

IEEE 802

Local and Metropolitan Area Network Standards Committee

Homepage at <http://ieee802.org/>

July 29, 2002

To: Ms. Marlene H. Dortch, Esq.
Secretary
Federal Communications Commission
236 Massachusetts Ave., NE, Suite 110
Washington, DC 20002

Reply to: Carl R. Stevenson
Chair, IEEE 802.18 Radio Regulatory
Technical Advisory Group
4991 Shimerville Road
Emmaus, PA 18049
phone: (610) 965-8799
mobile: (610) 570-6168
e-mail: carl.stevenson@ieee.org

From: Paul Nikolich,
Chair, IEEE Project 802
18 Bishops Lane
Lynnfield, MA 01940
(857) 205-0050
p.nikolich@ieee.org

Dear Ms. Dortch:

Please find attached the *Comments of IEEE 802 in ET Docket No. 02-98*.

Should you have any questions regarding this filing, please feel free to contact Mr. Carl R. Stevenson, the Chair of the IEEE 801.18 Radio Regulatory Technical Advisory Group ("TAG").

Respectfully submitted,

/s/
Paul Nikolich
Chair, IEEE 802
18 Bishops Lane
Lynnfield, MA 01940
(857) 205-0050
p.nikolich@ieee.org

/s/
Carl R. Stevenson
Chair, IEEE 802.18 Radio Regulatory TAG
4991 Shimerville Road
Emmaus, PA 18049
(610) 965-8799
carl.stevenson@ieee.org

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

In the Matter of)	
)	
Amendment of Parts 2 and 97 of the)	ET Docket No. 02-98
Commission's Rules to Create a Low)	RM-9404
Frequency allocation for the Amateur Radio)	
Service)	
)	
Amendment of Parts 2 and 97 of the)	RM-10209
Commission's Rules Regarding an Allocation)	
of a Band near 5 MHz for the Amateur Radio)	
Service)	
)	
Amendment of Parts 2 and 97 of the)	RM-9949
Commission's Rules Concerning the Use)	
Of the 2400-2402 MHz Band by the)	
Amateur and Amateur-Satellite Services)	

To the Commission:

COMMENTS OF IEEE 802 IN ET DOCKET NO. 02-98

IEEE 802¹ hereby offers its comments on the Notice of Proposed Rulemaking (“the NPRM”) in the above-captioned Proceeding. IEEE 802 and its members that participate in the IEEE 802 standards process are interested parties in this proceeding for two principal reasons:

1) The NPRM proposes to elevate the Amateur Radio Service from a Secondary allocation status to Primary status in the 2400-2402 MHz band and also to establish a Primary allocation for the Amateur Satellite Service in the same band.

2) The band in question is also widely utilized by rapidly increasing millions of devices, based on a number of IEEE 802 standards², that are authorized under Part 15 of the Commission's rules.

These comments are timely filed and we appreciate the opportunity to offer them.

¹ The IEEE Local and Metropolitan Area Networks Standards Committee (“IEEE 802” or the “LMSC”)

² The IEEE 802.11b, 802.11g, 802.15.1, 802.15.3, and 802.15.4 standards all currently use, or are targeted to soon use, the 2.4 GHz Part 15 bands.

INTRODUCTION

1. In the NPRM, the Commission, in response to a Petition for Rulemaking (“the Petition”) from the American Radio Relay League (“ARRL”), proposes to upgrade the allocation for the Amateur Radio Service from Secondary status to Primary status and to add a Primary allocation to the Amateur Satellite Service in the 2400-2402 MHz band in Parts 2 and 97 of its rules.³

2. The Commission, in its November 18, 1999 *Policy Statement* indicated that existing ISM and unlicensed usage of the band would restrict new services given current spectrum sharing techniques, and concluded that the 2400-2402 MHz band would be placed into a spectrum reserve for future applications *until new technologies or other changes would increase the opportunity for new operations*.⁴ (emphasis added)

3. However, less than one year later, on July 17, 2000, the ARRL filed the Petition, contending that upgrading the Amateur Radio Service and Amateur Satellite Service allocations in this band would not impose constraints on co-frequency Part 15 and Part 18 devices.

4. While technology advances rapidly, we do not believe that there have been sufficiently major breakthroughs in the intervening time since the Commission issued its policy statement, and placed the 2400-2402 MHz band in reserve, to support a contention that there have been major changes in the feasibility of sharing between unlicensed Part 15 devices and amateur users of the subject band.

³ See the NPRM, at 49.

⁴ *Id.* at 43.

**THE ARRL'S CONTENTION THAT THE PROPOSED UPGRADE WOULD NOT
CONSTRAIN OPERATION OF PART 15 DEVICES IS INCONSISTENT WITH THEIR
RECENT FILINGS WITH THE COMMISSION**

5. The ARRL contends that upgrading the amateur and amateur-satellite service allocations in this band would not impose constraints on co-frequency Part 15 (and Part 18) devices “*because this band is located at the lower edge of the segment in which such devices operate, and because of the geographic separation typically encountered between amateur-satellite stations and Part 15 and Part 18 devices.*”⁵

6. However, we are compelled to note that the ARRL has, in two separate Proceedings currently before the Commission, challenged the Commission’s fundamental authority to authorize unlicensed Part 15 operations on the basis that they *might possibly* cause interference to amateur operations.^{6,7}

7. In light of the nature of the ARRL’s filings in the referenced Proceedings, we are concerned that it does not require a huge leap of imagination to foresee a strong likelihood that the ARRL will, if granted Primary status, attempt to use that elevated status to ultimately raise new challenges to Part 15 unlicensed operations in the subject band.

⁵ See the NPRM, at 46.

⁶ See the Petition for Reconsideration filed by the ARRL in ET Docket No. 98-156

⁷ See also Comments filed by ARRL in ET Docket No. 01-278

**THE SUBJECT BAND IS OF VITAL IMPORTANCE TO UNLICENSED USES THAT
PROVIDE TREMENDOUS BENEFITS TO THE PUBLIC**

8. In the NPRM, the Commission states, “Because this band is important to unlicensed applications and there is widespread deployment, the removal of such devices would not be feasible.” and, further, requests comment on whether the proposed primary amateur and amateur-satellite service allocations would conflict with unlicensed use of the band.⁸

9. We concur with, and appreciate, the Commission’s recognition of the importance of the subject band to unlicensed Part 15 operations and the infeasibility of the removal of such operations from the band.

10. We also commend the Commission for its wisdom and foresight in creating, through its Part 15 rules, the environment where technology and innovation can flourish, relatively unfettered by unnecessarily restrictive regulations, producing enormous benefits to millions of Americans.

11. Despite the concerns we express in 3-7 above, unlicensed Part 15 operations and amateur operations have, as the Commission recognizes, successfully coexisted in the subject band for many years.⁹

⁸ See the NPRM, at 50.

⁹ *Id.*

12. In response to the Commission's request for comment on whether the proposed primary Amateur Radio Service and Amateur Satellite Service allocations would conflict with unlicensed use of the band, our view is that there need not be a conflict in a purely technical sense, but conflicts of a more fundamentally political nature may, in fact, arise in the future, due to the ARRL's tenacious, and often preemptive, approach to the defense of amateur operations.^{10,11}

¹⁰ See the Petition for Reconsideration filed by the ARRL in ET Docket No. 98-156

¹¹ See also Comments filed by ARRL in ET Docket No. 01-278

**SHARING OF THE SUBJECT BAND BETWEEN AMATEUR SATELLITE
OPERATIONS AND UNLICENSED PART 15 OPERATIONS COULD BE
FACILITATED BY SIMPLY LIMITING AMATEUR SATELLITE USE OF THE BAND
TO DOWNLINK TRANSMISSIONS ONLY**

13. We note that ARRL states that amateur radio operators use this band for both analog and digital satellite uplink and downlink operations.¹²

14. We respectfully suggest that the sharing scenario between amateur satellite operations and unlicensed Part 15 operations would be greatly enhanced by limiting the Amateur Satellite Service's use of the subject band to downlink transmissions only. In this situation, there would be no concerns about the possibility of aggregate interference from the total population of Part 15 devices into the amateur satellites' sensitive receivers.

15. Furthermore, our understanding, from a review of information available on the websites of the ARRL and the Radio Amateur Satellite Corporation ("AMSAT"), is that the 2.4 GHz uplink receivers in the amateur satellite known as AO-40 are non-functional, due to an unfortunate accident during the firing of a maneuvering rocket intended to alter the satellite's orbit from its initial post-launch orbit to the desired final orbit. It is also our understanding that only one of the two 2.4 GHz downlink transmitters is functional, and that both the non-functional 2.4 GHz uplink receivers and the non-functional 2.4 GHz downlink transmitter are considered "unrecoverable."

16. Thus, we believe that restricting the use of the 2.4 GHz band by the Amateur Satellite Service to downlink transmissions only would not preclude the full use of that satellite's currently available capabilities.

¹² See the NPRM, at 45, *see also* the Petition, at 8.

17. We also believe that such a restriction can easily be accommodated in the design and frequency plans of future amateur satellites and furthermore that it only makes good technical sense for amateur satellite system designers to recognize the reality of the rapidly increasing volume of unlicensed Part 15 operation in the subject band.

18. By simply applying good design judgment and restricting amateur satellite use to downlink transmissions only in the subject band, it is readily possible to completely avoid the possibility of aggregate interference from the total population of Part 15 devices that are there and, by the Commission's own acknowledgement, cannot feasibly be removed.

**IF THE ARRL IS SINCERE IN ITS CONTENTION THAT UPGRADING THE
AMATEUR AND AMATEUR SATELLITE SERVICE ALLOCATIONS IN THIS BAND
“WOULD NOT IMPOSE CONSTRAINTS ON CO-FREQUENCY PART 15 DEVICES,”
THEY SHOULD NOT OBJECT TO A “SAFE HARBOR” PROVISION**

19. In its *MEMORANDUM OPINION AND ORDER AND FURTHER NOTICE OF PROPOSED RULE MAKING* in PR Docket No. 93-61, released September 16, 1997, the Commission enacted a “Safe Harbor” provision, which in states, in part:

“To accommodate the concerns of Part 15 interests regarding their secondary status *vis-a-vis* LMS, the *LMS Report and Order* adopted a "safe harbor" within which Part 15 devices may operate without fear of being deemed to cause interference to LMS operators. Specifically, a Part 15 device will, ***by definition***, (emphasis added) not be considered to be causing interference to a multilateration LMS system if it is otherwise operating in accordance with the provisions of Part 15 and meets at least one of the following conditions: ...”^{13,14}

20. Because of the tremendous value of unlicensed Part 15 operations to the public, this same principle could, *and should*, be applied *vis-à-vis* accommodating the concerns of Part 15 interests regarding their secondary status relative to the Amateur Services, with provisions very similar to those embodied in 47 C.F.R. § 90.361, if the proposed upgrade of the Amateur Radio Service to Primary status and/or the proposed Primary allocation to the Amateur Satellite Service are adopted by the Commission.

¹³ See *MEMORANDUM OPINION AND ORDER AND FURTHER NOTICE OF PROPOSED RULE MAKING* in PR Docket No. 93-61, released September 16, 1997 (FCC 97-305)

¹⁴ See also 47 C.F.R. § 90.361

21. This would have the effect of precluding recurrent, frivolous challenges to the Commission's authority from the amateur community *vis-à-vis* Part 15 unlicensed operations as well as unreasonable assertions of interference to future systems in the Amateur Radio Service or Amateur Satellite Service that may be designed without adequate technical consideration of the reality of the other uses of the band, combined with an attitude that "the onus of coexistence is totally on the Part 15 community."

22. In fact, based on the striking ratio between the rather sparse use of the amateur allocations at frequencies above 902 MHz that are provided in Part 97 of the Commission's rules vs. the many millions of users of unlicensed Part 15 devices operating above 902 MHz, we would respectfully submit that the public interest would be served if the Commission were to go one step further and extend such a "safe harbor" provision to all Part 15 operations in all bands above 902 MHz that are shared between Part 15, the Amateur Radio Service, and/or the Amateur Satellite Service.

SUMMARY AND CONCLUSION

23. In summary, our comments and recommendations are as follows:

No radical changes in technology have occurred since the Commission issued its November 18, 1999 *Policy Statement* that would dramatically alter the feasibility of sharing between amateur operations and unlicensed Part 15 operations in shared bands.

The ARRL's contention that the proposed upgrade would not constrain operation of Part 15 devices is inconsistent with their recent filings with the Commission.

The subject band is of vital importance to unlicensed uses that provide tremendous benefits to the public.

Sharing of the subject band between amateur satellite operations and unlicensed Part 15 operations could be facilitated by simply limiting amateur satellite use of the band to downlink transmissions only.

If the ARRL is *sincere* in its contention that upgrading the amateur and amateur satellite service allocations in this band "*would not impose constraints on co-frequency Part 15 devices,*" they should not object to a "Safe Harbor" provision.

24. On behalf of IEEE 802, we hereby respectfully request that the Commission either adopt the recommendations we present herein, or, if those recommendations exceed the scope of the instant NPRM, expeditiously issue a Further Notice of Proposed Rulemaking in the Proceeding, seeking further comment thereon.

Respectfully submitted,

/s/

Paul Nikolich
Chair, IEEE 802
18 Bishops Lane
Lynnfield, MA 01940
(857) 205-0050
p.nikolich@ieee.org

/s/

Carl R. Stevenson
Chair, IEEE 802.18 Radio Regulatory TAG
4991 Shimerville Road
Emmaus, PA 18049
(610) 965-8799
carl.stevenson@ieee.org