

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

In the Matter of)	
)	
Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended)	WT Docket No. 99-87
)	
Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies)	RM-9332
)	
)	

THIRD REPORT AND ORDER

Adopted: March 22, 2007

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By the Commission:

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I. INTRODUCTION AND EXECUTIVE SUMMARY

1. In the *Second Report and Order and Second Further Notice of Proposed Rule Making (Second Report and Order and Second Further Notice, respectively)* in this proceeding,¹ the Commission sought comment on requiring certain private land mobile radio (PLMR) licensees to transition to 6.25 kHz technology. In the *Third Memorandum Opinion and Order, Third Further Notice of Proposed Rule Making and Order (Third MO&O, Third Further Notice, and Order, respectively)* in this proceeding,² the Commission sought comment on a proposal³ to defer or eliminate the requirement in Sections 90.203(j)(4)-(5) of the Commission's Rules⁴ that certain applications for equipment authorizations received on or after January 1, 2005, must specify 6.25 kHz capability, and stayed the January 1, 2005, compliance date. This *Third Report and Order* addresses the comments and reply comments received in response to the *Second Further Notice* and the *Third Further Notice*.

2. The major decisions in the *Third Report and Order* are as follows:

- We decline to establish a fixed date for users to transition to 6.25 kHz technology.
- We change the implementation date for 6.25 kHz equipment capability as specified in Sections 90.203(j)(4)-(5) of the Rules, from January 1, 2005, to January 1, 2011.

II. BACKGROUND

3. In the *Refarming* proceeding in 1995, the Commission adopted rule changes to promote the efficient use of the PLMR service and facilitate the introduction of advanced technologies.⁵ To promote the transition to a more efficient narrowband channel plan, the Commission adopted certain market-based incentives in the PLMR service, by providing, *inter alia*, that “only increasingly efficient equipment” would be type certified.⁶ Accordingly, since February 14, 1997, the Commission has certified equipment employing 25 kHz channel bandwidth only if it was also capable of operating on 12.5 kHz or narrower channels, or with the equivalent efficiency.⁷ The *Refarming* rules also provided that applications for equipment certification received after January 1, 2005, would be granted only if the

¹ Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies, *Second Report and Order and Second Further Notice of Proposed Rule Making and Order*, WT Docket No. 99-87, RM-9332, 18 FCC Rcd 3034 (2003). The *Second Report and Order and Second Further Notice* was published in the Federal Register on July 17, 2003. 68 Fed. Reg. 42296, 42337 (2003).

² Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies, *Third Memorandum Opinion and Order, Third Further Notice of Proposed Rule Making and Order*, WT Docket No. 99-87, RM-9332, 19 FCC Rcd 25045 (2004). The *Third MO&O and Third Further Notice and Order* was published in the Federal Register on June 15, 2004. 69 Fed. Reg. 34666, 34669 (2004).

³ Joint Petition of E.F. Johnson Company, Kenwood U.S.A. (Kenwood) and Motorola, Inc. (Motorola) to Defer Enforcement of Section 90.203(j)(5) of the Commission's Rules, WT Docket No. 99-87, RM-9332 (filed July 14, 2004) (Petition to Defer).

⁴ 47 C.F.R. § 90.203(j)(4)-(5).

⁵ See Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, *Report and Order and Further Notice of Proposed Rule Making*, PR Docket No. 92-235, 10 FCC Rcd 10076, 10077 ¶ 1 (1995) (*Refarming Report and Order*).

⁶ *Id.* at 10081 ¶ 7.

⁷ *Id.* at 10099-100 ¶¶ 38-40; 47 C.F.R. § 90.203(j)(2).

equipment is either capable of operating on 6.25 kHz or narrower channels, or has equivalent efficiency.⁸ The Commission did not set a date after which it would no longer approve equipment with a wideband (25 kHz) mode, or after which such equipment could no longer be manufactured or used.⁹ It believed that the mandate was unneeded because, as systems reached the end of their service life and new radios were needed, users would migrate to the narrower bandwidth multi-mode radios in order to avoid the adjacent channel interference that could occur from systems using the adjacent narrowband channels.¹⁰

4. In 2003, the Commission released the *Second Report and Order and Second Further Notice*. It determined that because the existing rules failed to provide adequate incentive to realize the Commission's spectrum efficiency goals in these bands, stronger measures would be required to bring about a timely transition to narrowband technology.¹¹ Specifically, the *Second Report and Order*: (1) prohibited any applications for new systems using 25 kHz channels, effective January 13, 2004;¹² (2) prohibited any modification applications that expand the authorized contour of an existing station if the bandwidth for transmissions specified in the modification application is greater than 12.5 kHz, effective January 13, 2004;¹³ (3) prohibited the certification of any equipment capable of operating with only one voice path per 25 kHz of spectrum, *i.e.*, equipment that includes a 25 kHz mode, beginning January 1, 2005; (4) prohibited the manufacture and importation of any 150-174 MHz or 421-512 MHz band equipment that can operate on a 25 kHz bandwidth beginning January 1, 2008; and (5) imposed deadlines of January 1, 2013, for licensees in the Industrial/Business Radio Pool and January 1, 2018, for licensees in the Public Safety Radio Pool to migrate to 12.5 kHz technology in the 150-174 MHz and 421-512 MHz bands.¹⁴

5. In the *Second Further Notice*, the Commission sought comment on whether measures similar to those adopted in the *Second Report and Order* to encourage the migration to 12.5 kHz narrowband technology should also be applied to facilitate migration to 6.25 kHz technology.¹⁵ Noting that 12.5 kHz technology was a transitional standard to facilitate migration to 6.25 kHz technology, and in light of the measures adopted in the *Second Report and Order*, the Commission tentatively concluded that similar measures would facilitate migration to 6.25 kHz technology.¹⁶ It also sought comment on a date or dates by which licensees must migrate to 6.25 kHz technology.¹⁷

6. In 2004, the Commission released the *Third MO&O, Third Further Notice, and Order*. In response to eighteen petitions for reconsideration of the rules adopted in the *Second Report and Order*, the Commission made the following decisions in the *Third MO&O and Order*:

⁸ See 47 C.F.R. § 90.203(j)(4)-(5) (2002).

⁹ See *Refarming Report and Order*, 10 FCC Rcd at 10100 ¶ 40.

¹⁰ *Id.*

¹¹ *Second Report and Order*, 18 FCC Rcd at 3038 ¶ 12.

¹² By *Order* released December 3, 2003, the Commission determined that good cause had been shown to stay the January 13, 2004 date pending Commission consideration of the petitions for reconsideration of the *Second Report and Order*. Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies, *Order*, WT Docket No. 99-87, RM-9332, 18 FCC Rcd 25491 (2003).

¹³ The Commission also stayed this January 13, 2004 date. *Id.*

¹⁴ *Second Report and Order*, 18 FCC Rcd at 3038 ¶ 12.

¹⁵ *Second Further Notice*, 18 FCC Rcd at 3045 ¶ 27.

¹⁶ *Id.* (citing *Refarming Report and Order*, 10 FCC Rcd at 10095 ¶ 28).

¹⁷ *Id.*

- It set January 1, 2013, as the deadline for Industrial/Business and Public Safety Radio Pool licensees in the 150-174 MHz and 421-512 MHz bands to either migrate to 12.5 kHz technology, or utilize a technology that achieves the narrowband equivalent of one voice channel per 12.5 kHz of channel bandwidth or 4800 bits per second per 6.25 kHz if the bandwidth for transmissions specified in the modification application is greater than 12.5 kHz.
- It revised the interim dates established in the *Second Report and Order* as follows:
 - Applications for new operations using 25 kHz channels will be accepted until January 1, 2011. Thereafter, applications for new operations using a bandwidth greater than 12.5 kHz will be accepted only to the extent that the equipment meets the spectrum efficiency standard of one voice channel per 12.5 kHz of channel bandwidth or 4800 bits per second per 6.25 kHz.
 - Applications for modification of operations that expand the authorized contour of an existing station using 25 kHz channels will be accepted until January 1, 2011. Thereafter, such applications that expand the authorized contour of an existing station will be accepted only to the extent that the equipment meets the spectrum efficiency standard of one voice channel per 12.5 kHz of channel bandwidth or 4800 bits per second per 6.25 kHz if the bandwidth for transmissions specified in the modification application is greater than 12.5 kHz.
 - Manufacture and importation of any 150-174 MHz and 421-512 MHz band equipment operating on a channel bandwidth up to 25 kHz will be permitted until January 1, 2011. Thereafter, manufacture and importation of any 150-174 MHz and 421-512 MHz band equipment operating on a channel bandwidth greater than 12.5 kHz will be accepted only to the extent that the equipment meets the spectrum efficiency standard of one voice channel per 12.5 kHz of channel bandwidth or 4800 bits per second per 6.25 kHz.
- It revised the Commission's Rules to permit applications for equipment certification received on or after January 1, 2005, operating with a 25 kHz bandwidth, to the extent that the equipment meets the spectrum efficiency standard of one voice channel per 6.25 kHz of channel bandwidth or 4800 bits per second per 6.25 kHz. However, it stayed the requirement in Sections 90.203(j)(4)-(5) that applications for equipment certification received on or after January 1, 2005, will be granted only if the equipment either (1) is capable of operating on 6.25 kHz channels, or (2) the equipment meets a narrowband efficiency standard, *i.e.*, one channel per 6.25 kHz or 4800 bits per second per 6.25 kHz.¹⁸

The Commission received no petitions for reconsideration of the *Third MO&O and Order*.

7. In the *Third Further Notice*, the Commission sought comment on a proposal to defer or eliminate the January 1, 2005, date in Sections 90.203(j)(4)-(5).¹⁹ Specifically, it asked whether the 6.25 kHz equipment certification rules would place onerous burdens on manufacturers and jeopardize the promotion of interoperability between users in the absence of a 6.25 kHz equivalent efficiency standard.²⁰

¹⁸ *Third MO&O*, 19 FCC Rcd at 25047 ¶ 2.

¹⁹ *Third Further Notice*, 19 FCC Rcd at 25062 ¶ 40.

²⁰ *Id.*; *see also* Petition to Defer at 2.

Additionally, it sought comment on equipment that is specifically manufactured to utilize 6.25 kHz channel bandwidth as opposed to wider bandwidth equipment capable of operating with an equivalent efficiency of 6.25 kHz.²¹ Finally, the Commission sought comment on whether 6.25 kHz bandwidth equipment versus wider bandwidth equipment with an equivalent efficiency of 6.25 kHz affects interoperability.²² The Commission also stated that it would defer its decision on the broader issues raised in the *Second Further Notice* regarding migration to 6.25 kHz technology until it compiled a record in response to the *Third Further Notice*.²³

III. DISCUSSION

A. User Migration to 6.25 kHz Technology

8. As noted above, the Commission sought comment in the *Second Further Notice* on whether measures similar to those adopted in the *Second Report and Order* to encourage the migration to 12.5 kHz narrowband technology should also be applied to encourage migration to 6.25 kHz technology. The comments to the *Second Further Notice* unanimously oppose a mandatory migration requirement to 6.25 kHz technology as “premature and inappropriate.”²⁴ Several comments state that a mandatory conversion to 6.25 kHz would have significant technological hurdles to overcome, would add unnecessary confusion during the transition to 12.5 kHz, and would actually delay deployment of spectrum efficient technology.²⁵ Motorola, Inc. (Motorola) states that the Commission should permit market forces to shape the demand for 6.25 kHz.²⁶ It points out that while the Project 25²⁷ “Phase I” 12.5 kHz frequency division multiple access (FDMA)²⁸ standard is complete, development of a Project 25 “Phase II” 6.25 kHz FDMA standard is still in progress. Therefore, Motorola contends that any mandated changes at this time would be a waste of resources spent on developing a 12.5 kHz standard and would likely increase equipment costs.²⁹ Other comments suggest that market demand is not sufficient to spur the manufacture of 6.25 kHz equipment.³⁰ Existing time division multiple access (TDMA)³¹ technology

²¹ *Third Further Notice*, 19 FCC Rcd at 25062 ¶ 40.

²² *Id.*

²³ *Id.* at 25062 ¶ 41.

²⁴ See, e.g., Industrial Telecommunications Association (ITA) Comments to the *Second Further Notice* at 1, 5 (citing lack of availability of equipment); Private Wireless Mining Coalition Comments to the *Second Further Notice* at 5-6; Tait North America, Inc. Comments to the *Second Further Notice* at 4-5. We note that ITA subsequently consolidated its operations into the Enterprise Wireless Alliance (EWA). See Mark E. Crosby, *Letter*, 20 FCC Rcd 8552 (WTB PSCID 2005).

²⁵ See, e.g., Association of Public-Safety Communications Officials – International, Inc. (APCO) Comments to the *Second Further Notice* at 2; Land Mobile Communications Council (LMCC) Comments to the *Second Further Notice* at 2-3; ITA Comments to the *Second Further Notice* at 4.

²⁶ Motorola Comments to the *Second Further Notice* at 1.

²⁷ Project 25 is the standard for interoperable, digital, two-way wireless communications products and systems.

²⁸ FDMA refers to the method of allocating a discrete amount of frequency bandwidth to each user to permit many simultaneous conversations. See Harry Newton, *Newton’s Telecom Dictionary*, 327 (San Francisco: CMP Books, 2004).

²⁹ Motorola Comments to the *Second Further Notice* at 7.

³⁰ See ITA Comments to the *Second Further Notice* at 4-5; LMCC Reply Comments to the *Second Further Notice* at 4; Federal Law Enforcement Wireless Users Group *Ex Parte* Comments to the *Second Further Notice* at 6.

³¹ TDMA is used to allocate a discrete amount of frequency bandwidth to each user to permit many simultaneous conversations. However, each user is assigned a specific timeslot for transmission. See Harry Newton, *Newton’s Telecom Dictionary*, 814 (San Francisco: CMP Books, 2004).

provides 6.25 kHz equivalency over 12.5 kHz (2-slot) or 25 kHz (4-slot) bandwidths,³² and most federal agencies have established communications systems based on a 12.5 kHz standard.³³ Other comments state that a mandatory migration to 6.25 kHz narrowband is not an economically feasible or technologically viable option for high speed data transmissions,³⁴ “one-to-many” dispatch architecture via simulcast,³⁵ or encryption of voice and data.³⁶

9. Commenters to the *Third Further Notice* also oppose a mandatory migration requirement for 6.25 kHz technology. The National Public Safety Telecommunications Council (NPSTC) believes that a mandatory date for transitioning to 6.25 kHz would be counterproductive to the FCC’s objective to complete the transition to 12.5 kHz, because the 12.5 kHz transition presents significant operational and logistical challenges to public safety agencies.³⁷ NPSTC notes that a finite date mandating yet another transition raises the specter of more expense in a sector where equipment cycles are already lengthy.³⁸ Further, NPSTC urges the Commission not to mandate a transition to 6.25 kHz technology until operational issues such as interoperability capability are resolved.³⁹ Finally, NPSTC states that requiring 6.25 kHz spectrum efficiency without widespread availability, use, and acceptance of equipment would be counterproductive to the Commission’s objective.⁴⁰ Icom America, Inc. and Icom, Inc. (collectively, Icom) see little benefit in setting dates for user conversion to 6.25 kHz at this time, with mandatory conversion to 12.5 kHz taking place by 2013.⁴¹ Motorola and Kenwood USA Corporation (Kenwood) note that the Commission can defer reassessment of the development of 6.25 kHz technologies until early next decade, when the 12.5 kHz transition will be near completion.⁴²

10. Based on our review of the comments, we will not establish a specific migration plan to 6.25 kHz at this time. We note that the majority of commenters believe that adopting such a measure would be premature, and we conclude that more time is warranted to allow further development and field testing of the 6.25 kHz standard. It thus is not presently apparent what date would be most appropriate for requiring licensees to use radios that operate on 6.25 kHz channels or wider-band equipment that delivers equivalent efficiency.

11. We reiterate, however, that 12.5 kHz technology is a transitional step in the eventual migration of PLMR systems to 6.25 kHz technology. As the demand for scarce PLMR spectrum continues to grow, the Commission will closely monitor the progress made by standards-setting organizations and equipment manufacturers to develop more spectrum-efficient PLMR systems. We will pay particular attention to progress made in the development of 6.25 kHz technology. When that technology matures to the point that sufficient equipment is available for testing, we will expeditiously establish a transition date for users to convert to that more spectrum-efficient technology. As discussed

³² APCO Comments to the *Second Further Notice* at 2.

³³ *Id.* at 3.

³⁴ LMCC Comments to the *Second Further Notice* at 5.

³⁵ APCO Comments to the *Second Further Notice* at 4.

³⁶ American Association of Railroads Comments to the *Second Further Notice* at 5.

³⁷ NPSTC Comments to the *Third Further Notice* at 3-4.

³⁸ *Id.* at 4.

³⁹ *Id.* at 6.

⁴⁰ *Id.* at 7.

⁴¹ Icom Comments to the *Third Further Notice* at 5; accord Motorola Comments to the *Third Further Notice* at 2.

⁴² Motorola Comments to the *Third Further Notice* at 3, Kenwood Comments to the *Third Further Notice* at 5, Motorola Reply Comments to the *Third Further Notice* at 3.

below, radios that operate on 6.25 kHz channels or wider-band equipment that delivers equivalent efficiency will be available before the January 1, 2013 date by which users must migrate to 12.5 kHz technology. Given that the Commission will adopt a date by which users must migrate to 6.25 kHz technology, we strongly urge licensees to consider the feasibility of migrating directly from 25 kHz technology to 6.25 kHz technology prior to January 1, 2013. Such a course could be more efficient and economical than first migrating to 12.5 kHz technology by 2013, then further migrating to 6.25 kHz technology thereafter.

B. Implementation Date in Sections 90.203(j)(4)-(5)

12. As noted above, the Commission sought comment in the *Third Further Notice* on whether to defer or eliminate the requirement in Sections 90.203(j)(4)-(5) that applications for 150-174 MHz and 421-512 MHz equipment authorizations received on or after January 1, 2005, must specify 6.25 kHz capability. All commenters to the *Third Further Notice* oppose the January 1, 2005, implementation date. This date was stayed in the *Order*, and we see no value in retaining it in the rules, when, even now, there is no industry standard for 6.25 kHz equipment. As M/A-COM, Inc. (M/A-COM) notes, enforcing an equipment authorization cut-off now would place onerous burdens on manufacturers because they would be forced to produce interim technologies before the finalization of standards, simply to comply with this spectrum efficiency rule.⁴³ The finalization of standards afterward could require the development of new, compliant radio equipment at additional cost to the manufacturers and, ultimately, to consumers. We also agree with NPSTC that enforcing the deadline now without the widespread availability, use, and acceptance of equipment could impair the Commission's interoperability objectives, because interoperability among public safety users would suffer if non-standardized 6.25 kHz equipment were deployed prior to the emergence of an interoperability standard.⁴⁴

13. We disagree, however, with those parties, such as the Land Mobile Communications Council (LMCC), Kenwood, Motorola, and Enterprise Wireless Alliance (EWA), that argue that the requirement should be eliminated entirely,⁴⁵ and marketplace activities alone should influence introduction and adoption of 6.25 kHz technologies into equipment.⁴⁶ Motorola argues that, because the initial rules governing narrowbanding -- not certifying new 25 kHz radios after a date certain -- did not fully and rapidly achieve the Commission's first narrowband initiative, we should abandon that incentive altogether in the context of implementing 6.25 kHz narrowbanding.⁴⁷ However, the Commission never determined that the 25 kHz certification limitation was inherently ineffective. It said only that the certification limitation, alone, was not producing the desired result and that an additional -- not an alternative -- measure was necessary to timely implement narrowbanding to 12.5 kHz.⁴⁸ Thus it retained the certification limitation and added the additional provision that barred use of 25 kHz equipment after a date certain. Motorola, *et al.* have made no persuasive argument for eliminating the rule barring certification, after a date certain, of radios that do not meet a 6.25 kHz (or equivalent) efficiency standard and we decline to do so.

⁴³ M/A-COM Comments to the *Third Further Notice* at 1-2.

⁴⁴ NPSTC Comments to the *Third Further Notice* at 7.

⁴⁵ LMCC Comments to the *Third Further Notice* at 1; Kenwood Comments to the *Third Further Notice* at 7; Motorola Comments to the *Third Further Notice* at 1; EWA Comments to the *Third Further Notice* at 1.

⁴⁶ LMCC Comments to the *Third Further Notice* at 4; Comments to the *Third Further Notice* at 3; Motorola Comments to the *Third Further Notice* at 3; EWA Comments to the *Third Further Notice* at 5-6; Motorola Reply Comments to the *Third Further Notice* at 2.

⁴⁷ Petition for Reconsideration and Clarification of Motorola, Inc., WT Docket No. 99-87, RM-9332 (filed August 18, 2003) at 11.

⁴⁸ *Second Report and Order*, 18 FCC Rcd at 3038 ¶ 12.

14. We agree with Icom that mandating a 6.25 kHz efficiency standard will spur technological advances and provide choices for users.⁴⁹ Icom supports a date in the near future in order to ensure that users can choose between 12.5 kHz and 6.25 kHz equipment as the 12.5 kHz user transition date approaches.⁵⁰ We are concerned, however, that adoption of too early a date may not allow enough time for field testing of equipment once 6.25 kHz standards have been established. This would not further the public interest, because it could bring about the same circumstances that led the Commission to stay and reexamine the January 1, 2005, date.

15. LMCC supports an implementation date of January 1, 2015,⁵¹ which would bring the rule section into line with the new deadline of December 31, 2014, after which manufacturers may market, manufacture, and import only 6.25 kHz equipment or 12.5 kHz dual mode equipment in the 700 MHz band.⁵² LMCC argues that this would maximize economies of scale for equipment manufacturers.⁵³ Delaying the implementation date by ten years, however, appears both unnecessary and contrary to the purpose of this proceeding.

16. We conclude, based on the record in this proceeding, that January 1, 2011, is the most appropriate date to implement the requirement in Sections 90.203(j)(4)-(5) that certain applications for equipment authorizations specify 6.25 kHz capability. First, it is the same date as the interim deadline the Commission established in the *Third MO&O* prohibiting the manufacture or importation of 25 kHz equipment. Having these deadlines coincident will offer users a choice between 6.25 kHz and 12.5 kHz equipment well ahead of the 2013 deadline for migration to 12.5 kHz technology and increase economies of scale for equipment manufacturers. Availability of 6.25 kHz equipment before the 12.5 kHz migration deadline may encourage some users of wideband equipment to make one cost-saving transition directly to 6.25 kHz-capable equipment. Second, the date is in line with NPSTC's recommendation of implementing the rules five years after a 6.25 kHz interoperability standard has been defined and published by the Telecommunications Industry Association (TIA) and/or the American National Standards Institute (ANSI), which is expected to occur in the near future.⁵⁴

C. Other Issues

1. M/A-COM Proposals to Restructure the Bands Below 512 MHz and Convert Shared Channels to Exclusive Use Channels in the Bands Below 470 MHz

17. In its comments to the *Third Further Notice*, M/A-COM proposes two major changes to Part 90 of the Commission's Rules that it believes would promote efficiency and facilitate the deployment and use of 6.25 kHz equipment. First, M/A-COM suggests restructuring the bands below 512 MHz.⁵⁵ M/A-COM offers alternate-channel center plans in both the VHF and UHF bands,⁵⁶ which it contends

⁴⁹ Icom Reply Comments to the *Third Further Notice* at 4-5.

⁵⁰ Icom Comments to the *Third Further Notice* at 6.

⁵¹ LMCC Comments to the *Third Further Notice* at 5.

⁵² See The Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communication Requirements Through the Year 2010, *Fifth Memorandum Opinion and Order, Sixth Report and Order, and Seventh Notice of Proposed Rule Making*, WT Docket No. 96-86, 20 FCC Rcd 831, 838 ¶ 13 (2005).

⁵³ LMCC Comments to the *Third Further Notice* at 5.

⁵⁴ NPSTC Comments to the *Third Further Notice* at 8; NPSTC Reply Comments to the *Third Further Notice* at 3.

⁵⁵ M/A-COM Comments to the *Third Further Notice* at 4-5.

⁵⁶ Petition for Reconsideration of the *Second Report and Order* filed by M/A-COM, Inc., WT Docket 99-87, RM-9332 (filed Aug. 18, 2003) at 14-17.

would yield more effective spectrum when the transition is made to more spectrum-efficient technology.⁵⁷ Second, M/A-COM suggests that converting shared channels to exclusive-use channels in the bands below 470 MHz would be an incentive for licensees to migrate to more efficient equipment as they become capacity-limited.⁵⁸ In making a case against the current shared environment, M/A-COM cites the *Second Report and Order*, where the Commission stated that licensees do not necessarily accrue the benefits of investment in narrowband technology because some may choose more efficient equipment while other licensees in the band may not.⁵⁹

18. Icom believes that a more comprehensive review of M/A-COM's suggestions is warranted, although it recognizes that this review is beyond the scope of the Commission's current inquiry.⁶⁰ NPSTC states that M/A-COM's suggestions present issues that overtake the question in the *Third Further Notice*.⁶¹ We agree and note that MA-COM may pursue its proposals further by filing a petition for rulemaking. We also note that in the *Report and Order* in this proceeding, the Commission rejected a proposal to convert part of the 450-470 MHz band from shared channels to exclusive use channels.⁶² Motorola opposes M/A-COM's band restructuring recommendation on the basis that it would cause unnecessary disruption to the narrowbanding initiative, and Motorola recalls that the Commission considered and rejected similar band restructuring proposals in the *Refarming* proceeding.⁶³ Specifically, in 1995, *Refarming* commenters opposed a requirement to shift their frequencies to align with a proposed channelization plan,⁶⁴ and the Commission recognized that remaining on-channel was seen as critical to existing licensees.⁶⁵ In 1996, the Commission denied several petitions for reconsideration seeking a shift in VHF channelization and reaffirmed the channel plan adopted in the *Refarming Report and Order*.⁶⁶ Motorola believes that M/A-COM has presented no new arguments that would warrant reconsideration of these *Refarming* decisions.⁶⁷ To address Motorola's concern, any such petition for rulemaking should explain how circumstances have changed to warrant consideration of these proposals.

⁵⁷ M/A-COM Comments to the *Third Further Notice* at 4-5.

⁵⁸ *Id.* at 8.

⁵⁹ *Id.* Also see *Second Report and Order*, 18 FCC Rcd at 3039 ¶ 13. *But see* Motorola Reply Comments to the *Third Further Notice* at 4 (arguing that M/A-COM's proposal lacks sufficient detail to merit consideration at this time).

⁶⁰ Icom Reply Comments to the *Third Further Notice* at 7.

⁶¹ NPSTC Reply Comments to the *Third Further Notice* at 3-4.

⁶² See Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies; Establishment of Public Service Radio Pool in the Private Mobile Frequencies Below 800 MHz; Petition for Rule Making of the American Mobile Telecommunications Association, *Report and Order and Further Notice of Proposed Rule Making*, WT Docket No. 99-87, RM-9332, RM-9405, RM-9705, 15 FCC Rcd 22709, 22757-59 ¶¶ 104-07 (1999). The Commission concluded that it was not advisable to revisit the licensing scheme in light of commenters' concerns that the forced migration of incumbents would cause harmful disruptions in service as well as severe levels of interference. *Id.* at 22758-59 ¶¶ 106-07.

⁶³ Motorola *Third Further Notice* Reply Comments at 5; see *Refarming Report and Order*, 10 FCC Rcd at 10094 ¶ 26; see also Replacement of Part 90 by Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, *Memorandum Opinion and Order*, PR Docket No. 92-235, 11 FCC Rcd 17676, 17682 ¶ 11 (1996) (*Refarming MO&O*).

⁶⁴ See *Refarming Report and Order*, 10 FCC Rcd at 10088 ¶¶ 17-18.

⁶⁵ *Id.* at 10094 ¶ 26.

⁶⁶ See *Refarming MO&O*, 11 FCC Rcd at 17682 ¶ 11.

⁶⁷ Motorola *Third Further Notice* Reply Comments at 5.

2. Effects of 12.5 kHz Interim Transition Date on Public Safety Users

19. NPSTC embraces the Commission mandate for conversion to 12.5 kHz technology by January 1, 2013.⁶⁸ However, NPSTC anticipates that the requirements of the January 1, 2011, interim transitional date, which the Commission adopted in the *Third MO&O*, present significant operational and logistical challenges to public safety agencies.⁶⁹ After January 1, 2011, neither a modification to expand the contour of an existing station nor the manufacture or importation of equipment may take place unless the equipment comports with 12.5 kHz technology.⁷⁰ NPSTC notes that it is not unusual for public safety agencies to expand or change the geographic areas for which they are responsible.⁷¹ Such changes would not be permitted after January 1, 2011, for systems that operate exclusively at 25 kHz. Additionally, if an agency's 25 kHz bandwidth-only equipment is damaged, lost, or incapable of repair, NPSTC is concerned that replacement equipment may not be available after January 1, 2011.⁷² NPSTC finds it unreasonable that unless it obtains a waiver of the Commission's rules, an agency cannot expand its contour or replace its 25 kHz equipment after January 1, 2011, which is two years ahead of the firm date for 12.5 kHz technology.⁷³

20. In the *Third MO&O*, the Commission addressed concerns regarding interim dates, including concerns about modifications and replacement equipment, by delaying the interim dates to January 1, 2011.⁷⁴ However, the Commission emphasized that the purpose of interim deadlines is to encourage licensees to begin planning and implementing migration to narrowband technology well before January 1, 2013.⁷⁵ NPSTC has presented no new reason to revisit the 12.5 kHz migration schedule. We continue to believe that licensees will have ample opportunity and incentive to convert to 12.5 kHz technology before or during the two-year interim period without jeopardizing interoperability.

IV. PROCEDURAL MATTERS

A. Regulatory Flexibility Act Analysis

21. As required by Section 603 of the Regulatory Flexibility Act (RFA), 5 U.S.C. § 604, the Commission has prepared a Final Regulatory Flexibility Analysis of the possible impact of the rule changes contained in this *Third Report and Order* on small entities. The Final Regulatory Flexibility Act analysis is set forth in Appendix C, *infra*. The Commission's Consumer Information Bureau, Reference Information Center, will send a copy of this *Third Report and Order*, including the Final Regulatory Flexibility Act Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

B. Paperwork Reduction Act of 1995 Analysis

22. This document does not contain new or modified information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. In addition, therefore, it does not contain any new or modified "information collection burden for small business concerns with

⁶⁸ NPSTC Comments to the *Third Further Notice* at 4.

⁶⁹ *Id.* at 4-5.

⁷⁰ See 47 C.F.R. §§ 90.203(j)(11), 90.209(b)(6)(ii) (effective July 15, 2005).

⁷¹ NPSTC Comments to the *Third Further Notice* at 5.

⁷² *Id.*

⁷³ *Id.* at 6.

⁷⁴ *Third MO&O*, 19 FCC Rcd at 25053-56 ¶¶ 15-23.

⁷⁵ *Id.* at 25055 ¶ 22.

fewer than 25 employees,” pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, see 44 U.S.C. § 3506(c)(4).

C. Congressional Review Act Analysis

23. The Commission will send a copy of this *Third Report and Order* in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act, see 5 U.S.C. 801(a)(1)(A).

D. Further Information

24. For further information concerning this *Third Report and Order*, contact Mel Spann, Mobility Division, Wireless Telecommunications Bureau, Federal Communications Commission, Washington, D.C. 20554, at (202) 418-0680, TTY (202) 418-7233, via e-mail at Melvin.Spann@fcc.gov, or via U.S. Mail at Federal Communications Commission, Wireless Telecommunications Bureau, 445 12th Street, S.W., Washington, D.C. 20554.

25. Alternative formats (computer diskette, large print, audio cassette, and Braille) are available to persons with disabilities by sending an e-mail to FCC504@fcc.gov or calling the Consumer and Governmental Affairs Bureau at (202) 418-0530, TTY (202) 418-0432. This *Third Report and Order* can be downloaded at <http://wireless.fcc.gov/releases.html#orders>.

V. ORDERING CLAUSES

26. Accordingly, pursuant to Sections 1, 2, 4(i), 301, 302, and 303 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 152, 154(i), 301, 302, 303, and Sections 1.421 and 1.425 of the Commission’s Rules, 47 C.F.R. §§ 1.421, 1.425, IT IS ORDERED that the *Third Report and Order* is hereby ADOPTED.

27. IT IS FURTHER ORDERED that Part 90 of the Commission’s Rules IS AMENDED as set forth in Appendix B, and that these Rules shall be effective [30 days after publication in the Federal Register].

28. IT IS FURTHER ORDERED that the stay of the deadline in 47 C.F.R. § 90.203(j)(4) and (j)(5), see FCC 04-292, 69 Fed. Reg. 34666, SHALL EXPIRE [30 days after publication in the Federal Register].

29. IT IS FURTHER ORDERED that the Commission’s Consumer Information Bureau, Reference Information Center, SHALL SEND a copy of this *Third Report and Order*, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the U.S. Small Business Administration.

30. IT IS FURTHER ORDERED that this proceeding is TERMINATED.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

Appendix A**Petition to Defer and Comments****Petition to Defer**

EF Johnson Company, Kenwood U.S.A. Corporation (Kenwood), and Motorola, Inc. (Motorola)

Comments to the *Second Further Notice*

Association of American Railroads (AAR)

Association of Public-Safety Communications Officials–International, Inc. (APCO), International Association of Fire Chiefs, Inc. and the International Municipal Signal Association (IAFC/IMSA), International Association of Chiefs of Police (IACP), Major Cities Chiefs Association (MCCA), National Sheriffs' Association (NSA), Major County Sheriffs' Association (MCSA), and National Public Safety Telecommunications Council (NPSTC) (collectively, APCO et al.)

Federal Law Enforcement Wireless Users Group (FLEWUG)

Industrial Telecommunications Association (ITA)

Land Mobile Communications Council (LMCC)

Motorola

Private Wireless Mining Coalition (Coalition)

Tait North America, Inc. (TAIT)

Reply Comments to the *Second Further Notice*

LMCC

Comments to the *Third Further Notice*

Enterprise Wireless Alliance (EWA)

Icom America, Inc. and Icom, Inc. (Icom)

Kenwood U.S.A. Corporation, Communications Division (Kenwood)

LMCC

M/A-COM

Motorola

National Public Safety Telecommunications Council (NPSTC)

Reply Comments to the *Third Further Notice*

Icom

Motorola

NPSTC

Other Relevant Filings:

NPSTC Letter to Michael Wilhelm, Chief, Public Safety and Critical Infrastructure, Wireless Telecommunications Bureau, dated Sept. 19, 2005

Appendix B**Final Rules**

Part 90 of Title 47 of the Code of Federal Regulations is amended as follows:

PART 90—PRIVATE LAND MOBILE RADIO SERVICES

1. The authority citation for Part 90 continues to read as follows:

AUTHORITY: Sections 4(i), 11, 303(g), 303(r), and 332(c)(7) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 161, 303(g), 303(r), 332(c)(7).

2. Section 90.203 is amended by removing paragraphs (j)(6), (j)(6)(i), (j)(6)(ii), and (j)(6)(iii); redesignating paragraphs (j)(7)-(11) as (j)(6)-(10); and revising paragraphs (j)(4) and (j)(5) to read as follows:

§ 90.203 Certification required.

* * * * *

(j) * * * * *

- (4) Applications for part 90 certification of transmitters designed to operate on frequencies in the 150.8-162.0125 MHz, 173.2-173.4 MHz, and/or 421-512 MHz bands, received on or after January 1, 2011, except for hand-held transmitters with an output power of two watts or less, will only be granted for equipment with the following channel bandwidths:

* * * * *

- (5) Applications for part 90 certification of transmitters designed to operate on frequencies in the 150.8-162.0125 MHz, 173.2-173.4 MHz, and/or 421-512 MHz bands, received on or after January 1, 2011, must include a certification that the equipment meets a spectrum efficiency standard of one voice channel per 6.25 kHz of channel bandwidth. Additionally, if the equipment is capable of transmitting data, has transmitter output power greater than 500 mW, and has a channel bandwidth of more than 6.25 kHz, the equipment must be capable of supporting a minimum data rate of 4800 bits per second per 6.25 kHz of channel bandwidth.

* * * * *

Appendix C

Final Regulatory Flexibility Analysis

1. As required by the Regulatory Flexibility Act (RFA),¹ an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the *Third Memorandum Opinion and Order and Third Further Notice of Proposed Rule Making and Order (Third MO&O and Third Further Notice)*² in WT Docket 99-87. The Commission sought written public comment on the proposals in the *Third Further Notice*. In view of the fact that we have adopted further rule amendments in this *Third Report and Order*, we have included this Final Regulatory Flexibility Analysis (FRFA). This Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.³

I. Reason for, and Objectives of, the *Third Report and Order*

2. This *Third Report and Order* is needed to address comments in response to the *Third Further Notice of Proposed Rule Making*⁴ in WT Docket 99-87 concerning a contemplated mandatory transition to 6.25 kHz technology for Private Land Mobile Radio (PLMR) users. In this *Third Report and Order*, we change the implementation date of 47 C.F.R. § 90.203(j)(4)-(5) from January 1, 2005, to January 1, 2011. The rule change reduces burdens on equipment manufacturers and furthers the Commission's objectives to encourage the development and use of increasingly spectrally efficient technology. Once the rule change becomes effective, applications for equipment certification received on or after January 1, 2011, will be granted only if the equipment either (1) is capable of operating on 6.25 kHz channels, or (2) meets a narrowband efficiency standard, *i.e.*, one channel per 6.25 kHz (voice) or 4800 bits per second per 6.25 kHz (data).

II. Summary of Significant Issues Raised by Public Comments in Response to the IRFA

3. No comments or reply comments were filed in direct response to the IRFA. The Commission has, however, reviewed the general comments that may impact small businesses. Much of the potential impact on small businesses arose from the previous requirement that applications for equipment certification received on or after January 1, 2005, will be granted only if the equipment either (1) is capable of operating on 6.25 kHz channels, or (2) meets a narrowband efficiency standard, *i.e.*, one channel per 6.25 kHz (voice) or 4800 bits per second per 6.25 kHz (data). The burdens and hardships associated with equipment manufacturers meeting this requirement were cited in opposition to this requirement.

¹ See U.S.C. § 603. The RFA, *see* 5 U.S.C. § § 601-612, has been amended by the Contract With America Advancement Act of 1996, Pub. L. No. 104-121, 110 Stat. 847 (1996) (CWAAA). Title II of the CWAAA is the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA).

² Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies, *Third Memorandum Opinion and Order and Third Further Notice of Proposed Rulemaking and Order*, WT Docket No. 99-87, RM-9332, 19 FCC Rcd 25045 (2004). The *Third MO&O and Third Further Notice and Order* was published in the Federal Register on June 15, 2004. 69 Fed. Reg. 34666, 34669 (2004).

³ See 5 U.S.C. § 604.

⁴ Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies, *Second Report and Order and Second Further Notice of Proposed Rulemaking and Order*, WT Docket No. 99-87, RM-9332, 18 FCC Rcd 3034 (2003). The *Second Report and Order and Second Further Notice* was published in the Federal Register on July 17, 2003. 68 Fed. Reg. 42296, 42337 (2003).

III. Description and Estimate of the Number of Small Entities to Which the Rules Apply

4. The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the rules adopted. The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.”⁵ In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act.⁶ A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).⁷ Nationwide, there are a total of approximately 22.4 million small businesses, according to SBA data.⁸ A “small organization” is generally “any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.”⁹ Nationwide, as of 2002, there were approximately 1.6 million small organizations.¹⁰ The term “small governmental jurisdiction” is defined generally as “governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand.”¹¹ Census Bureau data for 2002 indicate that there were 87,525 local governmental jurisdictions in the United States.¹² We estimate that, of this total, 84,377 entities were “small governmental jurisdictions.”¹³ Thus, we estimate that most governmental jurisdictions are small.

5. The rule change effectuated by this *Third Report and Order* applies to manufacturers of radio equipment designed to operate on private land mobile frequencies in the 150-174 MHz and 421-512 MHz bands. The rule change and decisions herein also have a nominal, merely indirect application to users of Public Safety Radio Pool services and private radio licensees that are regulated under Part 90 of the Commission’s rules.

6. *Equipment Manufacturers.* We anticipate that at least six radio equipment manufacturers will be affected by our decisions in this proceeding. The Census Bureau defines this category as follows: “This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. Examples of products made by these establishments are: transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment.”¹⁴ The SBA has developed a small business size standard for Radio and Television

⁵ See 5 U.S.C. § 601(6).

⁶ 5 U.S.C. § 601(3) (incorporating by reference the definition of “small business concern” in 15 U.S.C. § 632). Pursuant to the RFA, the statutory definition of a small business applies unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register.

⁷ Small Business Act, 5 U.S.C. § 632 (1996).

⁸ See SBA, Programs and Services, SBA Pamphlet No. CO-0028, at page 40 (July 2002).

⁹ 5 U.S.C. § 601(4).

¹⁰ Independent Sector, *The New Nonprofit Almanac & Desk Reference* (2002).

¹¹ 5 U.S.C. § 601(5).

¹² U.S. Census Bureau, *Statistical Abstract of the United States: 2006*, Section 8, page 272, Table 415.

¹³ We assume that the villages, school districts, and special districts are small, and total 48,558. See U.S. Census Bureau, *Statistical Abstract of the United States: 2006*, section 8, page 273, Table 417. For 2002, Census Bureau data indicate that the total number of county, municipal, and township governments nationwide was 38,967, of which 35,819 were small. *Id.*

¹⁴ U.S. Census Bureau, 2002 NAICS Definitions, “334220 Radio and Television Broadcasting and Wireless (continued....)

Broadcasting and Wireless Communications Equipment Manufacturing, which is: all such firms having 750 or fewer employees.¹⁵ According to Census Bureau data for 2002, there were a total of 1,041 establishments in this category that operated for the entire year.¹⁶ Of this total, 1,010 had employment of under 500, and an additional 13 had employment of 500 to 999.¹⁷ Thus, under this size standard, the majority of firms can be considered small.

7. *Public safety services and Governmental entities.* Public safety radio services include police, fire, local governments, forestry conservation, highway maintenance, and emergency medical services.¹⁸ The SBA rules contain a definition for small radiotelephone (wireless) companies that encompass business entities engaged in radiotelephone communications employing no more than 1,500 persons.¹⁹ There are a total of approximately 127,540 licensees within these services. Governmental entities as well as private businesses comprise the licensees for these services. The RFA also includes small governmental entities as a part of the regulatory flexibility analysis.²⁰ As noted, under the RFA, the term “small governmental jurisdiction” is defined generally as “governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand.”²¹ Census Bureau data for 2002 indicate that there were 87,525 local governmental jurisdictions in the United States.²² We estimate that, of this total, 84,377 entities were “small governmental jurisdictions.”²³ Thus,

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Communications Equipment Manufacturing”; <http://www.census.gov/epcd/naics02/def/NDEF334.HTM#N3342>.

¹⁵ 13 C.F.R. § 121.201, NAICS code 334220.

¹⁶ U.S. Census Bureau, American FactFinder, 2002 Economic Census, Industry Series, Industry Statistics by Employment Size, NAICS code 334220 (released May 26, 2005); <http://factfinder.census.gov>. The number of “establishments” is a less helpful indicator of small business prevalence in this context than would be the number of “firms” or “companies,” because the latter take into account the concept of common ownership or control. Any single physical location for an entity is an establishment, even though that location may be owned by a different establishment. Thus, the numbers given may reflect inflated numbers of businesses in this category, including the numbers of small businesses. In this category, the Census breaks-out data for firms or companies only to give the total number of such entities for 2002, which was 929.

¹⁷ *Id.* An additional 18 establishments had employment of 1,000 or more.

¹⁸ With the exception of the special emergency service, these services are governed by Subpart B of Part 90 of the Commission's rules. 47 C.F.R. §§ 90.15 through 90.27. The police service includes 26,608 licensees that serve state, county and municipal enforcement through telephony (voice), telegraphy (code) and teletype and facsimile (printed material). The fire radio service includes 22,677 licensees comprised of private volunteer or professional fire companies as well as units under governmental control. The local government service that is presently comprised of 40,512 licensees that are state, county or municipal entities that use the radio for official purposes not covered by other public safety services. There are 7,325 licensees within the forestry service which is comprised of licensees from state departments of conservation and private forest organizations who set up communications networks among fire lookout towers and ground crews. The 9,480 state and local governments are licensed to highway maintenance service provide emergency and routine communications to aid other public safety services to keep main roads safe for vehicular traffic. The 1,460 licensees in the Emergency Medical Radio Service (EMRS) use the 39 channels allocated to this service for emergency medical service communications related to the actual delivery of emergency medical treatment. 47 C.F.R. §§ 90.15 through 90.27. The 19,478 licensees in the special emergency service include medical services, rescue organizations, veterinarians, handicapped persons, disaster relief organizations, school buses, beach patrols, establishments in isolated areas, communications standby facilities and emergency repair of public communication facilities. 47 C.F.R. §§ 90.33 through 90.55.

¹⁹ See 13 C.F.R. § 121.201 (SIC Code 4812).

²⁰ See 5 U.S.C. § 601(5) (including cities, counties, towns, townships, villages, school districts, or special districts).

²¹ 5 U.S.C. § 601(5).

²² U.S. Census Bureau, Statistical Abstract of the United States: 2006, Section 8, page 272, Table 415.

we estimate that most governmental jurisdictions are small.

8. *Estimates for PLMR Licensees.* Private land mobile radio systems serve an essential role in a vast range of industrial, business, land transportation, and public safety activities. These radios are used by companies of all sizes operating in all U.S. business categories. Because of the vast array of PLMR users, the Commission has not developed a definition of small entities specifically applicable to PLMR users, nor has the SBA developed any such definition. The SBA rules do, however, contain a definition for small radiotelephone (wireless) companies.²⁴ Included in this definition are business entities engaged in radiotelephone communications employing no more than 1,500 persons.²⁵ The SBA has developed a small business size standard for wireless firms within the two broad economic census categories of "Paging"²⁶ and "Cellular and Other Wireless Telecommunications."²⁷ Under both categories, the SBA deems a wireless business to be small if it has 1,500 or fewer employees. For the census category of Paging, Census Bureau data for 2002 show that there were 807 firms in this category that operated for the entire year.²⁸ Of this total, 804 firms had employment of 999 or fewer employees, and three firms had employment of 1,000 employees or more.²⁹ Thus, under this category and associated small business size standard, the majority of firms can be considered small. For the census category of Cellular and Other Wireless Telecommunications, Census Bureau data for 2002 show that there were 1,397 firms in this category that operated for the entire year.³⁰ Of this total, 1,378 firms had employment of 999 or fewer employees, and 19 firms had employment of 1,000 employees or more.³¹ Thus, under this second category and size standard, the majority of firms can, again, be considered small. Thus, under this size standard, the majority of firms can be considered small. For the purpose of determining whether a licensee is a small business as defined by the SBA, each licensee would need to be evaluated within its own business area. The Commission's fiscal year 1994 annual report indicates that, at the end of fiscal year 1994, there were 1,101,711 licensees operating 12,882,623 transmitters in the PLMR bands below 512 MHz.³²

IV. Description of Projected Reporting, Recordkeeping and Other Compliance Requirements

9. Equipment manufacturers need to make note of the new implementation date of January

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²³ We assume that the villages, school districts, and special districts are small, and total 48,558. See U.S. Census Bureau, Statistical Abstract of the United States: 2006, section 8, page 273, Table 417. For 2002, Census Bureau data indicate that the total number of county, municipal, and township governments nationwide was 38,967, of which 35,819 were small. *Id.*

²⁴ See 13 C.F.R. § 121.201, NAICS code 517212.

²⁵ *Id.*

²⁶ 13 C.F.R. § 121.201, NAICS code 517211.

²⁷ 13 C.F.R. § 121.201, NAICS code 517212.

²⁸ U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 5, NAICS code 517211 (issued Nov. 2005).

²⁹ *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is for firms with "1000 employees or more."

³⁰ U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 5, NAICS code 517212 (issued Nov. 2005).

³¹ *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is for firms with "1000 employees or more."

³² See Federal Communications Commission, 60th Annual Report, Fiscal Year 1994 at 120-121.

1, 2011, for 47 C.F.R. § 90.203(j)(4)-(5) of the Commission's Rules, as established in this *Third Report and Order*. Applications for equipment certification and received on or after January 1, 2011, will be granted only if the equipment either (1) is capable of operating on 6.25 kHz channels, or (2) meets a narrowband efficiency standard, i.e., one channel per 6.25 kHz (voice) or 4800 bits per second per 6.25 kHz (data). We believe that both small and large entities will encounter the same proportional costs to comply with these requirements.

V. Steps Taken to Minimize Significant Economic Impact on Small Entities and Significant Alternatives Considered

10. The RFA requires an agency to describe any significant alternatives that it has considered in developing its approach, which may include the following four alternatives (among others): “(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities; (3) the use of performance rather than design standards; and (4) an exemption from coverage of the rule, or any part thereof, for such small entities.”³³

11. The only rule change we adopt herein is to delay the implementation date of our certification requirements from January 1, 2005, to January 1, 2011. Applications for equipment certification received on or after January 1, 2011, will be granted only if the equipment either (1) is capable of operating on 6.25 kHz channels, or (2) meets a narrowband efficiency standard, i.e., one channel per 6.25 kHz (voice) or 4800 bits per second per 6.25 kHz (data). This rule change reduces the impact on equipment manufacturers of the prior rule, which required compliance sooner. We delayed the implementation date because a majority of commenters believed that enforcing an equipment authorization cut-off now would place onerous burdens on manufacturers. We anticipate that small licensees will experience little impact as a result of this rule change. By 2011, licensees in the market for new equipment will have a choice between 12.5 kHz-capable and 6.25 kHz-capable equipment.

12. We investigated alternatives to the January 1, 2011, implementation date of our certification requirements, including elimination of the requirements, as requested by some commenters. We rejected earlier dates because they might not allow enough time for 6.25 kHz standards to be finalized. We believe that earlier dates would not provide significant relief to equipment manufacturers, and that they would incur excessive costs to meet our certification requirements. Next, we considered dates after 2011, as well as eliminating our 6.25 kHz equipment certification requirements completely. While we realize that these options would further minimize the economic impact on equipment manufacturers, we rejected these options they would excessively delay our objective to encourage the development and use of spectrally efficient technology.

VI. Report to Congress

13. The Commission will send a copy of this *Third Report and Order*, including this FRFA, in a report to be sent to Congress pursuant to the Congressional Review Act, see 5 U.S.C. § 801(a)(1)(A). In addition, the Commission will send a copy of the *Third Report and Order*, including this FRFA, to the Chief Counsel for Advocacy of the Small Business Administration. A copy of the *Third Report and Order* and FRFA (or summaries thereof) will also be published in the Federal Register. See 5 U.S.C. § 604(b).

³³ 5 U.S.C. § 603(c)(1) – (c)(4).