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FEDERAL COMMUNICATIONS COMMISSION
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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems	)	**ET Docket No. 00-258**
	)	
Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use By the Mobile Satellite Service	)	**ET Docket No. 95-18**
	)	
The Establishment of Policies and Service Rules for the Mobile Satellite Service in the 2 GHz Band	)	**IB Docket No. 99-81**
	)	
Petition for Rule Making of the Wireless Information Networks Forum Concerning the Unlicensed Personal Communications Service	)	**RM-9498**
	)	
Petition for Rule Making of UTStarcom, Inc., Concerning the Unlicensed Personal Communications Service	)	**RM-10024**

REPLY COMMENTS OF ARRL,
THE NATIONAL ASSOCIATION FOR AMATEUR RADIO

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November 8, 2001

SUMMARY

ARRL, the National Association for Amateur Radio, also known as the American Radio Relay League, Incorporated (ARRL), submits its reply to comments filed pursuant to the *Memorandum Opinion and Order and Further Notice of Proposed Rule Making* (the Further Notice), FCC 01-224, released August 20, 2001. The Further Notice addresses the potential for use of certain frequency bands below 3 GHz to support the introduction of new advanced mobile and fixed terrestrial wireless services. ARRL is concerned with the Commission's consideration of the 2390-2400 MHz band for either: (a) advanced wireless services, including third generation and future generations of wireless services, or (b) relocation spectrum to accommodate incumbent users displaced from other bands to make room for new advanced wireless services.

ARRL urges that no changes be made in the allocation at 2390-2400 MHz. If it is necessary to add at 2390-2400 MHz any displaced uses from other bands, ARRL would be willing to participate in compatibility studies to determine whether certain Federal government uses could share the allocation without significant disruption of present and planned future Amateur operations in that band. In such a case, however, the Commission should seriously consider an allocation of the entire 2385-2390 MHz band for Federal government use and to create a non-government primary allocation for the Amateur Service at 2385-2390 MHz to accommodate the reduction in utility of the 2390-2400 MHz segment resulting from the addition of the government uses to that segment. In any case, ARRL urges that the Commission make no commercial allocation at 2390-2400 MHz, or to add any other non-Government use to that band, and to retain the non-Government primary allocation for the Amateur Service at 2390-2400 MHz.

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To: The Commission

REPLY COMMENTS OF ARRL,
THE NATIONAL ASSOCIATION FOR AMATEUR RADIO

ARRL, the National Association for Amateur Radio, also known as the American Radio Relay League, Incorporated (ARRL), by counsel and pursuant to Section 1.415 of the Commission's Rules (47 C.F.R. §1.415) hereby respectfully submits its reply to comments filed

pursuant to the *Memorandum Opinion and Order and Further Notice of Proposed Rule Making* (the Further Notice), FCC 01-224, released August 20, 2001. The Further Notice addresses the potential for use of certain frequency bands below 3 GHz to support the introduction of new advanced mobile and fixed terrestrial wireless services. ARRL is concerned with the Commission's consideration of the 2390-2400 MHz band for either: (a) advanced wireless services, including third generation and future generations of wireless services, or (b) relocation spectrum to accommodate incumbent users displaced from other bands to make room for new advanced wireless services. In reply to certain comments filed in this proceeding, ARRL states as follows:

1. It is fair to assert, following review of the numerous comments in this proceeding, that no party has provided any serious justification for the reallocation, for either advanced wireless services or as relocation spectrum for displaced users, of the 2390-2400 MHz band. As was discussed in ARRL's comments in this proceeding, the Further Notice combined consideration of the 1910-1930 MHz band and the 2390-2400 MHz band as candidate bands for advanced wireless systems, noting that those bands are currently available for unlicensed PCS. While there are several comments supporting the reallocation of the 1910-1930 MHz segment (and as well a significant number opposing reallocation of that segment), few address both that segment *and* 2390-2400 MHz, and no comments provide any reasoned basis for disrupting a carefully crafted compatible "sharing" plan at 2390-2400 MHz for asynchronous U-PCS, and the Amateur Service (on a primary basis).

2. While some comments support the reallocation of the 1910-1930 MHz band for third generation wireless services, such as Siemens, Quantum Communications, Inc., Aviatell, Inc.,

and RNI, others distinctly call for retaining access to that band for unlicensed devices. These include TCA, Inc., WINForum, Penasco Valley Telephone Cooperative, Motorola, NEC, Avaya, UTAM, and iBee Communications. Numerous comments, such as those of Midvale Telephone Exchange, Midstate Communications, Inc., and UTStarcom, Inc., sought access to the 1910-1930 MHz band for "Community Wireless Networks". Others, such as Arraycomm, Inc., had other proposed uses for that band. Finally, some comments urged that the Commission consider the allocation of the 1910-1930 MHz band in a separate proceeding on a more open-ended basis, without reference to Advanced Wireless Services in particular.

3. None of the foregoing comments, however, made any reference whatsoever to the 2390-2400 MHz band. Those which specifically addressed the 2390-2400 MHz band were relatively few, and among them, there was no consistency. At the outset, ARRL would specifically draw the Commission's attention to the thoughtful comments of Cingular Wireless LLC, which urges the Commission to allocate a contiguous portion of spectrum for advanced wireless services, rather than bits and pieces of separate bands. Cingular notes that the bands identified by the United States for the purpose at WRC-2000 are no longer under consideration domestically, save for small slivers of spectrum. Instead, Cingular provides a strong argument that the Commission make the 2 GHz Mobile Satellite Service (MSS) bands available for terrestrial advanced wireless services, in view of the lack of economic viability of MSS. Relative to the 2390-2400 MHz segment, Cingular states as follows:

> The Commission seeks comment on the feasibility of using this spectrum for advanced wireless services in the United States. The spectrum is currently allocated to the Amateur Radio Services and Cingular opposes use of this band for advanced wireless services because sharing between the two services would not be feasible for two primary reasons. First, Amateur Services are not constrained to operat[e] from a specific location. Thus, they can initiate

> transmissions anywhere within the United States. Second, the transmitted power levels can be quite high and vary significantly. Moreover, Cingular supports the principles embodied by the Amateur Radio Services and believes that these services can be invaluable during emergencies. Accordingly, Cingular urges the Commission to leave this allocation unchanged.
>
> Cingular Comments, at 14.

This refreshing candor in a domestic spectrum allocations proceeding is unfortunately rare. ARRL appreciates the vote of support from Cingular and its recognition of the need for compatible sharing planning in these proceedings. ARRL would suggest that Cingular's proposed reallocation of the large segments of MSS 2 GHz allocations is a sound one, and that terrestrial advanced wireless services are clearly a viable alternative to MSS services.

4. In stark contrast to the comments of Cingular, those of Constellation Communications Holdings, Inc. reflect no recognition whatsoever of the allocation status of the 2390-2400 MHz band. Constellation suggests the reallocation of both the 1910-1930 MHz band and the 2390-2400 MHz band for advanced wireless services, as an alternative to reallocation of the MSS allocations at 2 GHz. They suggest allocation of 2390-2400 MHz on the basis that "there is little use or development of these bands."[1] There is no authority, other than the language of the Further Notice itself, for that premise, and no mention whatsoever of the recently created primary Amateur allocation in that band.

5. The comments of the Wireless Communications Division of the Telecommunications Industry Association, and those of Ericsson are similarly superficial in their assessment of the 2390-2400 MHz band. WCD/TIA states at page 4 of its comments that the "bands 1910-1930

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[1] Constellation quotes the Commission's Further Notice, at paragraph 35, for that premise, but apparently refers to U-PCS development only. There is no reference in Constellation's comments to the Amateur Service at all.

MHz and 2390-2400 MHz are currently used by Unlicensed PCS... operators and to a lesser extent, Amateur Services... (T)he WCD submits that the 2385-2390 MHz and 2390-2400 MHz bands form an ideal candidate for relocation of MDS users." Essentially the same characterization is made by Ericsson, except that Ericsson proposes use of the 2390-2400 MHz band for advanced wireless services. No authority is cited by either for the assumptions made as to the level of U-PCS use of the band, nor of the level of present Amateur use thereof. Nor is there any assessment of the disruption of the Amateur Service resulting from the suggested reallocation. As a matter of fact, ARRL would note that Amateur reliance on the 2390-2400 MHz band is substantial and has increased, due to the Commission's reallocation of the 2305-2310 MHz segment to Miscellaneous Wireless Communications Services, and the decreasing utility of the 2400-2450 MHz segment due to noise from unlicensed consumer devices. WCD/TIA's comments, and those of Ericsson do not reflect any knowledge of the level of Amateur occupancy of the 2390-2400 MHz band and the Commission should review those comments with that in mind.

6. Similarly, the comments of Verizon Wireless and Telephone and Data Systems, Inc. reflect a lack of understanding of the present allocation status of 2390-2400 MHz. Verizon states:

> The Notice seeks comment on the potential reallocation of the 2385-2400 MHz band to advanced wireless services or to accommodate the relocation of services displaced by 3G systems in other bands (citation omitted). Verizon Wireless supports such a reallocation and believes that this band can best be used to accommodate MDS relocation. The 2385-2400 MHz band would provide sufficient spectrum to accommodate MDS systems currently operating in the 2150-2160 MHz band, while not causing harmful interference to those systems operating in adjacent bands. Since it was only recently reallocated from Federal Government to commercial use, it is not heavily encumbered with other commercial users. As a result, it may be the best candidate for accommodating

> MDS relocation in the near-term. Verizon Wireless urges the Commission to remove the Amateur Service allocation from the 2390-2400 MHz band, reallocate the entire 2385-2390 MHz and 2390-2400 MHz bands to the Fixed Service, and make both bands available as soon as practicable for MDS relocation.
>
> Verizon Wireless Comments, at 10, 11.

It is unclear from the foregoing whether Verizon is at all cognizant of the allocation status of the band. There are no "commercial users" at 2390-2400 MHz. It was as recently as 1995 that the Commission made any private sector allocation of the band at all. At that time, the Commission stated, in the *First Report and Order and Second Notice of Proposed Rule Making,* 10 FCC Rcd. at 4780:

> We will regulate these unlicensed PCS devices in accordance with Part 15 of our Rules. Devices operating under Part 15 have generally proven to be effective in operating in shared environments with other services, including in frequency bands shared with the Amateur service. We recognize the value of maintaining adequate spectrum for the Amateur service and we believe that the generally robust nature of PCS devices will make it feasible for unlicensed PCS devices and Amateur operations to operate on a shared basis in this band. In addition, both Apple and the ARRL believe that shared use of this band is possible (footnote omitted). Accordingly, we are providing for the continued availability of the 2390-2400 MHz band for Amateur operations, and are increasing the status of the Amateur service in this band to primary (footnote omitted). Considering past experience of Part 15 devices and Amateur service users operating in a shared environment, we do not believe that it is necessary to adopt specific provisions for protecting either of these operations.

Nothing has changed since 1995 that would alter this finding, nor justify the Commission's reversal of its position that it is valuable to maintain adequate spectrum for the Amateur Service. Verizon Wireless offers no justification whatsoever for its proposal to "remove" the Amateur Service allocation from the 2390-2400 MHz band, and no reason why the Commission should reverse its recent decision creating the primary allocation in this band for the Amateur Service.

7. Equally puzzling are the comments of Telephone and Data Systems, Inc. (TDS), which state, in part, at page 6, as follows:

> TDS submits that all of the 1910-1930 MHz and 2390-2400 MHz bands should be reallocated to wireless 3G. As noted in the MO&O and FNPRM, there is little utilization of the 1910-1930 MHz band. If existing UPCS operations cannot share the band on a secondary basis, then they should be relocated to alternative spectrum. Likewise, the amateur radio spectrum at 2390-2400 MHz should be reallocated for 3G services. The uncontroverted economic benefits from a robust 3G spectrum allocation and auction will far outweigh the cost of relocating incumbent users on these bands.

TDS offers, however, no plan for relocating incumbent Amateur operators at 2390-2400, and offers no indication where displaced amateurs should be relocated. It has no idea of the cost, and should refrain from making such vague and unsupported generalizations. While ARRL does not dispute the value of a "robust 3G spectrum allocation", the issue is how to achieve that without disruption of incumbent users. With respect to that issue, the comments of TDS are frankly unhelpful.

7. A class of comments address the use of 2390-2400 MHz to accommodate displaced users, and provide more useful input than those of Verizon Wireless or TDS. The Ad Hoc MDS Alliance, for example, suggests that U-PCS devices displaced from 1910-1930 MHz could "be shifted to" the 2390-2400 MHz band. Though the Alliance (rather impatiently) assumes that U-PCS is a failed concept, an assumption which is certainly not supported by any facts, there is established compatibility between asynchronous U-PCS devices and Amateur operations at 2390-2400 MHz. While isynchronous U-PCS devices may be far less compatible, ARRL is willing to consider compatibility studies addressing that issue.

8. Far closer to a workable proposal relative to 2390-2400 MHz is contained in the comments of the Cellular Telecommunications and Internet Association (CTIA) which note., at

page 3, that the band "could be used to relocate displaced incumbents, but it lacks sufficient capacity to provide significant spectrum for advanced mobile wireless services. Relocated incumbents, particularly certain Government users, might be accommodated in this band, and some could potentially share this band with the amateur service." ARRL agrees with this assessment, and urges the Commission to conduct necessary compatibility studies together with NTIA to determine which, if any, Government users might compatibly share with the Amateur Service in this band. Nortel Networks makes the same point, supporting the concept that 2390-2400 MHz can be used in conjunction with the 2385-2390 MHz band for possible relocation of some Government users from spectrum under consideration for advanced wireless services. ARRL would urge that the Commission consider an allocation of the entire segment at 2385-2400 MHz for displaced government users; to create a non-government primary allocation for the Amateur Service at 2385-2390 MHz at the same time, as an accommodation for the reduction in utility of the 2390-2400 MHz band by the addition of Government uses, and to retain the recently-created primary allocation for the Amateur Service at 2390-2400 MHz.

9. Among the various comments filed by Amateur Radio licensees opposing any commercial encroachment into the 2390-2400 MHz band, those of Nickolaus E. Leggett are perhaps most notable. Mr. Leggett explains concisely the rationale for compatible government sharing with the Amateur Service, if indeed any such reaccommodation is necessary at all:

> If the Commission decides that further sharing is needed in this frequency band, the amateur radio operators can share it with Federal Government users. This sharing approach has the advantage that the government users are not located in residential areas and hence the fundamental frequency overload type of interference will not occur. In addition, the government users tend to be more knowledgeable about interference than consumers are. This enhances the ability to solve any interference problems that may come up...This sharing would be most successful if the same type of Federal operations shared the band as those

that had successfully shared it in the past.

Nicholaus E. Leggett Comments, at 3.

10. Finally, ARRL would remind the Commission that it has made a commitment to the Amateur Service at 2390-2400 MHz, and any reconsideration of the allocation decisions made in 1995 is both premature and unfair. The Amateur Service requirements for reasonable access to this band have increased significantly since 1995, and the ill-advised decisions the Commission has made with respect to the remainder of the Amateur allocations around 2 GHz have severely restricted Amateur experimentation and communications in those bands. The Commission held, in 1995, that, while it had considered allocating the band for Fixed and Mobile services or for a number of specific services proposed by commenters in the Docket 94-32 proceeding, "we believe that use by new unlicensed PCS and continued use by the Amateur service represents the greatest opportunity for using this band to benefit the public." 10 FCC Rcd. at 4780-4781. The Commission was not wrong then, and there is no reason to disturb the specific findings made in Docket 94-32. The Commission's commitment to the Amateur Service relative to this band did not arise in a vacuum. It was Congressionally mandated. In the "*Report From the Federal Communications Commission to Ronald H. Brown, Secretary, U.S. Department of Commerce, Regarding The Preliminary Spectrum Allocation Report*", FCC 94-213, released August 9, 1994, the Commission stated, with respect to both the 2300-2310 MHz and the 2390-2400 MHz segments:

> The largest factor affecting use of these bands is their existing availability for use by the Amateur Service (footnote omitted). Congress specifically sought to avoid disruption of existing use of Federal government frequencies by amateur radio licensees (footnote omitted). We agree with commenters that there is a substantial likelihood that reallocation of the 2300-2310 MHz and 2390-2400 MHz band to

> commercial or local government use could cause serious disruption to Amateur service use of these bands.

Id., at 17.

11. ARRL therefore urges that no changes be made in the allocation at 2390-2400 MHz. If it is necessary to add any displaced uses from other bands at 2390-2400 MHz, and there is no alternative, ARRL would be willing to participate in compatibility studies to determine whether certain Federal government uses could share the allocation without significant disruption of present and planned future Amateur operations in that band. In such a case, however, the Commission should seriously consider an allocation of the entire 2385-2390 MHz band for Federal government use and to create a non-government primary allocation for the Amateur Service at 2385-2390 MHz to accommodate the reduction in utility of the 2390-2400 MHz segment resulting from the addition of the government uses to that segment.

Therefore, the foregoing considered, ARRL, The National Association For Amateur Radio, again respectfully requests that the Commission make no commercial allocation at 2390-2400 MHz, or to add any other non-Government use to that band. If it is necessary (1) to accommodate some displaced licensees in that band, and if Federal government uses must be reaccommodated there, ARRL would consider compatibility studies to address government sharing. ARRL further requests that, under any circumstances, the Commission retain the non-

Government primary allocation for the Amateur Service at 2390-2400 MHz.

Respectfully submitted,

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November 8, 2001

CERTIFICATE OF SERVICE

I, Christopher D. Imlay, do hereby certify under penalty of perjury that I caused to be served, this 8th day of November, 2001, via United States Mail, postage Prepaid, a copy of the foregoing **"REPLY COMMENTS OF ARRL, THE NATIONAL ASSOCIATION FOR AMATEUR RADIO"** on the following:

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