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

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

To: The Commission

COMMENTS OF THE
UTILITIES TELECOMMUNICATIONS COUNCIL
ON THE
FURTHER NOTICE OF PROPOSED RULEMAKING

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Summary

UTC supports the Commission's basic proposals contained in the FNPRM, as they are generally consistent with the proposals that UTC suggested in its petition for rulemaking. UTC supports the Commission's proposal to eliminate the distinctions between private and common carrier services for purposes of determining access to particular microwave bands above 3 GHz. Further, UTC urges the Commission to follow through with its commitment to pursue discussions with NTIA regarding the introduction of fixed microwave operations into the 1710-1850 MHz band and the 3.6-3.7 GHz band.

Irrespective of the specific channel plan ultimately adopted by the Commission, rechannelization must afford adequate replacement spectrum for private narrowband systems currently operating at 2.1 GHz. Rechannelization must also provide sufficient flexibility to accommodate the growing number of private microwave users that have a need for new wideband systems (e.g., 30 MHz). The 4 GHz band should be included in the rechannelization. The FCC's proposal provides the necessary flexibility to accommodate the varying bandwidth requirements of displaced private 2 GHz microwave users and existing 4 GHz common carrier microwave users, without disrupting the operations of licensed fixed satellite systems.

UTC believes that the coordination procedures and technical rules for the shared microwave bands should be consistent to eliminate any regulatory incentive for licensees to seek access to one band over another. To the extent that the coordination procedures differ, UTC recommends that the FCC adopt uniform procedures. To the extent that the interference standards differ, UTC recommends adoption of standards developed by TIA.

Finally, any technical standards or operational rules adopted must recognize the need to accommodate the large number of private analog systems that are currently in existence in the 2 GHz band and in the upper 6 GHz band.

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FURTHER NOTICE OF PROPOSED RULEMAKING

Pursuant to Section 1.415 of the Federal Communications Commission's (FCC) Rules, the Utilities Telecommunications Council (UTC) hereby submits its comments with respect to the Further Notice of Proposed Rulemaking (FNPRM), 7 FCC Rcd 6100 (1992), in the above captioned proceeding.^{1/} The FNPRM seeks comment on various issues relating to the amendment of the Commission's Rules in order to accommodate microwave systems in the bands above 3 GHz.

^{1/} On November 24, 1992, the FCC released an Order, DA 92-1599, extending the time for filing comments and reply comments in this proceeding to December 11, 1992, and January 13, 1993, respectively.

I. INTRODUCTION

UTC is the national representative on communications matters for the nation's electric, gas, water, and steam utilities. Approximately 2,000 utilities are members of UTC, ranging in size from large combination electric-gas-water utilities serving millions of customers to small, rural electric cooperatives and water districts serving only a few thousand customers. All utilities depend upon reliable and secure communications facilities in carrying out their public service obligations.

Many utilities operate extensive private microwave systems to meet these communications requirements. Utilities rely heavily on private microwave facilities operating in the 1.85-1.99, 2.13-2.15, and 2.18-2.20 GHz (2 GHz) bands, and would be severely hampered in their ability to provide vital public services if they were forced to vacate these bands without adequate replacement spectrum with equivalent reliability and technical rules to which they could migrate their systems.

On February 7, 1992, the FCC released the initial Notice of Proposed Rulemaking (NPRM) in this proceeding, 7 FCC Rcd 1542, wherein the FCC proposed to reallocate the 2 GHz band to emerging technologies. On March 31, 1992, in response to the Commission's NPRM, UTC filed a "Petition for Rulemaking" addressing the steps which the FCC should have taken before (or when) it issued the NPRM to make sure that there would, in fact, be appropriate and adequate replacement spectrum with equivalent reliability to the

2 GHz band in place, for use by displaced microwave users.^{2/} On May 22, 1992, Alcatel Network Systems (Alcatel) filed a "Petition for Rulemaking" addressing this same subject matter.^{3/}

II. REALLOCATION AND CHANNELIZATION PLAN

A. UTC Generally Supports the FCC's Proposals

UTC supports the Commission's basic proposals in the FNPRM, as they are generally consistent with the proposals that UTC and Alcatel suggested in their petitions. Further, UTC appreciates the attention that the Commission has given to this important matter, as indicated by the FCC's prompt commencement of this further proceeding.

Under the Commission's proposed band sharing plan the distinctions between private and common carrier services would be eliminated for purposes of determining access to particular microwave bands above 3 GHz. The Commission notes that under its proposal private microwave users would gain access to more spectrum than common carriers. UTC agrees with the FCC that this approach is appropriate since private microwave users are being asked to give up far more spectrum in the 2 GHz band than common carriers, and will therefore require access to a proportionately

^{2/} UTC's Petition for Rulemaking was placed on Public Notice May 1, 1992, FCC mimeo no. 22934, and was designated as RM-7981.

^{3/} Alcatel's Petition for Rulemaking was placed on Public Notice June 2, 1992, DA 92-705, and was designated as RM-8004.

larger amount of replacement spectrum.^{4/}

A fundamental concern of UTC throughout this proceeding has been that the bands above 3 GHz currently available for private microwave operations do not contain an adequate number of narrowband channel pairs to accommodate the 13,000 existing 2 GHz "skinny route" stations.^{5/} The 2.13-2.15 and 2.18-2.20 GHz private microwave bands are channelized into 24 pairs of 800 kHz, or 11 pairs of 1600 kHz, channels. Thus, irrespective of the specific channel plan ultimately adopted by the Commission, rechannelization must afford adequate replacement spectrum for private narrowband systems currently operating at 2.1 GHz.^{6/}

Further, as noted in UTC's petition, the channel loading requirements for the 4 and 6 GHz common carrier bands are such that most private microwave systems, including operations in the 1850-1990 MHz band, would be ineligible for relocation to these channels. Section 21.710 of the Commission's Rules provides that in the 3.7-4.2 and 5.925-6.425 GHz bands, licensees must load to a minimum of 900 voice-grade channels (4 kHz or equivalent) within 5 years, or operate at a minimum data rate of 10 Mb/s.

^{4/} FNPRM, para. 18.

^{5/} The "skinny route" is the 2.10-2.20 portion of the 2 GHz band.

^{6/} Rechannelization must also provide sufficient flexibility to accommodate the growing number of private microwave users that have a need for new wideband systems (e.g., 30 MHz).

Similarly, Section 21.122(a)(2), provides that digital systems in these bands must achieve at least 1152 encoded voice channels, which minimum may be reduced by a proportionate decrease in bandwidth. However, given the requirement of Section 21.710(c) for a minimum data rate of 10 Mb/s, as a practical matter licensees are limited to using at least 3.3 MHz bandwidth in the 4 GHz common carrier band or 5 MHz bandwidth in the 6 GHz common carrier band.^{2/}

Accordingly, UTC urges the Commission not to require loading standards for private microwave systems operating in any of the bands above 3 GHz. In the alternative, the commission should not enforce loading standards on private microwave systems operating on bandwidths of less than 10 MHz.

B. 3.7-4.2 GHz Band

UTC supports the Commission's proposal to rechannelize the 3.7-4.2 GHz (4 GHz) band. The FCC's proposal provides the necessary flexibility to accommodate the varying bandwidth requirements of displaced private 2 GHz microwave users and existing 4 GHz common carrier microwave users, without disrupting

^{2/} Section 21.122(a)(3) provides that the number of voice channels may be reduced by $1/N$ provided N transmitters may be operated satisfactorily within an authorized bandwidth equal to or less than the maximum authorized bandwidth over the same radio path. Thus, for example, with a maximum 20 MHz bandwidth for transmitters in the 4 GHz band, if bandwidth is reduced by a factor of 6 (to 3.3 MHz), the minimum channel capacity could likewise be reduced to $1152/6$, or 192 channels. This bandwidth would accommodate 8 DS-1's, or a bit rate of 12 Mb/s.

the operations of licensed fixed satellite systems.

While the proposed channelization plan may initially raise interference concerns for licensed fixed satellite systems, these concerns are for the most part unfounded. Proper coordination procedures will serve to protect licensed fixed satellite systems in the 4 GHz band. Moreover, while the proposed rechannelization plan may arguably require more precise coordination procedures in the 4 GHz band, these changes are necessary to make the band a viable replacement "home" for displaced 2 GHz users.

In any event, unlicensed satellite earth stations operating in the 4 GHz band are not entitled to interference protection, and thus, potential interference to these stations is not a valid justification for rejection of the Commission's rechannelization plan. Moreover, the Commission should use this proceeding to explicitly affirm that unlicensed "backyard" dish owners are not entitled to any interference protection from terrestrial microwave operations.

Notwithstanding UTC's confidence in the ability of coordination to resolve potential interference, UTC suggests that the remaining concerns regarding potential interference could be resolved if, as suggested in UTC's petition, the FCC would reallocate part of the 4 GHz band for exclusive, primary use by terrestrial operators. Such an exclusive allocation, which could

be phased-in over a reasonable transition period, would also eliminate concerns over interference to unlicensed satellite receive-only earth stations.

C. 3.6-3.7 GHz Band

Alcatel suggested in its petition that the Commission reallocate the 3.6-3.7 GHz band to private and common carrier fixed use on a co-primary basis with existing government and non-government aeronautical radionavigation, radiolocation, and fixed satellite services. In the FNPRM the Commission rejected this proposal stating that it did not believe that additional non-government users could be accommodated in this band at this time. However, the FCC announced its intention to approach the National Telecommunications and Information Administration (NTIA) to discuss whether some form of shared access to the 3.6-3.7 GHz band by fixed microwave users is feasible.^{8/}

The 3.6-3.7 GHz band has propagation characteristics suitable for long-haul communications and would thus be capable of supporting the long microwave paths being displaced from the 2 GHz band. Moreover, since the 3.6-3.7 GHz band is currently utilized for satellite operations, it would appear to be feasible to share this band with fixed microwave users under coordination criteria similar to that which is employed in the 4 GHz band. UTC therefore urges the Commission to follow through with its

^{8/} FNPRM, para. 20.

commitment to pursue discussions with NTIA regarding the introduction of fixed microwave operations into the 3.6-3.7 GHz band.

D. 1710-1850 MHz Government Band

In its petition UTC requested the FCC to enter into negotiations with NTIA regarding access to the 1710-1850 MHz Federal government band by displaced 2 GHz microwave users. UTC noted that relocation of displaced 2 GHz microwave users to the 1710-1850 MHz band would cause the least disruption to on-going 2 GHz operations, since the propagation characteristics of both bands are nearly identical. Moreover, the cost of such a relocation would be substantially less than a shift to a higher band. In issuing the FNPRM the Commission stated that it will continue its discussions with NTIA on this issue, and will make appropriate modifications should the situation change.

In the interim period since the issuance of the FNPRM, NTIA has released a report on the feasibility of relocating displaced 2 GHz microwave users into the 1710-1850 MHz band.^{9/} The report concludes that the 1710-1850 MHz band can effectively serve as an alternative for 2 GHz microwave systems that for technical reasons cannot operate reliably at higher frequencies, such as 6

^{9/} Feasibility of Relocating Non-Government Fixed Systems Into the 1710-1850 MHz Band, NTIA Report 92-268 (August 1992).

GHz.^{10/} Thus, the NTIA report virtually opens the door to the FCC for the use of this band as replacement spectrum for 2 GHz microwave systems that cannot be relocated elsewhere.^{11/}

Accordingly, UTC urges the Commission to renew its efforts in expediting its negotiations with NTIA regarding access to the 1710-1850 MHz bands by displaced 2 GHz microwave users. Moreover, the Commission should adopt specific procedures for 2 GHz microwave users to request access to the 1710-1850 MHz band. For example, the FCC could use the procedures adopted in the 932-935 MHz and 941-944 MHz shared bands as a model. In the 932/941 MHz band private users apply to the FCC for a license, the FCC coordinates with NTIA, and the FCC issues the license to the applicant.^{12/}

III. COORDINATION PROCEDURES/TECHNICAL STANDARDS

A. Coordination Procedures

In its Comments on the Alcatel petition UTC supported retention of the existing coordination rules for each microwave band. However, on further review, UTC believes that the coordination procedures and technical rules for the shared

^{10/} NTIA Report, 92-286 p. 43.

^{11/} UTC does, however, disagree with NTIA's off-the-cuff estimate that only 2% of the existing 30,000 2 GHz microwave paths will have difficulty relocating. See NTIA Report, 92-286, at p. 43.

^{12/} Second Report and Order in GEN. Docket No. 82-243, FCC 89-45 (1989).

microwave bands should be consistent to eliminate any regulatory incentive for licensees to seek access to one band over another. At present, the principle differences between common carriers and private microwave coordination is the requirement, at Section 21.100, for common carrier applicants to serve "prior coordination notices" on potentially affected applicants and licensees, and to wait for responses before filing applications with the FCC. These requirements increase the cost of frequency coordination and delay applicants' ability to commence operation and could serve as a catalyst for most applicants to select the upper private 6 GHz band due to its streamlined coordination procedures. It would appear that the easiest way to make the coordination procedures consistent is to impose the common carrier prior coordination notification requirements of Section 21.100 on applicants for the upper 6 GHz microwave band.^{13/}

Further, with the significant increase in bandwidth available to carriers under the proposed channelization plan, there is no need for carriers to retain the ability to reserve growth channels on an indefinite basis. While coordinators should be encouraged to avoid blocking other users' access to growth spectrum, there is no reason for the FCC to institutionalize the warehousing of spectrum by permitting

^{13/} Use of Section 21.100 coordination procedures is already required for private users accessing other shared microwave bands. See 47 C.F.R. § 94.63(a).

repeated renewals of coordination notifications.^{14/}

B. Technical Standards

UTC is absolutely opposed to any degradation of the existing private microwave interference standards that would impair the reliability of private microwave operations. UTC recognizes that the common carrier and private microwave interference standards are converging and supports the adoption of consistent standards across all of the shared bands, provided system reliability is not compromised. To the extent that the interference standards currently differ, UTC recommends that the Telecommunications Industry Association (TIA) be recognized as the appropriate entity to develop consistent interference standards. Further, until such time as uniform interference criteria are adopted, UTC suggests that the FCC require coordinators to apply the interference criteria utilized by the majority of the users of a particular band.^{15/}

UTC is also concerned that the technical standards ultimately adopted recognize the need to accommodate analog

^{14/} UTC suggests that the FCC amend Section 21.100 (d)(2)(x) to limit the ability of licensees to renew their coordination notification to one six month period after the expiration of the original notification period, and to prohibit recoordination for at least six months if no application is filed during this 12-month period.

^{15/} Thus, for example, common carriers applying in the upper (private) 6 GHz band would coordinate under the guidelines of TIA Bulletin 10-E.

microwave systems. It is important to note that the majority of existing 2 GHz users are analog and that, at least in the immediate future, the relocation of single hops within multi-hop analog systems would preferably be accomplished through the use of analog replacements. Moreover, according to the FCC's database approximately 94 percent of existing 6 GHz private microwave is analog. Accordingly, UTC urges the Commission not to adopt rules that would inhibit or preclude the use of analog microwave equipment in the bands above 3 GHz.

Finally, it is not apparent to UTC that retention of the analog loading limits contained in Section 21.710(c) will benefit narrowband common carrier applicants. UTC suspects that narrowband common carrier applicants will encounter the same difficulties in meeting these loading requirements as narrowband private microwave users. In any event, UTC urges the Commission to clarify, as discussed above, that these analog loading limits do not apply to Part 94 applicants.

IV. CONCLUSION

UTC supports the Commission's basic proposals contained in the FNPRM, as they are generally consistent with the proposals that UTC suggested in its petition for rulemaking. UTC supports the Commission's proposal to eliminate the distinctions between private and common carrier services for purposes of determining access to particular microwave bands above 3 GHz. Further, UTC urges the Commission to follow through with its commitment to pursue discussions with NTIA regarding the introduction of private fixed microwave operations into the 1710-1850 MHz band and the 3.6-3.7 GHz band.

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Finally, any technical standards or operational rules adopted must recognize the need to accommodate the large number of private analog systems that are currently in existence in the 2 GHz band and in the upper 6 GHz band.

WHEREFORE, THE PREMISES CONSIDERED, the Utilities Telecommunications Council respectfully requests the Commission to take action consistent with the views expressed herein.

Respectfully submitted,

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