

FCC MAIL SECTION

Before the
 Federal Communications Commission
 Washington, D.C. 20554

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PR Docket No. 92-151 ✓

In the Matter of

Federal Access to Low Power
 18 GHz Private Operational
 Fixed Microwave Systems

RM-7839

REPORT AND ORDER

Adopted: May 3, 1993;

Released: May 14, 1993

By the Commission:

I. INTRODUCTION

1. This *Report and Order* amends Section 94.17(a)(1) of the Commission's Rules¹ to permit federal government users to be served by Part 94 licensees operating, on a for-profit, private carrier basis, 18 GHz low power systems licensed on digital termination system (DTS) channels. This action will extend to federal users access to wireless local area networks without adversely affecting the availability or quality of this service to non-federal users.

II. BACKGROUND

2. Under the current rules, licensees may operate multiple, low power point-to-multipoint transmitters on frequencies in the 18 GHz band at sites anywhere within a 28 kilometer (17.5 mile) radius of the reference coordinates listed on their license.² All private operational fixed licensees, including those with 18 GHz low power authorizations, may share their systems' excess capacity on a

¹ 47 C.F.R. § 94.17(a)(1).

² See 47 C.F.R. § 94.88. Licensees operate these systems on one of the five 18 GHz DTS channel pairs listed in 47 C.F.R. § 94.65(j)(8). *Id.* Although these channels are paired, licensees may subdivide them and typically operate each half of their channel independently. See generally Report and Order, PR Docket No. 88-91 ("18 GHz Report and Order"), 5 FCC Rcd 1220 (1990). The Commission will license a system operator on more than one channel in the same area only if the applicant demonstrates that the spectrum will be fully utilized. See 47 C.F.R. § 94.65(j)(8)(i); 18 GHz Report and Order at n.69.

³ Eligibility criteria for Part 94 authorizations is set forth in Section 94.5 of the Commission's Rules, 47 C.F.R. § 94.5.

⁴ Notice of Proposed Rule Making, PR Docket 92-151 7 FCC Rcd 4527 (1992).

⁵ Notice at para. 6.

⁶ Motorola filed the petition for rule making (petition) that requested the modification to Section 94.17 now before us. Informal comments in support of Motorola's petition were filed by Control Cable, Inc., Threshold Technology, and BDS, Incorporated.

⁷ A local area network is "[a] data-communications system . . .

for-profit, private carrier basis under Section 94.17(a) of the Rules. Users of such private carriers, however, must themselves be eligible for licensing under Part 94.³ The federal government is not a Part 94 eligible and, therefore, cannot be served by 18 GHz low power licensees.

3. On July 1, 1992, we adopted a *Notice of Proposed Rule Making (Notice)* to consider modifying Section 94.17(a)(1) to allow federal users to be served by 18 GHz low power licensees.⁴ We tentatively concluded that the proposed amendment was in the public interest because it would increase communications options available to federal entities without an adverse impact on service quality or availability to non-federal users.⁵ In response to the *Notice*, we received comments from Motorola, Inc. (Motorola) and no reply comments.⁶

III. DISCUSSION

4. Low power 18 GHz systems are used to connect computing devices in an office, manufacturing, or industrial complex by radio link. Computing devices, when connected by wire or radio signals, communicate with each other via a "local area network" (LAN).⁷ Wireless LANs use radio signals instead of hard wiring to connect computing devices.⁸ This permits untethered, flexible utilization that allows users to connect computing devices wherever the wireless LAN's radio signal reaches. This, in turn, allows work stations to be situated at the most efficient locations instead of limiting users to the path of a wired LAN. Wireless LANs also overcome the high cost, delay and difficulty often encountered in installing, expanding, or changing hard-wired LANs. Wireless LANs, moreover, can also overcome older design and construction techniques that did not contemplate the complex communication wiring otherwise needed to support the electronic office.⁹

5. Motorola, in its comments, supports our proposed amendment to § 94.17(a)(1). According to Motorola, permitting federal users to be served by Part 94 licensees operating 18 GHz low power systems would provide federal users access to reliable, cost effective LAN systems.¹⁰ This, in turn, would improve federal government efficiency and productivity.¹¹ Motorola, which as noted currently markets

that allows . . . digital devices to talk to each other over a common transmission medium. Communications can also take place among diverse equipment types A local network provides such communications over a limited geographical area: a floor, a section of a building, an entire building or a cluster of buildings or in a multistory building or factory complex. Distances can vary from a few hundred feet to several miles." Rudolf F. Graf, *Modern Dictionary of Electronics*, 6th ed., Howard W. Sams & Company (1989) at 570-571.

⁸ Motorola calls its wireless LAN system "ALTAIR." These systems are currently operating in most U.S. metropolitan areas. Comments of Motorola at 2.

⁹ See *Notice* at para. 5.

¹⁰ Comments of Motorola at 2-4. According to Motorola, "[m]any buildings prevalent in the government sector are more than 30 years old, with designs and construction techniques that do not readily accommodate complex communications wiring . . . [R]eliable, cost effective, wireless LAN systems operating at 18 GHz can significantly improve efficiency and productivity in such an environment." *Id.* at 2.

¹¹ "[W]hile LAN sales are consistent across all industry segments including government, one of Motorola's market studies

wireless LAN systems to non-federal users, states that federal users can be served without any adverse impact on non-federal users because 18 GHz wireless LAN systems are low power, operate on exclusive channel assignments, and are designed to permit significant spectrum reuse within the 28 kilometer (17.5 mile) radius covered by each license.¹² Motorola also contends that extending service to federal users as proposed is consistent with related Commission precedent.¹³

6. We conclude that adopting the proposed amendment to Section 94.17(a)(1) is in the public interest. Extending the availability of wireless LANs to federal users will satisfy an identified communication need of federal users without adverse impact on non-federal users. The low power and frequency reuse design of 18 GHz low power systems produces high capacity systems that are capable of meeting the communications requirements of both federal and non-federal users, without reducing service quality or availability to the latter.¹⁴ Retaining the restriction, therefore, would merely impose unnecessary costs on federal users -- and taxpayers -- with no resultant benefit to non-federal users. Furthermore, extending the options available to federal users would increase the potential customer base for 18 GHz low power licensees and enhance spectrum-use efficiency by permitting licensees authorized to use a channel exclusively in an area to serve as many users as possible.¹⁵

7. We also note that frequencies are currently not allocated to the federal government in the 18 GHz band for wireless LAN operation, whereas the record reflects that 18 GHz equipment is currently manufactured, and marketed "off-the-shelf" for non-federal users.¹⁶ The record also reflects an unmet demand by federal users for wireless LANs.¹⁷ Under our current restriction, therefore, wireless LAN equipment operating on frequencies allocated to the federal government would have to be separately manufactured and marketed, imposing delay and additional costs on federal users seeking to employ wireless LANs.¹⁸

8. Our decision extending service by 18 GHz low power licensees to federal users is also consistent with related precedent. For example, we amended our Rules in 1988 to allow federal government entities to be end users of 800 and 900 MHz Specialized Mobile Radio (SMR) systems.¹⁹

We recognized at that time that SMRs are high capacity systems operating on exclusive assignments and thus are capable of serving a broader range of eligible users without diminishing service quality or availability to non-federal users.²⁰ We also found that expanding SMR end user eligibility to the federal government would increase the federal government's communications options, increase the potential customer base for SMR operators, and enhance spectrum efficiency by allowing a licensee assigned a channel(s) on an exclusive basis to serve a larger class of users.²¹ Extending availability of 18 GHz wireless LAN service to federal users presents analogous considerations since these systems are high capacity and operate on channels assigned on an exclusive basis.

9. We also amended our Rules in 1989 to permit federal users to be end-users of paging only systems in the Business Radio Service and the 929-930 MHz band.²² We extended end user eligibility for this paging service to the federal government because these systems are also high capacity and because established National Telecommunications and Information Administration policies provide that the federal government typically should not use federal government frequencies to provide telecommunications service to government agencies unless commercial services are unavailable, not suitable, or significantly more expensive.²³ The record of the instant proceeding reflects analogous considerations, *i.e.*, that (1) commercial service would be readily available absent the current regulatory prohibition, (2) the commercial service that would be available would be suitable for federal users, and (3) the commercial service would be less expensive than separate government-only wireless LAN service or hard-wired LANs.

10. We note, finally, that the Commission has granted several requests for waiver of Section 94.17(a)(1) to permit the federal government access to 18 GHz low power systems after determining that the federal agencies involved

showed the government sector has the greatest desire for *wireless* local area network capabilities." Motorola Petition at 14. See also Comments of Motorola at 3.

¹² Comments of Motorola at 4. See also Notice at para. 5.

¹³ Comments of Motorola at 4.

¹⁴ See Notice at paras. 5-6, Comments of Motorola at 4. Federal government participation on 18 GHz low power systems should be no more disruptive to non-federal users than the operations of state and local government agencies, which have always been eligible to be served by 18 GHz low power licensees. *Accord*, Report and Order in PR Docket No. 86-404 ("SMR Report and Order"), 3 FCC Rcd 1838, para. 32 (1988).

¹⁵ Notice at para. 6; *accord* SMR Report and Order at paras. 17 and 35.

¹⁶ See, e.g., 47 C.F.R. § 2.106 (frequencies in the 18.8-19.7 GHz band are not allocated for federal government use and adjacent bands are not allocated for fixed government use on either a primary or secondary basis).

¹⁷ See note 12, *supra*.

¹⁸ It is not clear that any frequencies allocated to the federal government would be suitable for wireless LAN operation. See, e.g., Comments of Motorola at 3. There is also no certainty that

any manufacturers would actually market separate equipment for federal users if frequencies available to the federal government were suitable for wireless LAN operation.

¹⁹ See SMR Report and Order at paras. 15-35.

²⁰ See *Id.* at paras. 17 and 29-30.

²¹ We noted that "[e]xpanding eligibility to include federal government entities . . . simply increases the number of *potential* SMR users. It does not require any SMR to serve [federal users] and it will not necessarily cause SMRs to displace current users." SMR Report and Order at para. 30.

²² See Report and Order in PR Docket No. 89-45 ("Paging Report and Order"), 6 FCC Rcd 542, paras. 12-14 (1991).

²³ See Paging Report and Order at para. 13 (citing National Telecommunications and Information Administration, U.S. Department of Commerce, NTIA TELECOM 2000, at 376 (1988)). We noted in that proceeding that, as a result of NTIA's criteria, the federal government relies very heavily on the private sector for its telecommunications service. *Paging Report and Order* at para. 13. See also SMR Report and Order at paras. 28 and 32 (we noted that NTIA, in comments, stated that it is not always economical for federal government entities to operate their own communication systems).

had no reasonable alternatives²⁴ We have considered prior waiver grants -- consistent with the proposed rule changes then before us -- relevant in analogous proceedings.²⁵

IV. CONCLUSION

11. We are amending Section 94.17(a)(1) to permit federal government users to be served by Part 94 licensees operating, on a for-profit, private carrier basis, 18 GHz low power systems licensed on digital termination system channels. This amendment will extend access to wireless local area networks to federal users without adverse impact on non-federal users.

V. FINAL REGULATORY FLEXIBILITY ANALYSIS

12. Pursuant to the Regulatory Flexibility Act of 1980, the Commission's final analysis is as follows:

Need and Purpose of the Action

13. The Commission is adopting the rule change to allow 18 GHz low power licensees to serve federal entities as end-users. Allowing federal users access to 18 GHz low power systems will improve government efficiency and productivity by providing access to reliable, cost effective LANs. Allowing access to federal users will not adversely affect service quality or availability of wireless LANs to non-federal users including small businesses. 18 GHz systems are low power and re-use significant spectrum within the 17.5 mile radius covered by each license. This produces high capacity systems capable of meeting the wireless LAN communications requirements of both non-federal and federal users.

Issues Raised in Response to the Initial Regulatory Flexibility Analysis

14. There were no comments submitted in response to the Initial Regulatory Flexibility Analysis.

Significant Alternatives Considered and Rejected

15. All significant alternatives have been addressed in this Report and Order.

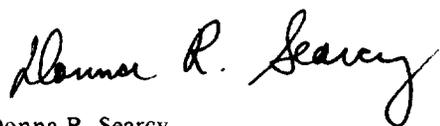
VI. ORDERING CLAUSES

16. Accordingly, IT IS ORDERED that, pursuant to the authority of Sections 4(i) and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i) and 303(r), Part 94 of the Commission's Rules, 47 C.F.R. Part 94, IS AMENDED as set forth in the Appendix below, effective [thirty days after publication in the *Federal Register*].

17. IT IS FURTHER ORDERED that this proceeding IS TERMINATED.

18. For further information concerning this *Report and Order*, contact Peter Daronco, Private Radio Bureau, Land Mobile and Microwave Division, Rules Branch, (202) 632-7125.

FEDERAL COMMUNICATIONS COMMISSION



Donna R. Searcy
Secretary

APPENDIX

Part 94 of Chapter 1 of Title 47 of the Code of Federal Regulations is amended as follows:

Part 94 - Private operational-fixed microwave service

1. The authority citation for Part 94 continues to read as follows:

AUTHORITY: Sections 4, 303, 48 Stat. 1066, 1082, as amended; 47 U.S.C. § 154, and 303, unless otherwise noted.

2. Section 94.17 is amended by revising paragraph (a)(1) to read as follows:

§ 94.17 Shared use of radio stations and the offering of private carrier communications service.

(a) * * *

(1) Persons or governmental entities licensed to operate radio systems on any of the frequencies set out in § 94.61(b) may share such systems with, or provide private carrier service to, any eligible for licensing under this part, regardless of individual eligibility restrictions enumerated in § 94.61(b), provided that the communications carried are permissible under § 94.9. In addition, persons or governmental entities licensed to operate low power systems under the provisions of § 94.88 may share such systems with, or provide private carrier services to, Federal Government entities, provided the communications carried are permissible under § 94.9.

* * * * *

²⁴ See, e.g., Request for Waiver of Section 94.17(a)(1) by Station WNTE-775 (Private Radio Bureau 1992); Request for Waiver of Section 94.17(a)(1) by Stations WNTE-799, WNTE-850, WNTE-868 and WNTE-936 (Private Radio Bureau 1992); Request for Waiver of Section 94.17(a)(1) by Station WNTE-936

(Private Radio Bureau 1991). See also Order, In re the Applications of State of Idaho, 3 FCC Rcd 5910 (1988); accord, Request for Waiver of Pass Word, Inc., 5 FCC Rcd 1180 (1990).

²⁵ See, e.g., *SMR Report and Order* at para. 32; *Paging Report and Order* at para. 12.