS licensees, of the type developed by the Commission in the *Cost Sharing* proceeding.

C. The Commission Should Apply Basic Principles of Cost Mitigation.

In addition to apportioning relocation costs in a fair and efficient manner, the Commission should also look for opportunities to mitigate those costs, and adopt rules that encourage the parties to do the same. Because of the long lead time required for satellite projects, the Commission has an opportunity in the 18 GHz Band to take advantage of the many individual investment decisions that will be made by FS operators over the next five years. Although there are undoubtedly many such opportunities, Teledesic suggests two. First, the Commission should not require any relocation payment for equipment replaced after the date of the NPRM. Second, the Commission should reduce the relocation payment that would otherwise be required by 33% for each license renewal after the date of the NPRM.

Relocation payments for equipment replaced after the date of the NPRM would create perverse incentives for incumbents by sending the message that relocation costs are somebody else's problem. Instead, the Commission should make sure that all parties realize that band segmentation is in the *public* interest, as well as the interest of all the operators involved. Accordingly, when equipment must be replaced, the operator should have every incentive to place the new equipment in service in a way that comports with the Commission's segmentation plan. And again, this limitation on relocation payments is fair because equipment replacement is a normal cost of doing business. The point of the relocation rules should be to compensate for extraordinary costs, not shift the ever-present expense of keeping one's capital equipment in working order.[42]

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[42] The logic of this argument obviously extends to applications that were filed but ungranted as of September 18, 1998. Although the Commission proposed to "grandfather" these stations, it would seem to be more efficient to refund their

Similarly, relocation payments should be reduced for each successive license term. All licensees enjoy protection from interference during the terms of their licenses, and many enjoy expectations of renewal. Nonetheless, no licensee holds spectrum rights in perpetuity,[43] and all licensees know that they are subject to the Commission's regulatory authority over spectrum use. Each successive renewal is an opportunity for the Commission and the licensee to reevaluate whether the public interest still supports operations that do not conform to the band plan. Incumbent applicants for renewal should therefore be encouraged to consider moving non-conforming links at renewal time. Furthermore, it is reasonable to expect all licensees to recoup their capital investment over the course of a single ten-year license term or, for the shorter licenses, perhaps two or even three terms. After the fourth term — that is, after three renewals of the license — it is reasonable to deem the licensee's initial investment to have been fully recovered, even if the original equipment is still in use. It is therefore both fair and efficient to reduce whatever relocation payment would otherwise be required by 33% for each successive license renewal.

IV. Conclusion

With a few modifications, the Commission's proposed segmentation plan is good for terrestrial services, good for satellite services, and good for users across the country. The

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Continued ...

application fees and allow them to reapply for licenses that conform to the segmentation plan. The applicants have not yet incurred large capital costs to operate in the requested frequencies, and society would appear to be better off if these links were deployed in conformity with the segmentation plan, instead of in a non-conforming way that someone will later be required to pay for. Indeed, one may well ask whether it is in the public interest to grant such applications in their current form.

[43] License terms for the terrestrial systems in the 18 GHz Band range from one to ten years.

blanket licensing proposal will make it possible for satellite operators to make advanced digital broadband services available throughout the United States and the rest of the world, and is clearly in the public interest. In order to bring these proposals to fruition, the Commission must adopt sensible relocation rules that encourage all parties to implement the new band plan in as fast, fair, and efficient a manner as possible.

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I, Lee Mullins, with the law firm of Harris, Wiltshire & Grannis LLP, do hereby certify that the foregoing Comments of Teledesic LLC" were served on the parties listed below by first-class U.S. mail, postage prepaid, on this 19th day of November, 1998.

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