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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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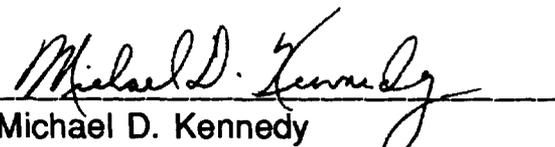
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter:)	
)	
Petition for Rulemaking of the)	RM-7981
Utilities Telecommunications)	
Council (UTC) to Amend Microwave)	
System Rules in Parts 2, 21, and 94.)	

Comments of Motorola Inc.

Motorola Inc. (hereinafter Motorola) submits the following comments in the above captioned Petition for Rulemaking.

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 List A B C D E

I. SUMMARY

The critical and specialized communications requirements of the nation's utilities, public safety entities, petroleum companies, railroads and others must be met. Therefore, Motorola supports the Utilities Communication Council (UTC) recommendation to develop a more specific plan which would help reaccommodate the legitimate needs of fixed microwave users currently employing the 1.8-2.2 GHz bands proposed to support emerging technologies such as PCS. ¹

At the same time, allocation of dedicated spectrum for emerging technologies is critical to the economic well being of this country. Emerging mobile technologies such as PCS encompass a wide range of private and public wireless communications services which will create new jobs, spur investment, provide tools many U.S. businesses need to be more competitive in a global economy and offer improved safety and convenience for the public. These benefits, in fact, will translate to additional business for the nation's utilities, petroleum producers, and railroads as well.

Therefore, rather than delay implementation of PCS by conducting each step of the process in a serial fashion as UTC suggests, Motorola recommends the Commission address the technical reaccommodation issues concurrent with further rulemaking activities on PCS and Emerging

¹Notice of Proposed Rulemaking in ET Docket No. 92-9, released February 7, 1992.

Technologies. Swift development of a more specific reaccommodation plan will allow the Commission to proceed with authorization of Emerging Technology services such as PCS without further delay.

Fortunately, UTC and others in the microwave industry have already made substantial progress in defining specific rule modifications necessary to provide for genuine reaccommodation of 1.8-2.2 GHz systems to alternative bands. In addition to the above-referenced UTC petition, Alcatel has done extensive work both on its own and in coordination with other microwave equipment manufacturers to help define specific rule changes required to accommodate these critical communications needs in higher bands and has filed a Petition for Rulemaking which the Commission has designated as RM-8004.

II. DISCUSSION

In the Emerging Technologies Notice of Proposed Rulemaking, the Commission proposed to allow private microwave users to access common carrier bands by a blanket waiver process. Further, the Notice proposed that users accessing these bands through such a blanket waiver process would be required to abide by the technical rules and coordination procedures currently applicable in the respective bands. The Commission, therefore, did not address any technical disparities between the private and common carrier bands which might need to be corrected for genuine reaccommodation to take place.

In its instant Petition for Rulemaking, UTC requested regulatory action to address the following areas of concern:

- 1) Routine access by private licensees to common carrier bands, instead of access by waiver;
- 2) Rechannelization of the common carrier bands to help support private fixed system requirements;
- 3) Elimination of the common carrier loading standards for private systems;
- 4) Solutions to interference between fixed microwave systems and entertainment receive only satellite downlinks in the 3.7 -4.2 GHz band identified as a potential reaccommodation resource;
- 5) Establishment of an Industry Advisory Committee to address any differences in private and common carrier protection standards; and
- 6) Access to the Federal 1710-1850 MHz band for reaccommodating fixed users.

Motorola applauds the UTC's identification of issues surrounding practical 2 GHz microwave reaccommodation to other bands. There appears to be no reason, however, that such issues cannot be addressed

concurrently with other regulatory requirements needed to bring the benefits of Emerging Technologies such as PCS to fruition.

In its petition, UTC indicates that the Commission's proposal to allow private system access to common carrier bands by blanket waiver provides no relief to licensees requiring completely new systems or expansion of existing systems moved up from the 2 GHz bands. In addressing this issue, UTC also referenced the uncertainty surrounding the conditional secondary status of microwave grants at 2 GHz, pending the outcome of the rulemaking.

Subsequent to UTC's filing, the Commission released a Public Notice on May 14, 1992 clarifying that license modifications to systems within the proposed Emerging Technology bands will in fact be made on a primary basis. By inference, it is not clear that the Commission actually intends under the blanket waiver approach to deny primary status for modifications of systems reaccommodated to other bands. Motorola concurs with UTC, however, that 2 GHz licensees reaccommodated to other bands will need the flexibility subsequently to modify their systems without sacrificing primary status. At minimum, the Commission needs to clarify its intention to provide such flexibility.

The key technical issue to be addressed appears to be the rechannelization of the upper microwave bands to provide an orderly process within which to reaccommodate private operational fixed microwave licensees into the 4, 6 and 10/11 GHz bands. Motorola concurs

with the UTC's general recommendations for rechannelization of these bands.

Fortunately, well thought out proposals for this rechannelization are already being finalized by experts in the microwave industry that serve both the private and common carrier markets. The Alcatel Network Systems (ANS) recently filed Petition for Rulemaking, RM-8004, is complementary to the instant UTC petition. The Telecommunications Industry Association is also actively addressing rechannelization of the bands. Therefore, the Commission should be in an excellent informed position to initiate any additional actions necessary to resolve this issue, in concert with UTC's concerns and recommendations.

UTC indicates that the channel loading requirements currently applied to common carrier licensees are inappropriate for private operational fixed systems, and in fact would tend to make many private systems ineligible for relocation to common carrier bands. Motorola understands that this issue is being addressed by the microwave industry as the current loading standards may be outdated even for common carrier systems. One approach being discussed is to (a) ensure equipment associated with a given license is capable of carrying the capacity of the licensed channel bandwidth; and (b) require loading to at least 50% of the equipment capacity within a specified time limit such as 5 years for all high capacity systems. In this context, high capacity systems are those using greater than 10 MHz channels with a capacity of one DS3 microwave circuit or equivalent or 672 voice channels.

UTC correctly notes that the proliferation of both licensed and unlicensed satellite earth receive stations at 3.7-4.2 GHz raises questions concerning the viability of this band for reaccommodating fixed users. Motorola agrees the Commission should consider ways this band may be made more attractive for fixed microwave use. We note that a discussion of this issue is also contained in the ANS petition previously referenced.

UTC proposes that the Commission convene an industry advisory committee to develop new technical standards and interference criteria for the 4, 6, and 11GHz bands. UTC states that the current common carrier microwave interference standards do not provide the degree of protection that many public safety/public service microwave systems require and concludes that many 2 GHz private microwave users would therefore suffer service degradation if forced to relocate under common carrier coordination standards and procedures.

As a practical matter, frequency coordination procedures today for both private operational fixed and common carrier bands bear some similarities. Generally, an industry coordinator such as Comsearch Inc. performs interference studies and makes recommendations to the applicant, whether private or common carrier. Such coordinators use recognized interference standards applicable to the band in question in performing a computer analysis of interference potential.

Overall, there also appears to be a close similarity between the existing interference standards for private and common carrier operations, because existing private industry standards as detailed in TIA Bulletin 10 were derived from earlier developed common carrier microwave standards. Few, if any, substantial evolutionary changes have been made to Bulletin 10 over past years. A detailed review may show the different standards to be more stringent in some areas and less stringent in others, with overall similarity.

The path lengths of existing 2 GHz systems vary considerably, but a substantial number of the existing systems in these bands provide service over relatively short path links. For these short links in particular, the fade margins currently used at 2 GHz may be somewhat more stringent than necessary to provide highly reliable service. Therefore, in some cases application of less stringent protection criteria for these short links may not actually translate to degradation of service. Variable fade margins depending on path length may be a more appropriate approach to use in coordinating microwave systems.

Industry advisory committees well versed in microwave matters already exist so formulation of a new industry advisory committee appears to be unnecessary. Both the Telecommunications Industry Association (TIA) and the National Spectrum Managers Association (NSMA) can already supply both the structure and the competence necessary to resolve microwave technical issues. Regardless of the forum the Commission chooses to address these issues, Motorola strongly

encourages setting a strict timetable at the outset to ensure that the important tasks of accommodating fixed users' requirements and bringing emerging technologies such as PCS to the U.S. are not subjected to further delay.

We also recommend that the Commission accelerate development of an agreement with NTIA concerning private access to at least portions of the 1.71-1.85 GHz Government Band to help reaccommodate fixed system requirements. Motorola views this important issue as complementary to the proposals recommended in the Notice. We trust neither the Commission nor NTIA have any desire to delay authorization of critical emerging technology services and that both parties will therefore expeditiously pursue resolution of this issue. Once the bands available for reaccommodation of 2 GHz links are finalized, it may be appropriate to consider the path length required in determining which band is the most appropriate option for reaccommodating any particular link.

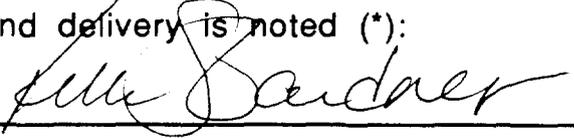
III. CONCLUSION

Motorola supports many of the concerns and recommendations raised by UTC in its Petition for Rulemaking. We believe there are solutions to these issues that can be put into place by the Commission to provide an orderly, non-disruptive reaccommodation of the Private OFS microwave services into the higher microwave bands. We believe providing a genuine

opportunity to reaccommodate 2 GHz fixed systems to alternative bands alongwith expeditious provision of emerging technology services such as PCS is necessary for the economic well being of the United States as a whole. The Commission should address these issues concurrently rather than serially to minimize delays in bringing the benefits of PCS to the American public.

CERTIFICATE OF SERVICE

I, Kelle Gardner, of Motorola Inc., do hereby certify that on this 8th day of June, 1992, a copy of the foregoing Comments was sent to each of the following by first class mail, except where hand delivery is noted (*):



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