ORIGINAL

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

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JUN 21 1995
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of	)	
	)	
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 RM-7927

To: The Commission

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REPLY COMMENTS OF TRW INC.

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List A B C D E

TABLE OF CONTENTS

		Page
SUMMARY		ii
I.	NO CONSENSUS HAS BEEN REACHED AMONG THE COMMENTERS ON AN ACCEPTABLE 2 GHz MSS ALLOCATION	3
II.	ANY 2 GHz MSS ALLOCATION AT THIS TIME WOULD BE PREMATURE	7
III.	THE COMMISSION SHOULD REJECT CELSAT'S PROPOSAL THAT THE COMMISSION PROHIBIT 1.6/2.4 AND 1.5/1.6 GHz MSS LICENSEES AND THEIR AFFILIATES FROM HOLDING 2 GHz MSS LICENSES	9
IV.	UNDER NO CIRCUMSTANCES SHOULD THE COMMISSION LICENSE SATELLITE SYSTEMS IN THE 2 GHz MSS BANDS BY MEANS OF COMPETITIVE BIDDING	11
V.	CONCLUSION	12

SUMMARY

TRW Inc. ("TRW") concurs with most commenters in this proceeding that the Commission's plan to make 2 GHz spectrum available for the Mobile Satellite Service ("MSS") by relocating a 35 MHz segment of Broadcast Auxiliary Service ("BAS") operations within the 2 GHz bands, and thereby displacing the operations of the Fixed Microwave Services ("FS") in the 2110-2145 and 2160-2195 MHz bands, raises complicated technical problems and would be so expensive as to be impracticable. The alternative proposals offered by the Commission in its NPRM in this proceeding would involve similar problems. Although many commenters offer their own alternative plans and/or propose further Commission study of the options for allocating 2 GHz MSS spectrum, no consensus has been reached or seems within reach on an acceptable 2 GHz MSS allocation.

There is no reason for the Commission to act in haste to allocate 2 GHz spectrum to the MSS, given the standard time frame for the development of a new satellite service and the fact that no other member nation of the ITU will permit 2 GHz MSS before January 2005. The Commission should instead take the more prudent approach of encouraging the BAS to seek to reduce or eliminate the need for relocating BAS operations by employing more spectrum-efficient technologies. The Commission should also re-examine the possibility that the FS and MSS can share spectrum in the 2160-2200 MHz bands. In any case, the Commission should not make any 2 GHz MSS allocation decision before the results of

WRC-95 are known and additional public comments based on those results have been filed and considered.

The Commission should also reject Celsat's proposal that the Commission adopt a restriction preventing any 1.6/2.4 or 1.5/1.6 GHz MSS licensee from obtaining authority to operate in the subject 2 GHz bands. The Commission must not waste the hard-won worldwide allocation for MSS in the 1980-2010 and 2170-2200 MHz bands by reserving those bands for purely domestic or regional satellite systems.

Finally, under no circumstances should the Commission employ competitive bidding to allocate 2 GHz MSS spectrum. The Commission must not jeopardize the financial viability of U.S. global MSS systems by giving other nations an excuse to employ MSS spectrum auctions of their own.

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To: The Commission

REPLY COMMENTS OF TRW INC.

TRW Inc. ("TRW"), by its attorneys and pursuant to Sections 1.415 and 1.419 of the Commission's rules, hereby replies to the comments filed by various parties in the above-captioned proceeding.

TRW agrees with most commenters in this proceeding that the Commission's plan to make 2 GHz Mobile Satellite Service ("MSS") spectrum available by relocating a 35 MHz segment of Broadcast Auxiliary Service ("BAS") operations within the 2 GHz bands and displacing the operations of the Fixed Microwave Services ("FS") in the 2110-2145 and 2160-2195 MHz bands raises complex technical issues and would be prohibitively expensive. The Commission's alternative proposals would create similar problems.

Numerous commenters propose their own alternative plans and/or further Commission study of the available options for allocating spectrum to the MSS in the 2 GHz bands. As of this

date, however, no consensus has been reached (or seems to be within reach) among prospective MSS system applicants and licensees and incumbent 2 GHz licensees on an acceptable MSS allocation in these bands.

Given the normal time frame for the development of a new satellite service and the fact that the rest of the world will not permit 2 GHz MSS before January 2005, there is no reason for the Commission to rush into its 2 GHz MSS allocation decision before it has adequate information with which to render a well-reasoned judgement. In this regard, the Commission should both encourage the BAS to explore the possibility that the need for and/or cost of relocating BAS operations may be reduced or eliminated by the BAS's use of more spectrum-efficient technologies, and re-examine the possibility that the FS and MSS can share spectrum in the 2160-2200 MHz bands. At a minimum, the Commission should not make any 2 GHz MSS allocation decision until the results of WRC-95 are known, and additional public comments submitted after the conference concludes are considered.

TRW also calls on the Commission to reject out of hand the proposal of Celsat America, Inc. ("Celsat") that the Commission adopt a restriction preventing any 1.6/2.4 GHz or 1.5/1.6 GHz MSS licensee from obtaining authorization to operate

in the subject 2 GHz bands. Under no circumstances should the Commission waste this valuable opportunity to make spectrum available for global MSS systems -- particularly as the world has already agreed to make significant portions of the 2 GHz bands available for this very purpose.

Finally, every commenter that directly addressed the issue strongly opposes the Commission's proposed use of competitive bidding to allocate 2 GHz spectrum for MSS use. The Commission must not jeopardize the future of global MSS by employing competitive bidding for this purpose.

I. No Consensus Has Been Reached Among The Commenters On An Acceptable 2 GHz MSS Allocation.

In the Notice of Proposed Rule Making in this proceeding ("NPRM"), the Commission proposed to relocate BAS operations from the 1990-2025 MHz bands to the 2110-2145 MHz bands, a change which would require the additional relocation of the linked FS bands at 2110-2145 MHz and 2160-2195 MHz. As alternatives, the Commission proposed: (1) to allocate 40 MHz to MSS at 1990-2010 MHz and 2180-2200 MHz and to defer action on additional spectrum until WRC-95 concludes its deliberations on the appropriate 2 GHz MSS allocation; or (2) to allocate 60 MHz to MSS at 1990-2020 MHz and 2170-2200 MHz. Most commenters in this proceeding agree that

these proposals raise as yet unresolvable problems, but have reached no consensus on an acceptable alternative.

Many commenters express concern that the Commission's proposals involve technical issues that the Commission has not yet adequately considered. For example, Motorola, Inc. ("Motorola"), Loral/QUALCOMM Partnership, L.P. ("LQP"), Constellation Communications, Inc. ("Constellation"), COMSAT Corporation ("Comsat"), Celsat, the Association of Public-Safety Communications Officials-International, Inc. ("APCO") and TRW all agree that the adoption by the BAS of digital or other more spectrum-efficient technology may allow the Commission to make sufficient spectrum available for MSS in the 2 GHz bands and obviate the Commission's complex and costly relocation proposals.[1/]

The Association for Maximum Service Television, Inc. and other members of the broadcast industry ("MSTV"), however, maintain that the BAS cannot accept any reduction in the amount of spectrum now available for ENG operations in the 2 GHz

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1/ See Motorola Comments at 19-21; LQP Comments at 14-16; Constellation Comments at 3; Comsat Comments at 19, 22-23; Celsat Comments at 7-8; APCO Comments at 3; TRW Comments at 11-12.

bands.[2/] MSTV argues that digital technology will not reduce BAS requirements for 2 GHz spectrum, and that the growth in BAS demand for 2 GHz spectrum will outpace any efficiency gains that may result from the use of new technology in any event.[3/] The Society of Broadcast Engineers, Inc. ("SBE") concedes that broadcasters may be able to make do with a 2 MHz reduction in each of the seven existing ENG channels, but offers no more.[4/]

The present and future needs of the BAS for 2 GHz spectrum affect the viability of all of the Commission's 2 GHz MSS spectrum allocation proposals. TRW therefore joins LQP and Constellation in urging the Commission to devote further study to the true spectrum needs of the BAS in the 2 GHz bands.[5/]

In addition, LQP, Comsat, Celsat and TRW agree that MSS use of the 2160-2200 MHz bands for downlink operations may be compatible with current FS operations in the 2160-2195 MHz

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2/ MSTV Comments at 6.

3/ Id. at 17-18.

4/ SBE Comments at 8. To date, exploratory discussions between certain prospective MSS system operators and the BAS have not produced any proposals that are acceptable to all participants in this proceeding.

5/ See LQP Comments at 14-16; Constellation Comments at 3.

bands.[6/] Therefore, depending on whether or not any 2 GHz BAS operations need to be relocated to accommodate the MSS, the Commission's proposed relocation of FS operations in the 2160-2195 MHz bands and the linked FS operations in the 2110-2145 MHz bands -- at a cost that some claim to be on the order of $3 billion[7/] -- may be entirely unnecessary. Motorola, however, maintains that sharing between MSS and Fixed Microwave users already occupying the 2 GHz bands is not feasible on a co-frequency basis because of the potential for interference between the services.[8/] LQP and Constellation have urged the Commission to devote further study to this matter as well.[9/]

Numerous parties offer the Commission their own alternative 2 GHz allocation plans or transition plans.[10/] These proposals are wildly divergent, both as to the amount of spectrum to be

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6/ LQP Comments at 16; Comsat Comments at 17-19; Celsat Comments at 8-10 (stating that Celsat's MSS service can "co-exist with a significant number of [microwave] incumbents without causing or being susceptible to interference."); TRW Comments at 8.

7/ See, e.g., Comsat Comments at 11-15; SBE Comments at 7; TRW Comments at 10.

8/ See Motorola Comments at 15.

9/ LQP Comments at 16; Constellation Comments at 3.

10/ See e.g., LQP Comments at 8-16; Comsat Comments at 17-24; APCO Comments at 2-5; SBE Comments at 8; Ericsson Corporation Comments at 3-4 ("Ericsson Comments").

allocated to various services and the dates on which such spectrum would become available for use.[11/] TRW submits that the Commission cannot reach proper conclusions on the merits of these proposals until the true needs and capabilities of incumbent licensees in the 2 GHz bands have been determined.

II. Any 2 GHz MSS Allocation At This Time Would Be Premature.

Given the uncertainty regarding the feasibility of, and need for, the 2 GHz reallocations proposed by the Commission and other parties -- not to mention the tremendous relocation costs that many of these proposals would entail, and the complications involved in apportioning the burden of those costs fairly among

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11/ See, e.g., LQP Comments at 11-16 (urging the Commission to defer any decision on its 2 GHz reallocation proposals pending the conclusion of WRC-95, recommending transitional procedures for the Commission to follow in reallocating the 2 GHz bands, and urging further study of the need for the relocations proposed in the NPRM); Comsat Comments at 17-24 (proposing a two-phased plan based on the premise that the MSS can share spectrum with the FS in the 2160-2200 MHz bands, and that MSS uplinks can be accommodated through the gradual rechannelization of BAS operations); APCO Comments at 2-5 (stating that if the Commission reallocates the 2110-2200 MHz band and allocates the 2165-2200 MHz bands to MSS, the 2110-2145 MHz band should be made available for advanced broadcast public safety communications); SBE Comments at 8 (suggesting that the Commission allocate just 14 MHz for 2 GHz MSS operations in the 1990-2025 MHz bands, and that each BAS/ENG channel be reduced by 2 MHz accordingly); Ericsson Corporation Comments at 3-4 (asserting that the Commission should reserve the 2110-2150 MHz band for terrestrial mobile telephony).

existing and new services[12/] -- TRW recommends that the Commission refrain from making any 2 GHz MSS allocation until it determines whether or not the relocation of incumbent 2 GHz licensees is in fact required. The Commission can only reach this determination by: (1) devoting further study to the present and future need of the BAS for the 2 GHz spectrum that it claims it requires; (2) allowing sufficient time for the BAS to develop the digital technology that it will inevitably adopt regardless of the Commission's decisions in this or other proceedings, and examining the spectrum-saving capabilities of that technology; and (3) re-evaluating the feasibility of co-frequency sharing between the MSS and the FS.

TRW once again urges the Commission to recognize that, by the time MSS systems that can use the 2 GHz bands are actually licensed and launched, the United States is likely to benefit little, if at all, from the nine-year lead that it reserved for itself over the rest of the world at WARC-92 for use of the 2 GHz bands.[13/] To this extent, TRW agrees with GE American Communications, Inc. ("GE Americom") that there may be no need

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12/ See TRW Comments at 7-10, 13-18.

13/ See id. at 12-13.

for the Commission to make any 2 GHz MSS allocation available to the MSS before January 2005.[14/]

In any event, TRW agrees with the many commenters who urge the Commission not to make any 2 GHz MSS allocation before the results of the upcoming WRC-95 are known.[15/] No purpose would be served by an allocation that could be rendered useless by decisions at the WRC. TRW is particularly concerned that, in binding the United States to any 2 GHz MSS allocation in advance of the WRC, the Commission may alienate the many nations that have already agreed to worldwide MSS allocations at 1980-2010 and 2170-2200 MHz and Region 2 MSS allocations at 1970-1980 and 2160-2170 MHz. The Commission would thereby jeopardize U.S. interests in attaining a viable worldwide 2 GHz MSS allocation, as well as other important MSS allocations.

III. The Commission Should Reject Celsat's Proposal That The Commission Prohibit 1.6/2.4 and 1.5/1.6 GHz MSS Licensees And Their Affiliates From Holding 2 GHz MSS Licenses.

TRW urges the Commission to reject out of hand Celsat's proposal that the Commission prohibit 1.6/2.4 and 1.5/1.6 GHz MSS

14/ See GE Americom Comments at 3.

15/ See, e.g., Constellation Comments at 2; LQP Comments at 7-8; MSTV Comments at 6-7; American Petroleum Institute Comments at 10-12.

licensees and their affiliates from holding 2 GHz MSS licenses.[16] While claiming to wish to prevent 1.6/2.4 and 1.5/1.6 GHz MSS licensees from "achiev[ing] a dominant market position and stifl[ing] competition from new entrants,"[17] it is obvious that Celsat seeks merely to hinder effective competition to its own proposed hybrid PCS/MSS system by reserving any 2 GHz MSS bands for itself.[18]

The world has already recognized the great need of the new global non-geostationary MSS industry for additional spectrum by allocating substantial portions of the 2 GHz bands for MSS use worldwide. TRW agrees with the many commenters that urge the Commission not to waste this precious international allocation by restricting it to use by purely domestic or regional MSS systems.[19]

16/ See Celsat Comments at 4-6.

17/ See id. at 5.

18/ As LQP observes, Celsat's proposed system would use certain 2 GHz frequencies exclusively for MSS and others exclusively for terrestrial service only. See LQP Comments at 23. Thus, Celsat would prevent any licensee, including itself, from using an MSS band segment for MSS where Celsat had decided to use the segment for terrestrial service. See id. Such use of an MSS allocation could hardly be considered efficient.

19/ See, e.g., Constellation Comments at 2-3; Motorola Comments at 10-12; Teledesic Comments at 8; Comsat Comments at 32-33; (continued...)

IV. Under No Circumstances Should The Commission License Satellite Systems In The 2 GHz MSS Bands By Means Of Competitive Bidding.

The overwhelming majority of commenters exhort the Commission in the strongest possible terms not to employ competitive bidding as a means of licensing MSS systems in the 2 GHz bands.[20/] Virtually every commenter addressing the issue stresses the danger that other countries may follow the United States' example and employ MSS spectrum auctions of their own, thereby raising the cost of providing global MSS to the point where it will simply become untenable.[21/] The Commission must

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19/ (...continued)
Comments of Newcomb Communications, Inc. at 2-4; Ericsson Comments at 2. Celsat also asserts that, if the Commission declines to allocate any new 2 GHz MSS bands for exclusive use by geostationary satellite systems, the Commission "should change the Big LEO rules to permit GSO use of such spectrum, and should permit new applications in that spectrum." Celsat Comments at 11. It need hardly be stated that, if Celsat wished to operate its proposed satellite system in the 1.6/2.4 GHz bands, it should have applied to do so long ago.

20/ See, e.g., Comsat Comments at 24-32; LQP Comments at 25-28; Motorola Comments at 24-27; Teledesic Comments at 10-15; Comments of Hughes Telecommunications and Space Company at 2-5 ("Hughes Comments"); GE Americom Comments at 13-20; Comments of Personal Communications Satellite Corporation at 11-15 ("PCSAT Comments"); Newcomb Comments at 9-10; TRW Comments at 18-24.

21/ See, e.g., Comsat Comments at 27-32; LQP Comments at n.31; Motorola Comments at 24-25; Teledesic Comments at 12-15; Hughes Comments at 3; GE Americom Comments at 20; PCSAT Comments at 14-15; TRW Comments at 22-24.

not place the short-term prospect of one-time federal revenues above the vast and long-term economic benefits of a healthy, global U.S. MSS industry. It is no exaggeration to state that the fate of a significant portion of the global information infrastructure is at stake.

V. Conclusion

For the foregoing reasons, the Commission should re-evaluate present and future BAS spectrum requirements in the 2 GHz bands before displacing any BAS operations to make room for a 2 GHz MSS allocation, and allow time for the BAS to employ digital equipment that may reduce those requirements. The Commission should also re-examine the possibility of sharing between the MSS and the FS in conjunction with any MSS allocation in the 2 GHz bands currently allocated to the FS. The Commission should not rush into a 2 GHz MSS allocation decision before it has sufficient information to render a well-reasoned judgement, and should not, in any case, make any 2 GHz MSS allocation decision until the results of WRC-95 are known.

The Commission should also reject Celsat's proposed restriction preventing 1.6/2.4 or 1.5/1.6 GHz MSS licensees and

their affiliates from obtaining authority to operate in any future 2 GHz MSS bands.

Finally, the Commission must not employ competitive bidding to allot spectrum to MSS systems in the 2 GHz MSS bands under any circumstances.

Respectfully submitted,

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