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

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In the Matter of

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

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ET Docket No. 92-9
RM-7981
RM-8004

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

REPLY COMMENTS

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TABLE OF CONTENTS

I. SUMMARY 1

II. THE BURDEN OF REALLOCATION MUST BE SHARED 8

 A. Opponents of the Proposed Reallocation Ignore Its Fairness 8

 B. Opponents of the Proposed Reallocation Fail to Demonstrate Any Hardship 9

 C. The Needs Of Displaced 2 Ghz Users Must Outweigh the Needs of Incumbent Licensees on the Bands Above 3 GHz 10

III. ADOPTION OF SPECIFIC CHANNELIZATION AND TECHNICAL OPERATING RULES FOR DISPLACED 2 GHZ USERS IS NECESSARY . 15

IV. THE COMMISSION CONCLUDES THAT ANS' PROPOSALS ARE IN THE PUBLIC INTEREST AND ADOPTS THE FNPRM 17

 A. The Commission Proposes Adoption of ANS' Petition 17

 B. The Commission Proposes to Modify Certain of ANS' Technical Proposals 19

 C. The Public Interest Requires Adoption of the Rules Proposed in the FNPRM and the Improvements Made in the Modified Plan 20

V. THE REALLOCATION AND CHANNELIZATION PROPOSED IN THE FNPRM AND IN THE MODIFIED PLAN ARE FAIR AND MUST BE ADOPTED . 21

 A. The Proposed Reallocation and Channelization Is Spectrally Efficient and Meets The Needs of All Users 21

 B. Affected 2 GHz Users Support Adoption of the Reallocation and Channelization Plan Proposed in the FNPRM 23

C.	ANS' Modified Plan Addresses Concerns Raised in Comments on the <u>FNPRM</u>	23
1.	4 GHz band	24
2.	Common carrier 6 GHz band	29
3.	Ensuring adequate bandwidth for low and medium capacity displaced 2 GHz fixed microwave users	31
4.	6 GHz private op-fixed band	33
5.	10 GHz band	35
6.	11 GHz band	37
7.	Concatenated channels	39
8.	Spectrum efficiency requirements	40
VI.	REALLOCATION OF THE 3.6-3.7 GHz BAND MUST BE PURSUED ACTIVELY BY THE COMMISSION	41
VII.	THE COMMISSION MUST ADOPT TECHNICAL RULES THAT PERMIT A SEAMLESS TRANSITION FOR DISPLACED 2 GHz FIXED USERS	46
A.	The Record Generally Supports Adoption of the Technical Rules Proposed in the <u>FNPRM</u>	46
B.	The Commission Needs to Resolve Certain Differences Regarding Various Technical Issues	47
1.	Frequency coordination	47
2.	Interference protection	48
3.	Growth channels	49
4.	Antenna standards	49
5.	Digital loading	50
6.	ATPC	51
7.	Grandfathering existing systems	52
	CONCLUSION	52

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Technologies) RM-8004

REPLY COMMENTS

Pursuant to Section 1.415 of the Commission's Rules, Alcatel Network Systems, Inc. ("ANS"), by its attorneys, hereby replies to the comments submitted on the above-captioned Further Notice of Proposed Rule Making, 7 FCC Rcd 6100 (1992) ("FNPRM").¹

I. SUMMARY

In the FNPRM, the Commission proposes a detailed and equitable blueprint for where and how 2 GHz fixed microwave users will operate once they are displaced to accommodate personal communications services ("PCS") and other emerging technologies. Based upon ANS' proposals,² this blueprint includes a reallocation and re-channelization plan and specific technical operating rules for displaced 2 GHz users to operate in the 4, 6, 10 and 11 GHz bands.

¹The deadline for filing Reply Comments in this proceeding was extended to January 27, 1993. Order Extending Time For Reply Comments, ET Docket No. 92-9, RM-7981 and RM-8004 (DA 93-5, released January 7, 1993).

²See ANS' Petition for Rule Making, filed May 22, 1992 (RM-8004) ("Petition").

With the proposed improvements detailed herein,³ the Commission's plan will maximize spectral efficiency, optimize the availability of spectrum for displaced 2 GHz users' low and medium capacity systems in the primarily high capacity bands above 3 GHz, and immunize incumbent licensees on these higher bands from service degradation. Moreover, adoption of this plan will provide timely clearance of the 2 GHz band for PCS and other emerging technologies. Accordingly, this proposal, as improved by the Modified Plan attached hereto, must be adopted and implemented expeditiously.

As detailed below, three critical issues were raised in comments on the FNPRM: (1) microwave users and manufacturers oppose replacing the common carrier 6 GHz band 29.65 MHz channel plan with the proposed 30 MHz channel plan because it would be inefficient and disruptive; (2) certain microwave manufacturers allege that the proposed 1.6 MHz-based channel plan is inferior to their 2.5 MHz-based plan; and (3) 4 GHz satellite licensees continue to claim that proposed reallocation of the band would disrupt their operation. Subsequent to the December 1992 filing of comments on the FNPRM, ANS, TIA, certain TIA members, and representatives of the satellite industry have been working to resolve their different approaches and to clear the way for adoption of appropriate higher band channelization and technical rules. As reflected in the Modified Plan, an industry consensus is emerging on most critical issues, including channelization of the common

³See Attachment A, Modified Plan.

carrier 6 GHz band and finalization of coordination and other technical rules.

ANS, in its Modified Plan, addresses these issues:

- * It decides against proposing 30 MHz channels for the common carrier 6 GHz band and proposes maintaining the 29.65 MHz plan.
- * It demonstrates conclusively that adoption of a 1.6 MHz-based channel plan, in comparison to a 2.5 MHz-based plan, is more spectrally efficient, serves the needs of low and medium capacity displaced users more effectively, and can be used with off-the-shelf or modified existing equipment.
- * It revises the 4 GHz band reallocation to eliminate all satellite user concerns set forth in the record of this proceeding. On January 19, 1993, this approach was disseminated to all satellite user parties to this proceeding. The only company that took the time to respond, GTE Service Corporation ("GTE"), considers ANS' approach to be the best compromise and will not oppose its adoption. Furthermore, ANS engaged in several teleconferences with the Satellite Broadcasting and Communications Association ("SBCA") to clarify satellite user problems and explain ANS' solutions. In recognition of SBCA's legitimate questions over the impact of its Modified Plan, ANS even volunteered to request Commission deferral of the 4 GHz reallocation, pending comprehensive study by representatives of the satellite and microwave communities to evaluate the merits of the Modified Plan. However, SBCA still refuses to budge and persists in opposing any reallocation of the 4 GHz band.

In view of the manifest need for maximizing available spectrum and the positive attributes of the 4 GHz band for displaced 2 GHz microwave users, ANS remains committed to reallocation of all the replacement bands above 3 GHz. To avoid further delay, ANS respectfully requests that the Commission promptly reallocate the 6, 10 and 11 GHz bands as proposed herein. In addition, despite SBCA's intransi-

gence, ANS herein requests that the Commission defer a decision on the 4 GHz issue and require satellite and microwave industry representatives to attempt reaching a resolution of this issue.

When ANS contributed to launching this proceeding by filing the Petition, its goal was to develop requirements that would serve the needs of displaced 2 GHz users while protecting the needs of incumbent licensees in the 4, 6, 10 and 11 GHz bands. Global approval was not expected. Constructive suggestions were welcomed.

ANS' goals have been met. Overall support for adoption of the FNPRM is evidenced in the record of this proceeding. Nevertheless, various parties, including the Telecommunications Industry Association Point to Point Communication Section ("TIA"), are concerned over certain specific proposals and thus have submitted alternatives.⁴ Various other parties, most notably the satellite industry, oppose aspects of the plan but do not offer constructive suggestions to facilitate a compromise.

After reviewing these concerns and the alternative proposals, and after discussing these issues with fixed microwave manufacturers and users and with representatives of the satellite industry, ANS has determined that other revisions to certain of the Commission's proposed rules are necessary. Consequently, ANS recommends

⁴Along with TIA, a group of manufacturers, Harris Corporation-Farion Division ("Harris"), Telesciences, Inc. ("Telesciences") and Digital Microwave Corporation ("DMC") (collectively, the "Joint Commenters") propose a comprehensive channelization plan (the "TIA Plan").

adoption of the rules set forth in the FNPRM, as revised in its Modified Plan detailed in Attachment A hereto:

- * Rechannelize the 4 GHz band so that 10 MHz, 5 MHz, 1.6 MHz, 800 KHz, and 400 KHz channels are centered at the same frequencies as the existing 20 MHz wideband channels.
- * Recommend that 4 GHz band "A" channels are paired with "B" channels to maintain compatibility with the existing frequency plan.
- * Retain the existing 29.65 MHz channel spacings and 30 MHz maximum bandwidths in the 6 GHz common carrier band.
- * Create additional 5 MHz channels in the upper 6 GHz operational fixed band and in the point-to-point section of the 10 GHz band (proposed in the TIA plan).
- * Revise the 11 GHz band proposed channel pairings to ensure compatibility with existing DE and PJ frequency plans.
- * Permit continued use of the 40 MHz DE frequency plan for 11 GHz band operations (proposed in the TIA Plan).
- * Add a 13th frequency pair to the existing PJ plan in the 11 GHz band.
- * Revise spectrum efficiency requirements to correspond with other changes set forth in the Modified Plan. Recommend rule changes to provide for an orderly phase-in of spectrum efficiency requirements over a 2-year transition period.
- * Adopt spectrum efficiency requirements to allow 2-DS1's in 1.2 MHz of bandwidth for low capacity traffic (proposed in the TIA Plan).
- * Clarify Part 94 to ensure that use of automated transmit power control ("ATPC") is permissible.

Not all the changes proposed in the comments, however, have merit. Adoption of such proposals would threaten spectral

efficiency and would foreclose optimal use of the higher bands by displaced low and medium capacity 2 GHz fixed microwave users. Thus, the following alternatives suggested in the comments must be rejected:

- * Elimination of all 10 MHz and lower capacity channels from the 4 GHz band (from the TIA Plan).
- * Adoption of a 40 MHz channel plan for the 4 GHz band.
- * Adoption of 2.5 MHz-based channel bandwidths for the common carrier and private op-fixed 6 GHz bands, the 10 GHz band, and the 11 GHz band (from the TIA Plan), instead of Alcatel's proposed spectrally efficient 1.6 MHz-based bandwidths.
- * Implementation of a temporary 15 MHz channel plan for the 6 GHz common carrier band during a 5-year transition period (from the TIA Plan).
- * Reserving the 6 GHz common carrier band until all channels in the 6 GHz private band are blocked (from the TIA Plan).
- * Co-primary sharing of the 10.55-10.68 GHz band by point-to-point and point-to-multipoint services.
- * AT&T's channelization plan.

Now that the 2 GHz reallocation has been adopted,⁵ establishing an appropriate channelization plan, providing adequate replacement spectrum, and finalizing specific technical rules are

⁵Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, Notice of Proposed Rulemaking, 7 FCC Rcd 1542 (1992) ("NPRM"); Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, First Report and Order and Third Notice of Proposed Rule Making, 7 FCC Rcd 6886 (1992) ("First Report and Order").

essential. The Commission must give the needs of future displaced users top priority. It is imperative that the Commission recognize the essential public health and safety, utility, and commercial services provided by these 2 GHz microwave licensees. Moreover, displaced microwave users need to know that equipment for the bands above 3 GHz will be brought to market quickly and on competitive terms.

Availability of adequate spectrum must be guaranteed. Reallocation and channelization of the 4, 6, 10 and 11 GHz bands, as proposed in the FNPRM and Modified Plan, substantially satisfy this need.

Even if the 4, 6, 10 and 11 GHz bands ultimately are reallocated, it appears unlikely that adequate long-term replacement spectrum for fixed microwave use would be available. Renewed consideration of reallocating the 3.6-3.7 GHz band, as proposed by ANS in its Petition, and vigorous pursuit of such spectrum for fixed microwave users, must become firm Commission policy in order to avoid a long-term spectrum shortage. ANS anticipates that reallocation of the 3.6-3.7 GHz band would provide sufficient spectrum to eliminate any further need by displaced 2 GHz microwave users to operate on the 4 GHz band.⁶

To ensure the continued availability and vitality of these valuable fixed microwave services, the Commission must recognize

⁶ANS invites satellite licensees and other 4 GHz users to participate in its efforts to reallocate the 3.6-3.7 GHz band for private sector fixed microwave use.

that: (1) most issues raised in the FNPRM comments have been resolved within the industry; (2) the 1.6 MHz channel plan is superior to the 2.5 MHz plan; (3) the 4 GHz band now can be reallocated without causing harmful interference to satellite operations;⁷ (4) on an expedited basis, rules can be adopted reallocating adequate spectrum in the 4, 6, 10, and 11 GHz bands for the near-term; and (5) further efforts at capturing spectrum in the 3.6-3.7 GHz band must be pursued aggressively to provide adequate capacity for the long-term. Otherwise, the Commission risks creating a refugee class of former 2 GHz fixed microwave licensees.

II. THE BURDEN OF REALLOCATION MUST BE SHARED

A. Opponents of the Proposed Reallocation Ignore Its Fairness.

Regrettably, this sensible approach to meeting the needs of dislocated 2 GHz users, which protects the needs of licensees on the higher bands, is threatened by opposition to certain proposals. These opponents include licensees of the proposed relocation bands, most notably the 4 GHz band users, which appear more concerned with protecting their turf than with meeting necessary public telecommunications needs. They claim that the proposed sharing of spectrum with incoming fixed microwave users will cause undue disruption to their operations because harmful interference will result.

⁷Notwithstanding SBCA's opposition, ANS' Modified Plan reallocation of the 4 GHz band works. ANS' request herein to defer this reallocation to provide time for further industry study is responsive to satellite industry needs and is not prompted by any misgivings about the merits of the Modified Plan.

Instead of recognizing the need to share the burdens created by the 2 GHz emerging technologies reallocation, these naysayers, while conceptually supporting the need for accommodating the 2 GHz displaced users, want "the other guy" to take the "hit" and surrender spectrum. Consequently, the soon-to-be orphaned 2 GHz licensees still are being burdened with the task of proving that the proposals in the FNPRM should be adopted and that adequate replacement spectrum should be reallocated. Such a short-sighted view of the proposed reallocation and channelization plan cannot be condoned.

B. Opponents of the Proposed Reallocation Fail to Demonstrate Any Hardship.

In the FNPRM, the Commission correctly recognizes the need to adopt a migration plan that "will not impose undue hardships on the existing users of the bands above 3 GHz."⁸ The migration plan proposed in the FNPRM, as improved in the Modified Plan, passes this test. Under this plan, displaced 2 GHz users can integrate their existing and future systems into the new bands without adversely affecting existing licensees' continued effective operations.

The concerns expressed in the comments by incumbent licensees of the higher bands are unjustified. There is no evidence in the record of this proceeding that any "undue" disruption could occur to these services. Moreover, with the improvements to the FNPRM included in the Modified Plan, especially the revisions to the

⁸FNPRM, 7 FCC Rcd at 6103 (emphasis added).

common carrier 4 and 6 GHz bands, the bases for any further concerns are eliminated. Indeed, any protests against the proposed reallocation and rechannelization are totally meritless and have all the earmarks of Chicken Little crying the "sky is falling."

In particular, the 4 GHz satellite user community opposes the proposed reallocation and channelization. ANS is sensitive to their concerns. The Modified Plan includes material changes to the scheme proposed in the FNPRM.⁹ Foremost among these changes are specific measures that eliminate all the satellite users' concerns. Continued objections by the satellite users only could be motivated by their parochial interest in safeguarding spectrum. Approval of such objections would be counterproductive to the Commission's program for implementing PCS.¹⁰

- C. The Needs Of Displaced 2 GHz Users Must Outweigh the Needs of Incumbent Licensees on the Bands Above 3 GHz.

Placing the burden on the 2 GHz users to stake their legitimate claim to spectrum above 3 GHz is unfair. These users already have been required to make their sacrifice. It should not be forgotten that the Commission, when it reallocated the 2 GHz band,

⁹Attachment A, Modified Plan at Section 3.1.

¹⁰Reallocation is a long-term process. A transition period for relocating 2 GHz users will be established. See First Report and Order, 7 FCC Rcd at 6891. Incumbent licensees, such as the 4 GHz satellite users, therefore, will be on notice so that they can plan ahead regarding their future spectrum needs. Changes to current spectrum assignments will occur on a phased-in basis, thereby minimizing any impact upon existing licensees or their customers.

promised that it would safeguard the involuntarily displaced users' interests:

In the [NPRM], we recognized the important and vital services currently being provided by the existing 2 GHz fixed microwave facilities. We therefore indicated our intention to reaccommodate those facilities in higher fixed microwave bands in a manner that would be most advantageous to those licensees, be least disruptive to the services they provide the public, and foster the introduction of emerging technologies services.¹¹

Furthermore, in the NPRM, the Commission, recognizing the price it was exacting upon 2 GHz licensees to establish the emerging technologies spectrum reserve, declared its intention

to identify a relatively wide band of frequencies that can be made available with a minimum of impact on existing users and that also can provide suitable operating characteristics for new, primarily mobile services.¹²

Now is the time for the Commission to fulfill this promise.¹³

¹¹First Report and Order, 7 FCC Rcd at 6886 (footnote omitted).

¹²NPRM, 7 FCC Rcd at 1543. One of the factors the Commission pledged to consider in selecting the candidates for relocation was that "existing licensees must be able to relocate with a minimum of cost and disruption of service to consumers." Id.

¹³Failure to find an adequate "spectrum home" for all displaced 2 GHz licensees would force the Commission to reconsider its decision to reallocate the band for PCS. The First Report and Order is predicated on the Commission's assumption that adequate, alternative spectrum would be available above 3 GHz. First Report and Order, 7 FCC Rcd at 6890. The U.S. Court of Appeals for the District of Columbia Circuit recognizes the Commission's authority to reallocate spectrum based on such preliminary determinations. However, the court also has warned that the Commission is obligated to re-examine its reallocation if displaced licensees cannot be reaccommodated as easily or successfully as assumed. National Ass'n of Broadcasters v. FCC, 740 F.2d 1190, 1212-13 (D.C. Cir. 1984). ANS also notes that, in 1992, the Senate proposed statutory language which would have prohibited the Commission from allocating

Fixed microwave users should not be the only licensees required to cede spectrum or otherwise make concessions for emerging technologies. This medicine also must be spread to other users of the spectrum.¹⁴ In evaluating the record of this proceeding, the needs of the displaced 2 GHz users must be paramount. Accepting the inevitability of their relocation, fixed microwave users and equipment manufacturers have taken a serious approach to ensuring a smooth transition, developed myriad proposals for operating on

spectrum to PCS unless the needs of the 2 GHz microwave community were met. Members of the House shared these concerns. The proposed language, however, was dropped after the Commission, in its September 17, 1992, Public Notice regarding the First Report and Order, indicated to Congress that 2 GHz licensees' need for reliable replacement spectrum would be addressed. The Congressional oversight committees have pledged to monitor the Commission's actions on this point. See H.R. Rep. No. 918, 102d Cong., 2d Sess. 100-101 (1992).

¹⁴None of the Commission's previous spectrum reallocations compares in scope or complexity to the current proceeding reallocating the 2 GHz band. In no other situation has the Commission displaced such a large number of licensees. Nor has it compelled the replacement of such a vast array of equipment. Moreover, the Commission never has faced the prospect of relocating such a large number of licensees to already-occupied spectrum. Despite the uniqueness of the situation and the difficult issues it creates, certain commenters on the FNPRM contend that the Commission must exempt incumbent licensees above 3 GHz from any obligation to assist in accommodating those to be displaced. See, e.g., GE American Communications ("GE Americom") at 11. GE Americom's assertion is unsupportable because there is no Commission precedent for exempting incumbents from this obligation. To the contrary, the Commission's approach consistently has been to attempt striking a balance between the equities of the displaced licensees and those of the incumbent licensees. See, e.g., Allocation of Spectrum for, and Establishment of Rules Pertaining to, a Radiodetermination Satellite Service, Report and Order, 58 Rad. Reg. (P&F) 2d 1416, 1421 (1985) (balancing the needs of existing and future users of the RDSS spectrum). ANS submits that, in this instance, substantial equities befall the displaced 2 GHz licensees and that fairness requires incumbent licensees to do their share to accommodate them.

the higher bands, and have worked together and resolved most related issues.

Under these circumstances, it is only fair to place the burden upon incumbent users of the bands above 3 GHz to prove that the reallocation proposed by the Commission in the FNPRM would substantially impair their service. Merely showing that the reallocation would make future provision of service more difficult should not be enough to foreclose their co-location with former 2 GHz private op-fixed and common carrier users.¹⁵

No showing in the record of this proceeding meets this burden. In its Modified Plan, ANS has answered all the objections to the FNPRM by:

- * changing the 4 GHz band reallocation to eliminate all satellite user concerns expressed in the record;
- * withdrawing its proposed 30 MHz rechannelization of the common carrier 6 GHz band and agreeing to retain 29.65 MHz channels;
- * demonstrating that the proposed 1.6 MHz channel plan is more spectrally efficient and flexible than a 2.5 MHz plan and that equipment is available for use with a 1.6 MHz plan;

¹⁵The Commission never has insured incumbent licensees (except, in limited circumstances, public safety incumbents) against the adverse consequences of accommodating new users. Indeed, "[t]he [Communications] Act...requires the Commission to promote the public interest, not to protect individual licensees." National Ass'n of Broadcasters, 740 F.2d at 1212 (citation omitted) (affirming the Commission's decision to reallocate the 10 GHz band from microwave use to Direct Broadcast Satellite use). In this regard, the Commission's goal only has been to limit the collateral impact of its reallocations to the extent feasible, not to avoid all adverse consequences. See FNPRM, 7 FCC Rcd at 6103.

- * proving that the proposals in the FNPRM, as enhanced in the Modified Plan, fully accommodate the low and medium capacity needs of displaced 2 GHz microwave users and provide more spectrum for common carrier and for private op-fixed users than is available in the 2 GHz band; and
- * identifying the long-term need for additional spectrum and the proper solution for this anticipated shortage by recommending that the Commission institutionalize the process for reallocating the 3.6-3.7 GHz band.

Based upon the record of this proceeding, adoption of the proposals in the FNPRM, with the revisions detailed in the Modified Plan, is in the public interest, is crucial to the continued provision of essential services, and is protective of existing services in the bands above 3 GHz. As one of the most affected 2 GHz user groups, the American Petroleum Institute ("API"), concludes:

API appreciates the role that [ANS] has taken in developing proposals to accommodate the needs of private microwave users. API also recognizes that there may be other manufacturers who wish to continue to support this market. API recognizes that the Commission's current proposal is based primarily on the initiative that [ANS] has taken to fashion a workable replacement channelization scheme for private microwave users.

* * * * *

[The] proposals in the Further Notice may not be ideal for either private users or common carriers, but these proposals are a viable compromise for both classes of users. Under the circumstances, the sharing of microwave spectrum between common carrier and private radio services represents a useful approach.

API therefore supports adoption of this aspect of the Commission's proposal.¹⁶

III. ADOPTION OF SPECIFIC CHANNELIZATION AND TECHNICAL OPERATING RULES FOR DISPLACED 2 GHZ USERS IS NECESSARY

When the Commission proposed reallocating 220 MHz of spectrum between 1.85 and 2.20 GHz for emerging technologies and forcing a corresponding phased-in exodus of existing common carrier and private op-fixed 2 GHz users to bands above 3 GHz, it did not define specific rules for how the displaced 2 GHz users would operate on the higher bands. Rather, the Commission proposed applying a "blanket" waiver of the technical rules and coordination procedures for each of the bands above 3 GHz.¹⁷

The Commission's "blanket" waiver approach is not the answer. Operation by 2 GHz common carrier and private op-fixed users in the bands above 3 GHz requires specific channelization and loading standards, path length and propagation characteristics, and reliability standards. Such necessary precise operating requirements could not exist under a "blanket" waiver.

Faced with the totally unacceptable prospect of being ousted from the 2 GHz band without being guaranteed safe harbor, it became essential for incumbent licensees that a suitable menu of specific

¹⁶API at 7-8. See also Comsearch at 3-4; AT&T at 2-3; Utilities Telecommunications Council ("UTC") at 3-4 (footnote omitted); Association of American Railroads at 2; Lower Colorado River Authority at 2-3; TIA at 2-3; Motorola Inc. ("Motorola") at 3; The Bell Atlantic Companies ("Bell Atlantic") at 1; American Personal Communications at 1; United States Telephone Association ("USTA") at 1-2; Western Tele-Communications, Inc. ("WTCI") at 6.

¹⁷NPRM, 7 FCC Rcd at 1545.

channelization and operating rules for operation above 3 GHz be established quickly. Absent such rules, inefficient and ineffective use of the spectrum would result.

Given the Commission's failure to define such essential rules, ANS felt obligated to initiate the process. Along with the UTC, ANS accepted the mantle of responsibility and submitted specific proposals for how 2 GHz users would operate in the bands above 3 GHz. In its Petition, ANS stood alone by proposing rules to promote spectral efficiency and to maximize available spectrum for both former 2 GHz private users and common carriers relocating to the higher bands.

ANS' plan was designed to ensure that the 2 GHz users' low and medium capacity systems would be compatible with their current operations when relocated to the primarily high capacity bands above 3 GHz.¹⁸ Specifically, ANS proposed requirements for co-primary use of all available bands by private op-fixed users and common carriers, as well as eligibility, band channelization,

¹⁸Use of microwave by common carriers is evolving. No longer is it the transmission medium of choice by common carriers for long-haul, high density transcontinental systems. With the advent of lightwave systems, common carriers primarily use microwave for less dense and shorter systems. This change diminishes the need to make large amounts of available spectrum channelized for high density systems. Consequently, a portion of the bands above 3 GHz should be rechannelized to match current low or medium capacity needs.

modulation efficiency and minimal channel loading, minimum path lengths, frequency coordination, and antenna standards.¹⁹

Under ANS' proposal, optimal spectral efficiency would be achieved. For the first time, fixed microwave bands would be channelized to be congruent with users' anticipated operating requirements so that low, medium, or high capacity systems would employ only the spectrum actually needed. By proposing across-the-board sharing of the 4, 6, 10 and 11 GHz bands by common carrier and by private op-fixed microwave users on a co-primary basis, both classes of users would have access to more spectrum.

**IV. THE COMMISSION CONCLUDES THAT ANS'
PROPOSALS ARE IN THE PUBLIC INTEREST
AND ADOPTS THE FNPRM**

A. The Commission Proposes Adoption of ANS' Petition.

In reliance upon public support for grant of the Petition, the Commission, in the FNPRM, concludes that, in most respects, ANS' proposals regarding reallocation, channelization, and technical standards are in the public interest. Consistent with ANS' proposals:

The Commission...proposes to reallocate five bands above 3 GHz to private and common carrier fixed microwave use on a co-primary basis and to prescribe additional technical standards to govern use of these bands.

* * * * *

¹⁹In its Petition for Rulemaking (RM-7981), UTC took a similar approach. It proposed adoption of specific technical rules to accommodate operation by displaced 2 GHz users in the bands above 3 GHz. However, unlike ANS, UTC did not propose any specific rules for this purpose.

[These proposals are intended] to ensure that alternative frequencies will be available to 2 GHz licensees that are suitable for providing equivalent service with comparable reliability.²⁰

In assessing ANS' proposals underlying the FNPRM, with the exception of certain aspects of the suggested 4 GHz band reallocation, the Commission concludes that they satisfy the channelization needs of the displaced 2 GHz users:

We find merit in many of the proposals made by UTC and [ANS]. We are sensitive to the needs of 2 GHz fixed users for channelization plans and technical standards that meet their specific requirements. In meeting these needs, however, we will not impose undue hardships on the existing users of the bands above 3 GHz. In general, we believe that the reallocation and channelization plan proposed by [ANS] for bands above 3 GHz balances the interests of both groups.

* * * * *

Specifically, we propose to adopt [ANS'] reallocation and channelization proposals, with the exceptions of the 3.6-3.7 GHz band proposal and the proposal (also made by UTC) that 80 MHz of spectrum in the 4 GHz band currently allocated to the Fixed-Satellite Service (FSS) on a primary basis be downgraded to secondary. We believe that adoption of [ANS'] basic plan will treat both private users and common carriers equitably. In this regard, we note that Harris focuses on the fact that in the Notice 180 MHz of spectrum is proposed to be reallocated from private fixed use versus only 40 MHz from common carrier fixed use, whereas MCI focuses on the fact that under [ANS'] proposals private users would gain access to far more spectrum than common carriers. Since more private users than common carriers are potentially affected by the proposals in the

²⁰FNPRM, 7 FCC Rcd at 6100.

Notice, we believe this approach is appropriate.²¹

Similarly, in the FNPRM, the Commission generally supports ANS' proposed coordination procedures and technical standards. It incorporates ANS' rules for minimum path length, antenna characteristics, frequency diversity transmissions, and power, emission and bandwidth limitations.²²

B. The Commission Proposes to Modify Certain of ANS' Technical Proposals.

Not surprisingly, parties commenting on the FNPRM make constructive suggestions regarding the technical proposals set forth therein. The Commission agrees with certain of the alternatives and therefore proposes modifying aspects of ANS' plan.

Instead of adopting ANS' proposal and imposing Part 21 coordination procedures upon all bands proposed for reallocation, the Commission concludes that it would be least disruptive to maintain current procedures in each band. In the 4, 6, 10, and 11 GHz common carrier bands, Part 21 coordination and interference procedures would apply; in the 6 GHz private band, Part 94 procedures would be used.²³ Moreover, the Commission solicits

²¹Id. at 6103 (footnotes omitted). The Commission also proposes incorporating the new channelization plans into the rules to allow standard equipment design and to permit expansion of existing microwave systems under current channelization plans without waiver. Id. at 6105.

²²Id.

²³Id.

comment on whether frequency coordinators should establish time limits for the reservation of growth channels.²⁴

The Commission supports, in principle, ANS' proposal to substitute voice channel loading requirements and analog performance standards with minimum digital system loading requirements. Nevertheless, it recommends maintaining voice channel loading requirements and analog standards while also recommending adoption of ANS' proposed digital standards.²⁵

In its Petition, ANS stated that ATPC currently is permitted under Part 21 but is prohibited under Part 94 of the Commission's Rules. The Commission concurs regarding use of ATPC under Part 21 but disagrees that it is prohibited under Part 94. To clarify this issue, the Commission proposes amending applicable Part 21 and Part 94 rules to authorize use of ATPC explicitly.²⁶

C. The Public Interest Requires Adoption of the Rules Proposed in the FNPRM and the Improvements Made in the Modified Plan.

The proposals made in the FNPRM and the improvements made in the Modified Plan, as discussed in Section V below, are appropriate and must be adopted promptly. These new rules will ensure that relocated 2 GHz fixed microwave users will transition to the higher bands in an orderly manner.

²⁴Id.

²⁵Id.

²⁶Id.

Nevertheless, even with adoption of the modified FNPRM, long-term availability of adequate replacement spectrum for fixed microwave users remains a significant concern. While ANS appreciates the Commission's decision to "approach NTIA and open formal discussions to determine whether some form of shared access to the 3.6-3.7 GHz band by fixed microwave users is feasible,"²⁷ as detailed in Section VI below, this issue must be addressed more aggressively. Reallocation of the 3.6-3.7 GHz band, for future use by fixed microwave users consistent with federal government needs, would contribute significantly to alleviating the potential spectrum shortage endangering these services.

**V. THE REALLOCATION AND CHANNELIZATION
PROPOSED IN THE FNPRM AND IN THE MODIFIED
PLAN ARE FAIR AND MUST BE ADOPTED**

- A. The Proposed Reallocation and Channelization Plan is Spectrally Efficient and Meets the Needs of All Users.

In mandating that incumbent 2 GHz users relocate to bands above 3 GHz, the Commission creates a potential mismatch. Low and medium capacity bandwidth dominate existing 2 GHz systems. High capacity bandwidth characterizes the bands above 3 GHz.

ANS' proposal, which is totally supported by the Commission in the FNPRM and which is enhanced in the Modified Plan, bridges this potential gap. It includes a channelization scheme and technical operating rules that are sensitive to the needs of all displaced 2

²⁷Id. at 6103.

GHz fixed microwave users and all incumbent licensees in the bands above 3 GHz.

Not only does the reallocation and channelization plan proposed in the FNPRM conform to existing needs of the microwave communications industry, as the Commission acknowledges, it also affords an appropriate platform for its continued growth:

UTC and [ANS] contend that [their] plans are consistent with changes in the microwave communications industry. [ANS] states that while common carriers have made extensive use of long haul systems using full blocks of 4 and 6 GHz frequencies with the proliferation of fiber optic systems few new multichannel systems are being built. Also, according to [ANS], common carriers increasingly need low capacity systems to extend digital loop cell sites in cellular Rural Service Areas, while private operators have new requirements for high capacity systems to carry high-speed local area network traffic and digitized video between buildings in private networks. Consequently, [ANS] asserts microwave operators are demanding flexible radio equipment that can be used for low or high capacities as service requirements change and the equipment needs of common carriers and private operators increasingly become similar. Therefore, [ANS] concludes co-primary sharing of several bands is technically feasible.²⁸

This intrinsic flexibility distinguishes the reallocation and channelization plan proposed in the FNPRM from other plans submitted by parties to this proceeding and compels its adoption.

²⁸FNPRM, 7 FCC Rcd at 6102.