

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

In the Matter of
Revisions to Rules Authorizing the Operation of
Low Power Auxiliary Stations in the 698-806 MHz
Band
Public Interest Spectrum Coalition, Petition for
Rulemaking Regarding Low Power Auxiliary
Stations, Including Wireless Microphones, and the
Digital Television Transition
Amendment of Parts 15, 74 and 90 of the
Commission's Rules Regarding Low Power
Auxiliary Stations, Including Wireless
Microphones
WT Docket No. 08-166
WT Docket No. 08-167
ET Docket No. 10-24

SECOND REPORT AND ORDER

Adopted: May 15, 2014

Released: June 2, 2014

By the Commission:

TABLE OF CONTENTS

Heading Paragraph #
I. INTRODUCTION..... 1
II. BACKGROUND..... 3
III. DISCUSSION 8
IV. PROCEDURAL MATTERS..... 32
V. ORDERING CLAUSES..... 35
APPENDIX A – List of Commenters
APPENDIX B – Final Rules
APPENDIX C – Final Regulatory Flexibility Act Analysis

I. INTRODUCTION

1. In this Second Report and Order, we take steps to better enable wireless microphone users to provide high quality audio services to serve a wider range of needs. Theatrical productions, concerts, sporting events, conventions and houses of worship all depend on wireless microphones to meet their needs for high quality audio services. The actions we take today extend license eligibility to those wireless microphone users who have needs similar to those of existing low power auxiliary stations (LPAS) licensees.¹ Specifically, we expand Part 74 license eligibility to include professional sound

¹ See generally Part 74, Subpart H (“Low Power Auxiliary Stations”). LPAS operations, including wireless microphones (collectively referenced as “wireless microphones”), are intended for uses such as wireless

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companies and owners and operators of large venues that routinely use 50 or more wireless microphones, where the use of wireless microphones is an integral part of the major productions or events they host. We conclude that this measured approach strikes an appropriate balance in providing the benefits of a license for entities and events that have a demonstrated need, while ensuring that spectrum is shared effectively with existing LPAS operations and remains available for other uses, including TV white space (TVWS) devices.

2. The actions we take in this Second Report and Order to expand license eligibility and protection are only one step to address a range of issues concerning the operation of wireless microphones. In the *Incentive Auction Report and Order* adopted concurrently with this Second Report and Order, we adopt several measures to accommodate the needs of wireless microphone users in the portion of the UHF band that will remain available for their operations following the incentive auction.² Among other actions, we revise our rules for co-channel operations to expand areas where wireless microphones may be used in the bands that will remain allocated for broadcast services,³ and we will permit wireless microphones to operate in the 600 MHz guard bands spectrum.⁴ Although we will no longer designate two TV channels exclusively for wireless microphone use after the UHF band is reorganized, we intend to designate one channel for use by wireless microphones and unlicensed devices and plan to make improvements in the TV bands database to enable more timely and effective registration of wireless microphone users seeking interference protection from TVWS device operations.⁵ In addition, while wireless microphones will eventually be required to cease operating in the spectrum repurposed for wireless broadband, we will allow wireless microphone users to continue to operate for 39 months following the incentive auction in order to facilitate their transition to other spectrum.⁶ Finally, recognizing the important benefits provided by wireless microphones, we plan to initiate a proceeding in the near term to explore ways to help accommodate the longer-term needs of wireless microphone users through use of additional frequency bands to meet their varying needs.⁷

II. BACKGROUND

3. The Commission's rules in Part 74, Subpart H, provide for licensed operations of wireless microphones primarily on frequencies allocated for television broadcasting on a secondary, non-exclusive basis.⁸ License eligibility has evolved over time and now includes the following specified entities: licensees of radio and broadcast television stations, broadcast television network entities, certain cable television system operators, and motion picture and television program producers.⁹ These entities share the need for regular and reliable high quality audio services that are free from interference and often

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microphones, cue and control communications, and synchronization of TV camera signals. These low power auxiliary stations transmit over distances of approximately 100 meters. 47 C.F.R. § 74.801.

² Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, Docket No. 12-268, *Report and Order*, FCC 14-50, ¶¶ 299-316 (adopted May 15, 2014) (*Incentive Auction Report and Order*).

³ *Incentive Auction Report and Order* at ¶¶ 304-307.

⁴ *Incentive Auction Report and Order* at ¶¶ 313-315, 685.

⁵ *Incentive Auction Report and Order* at ¶ 309.

⁶ *Incentive Auction Report and Order* at ¶ 687-688.

⁷ *Incentive Auction Report and Order* at ¶ 316.

⁸ In addition to permitting operation in the television broadcasting bands, the LPAS rules also permit wireless microphone operations at 26.100-26.480 MHz, 161.625-161.775 MHz (except Puerto Rico and Virgin Islands), and 944.000-952.000 MHz. 47 C.F.R. § 74.802.

⁹ 47 C.F.R. § 74.832(a)(1)-(6). Certain wireless microphone operations are authorized under Part 90 of the rules on certain frequencies between 169.445 and 171.905 MHz on a secondary basis, subject to power and other restrictions. See 47 C.F.R. §§ 90.35(a)(1)-(4), 90.265(b).

require a large number of wireless microphones to meet their needs. Licensees may not cause harmful interference to the operations of TV broadcast and land mobile stations operating on a primary basis and must comply with a number of technical rules.¹⁰ These include requirements to avoid causing harmful interference to TV broadcasting and land mobile station operations,¹¹ to coordinate frequencies with other LPAS operations,¹² to comply with specified transmission power limits and out-of-band emission limits,¹³ and to use FCC-certified equipment.¹⁴ LPAS licensees may receive protection from TVWS devices by registering in the TV bands database.¹⁵

4. In the 2010 *Wireless Microphone Report and Order*, the Commission first authorized unlicensed operations in the broadcast television bands in recognition of the important benefits provided by wireless microphones in performances and programs in theaters, classrooms, lecture halls, houses of worship, stadiums, and other venues.¹⁶ The Commission granted waivers of its rules to permit continued operations of wireless microphones on an unlicensed basis under Part 15 in the core television bands, generally at a power of up to 50 milliwatts.¹⁷ These temporary waivers have been in effect pending further action in this docket.¹⁸

5. The Commission subsequently recognized that certain types of unlicensed wireless microphone users require a large number of wireless microphones and should therefore be permitted to register in the TV bands database, upon meeting certain conditions.¹⁹ Specifically, the new rule provided

¹⁰ See 47 C.F.R. §§ 74.803(b), 74.861(g)-(h).

¹¹ See 47 C.F.R. § 74.803(a).

¹² 47 C.F.R. § 74.803(a)-(b).

¹³ See 47 C.F.R. § 74.861. The Commission's rules permit a maximum transmitter power of 1 watt for wireless microphones operating in the bands other than those allocated for TV broadcasting. 47 C.F.R. § 74.861(d)(1). For wireless microphones operating in the bands allocated for TV broadcasting, the power of the measured unmodulated carrier power at the output of the transmitter power amplifier may not exceed 50 milliwatts for the 54-72, 76-88, and 174-216 MHz bands; and may not exceed 250 milliwatts for the 470-608 and 614-698 MHz bands. 47 C.F.R. § 74.861(e)(1)(i)-(ii).

¹⁴ 47 C.F.R. § 74.851.

¹⁵ See *Unlicensed Operations in the TV Broadcast Bands and Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, ET Docket Nos. 04-186 and 02-380, *Second Report and Order and Memorandum Opinion and Order*, 23 FCC Rcd 16807, 16876 ¶ 198 (2008).

¹⁶ See generally *Revisions to Rules Authorizing the Operation of Low Power Auxiliary Stations in the 698-806 MHz Band*, WT Docket No. 08-166, Public Interest Spectrum Coalition, *Petition for Rulemaking Regarding Low Power Auxiliary Stations, Including Wireless Microphones, and the Digital Television Transition*, WT Docket No. 08-167, Amendment of Parts 15, 74 and 90 of the Commission's Rules Regarding Low Power Auxiliary Stations, Including Wireless Microphones, ET Docket No. 10-24, *Report and Order and Further Notice of Proposed Rulemaking*, 25 FCC Rcd 643, 685-86 ¶ 86-87 (2010) (*Wireless Microphone Report and Order* and *Wireless Microphone Further Notice*, respectively).

¹⁷ *Wireless Microphone Report and Order*, 25 FCC Rcd at 683-84 ¶¶ 83-84.

¹⁸ *Wireless Microphone Report and Order*, 25 FCC Rcd at 682 ¶ 81, 686 ¶ 88. In addition to issues regarding licensee eligibility, the Commission sought comment on questions relating to permitting wireless microphones on an unlicensed basis in the TV bands under Part 15 as "Wireless Audio Devices," making Part 90 rules more useful to wireless microphone users, and encouraging more efficient use of wireless microphones such as through digital technology. *Wireless Microphone Further Notice*, 25 FCC Rcd at 692-704 ¶¶ 109-151. We intend to address these other questions prior to the incentive auction.

¹⁹ See *Unlicensed Operation in the TV Broadcast Bands and Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz band*, ET Docket Nos. 04-186 and 02-380, *Second Memorandum Opinion and Order*, 25 FCC Rcd 18661, 18674-75 ¶¶ 31-32 (recognizing that certain events, such as major sporting contests or live theatrical productions/shows, may use scores of wireless microphones, although on an unlicensed basis, and may be

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that an unlicensed wireless microphone user must demonstrate to the Commission that it requires a large number of microphones and that it is using all TV channels not available to other users and on which wireless microphones can practicably be used.²⁰ Unlike LPAS licensees, which can register directly with the database administrator, unlicensed wireless microphone users must apply to the Commission and must do so at least 30 days in advance of the event for which they seek protection.²¹

6. In the *Wireless Microphone Further Notice*, the Commission sought comment on whether to provide for a limited expansion of license eligibility under Part 74 Subpart H of the rules. The Commission recognized that certain types of unlicensed wireless microphone users, including many large cultural, civic, sporting and religious events, may have needs that are similar to existing licensees and share the need for the kinds of interference protection that a license affords.²² The Commission further noted that it previously had expanded license eligibility to accommodate users with requirements similar to those of broadcast licensees.²³ However, it noted that any “broad expansion” of eligibility could significantly reduce the amount of spectrum available for other uses of the TV bands, such as by TVWS devices.²⁴ In addition, the Commission understood that any expansion of Part 74 license eligibility would have an impact on the existing licensees and sought comment on how expansion might affect the viability of frequency coordination among existing licensees that make use of the spectrum to address their needs.²⁵ The Commission subsequently issued a public notice to refresh the record on these issues, as well as on the promotion of more efficient use of spectrum, and the impact of TVWS devices and incentive auction proceedings regarding spectrum currently allocated to TV broadcasting.²⁶

7. The Commission received 24 comments and 18 reply comments in response to the *Wireless Microphone Further Notice*. The Commission received 25 comments and 11 reply comments in response to the *Wireless Microphone Refresh Public Notice*.²⁷ These comments and reply comments are

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eligible for registration in the TV bands databases for protection against interference from TVWS devices) (*TV White Spaces Second Memorandum Opinion and Order*); 47 C.F.R. § 15.713(h)(9); Office of Engineering and Technology and Wireless Telecommunications Bureau Announce the Initial Launch of Unlicensed Wireless Microphone Registration System, ET Docket No. 04-186, *Public Notice*, 27 FCC Rcd 11163 (OET/WTB 2012); Office of Engineering and Technology and Wireless Telecommunications Bureau Announce Nationwide Launch of Unlicensed Wireless Microphone Registration System, ET Docket No. 04-186, *Public Notice*, 27 FCC Rcd 15102 (OET/WTB 2012).

²⁰ *TV White Spaces Second Memorandum Opinion and Order*, 25 FCC Rcd at 18675 ¶ 32.

²¹ See 47 C.F.R. §§ 15.713(h)(9), 15.715.

²² *Wireless Microphone Further Notice*, 25 FCC Rcd at 697 ¶ 127.

²³ *Wireless Microphone Further Notice*, 25 FCC Rcd at 696 ¶ 125, citing Amendment of Part 2, and Subpart D, Report, Memorandum and Order, 63 FCC 2d 535 ¶ 31 (1977).

²⁴ *Wireless Microphone Further Notice*, 25 FCC Rcd at 699 ¶ 134.

²⁵ *Wireless Microphone Further Notice*, 25 FCC Rcd at 699 ¶ 135.

²⁶ The Wireless Telecommunications Bureau and the Office of Engineering and Technology Seek to Update and Refresh Record in the Wireless Microphone Proceeding, WT Docket Nos. 08-166, 08-167, ET Docket No. 10-24, *Public Notice*, 27 FCC Rcd 12067 (WTB/OET 2012) (*Wireless Microphone Refresh Public Notice*). In the *TV White Spaces Second Memorandum Opinion and Order*, the Commission reserved two channels for wireless microphone operations in each market area that have not been available for TVWS use and established the registration process where additional channels are needed. See *TV White Spaces Second Memorandum Opinion and Order*, 25 FCC Rcd at 18671-77 ¶¶ 25-36.

²⁷ The Commission also received a large number of letters and *ex parte* filings in response to the *Wireless Microphone Further Notice* and *Wireless Microphone Refresh Public Notice*. Included in these letter and *ex parte* filings are submissions from houses of worship, wireless microphone manufacturers, retailers, audio rental concerns, production services providers, venues, educational facilities, trade groups, and governmental entities.

listed in Appendix A, with short form names.

III. DISCUSSION

8. In this Second Report and Order, we find that it is in the public interest to provide for a limited expansion of the types of entities eligible for a Part 74 LPAS license to include qualifying professional sound companies, as well as owners and operators of large venues. In order to qualify for a license, a professional sound company or venue must certify that it provides audio services or holds events that routinely use 50 or more wireless microphones, where the use of such devices is an integral part of major events or productions. Routinely using 50 or more wireless microphones means that the professional sound company or venue uses 50 or more such devices for most events or productions.²⁸ Such events may include, for example, performing arts events; major sports, cultural, religious and corporate events; and large theater productions.

9. We conclude that professional sound companies and venues that routinely use 50 or more wireless microphones generally have the same needs for interference protection as existing LPAS licensees in order to ensure reliable, high quality audio, particularly given the spectrum requirements associated with use of a large number of wireless microphones. This expansion will provide a meaningful benefit to entities that require the protection that a license affords without unduly reducing the amount of spectrum available for other uses in the television bands. Unlicensed wireless microphone users that do not qualify for a license may continue to operate under the terms of the existing waivers.

10. **Expanded License Eligibility.** The eligibility threshold we adopt today is limited to professional sound companies and venues that have the sophisticated knowledge and capability to manage use and coordination of a large number of wireless microphones, register qualifying events in the TV broadcast database, and comply with LPAS rules. As discussed in the record, these types of professional users have experience in coordinating wireless microphone uses among themselves at venues or events, even in congested markets.²⁹ They also have similar needs to existing LPAS licensees in order to provide high quality audio services for large scale performances and events.

11. For purposes of the revised eligibility rule, a professional sound company is defined as an entity that provides audio services that routinely use 50 or more low power auxiliary station devices, where the use of such devices is an integral part of major events or productions. Services by a professional sound company may include the provision of equipment, as well as engineering expertise and frequency coordination. A production company that provides its own audio services, such as a touring theater company or performer, would be eligible for licensing under this definition, provided that it routinely uses 50 or more wireless microphones in connection with the performances or events.

12. Eligible venues are those that routinely use 50 more wireless microphones and may include indoor or outdoor seated facilities, including auditoriums, amphitheaters, arenas, stadiums, theaters, and houses of worship, as well as indoor or outdoor venues without fixed seating, including convention centers, conference locations, amusement parks, fairgrounds, entertainment complexes, athletic facilities, educational centers, and government locations.³⁰ The venue does not have to own or

²⁸ A professional sound company or venue that does not usually use 50 or more wireless microphones would therefore not qualify for a license under our revised eligibility standard.

²⁹ See Letter from Jason Eskew, Professional Wireless Systems, to FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Feb. 28, 2010) (Professional Wireless Systems Feb. 28, 2010 Letter) at 7; Broadway League Refresh Comments at 12; see also Letter from Catherine Wang and Timothy Bransford, Counsel to Shure Incorporated, Inc. to Marlene Dortch, Secretary, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Apr. 11, 2014) at 2.

³⁰ The scope of service and permissible transmissions for existing LPAS licensees appear well suited to the activities to be undertaken by the newly eligible entities. Section 74.831 provides that the license authorizes, among other matters, “the transmission of program material by means of a wireless microphone worn by a performer and other participants in a program or motion picture during rehearsal and during the actual broadcast, filming, or

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operate the wireless microphones itself to qualify for the LPAS license but must routinely host large-scale productions that require 50 or more of these devices.

13. Licenses issued to large venue owners or operators are specific to a single venue and authorize operation only at that venue. We allow venues that are comprised of more than one theater or stage area to be eligible provided they routinely use 50 or more wireless microphones by combining all theaters or stage areas at that same location. This will provide interference protection for all theaters and similar facilities at large multi-stage venues,³¹ and it will provide flexibility to the licensee, for example, in the event there are location changes for performances and events within the venue.³²

14. Expanding eligibility in this manner is consistent with the approach the Commission has previously taken with respect to Part 74 LPAS license eligibility. Although licensing was initially limited to licensees of radio and broadcast television stations, the Commission expanded licensing eligibility to include motion picture and television producers on grounds that these entities had the same types of needs as existing LPAS licensees.³³ It further noted that it would consider on a case-by-case basis license applications by “other groups such as live entertainment program producers, etc.” whose needs are similar to those of broadcast licensees.³⁴

15. The newly-eligible licensees have similar needs to existing LPAS licensees in order to provide high quality audio services for large scale performances and events. We note, for example, that interference protection is just as important for professional sound companies and venues that present large performances as it is for existing broadcast and broadcast-related entities because of the need to protect the quality of the performances that their audiences demand and value.³⁵ For example, we note that the need for licensed LPAS devices to be free from harmful interference can be critical for large, live performances, where there may be no chance at a “second take.”³⁶

16. We conclude that routine use of 50 microphones is a reasonable threshold for identifying those entities that are more likely to require interference protection in order to ensure high quality audio services. As discussed below, the record shows that large events and programs regularly utilize a

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recording...” 47 C.F.R. § 74.831. The producers of live events have similar LPAS device requirements. *See* Shure Refresh Comments at 18-19 (citing *Wireless Microphone Further Notice*); Broadway League Refresh Comments at 5-7; *see also* Letter from Michael Rowles, Executive Vice President, General Counsel and Secretary, Live Nation Entertainment, Inc. to Julius Genachowski, Chairman, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Mar. 1, 2010) (Live Nation Mar. 1, 2010 Letter) at 4; Josephson Engineering Additional Comments at 1; Letter from James Stoffo, RF Consultant, to Julius Genachowski, Chairman, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Feb. 19, 2010) (Stoffo Feb. 19, 2010 Letter) at 2; Letter from Scott Nelson, Cherry Hills Community Church to Julius Genachowski, Chairman, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Feb. 23, 2010) at 1.

³¹ *See* Kennedy Center Refresh Comments at 2-4.

³² *See* Collective Wireless Microphone Interests Refresh Comments at 4.

³³ Amendment of Part 2, and Subpart D, Part 74, of the Commission’s Rules and Regulations with Respect to the Use of Wireless Microphones, Docket No. 20195, *Report, Memorandum Opinion and Order*, 63 FCC 2d 535, 542 ¶¶ 30-31 (1977).

³⁴ *See id.* at 542 ¶ 30.

³⁵ *See* Broadway League Refresh Comments at 7; Letter from Daryl P. Friedman, Vice President, Advocacy & Government Relations, The Recording Academy to Julius Genachowski, Chairman, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Mar. 2, 2010) (The Recording Academy Mar. 2, 2010 Letter) at 1-2; NFL Refresh Comments at 6; Letter from Steve Gibson, Opry Music Director, Grand Ole Opry, to Julius Genachowski, Chairman, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Feb. 23, 2010) (Grand Ole Opry Feb. 23, 2010 Letter) at 2-3; Stoffo Feb. 19, 2010 Letter at 2.

³⁶ *See* Broadway League Refresh Comments at 7; Shure Refresh Comments at 8.

substantial number of wireless microphones. The number of wireless microphones used is generally an indicator of the complexity of productions and the need to ensure interference-free high audio quality.³⁷ Interference protection is important for large, live performances because audiences expect “performances of the highest caliber,”³⁸ and interference should not hinder such performances.³⁹

17. Although the number of these devices used for any event can vary based upon a variety of factors, including the nature of the performance, large events and productions often require 50 or more devices.⁴⁰ Data submitted by parties indicate that an average of approximately 50 wireless microphones is used for theatrical performances and that complex performances, such as musicals, often use more.⁴¹ These data also indicate that average wireless microphone usage at sporting events is approximately 80 microphones (although major sporting events can top 300 microphones⁴²), and that more than 150 wireless microphones on average are used at live events or shows.⁴³

18. Large events and productions have less flexibility in choosing channels to avoid interference than when only a few such devices are used. This occurs because the wireless microphone user needs to avoid causing interference to or receiving interference from operating TV station signals as well as other wireless microphones operating in close frequency and spatial proximity (*e.g.*, among the wireless microphones being used during any one event or production).⁴⁴ As a result, productions utilizing a large number of these devices must have access to a significant amount of spectrum that may only be available through licensed use. A production utilizing 50 devices, for example, could need interference-

³⁷ See CWMU Comments at 9; Association of Performing Arts Presenters Reply Comments at 2.

³⁸ See Performing Arts Alliance Reply Comments at 3; Live Nation Mar. 1, 2010 Letter at 2-4; Grand Ole Opry Feb. 23, 2010 Letter at 2; Arts Presenters Comments at 4; CWMU Reply Comments at 3.

³⁹ See, *e.g.*, Shure Refresh Comments at 4-8, 18-19; Live Nation Mar. 1, 2010 Letter at 3-4; Josephson Engineering Additional Comments at 1; Kennedy Center Refresh Comments at 2; Letter from Jason Jacoby, Audio-Visual Technical Manager, Central Synagogue, to Julius Genachowski, Chairman, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Feb. 12, 2010); Letter from Rickey Minor, Minor Productions, Inc., to Julius Genachowski, Chairman, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Feb. 19, 2010); Letter from Morgan Pitman, Production Manager, The Fillmore, to Julius Genachowski, Chairman, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Feb. 23, 2010).

⁴⁰ See Letter from Catherine Wang on behalf of wireless microphone interests, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 08-167 and ET Docket No. 10-24 (filed May 8, 2014) (providing data regarding wireless microphone usage at events/shows, theaters, sporting events, and fixed/studio locations) (Wireless Microphone Interests May 8, 2014 *Ex Parte* Letter); The Recording Academy Mar. 2, 2010 Letter at 1-2 (numerous live performances which may not be currently eligible for a license under Part 74 such as major concert events, musical festivals, and other live music events rely upon “as many or more wireless microphones” as the 50-plus wireless microphones used for its annual GRAMMY awards show); Kennedy Center Refresh Comments at 2-3, 6 (one theatrical production, especially a musical, can make use of 60-70 wireless microphones or 100 pieces of wireless equipment); Bosch Refresh Comments at 8 n.18, SBE Refresh Comments at 7 & n.17 (at the largest sporting events and at political conventions, there are typically more than 120 wireless microphones and low power auxiliary service devices in use, often simultaneously); Live Nation Mar. 1, 2010 Letter at 3 (large venues can use dozens, or even hundreds, of wireless microphones, in-ear monitors, and related equipment for one concert or sporting event).

⁴¹ See Wireless Microphone Interests May 8, 2014 *Ex Parte* Letter at 8. The information discussed above is derived from charts attached to the *Ex Parte* Letter. See also Kennedy Center Refresh Comments at 2-3, 6.

⁴² Wireless Microphone Interests May 8, 2014 *Ex Parte* Letter at 8.

⁴³ Wireless Microphone Interests May 8, 2014 *Ex Parte* Letter at 8.

⁴⁴ Under the LPAS rules, the selection of frequencies in the bands allocated for TV broadcasting is guided by the need to avoid interference to TV broadcast reception. 47 C.F.R. § 74.803(b). In addition, two or more LPAS licensees operating in the same area must select appropriate frequencies and separation distances to avoid interfering with each other. 47 C.F.R. § 74.803(a).

free access to many TV channels at any given venue.⁴⁵ For these reasons, we conclude that routine use of a minimum of 50 wireless microphones provides a reasonable basis for establishing license eligibility.

19. Finally, adopting a standard based on the number of wireless microphones – in this case, 50 or more – is in the public interest because it does not just focus on one particular class or group of users, or on the content of the presentation or event. Rather, this standard encompasses a range of professional entities that provide sound for major events and productions irrespective of the class or group of users or the content of the event or performance.⁴⁶

20. The limited expansion we adopt today strikes an appropriate balance in expanding license eligibility where there is a clear need, while ensuring that spectrum is shared effectively with the existing LPAS operations and remains available for other uses, such as by TVWS devices.⁴⁷ Together with the provisions adopted in the *Incentive Auction Report and Order*, the expansion we adopt today will ensure that the reduced amount of television spectrum that remains after repacking can continue to accommodate wireless microphone operations along with other uses in an efficient and effective manner. For this reason, we reject arguments presented by parties who oppose any expansion of Part 74 eligibility by arguing that such expansion will unduly reduce spectrum available for other uses, such as TVWS devices, especially in major metropolitan areas, and hinder the development of wireless broadband.⁴⁸ We also agree that it is important “to be flexible” in expanding eligibility,⁴⁹ and our new eligibility criteria are designed with that goal in mind. However, we do not believe it is appropriate to expand eligibility further than the approach we adopt in this order.⁵⁰ Limiting license eligibility expansion to professional sound companies and venues that routinely use 50 or more wireless microphones strikes an appropriate balance among competing users for the more limited broadcast spectrum remaining after the repacking, while as noted below continuing to permit use by other wireless microphone users on an unlicensed basis.

⁴⁵ See Letter from Paul Libin, Chairman, The Broadway League, to Senators John Kerry and Olympia Snowe (dated June 22, 2010), filed by David H. Pawlik, Counsel for the Coalition of Wireless Microphone Users, with FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed July 2, 2010) at 2 (a “single Broadway production may easily require upwards of fifty individual wireless frequencies”); Letter from Michael A. Johnson, House Soundman Keller Auditorium, Portland Center for the Performing Arts, to Julius Genachowski, Chairman, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Feb. 19, 2010) at 1 (touring Broadway shows can require upwards of 50 clear channels); Presenters Comments at 3 (on average in 2007-2008, members used from five to 25 wireless microphone channels and a significant number of members used 26-50 channels); Letter from Brian Blackmore, Publisher and Editor-in-Chief, *Church Production Magazine* and *Worship Facilities Magazine*, to FCC (filed Mar. 1, 2010) at 1-2 (informal survey participated in by some readers suggests that an average number of wireless channels normally used simultaneously is nine); Letter from Catherine Wang, Counsel for Shure, Inc., and noting other wireless microphone interests, to Marlene H. Dortch, Secretary, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24, GN Docket No. 12-268 (filed Apr. 24, 2014) at 2 (Shure Apr. 24, 2014 *Ex Parte* Letter) (referring to examples discussed of “professional productions which routinely use hundreds of wireless microphone channels”). Generally, it is typical for six to eight analog wireless microphones to be on a six megahertz channel. In recent years, some manufacturers have developed analog equipment that permits up to 16 microphones on a television channel under certain circumstances. *Incentive Auction Report and Order* at ¶ 306 & n.960.

⁴⁶ See Shure Comments at 3-4. These major events and productions may, for example, include performing artists, live theater, sports, houses of worship, educational institutions, government activities, and business conference facilities, provided they meet all requirements for eligibility.

⁴⁷ Cf. Live Nation Mar. 1, 2010 Letter at 5.

⁴⁸ See, e.g., Microsoft Refresh Comments at 6-9; Spectrum Bridge Comments at 3; see also PISC Reply Refresh Comments at 23-27; Dell/Microsoft Comments at 9-12.

⁴⁹ Audio-Technica Refresh Comments at 21.

⁵⁰ See, e.g., Audio-Technica Refresh Comments at 20-22; Sennheiser Refresh Comments at 5-7; Shure Refresh Comments at 21-23.

21. We note at the outset that the licensing eligibility criteria we establish today should have limited impact on the availability of spectrum for other users in the repacked UHF band. First, we do not expect to significantly expand the types of events or use that would qualify for interference protection from TVWS devices, given that the Commission already permits events that require a large number of microphones to be registered in the database today.⁵¹ The Commission's rules currently allow both existing Part 74 licensees and certain unlicensed users requiring large numbers of wireless microphones to register in the database for interference protection, although unlicensed users must demonstrate that they are using the TV channels not available for TVWS devices and must request registration by filing with the Commission, rather than the database administrator, at least 30 days in advance. The rules adopted in this order will enable the newly eligible entities, which generally are able to register for database protection today as unlicensed users, to obtain protection in the TV bands database in a more administratively efficient manner, through the Part 74 license process.

22. We further observe that the actions we take in the *Incentive Auction Report and Order* help mitigate the impact that expanding eligibility may have on other users in the band. For example, by addressing the spectrum needs of wireless microphone users in a new proceeding that we will initiate in the near term to promote the use of frequency bands outside of the UHF band,⁵² we potentially increase spectrum resources available to TVWS devices in the TV bands, as well as to existing and newly eligible LPAS licensees both in the TV bands and in other spectrum bands. The *Incentive Auction Report and Order* also makes additional spectrum available to TVWS devices by providing such devices access to the repurposed spectrum during the 39-month transition period, designating one channel for use by TVWS and wireless microphones and permitting them to continue operating on vacant channels allocated and assigned for primary television services, making the 600 MHz guard bands available for unlicensed use,⁵³ as well as permitting unlicensed use on channel 37 subject to appropriate protections for channel 37 incumbents.⁵⁴ Taken together, we expect that these actions will help to address the existing and longer-term needs of wireless microphones and TVWS users.

23. We also note that wireless microphones and related devices may still operate on an unlicensed basis. We are not persuaded by arguments that with expanded eligibility we should restrict unlicensed wireless microphone use in the TV bands.⁵⁵ We find it is in the public interest to continue the temporary waiver for unlicensed operations under Part 15 that was granted in the *Wireless Microphone Report and Order*, and we will make a determination on rules for unlicensed operations at a later date.⁵⁶ This approach serves the public interest because it continues to provide a waiver for the operation of wireless microphones under Part 15 for a wide range of applications, and permits us to compile a record focused on unlicensed operations while we consider other issues. On balance, we conclude that the

⁵¹ *TV White Spaces Second Memorandum Opinion and Order*, 25 FCC Rcd at 18674-75 ¶¶ 31-32 (recognizing that certain events, such as major sporting contests or live theatrical productions/shows, may use scores of wireless microphones, although on an unlicensed basis, and may be eligible for registration in the TV bands databases for protection against interference from TVWS devices); 47 C.F.R. § 15.713(h)(9); Office of Engineering and Technology and Wireless Telecommunications Bureau Announce the Initial Launch of Unlicensed Wireless Microphone Registration System, ET Docket No. 04-186, *Public Notice*, 27 FCC Rcd 11163 (OET/WTB 2012); Office of Engineering and Technology and Wireless Telecommunications Bureau Announce Nationwide Launch of Unlicensed Wireless Microphone Registration System, ET Docket No. 04-186, *Public Notice*, 27 FCC Rcd 15102 (OET/WTB 2012).

⁵² See *Incentive Auction Report and Order* at ¶ 316.

⁵³ See *Incentive Auction Report and Order* at ¶¶ 258, 678-679, 681.

⁵⁴ See *Incentive Auction Report and Order* at ¶ 274-278.

⁵⁵ See, e.g., NAB Refresh Comments at 3-5; NAB Refresh Reply Comments at 7-8.

⁵⁶ During the temporary waiver period, any entity that chooses to operate a wireless microphone under the waiver must comply with all waiver conditions, including compliance with specified technical requirements. See *Wireless Microphone Report and Order*, 25 FCC Rcd at 682-87 ¶¶ 81-90.

changes that we are making best serve to address the important needs of wireless microphone users as well as other users that seek access to the broadcast spectrum that remains available for use following repacking.

24. There are parties who argue that expanding license eligibility will lead to inefficient use, remove incentives for technological advancement, and “cement the use of inefficient technologies,”⁵⁷ but we find that these arguments do not provide a sufficient basis to outweigh the benefits of expanded eligibility in ensuring high quality audio services in connection with large events. Although high quality audio largely depends upon analog technology at the present time,⁵⁸ steps have been taken during the past few years to develop and make available digital wireless microphones.⁵⁹ We have found that it is in the public interest to provide for a limited expansion of license eligibility, and we will consider the current state of digital technology for wireless microphones, along with the spectrum needs of wireless microphone and other users, in connection with a forthcoming Notice of Proposed Rulemaking on wireless microphones.

25. ***Nuclear Power Plants.*** We deny requests to expand eligibility under Part 74 to include nuclear power plants, but we modify the NEI/UTC Waiver Letter Order to provide a uniform transmit power for operation of unlicensed low power auxiliary devices both inside and outside the nuclear power plants, as explained below.⁶⁰ The NEI/UTC Waiver Letter Order provided nuclear power plants with additional flexibility in the operation of unlicensed low power auxiliary station devices by establishing tailored operating provisions for the use of those devices inside nuclear power plants.⁶¹ NEI/UTC ask that the rule waiver granted in the NEI/UTC Waiver Letter Order be codified in Part 15 of the rules.⁶² They also ask that nuclear plants be made eligible under Part 74 for licensed LPAS use at their plants so that they can have “greater flexibility to use their Telex equipment in more limited outdoor applications at their facilities, such as when carrying fuel rods to storage locations.”⁶³

26. We decline to expand Part 74 eligibility to include nuclear power plants as unnecessary at this time because we are providing increased flexibility for their operations by modifying the rule waiver

⁵⁷ Dell/Microsoft Reply Comments at 11; *see also* Microsoft Refresh Comments at 6-7; Wi-Fi Alliance Refresh Comments at 2-3. *See* Dell/Microsoft Comments at 6-12.

⁵⁸ *See* Bosch Refresh Comments at 18; Sennheiser Refresh Comments at 12-13.

⁵⁹ *See Wireless Microphone Refresh Public Notice*, 27 FCC Rcd at 12072 (discussing Shure and Sennheiser systems); *see also* Shure Refresh Comments at 30-31; Lectrosonics Refresh Comments at 4-6; Microsoft Refresh Comments at 4. Audio-Technica comments that it is wrong to assume that digital wireless microphones are inherently more efficient than analog microphones, and states that “[it] has developed an analog wireless microphone product that allows more than 25 microphones to operate on a single 6 MHz channel” Audio-Technica Refresh Comments at 12-13.

⁶⁰ Request to Modify Conditions on Waiver Granted in ET Docket No. 10-24, Letter from Julius Knapp, Chief, OET, FCC, and Ruth Milkman, Chief, WTB, FCC, to J. Jeffrey Craven, 25 FCC Rcd 15581 (OET/WTB 2010) (“NEI/UTC Waiver Letter Order”).

⁶¹ The NEI/UTC Waiver Letter Order modified the waiver granted in the *Wireless Microphone Report and Order* to allow nuclear power plants to operate Telex headsets in the TV band spectrum without regard to the television station co-channel separation distances specified in the more general waiver and to operate at a transmit power of up to 100 milliwatts, provided that the plants operate these devices only inside buildings and comply in all other respects with the terms of the more general waiver. *See* NEI/UTC Waiver Letter Order, 25 FCC Rcd at 15581.

⁶² *See* NEI/UTC Refresh Comments at 3-4; *see also* Letter from Donald L. Herman, Jr., Counsel for Pinnacle Capital Corp. and on behalf of nuclear representatives, to Marlene H. Dortch, Secretary, FCC, WT Dockets Nos. 08-166 and 08-167, ET Docket No. 10-24, GN Docket No. 12-268 (filed March 20, 2014) at 2; Letter from J. Jeffrey Craven, Counsel for the Nuclear Energy Institute, to Marlene H. Dortch, Secretary, FCC, WT Dockets Nos. 08-166 and 08-167, ET Docket No. 10-24, GN Docket No. 12-268 (filed January 17, 2014) at 2.

⁶³ NEI/UTC Refresh Comments at 4.

to make the power limits uniform for both indoor and outdoor operations. This modification of the rule waiver obviates the need to expand eligibility to include nuclear power plants because the modified waiver will enable nuclear power plants to use their Telex equipment both indoors and outdoors at 100 milliwatts. We also decline to codify the waiver provisions at this time, because there has been no showing that further relief is necessary prior to consideration of changes to our rules in connection with the forthcoming Notice of Proposed Rulemaking addressing wireless microphone use.⁶⁴ Finally, we find that operation of these devices outside at transmit levels up to 100 milliwatts would not interfere with other users in the TV bands because the locations of nuclear power plants are known, they generally are located in remote areas, and their Telex equipment operates at a relatively low power.⁶⁵

27. **License Requirements.** As part of the licensing process, applicants will be required to certify and provide supporting evidence that they meet all eligibility criteria, including information showing that they routinely provide audio services or hold events that require use of 50 or more wireless microphones.⁶⁶ In addition, as with other licensed operations for LPAS, newly eligible licensees will be subject to all applicable rules, including the requirement that wireless microphone use is “secondary to TV broadcasting and land mobile stations operating in the UHF-TV spectrum and must not cause harmful interference.”⁶⁷ If such interference occurs, the operation must immediately cease and may not resume until the interference problem has been resolved.⁶⁸ Moreover, where two or more LPAS licensees seek to operate in the same area, the licensees should “select frequencies or schedule operation in such manner as to avoid mutual interference.”⁶⁹

28. We decline to modify our licensing procedures or the information required from an applicant, except to the extent necessary to reflect the modification to the rules we adopt here.⁷⁰ The new class of eligible entities is comprised of venues and professional sound companies that routinely use 50 or more wireless microphones, and we do not anticipate that the licensing process should be difficult for them to follow. Further, we conclude that it is not necessary to grant the request for separate licenses for individual frequency ranges because an applicant is already able to specify individual frequency ranges on its license.⁷¹ Finally, we reject requests to modify or waive the fees relating to LPAS.⁷² The Commission is required to assess and collect application fees pursuant to Section 8 of the Communications Act of

⁶⁴ NEI/UTC Waiver Letter Order, 25 FCC Rcd at 15581. In addition, such devices, in all other ways, were required to comply with the terms of the waiver granted in the *Wireless Microphone Report and Order*. *Id.*

⁶⁵ See Bosch Refresh Comments at 17.

⁶⁶ The requirement that a licensee must routinely provide audio services or hold events that require use of 50 or more wireless microphones will also appear as a condition on the license.

⁶⁷ 47 C.F.R. § 74.803(b).

⁶⁸ 47 C.F.R. §§ 74.803(b), 74.861(g).

⁶⁹ 47 C.F.R. § 74.803(a).

⁷⁰ See, e.g., CWMU Comments at 10-11; The Recording Academy Mar. 2, 2010 Letter at 2-3; Letter from Alan M. Feldman, MGM Mirage, to Julius Genachowski, Chairman, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Feb. 23, 2010) at 4.

⁷¹ See Letter from Annette M. Moody, PSAV Presentation Services, to Julius Genachowski, Chairman, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed March 1, 2010) at 2.

⁷² See Letter from Dan Hladun, Dan’s Portable PA, to Julius Genachowski, Chairman, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Feb. 13, 2010) at 1; Letter from Dale Janus, Guys Without Ties, to Julius Genachowski, Chairman, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Feb. 11, 2010) at 1; Letter from Matthew Wentz, Willow Creek Community Church – McHenry County, to Julius Genachowski, Chairman, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Feb. 23, 2010) at 1.

1934, as amended, and we decline to grant a waiver except pursuant to our established waiver standards for a “specific instance for good cause shown, where such action would promote the public interest.”⁷³

29. **License Conditions.** The *Incentive Auction Report and Order* requires wireless microphones to vacate the repurposed UHF spectrum by the end of the post-auction transition period, which will be 39 months after the release of the *Channel Reassignment Public Notice*.⁷⁴ Consistent with this deadline, we expressly condition any new LPAS licenses granted between now and that date, including licenses granted to newly eligible licensees, on the requirement to cease operating in the repurposed spectrum no later than that date. Further, we delegate authority to the WTB to modify the LPAS licenses to delete the frequencies identified as repurposed in the *Channel Reassignment Public Notice*, effective as of the end of the post-auction transition period, and to make any other related changes as necessary. Following the post-auction transition period, licensees may operate only in the bands allocated for TV broadcasting.⁷⁵

30. **License Term.** We find that it is in the public interest to provide newly eligible licensees an initial and renewal license term not to exceed ten years. A ten-year term for these licenses is consistent with the license term of most other wireless services, such as Part 27 services, cellular service, and Personal Communications Services.⁷⁶ Moreover, a ten-year license term provides these licensees with flexibility because it is a relatively long period of time and will give them a greater degree of certainty in connection with their status and ability to receive the benefits of a license.

31. The existing rule ties the license term to that of broadcast stations in the same area of operation.⁷⁷ We decline to apply this rule to the new licensees because their operation of wireless microphones is generally not related to or affiliated with local broadcast operations, and conforming their license term to the term of local broadcast stations could lead to confusion with no corresponding benefit.⁷⁸ We note that if we applied the existing rule to the new licensees, they would have an initial license term that is no more than eight years but could be substantially less if the license were obtained in

⁷³ See 47 U.S.C. § 158(d)(2). See also 47 C.F.R. § 1.1102.

⁷⁴ *Incentive Auction Report and Order* at ¶¶ 687-689.

⁷⁵ See 47 C.F.R. § 74.832(d).

⁷⁶ See, e.g., 47 C.F.R. §§ 24.15, 27.13; Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands, Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz, Service Rules for Advanced Wireless Services in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz and 2175-2180 MHz Bands, WT Docket Nos. 12-70 and 04-356, ET Docket No. 10-142, *Report and Order and Order of Proposed Modification*, 27 FCC Rcd 16102, 16200 ¶ 262 (2012); Service Rules for the 698-746, 747-762 and 777-792 MHz Bands, WT Docket No. 06-150, Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, Section 68.4(a) of the Commission’s Rules Governing Hearing Aid-Compatible Telephones, WT Docket No. 01-309, Biennial Regulatory Review – Amendment of Parts 1, 22, 24, 27, and 90 to Streamline and Harmonize Various Rules Affecting Wireless Radio Services, WT Docket 03-264, Former Nextel Communications, Inc. Upper 700 MHz Guard Band Licenses and Revisions to Part 27 of the Commission’s Rules, WT Docket No. 06-169, Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band, PS Docket No. 06-229, Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010, WT Docket No. 96-86, *Report and Order and Further Notice of Proposed Rulemaking*, 22 FCC Rcd 8064, 8096 ¶ 84 (2007); Amendment of the Commission’s Rules to Establish New Personal Communications Services, GEN Docket No. 90-314, *Second Report and Order*, 8 FCC Rcd 7700, 7753 ¶¶ 130-31 (1993). See also Sennheiser Comments at 7; Professional Wireless Systems Feb. 28, 2010 Letter at 8.

⁷⁷ See 47 C.F.R. § 74.15(b).

⁷⁸ See Shure Comments at 14.

the middle of the license term of broadcast stations located in the same area of operation.⁷⁹ Moreover, many new professional sound company licensees may provide services in different regions.⁸⁰ Application of the existing LPAS license term would be burdensome and confusing because it would result in different license terms for the same entity operating in different geographic areas. Finally, we anticipate that many of these new licensees could be small entities and that it would ease regulatory burdens on them if their initial license term were to run for the full ten-year period.

IV. PROCEDURAL MATTERS

32. ***Final Regulatory Flexibility Analysis.*** The Regulatory Flexibility Act (RFA)⁸¹ requires that an agency prepare a regulatory flexibility analysis for notice and comment rulemakings, unless the agency certifies that “the rule will not, if promulgated, have a significant economic impact on a substantial number of small entities.”⁸² Accordingly, we have prepared a Final Regulatory Flexibility Analysis concerning the possible impact of the rule changes contained in the Second Report and Order on small entities. The Final Regulatory Flexibility Analysis is set forth in Appendix C.

33. ***Final Paperwork Reduction Act Analysis.*** The Second Report and Order contains new or modified information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. It will be submitted to the Office of Management and Budget (OMB) for review under Section 3507(d) of the PRA. OMB, the general public, and other Federal agencies are invited to comment on the new or modified information collection requirements contained in this proceeding. In addition, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, *see* 44 U.S.C. 3506(c)(4), we seek specific comment on how we might further reduce the information collection burden for small business concerns with fewer than 25 employees.

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

V. ORDERING CLAUSES

35. Accordingly, IT IS ORDERED, pursuant to Sections 1, 4(i), 301, 302, 303, and 316 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i), 301, 302a, 303, and 316, that this SECOND REPORT AND ORDER in WT Docket No. 08-166, WT Docket No. 08-167, and ET Docket No. 10-24 IS ADOPTED.

36. IT IS FURTHER ORDERED that Part 74 of the Commission’s rules, 47 C.F.R. Part 74, IS AMENDED as set forth in Appendix B, and such amendments SHALL BE EFFECTIVE 30 days after the date of publication in the Federal Register, except for Section 74.832, which contains new or modified information collection requirements that require approval by the Office of Management and Budget (OMB) under the PRA. The Federal Communications Commission will publish a document in the Federal Register announcing such approval and the relevant effective date.

37. IT IS FURTHER ORDERED that all low power auxiliary station licenses granted between the effective date of this Second Report and Order and the end of the post-auction transition period ARE CONDITIONED as stated herein and that all low power auxiliary station licenses granted to large venue owners or operators and professional sound companies ARE CONDITIONED as stated herein.

⁷⁹ We note that we are only revising the license term rule for newly-eligible licensees. Currently eligible LPAS licenses remain subject to the existing license term requirements in 47 C.F.R. § 74.15(b).

⁸⁰ *See, e.g.*, Professional Wireless Systems Feb. 28, 2010 Letter at 1.

⁸¹ *See* 5 U.S.C. § 601–612. The RFA has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

⁸² 5 U.S.C. § 605(b).

38. IT IS FURTHER ORDERED that the temporary waiver granted in the *Wireless Microphones Report and Order*, which permits certain unlicensed operation of wireless microphones in the broadcast television spectrum, shall continue in effect pending the outcome of further proceedings.

39. IT IS FURTHER ORDERED that the NEI/UTC Waiver Letter Order is modified as stated herein. As modified, it shall continue in effect pending the outcome of further proceedings.

40. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this SECOND REPORT AND ORDER, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

41. IT IS FURTHER ORDERED that the Commission SHALL SEND a copy of this SECOND 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).

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

APPENDIX A

List of Commenters

Wireless Microphone Further Notice Comments and Reply Comments:**Comments:**

Association of Maximum Service Television, Inc. and National Association of Broadcasters (“MSTV/NAB”)
Association of Performing Arts Presenters (“Arts Presenters”)
Association of Public-Safety Communications Officials-International, Inc. (“APCO”)
Audio-Technica U.S., Inc. (“Audio-Technica”)
Audiovend Wireless Systems, Inc. (“Audiovend”)
Coalition of Wireless Microphone Users (“CWMU”)
County of Los Angeles (“Los Angeles”)
CTIA – The Wireless Association (“CTIA”)
Dell Inc. and Microsoft Corp. (“Dell/Microsoft”)
Engineers for the Integrity of Broadcast Auxiliary Services Spectrum (“EIBASS”)
Josephson Engineering, Inc. (“Josephson Engineering, Inc.”)
Lectrosonics, Inc. (“Lectrosonics”)
Mabuhay Alliance (“Mabuhay”)
Michael J. Benonis (“Benonis”)
Motorola, Inc. (“Motorola”)
Nady Systems, Inc. (“Nady”)
National Public Safety Telecommunications Council (“NPSTC”)
Nuclear Energy Institute and Utilities Telecom Council (“NEI/UTC”)
Public Interest Spectrum Coalition comprised of Media Access Project, New America Foundation, and Public Knowledge (“PISC”)
Ryan S. Overdorf (“Overdorf”)
Sennheiser Electronic Corporation (“Sennheiser”)
Shure Incorporated (“Shure”)
Spectrum Bridge, Inc. (“Spectrum Bridge”)
Thomas C. Smith (“Thomas C. Smith”)

Reply Comments:

Ameren Services Company (“Ameren”)
Arizona Public Service Company (“APS”)
Arts Presenters
AT&T Inc. (“AT&T”)
Audio-Technica
CWMU
Dell/Microsoft
International Association of Assembly Managers (“IAAM”)
Land Mobile Communications Council (“LMCC”)
Motorola
MSTV/NAB
NEI/UTC
Performing Arts Alliance comprised of American Music Center, Association of Performing Arts Presenters, Chorus America, Dance/USA, Fractured Atlas, League of American Orchestras, National

Alliance for Musical Theatre, National Performance Network, OPERA America, and Theatre Communications Group (“Performing Arts Alliance”)
QUALCOMM Incorporated (“Qualcomm”)
Overdorf
Sennheiser
Shure
Southern Company Services, Inc. (“Southern”)

Refresh PN Comments and Reply Comments:**Comments:**

Adaptrum, Inc. (“Adaptrum”)
Audio-Technica U.S., Inc. (“Audio-Technica”)
Cohen Dippell and Everist PC
Collective Wireless Microphone Interests
CP Communications PA, LLC (“CP Communications”)
CTIA – The Wireless Association (“CTIA”)
EIBASS
Google Inc. (“Google”)
IEEE 802 LMSC (“IEEE”)
John F. Kennedy Center for the Performing Arts (“Kennedy Center”)
Lectrosonics
Microsoft Corporation (“Microsoft”)
National Association of Broadcasters (“NAB”)
National Football League
NEI/UTC
Public Interest Spectrum Coalition comprised of New America Foundation, Consumer Federation of America, Public Knowledge and the National Hispanic Media Coalition (“PISC”)
Robert Bosch LLC (“Bosch”)
Sennheiser
Shure
The Boeing Company (“Boeing”)
The Broadway League, Inc. (“Broadway League”)
The Performing Arts Wireless Microphone Working Group (comprised of the Alliance of Resident Theatres/NY, Association of Performing Arts Presenters, Dance/USA, Educational Theatre Association, League of American Orchestras, OPERA America, Theatre Communications Group) (“Performing Arts Working Group”)
The Society of Broadcast Engineers, Inc. (“SBE”)
Wi-Fi Alliance
Wireless Internet Service Providers Association (“WISPA”)

Reply Comments:

Cohen, Dippell and Everist PC
Lectrosonics, Inc.
NAB
NEI/UTC

Office of the Commissioner of Baseball, National Basketball Association, NFL, National Hockey League, National Collegiate Athletic Association, and National Association for Stock Car Auto Racing (“Sports Leagues”)

Public Interest Spectrum Coalition comprised of New America Foundation, Consumer Federation of America, Public Knowledge and the National Hispanic Media Coalition (“PISC”)

Sennheiser

Shure

The Walt Disney Company (“Disney”)

WhiteSpace Alliance

WISPA

APPENDIX B**Final Rules**

Part 74 of the Code of Federal Regulations is amended as follows:

1. The authority citation for part 74 is revised to read as follows:

AUTHORITY: 47 U.S.C. 154, 302a, 303, 307, 309, 336 and 554.

2. Section 74.15 is amended by revising paragraph (b) to read as follows:

§ 74.15 Station License Period.

* * * * *

(b) Licenses for stations or systems in the Auxiliary Broadcast Service held by a licensee of a broadcast station will be issued for a period running concurrently with the license of the associated broadcast station with which it is licensed. Licenses held by eligible networks for the purpose of providing program service to affiliated stations under subpart D of this part, and by eligible networks, cable television operators, motion picture producers and television program producers under subpart H of this part will be issued for a period running concurrently with the normal licensing period for broadcast stations located in the same area of operation. Licenses held by large venue owners or operators and professional sound companies under subpart H of this part will be issued for a period not to exceed ten years from the date of initial issuance or renewal.

* * * * *

3. Section 74.801 is amended by adding definitions of large venue owner or operator and professional sound company to read as follows:

§ 74.801 Definitions.

* * * * *

Large venue owner or operator. Large venue owner or operator refers to a person or organization that owns or operates a venue that routinely uses 50 or more low power auxiliary station devices, where the use of such devices is an integral part of major events or productions. Routinely using 50 or more low power auxiliary station devices means that the venue owner or operator uses 50 or more such devices for most events or productions.

* * * * *

Professional sound company. Professional sound company refers to a person or organization that provides audio services that routinely use 50 or more low power auxiliary station devices, where the use of such devices is an integral part of major events or productions. Routinely using 50 or more low power auxiliary station devices means that the professional sound company uses 50 or more such devices for most events or productions.

* * * * *

4. Section 74.831 is amended to read as follows:

§ 74.831 Scope of Service and Permissible Transmissions.

The license for a low power auxiliary station authorizes the transmission of cues and orders to production personnel and participants in broadcast programs, motion pictures, and major events or productions and in the preparation therefor, the transmission of program material by means of a wireless microphone worn by a performer and other participants in a program, motion picture, or major event or production during rehearsal and during the actual broadcast, filming, recording, or event or production, or the transmission of comments, interviews, and reports from the scene of a remote broadcast. Low power auxiliary stations operating in the 944-952 MHz band may, in addition, transmit synchronizing signals and various control signals to portable or hand-carried TV cameras which employ low power radio signals in lieu of cable to deliver picture signals to the control point at the scene of a remote broadcast.

5. Section 74.832 is amended by adding paragraphs (a)(7) and (a)(8) and revising paragraphs (d), (e), and (f) to read as follows:

§ 74.832 Licensing Requirements and Procedures.

(a) * * *

(7) Large venue owners or operators as defined in § 74.801.

(8) Professional sound companies as defined in § 74.801.

* * * * *

(d) Cable television operations, motion picture and television program producers, large venue owners or operators, and professional sound companies may be authorized to operate low power auxiliary stations only in the bands allocated for TV broadcasting.

(e) An application for low power auxiliary stations or for a change in an existing authorization shall specify the broadcast station, or the network with which the low power broadcast auxiliary facilities are to be principally used as given in paragraph (h) of this section; or it shall specify the motion picture or television production company, the cable television operator, the professional sound company, or, if applicable, the venue with which the low power broadcast auxiliary facilities are to be solely used. A single application, filed on FCC Form 601 may be used in applying for the authority to operate one or more low power auxiliary units. The application must specify the frequency bands which will be used. Motion picture producers, television program producers, cable television operators, large venue owners or operators, and professional sound companies are required to attach a single sheet to their application form explaining in detail the manner in which the eligibility requirements given in paragraph (a) of this section are met. In addition, large venue owners or operators and professional sound companies shall include on the attachment the following certification and shall sign and date the certification: "The applicant hereby certifies that it routinely uses 50 or more low power auxiliary station devices, where the use of such devices is an integral part of major events or productions."

(f) Applications for the use of the bands allocated for TV broadcasting must specify the usual area of operation within which the low power auxiliary station will be used. This area of operation may, for example, be specified as the metropolitan area in which the broadcast licensee serves, the usual area within which motion picture and television producers are operating, or the location of the venue.

Licenses issued to large venue owners or operators are specific to a single venue and authorize operation only at that venue. Because low power auxiliary stations operating in these bands will only be permitted in areas removed from existing co-channel TV broadcast stations, licensees have full responsibility to ensure that operation of their stations does not occur at distances less than those specified in § 74.802(b).

* * * * *

APPENDIX C

Final Regulatory Flexibility Act Analysis

1. As required by the Regulatory Flexibility Act of 1980, as amended (RFA),¹ an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the *Wireless Microphone Further Notice*.² The Commission sought written public comment on the proposals in the *Wireless Microphone Further Notice*, including comment on the IRFA. This Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.³

2. We believe that it would serve the public interest to analyze the possible significant economic impact of the policy and rule changes for expanded wireless microphone license eligibility on small entities. Accordingly, this FRFA contains an analysis of this impact in connection with the limited expansion of wireless microphone license eligibility within the scope of this Second Report and Order.

A. Need for, and Objectives of, the Report and Order

3. We provide for a limited expansion of wireless microphone license eligibility under Part 74, Subpart H of the Commission's rules to facilitate the operation of wireless microphones by professional sound companies and the owners and operators of large venues that use a large number of these devices.⁴ Specifically, in order to be eligible for a license, a professional sound company or venue must certify that it provides audio services or holds events that routinely use 50 or more wireless microphones, where the use of such devices is an integral part of major events or productions. Professional sound companies and large venues that meet these requirements have needs for interference protection to ensure reliable, high quality audio. Expanding wireless microphone license eligibility on this basis is in the public interest because it will benefit entities that require the protection that a license affords without unduly reducing the amount of spectrum available for other uses in the television spectrum bands. In addition, expanding license eligibility in this manner avoids distinctions based on presentation content or on particular classes or groups of users.

B. Summary of Significant Issues Raised By Public Comments in Response to the IRFA

4. There were no comments filed that specifically addressed the rules and policies proposed in the IRFA.

¹ See 5 U.S.C. § 603. The RFA, see 5 U.S.C. § 601 – 612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

² See Revisions to Rules Authorizing the Operation of Low Power Auxiliary Stations in the 698-806 MHz Band, WT Docket No. 08-166, Public Interest Spectrum Coalition, Petition for Rulemaking Regarding Low Power Auxiliary Stations, Including Wireless Microphones, and the Digital Television Transition, WT Docket No. 08-167, Amendment of Parts 15, 74 and 90 of the Commission's Rules Regarding Low Power Auxiliary Stations, Including Wireless Microphones, ET Docket No. 10-24, *Report and Order and Further Notice of Proposed Rulemaking*, 25 FCC Rcd 643, 685-86 ¶ 86-87 (2010) (*Wireless Microphone Order* and *Wireless Microphone Further Notice*, respectively).

³ See 5 U.S.C. § 604.

⁴ This rule part provides for the licensing and operation of "low power auxiliary stations" (LPAS), which include wireless microphones.

C. Description and Estimate of the Number of Small Entities to Which the Proposed Rules Would Apply

5. 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 herein.⁵ The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.”⁶ In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act.⁷ 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).⁸

6. *Small Businesses, Small Organizations, and Small Governmental Jurisdictions.* Our action may, over time, affect small entities that are not easily categorized at present. We therefore describe here, at the outset, three comprehensive, statutory small entity size standards.⁹ First, nationwide, there are a total of 28.2 million small businesses, according to the SBA.¹⁰ In addition, a “small organization” is generally “any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.”¹¹ Nationwide, as of 2012, there were approximately 2,300,000 small organizations.¹² Finally, 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.”¹³ Census Bureau data for 2012 indicate that there were 90,056 local governments in the United States.¹⁴ Thus, we estimate that most governmental jurisdictions are small.

7. **LPAS Licensees.** There are a total of more than 1,200 Low Power Auxiliary Station (LPAS) licenses in all bands and a total of over 600 LPAS licenses in the UHF spectrum.¹⁵ Existing LPAS operations are intended for uses such as wireless microphones, cue and control communications,

⁵ 5 U.S.C. § 604(a)(3).

⁶ 5 U.S.C. § 601(6).

⁷ 5 U.S.C. § 601(3) (incorporating by reference the definition of “small-business concern” in the Small Business Act, 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), 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 of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register.”

⁸ 15 U.S.C. § 632.

⁹ See 5 U.S.C. §§ 601(3)–(6).

¹⁰ See SBA, Office of Advocacy, “Frequently Asked Questions,” http://www.sba.gov/sites/default/files/FAQ_March_2014_0.pdf (last visited May 2, 2014; figures are from 2011).

¹¹ 5 U.S.C. § 601(4).

¹² NATIONAL CENTER FOR CHARITABLE STATISTICS, THE NONPROFIT ALMANAC (2012).

¹³ 5 U.S.C. § 601(5).

¹⁴ U.S. CENSUS BUREAU, GOVERNMENT ORGANIZATION SUMMARY REPORT: 2012 (rel. Sep. 26, 2013), http://www2.census.gov/govs/cog/g12_org.pdf (last visited May 2, 2014).

¹⁵ FCC, Universal Licensing System (ULS), available at <http://wireless.fcc.gov/uls/index.htm?job=home> (last visited May 13, 2014).

and synchronization of TV camera signals. These low power auxiliary stations transmit over distances of approximately 100 meters.¹⁶

8. **Radio Stations.** This Economic Census category “comprises establishments primarily engaged in broadcasting aural programs by radio to the public. Programming may originate in their own studio, from an affiliated network, or from external sources.”¹⁷ The SBA defines a radio broadcast station as a small business if such station has no more than \$35.5 million in annual receipts.¹⁸ Business concerns included in this industry are those “primarily engaged in broadcasting aural programs by radio to the public.”¹⁹ According to Commission staff review of the BIA Publications, Inc. *Master Access Radio Analyzer Database* as of November 26, 2013, about 11,331 (or about 99.9 percent) of 11,341 commercial radio stations have revenues of \$35.5 million or less and thus qualify as small entities under the SBA definition.

9. We note, however, that, in assessing whether a business concern qualifies as small under the above definition, business (control) affiliations²⁰ must be included. Our estimate, therefore, likely overstates the number of small entities that might be affected by our action, because the revenue figure on which it is based does not include or aggregate revenues from affiliated companies.

10. **Television Broadcasting.** This Economic Census category “comprises establishments primarily engaged in broadcasting images together with sound. These establishments operate television broadcasting studios and facilities for the programming and transmission of programs to the public.”²¹ The SBA has created the following small business size standard for Television Broadcasting firms: those having \$14 million or less in annual receipts.²² The Commission has estimated the number of licensed commercial television stations to be 1,388.²³ In addition, according to Commission staff review of the BIA Advisory Services, LLC’s *Media Access Pro Television Database* on March 28, 2012, about 950 of an estimated 1,300 commercial television stations (or approximately 73 percent) had revenues of \$14 million or less.²⁴ We therefore estimate that the majority of commercial television broadcasters are small entities.

¹⁶ 47 C.F.R. § 74.801.

¹⁷ U.S. Census Bureau, *2012 NAICS Definitions: 515112 Radio Stations*, <http://www.census.gov/epcd/naics02/def/NDEF515.HTM>. A separate census category for “Radio Networks” “comprises establishments primarily engaged in assembling and transmitting aural programming to their affiliates or subscribers via over-the-air broadcasts, cable, or satellite. The programming covers a wide variety of material, such as news services, religious programming, weather, sports, or music.” U.S. Census Bureau, *2012 NAICS Definitions: 515111 Radio Networks*, [http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=515111&search=2012 NAICS Search](http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=515111&search=2012%20NAICS%20Search) (last visited May 8, 2014).

¹⁸ See 13 C.F.R. § 121.201, NAICS Code 515112.

¹⁹ U.S. Census Bureau, *2012 NAICS Definitions: 515112 Radio Broadcasting*, <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=515112&search=2012> (last visited Mar. 6, 2014).

²⁰ “[Business concerns] are affiliates of each other when one concern controls or has the power to control the other or a third party or parties controls or has to power to control both.” 13 C.F.R. § 121.103(a)(1).

²¹ U.S. Census Bureau, *2012 NAICS Definitions: 515120 Television Broadcasting*, (partial definition), <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=515120&search=2012> (last visited May 6, 2014).

²² 13 C.F.R. § 121.201 (NAICS code 515120) (updated for inflation in 2010).

²³ See *FCC News Release*, Broadcast Station Totals as of December 31, 2013 (rel. January 8, 2014), http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0108/DOC-325039A1.pdf.

²⁴ We recognize that BIA’s estimate differs slightly from the FCC total given.

11. We note, however, that in assessing whether a business concern qualifies as small under the above definition, business (control) affiliations must be included.²⁵ Our estimate, therefore, likely overstates the number of small entities that might be affected by our action because the revenue figure on which it is based does not include or aggregate revenues from affiliated companies. In addition, an element of the definition of “small business” is that the entity not be dominant in its field of operation. We are unable at this time to define or quantify the criteria that would establish whether a specific television station is dominant in its field of operation. Accordingly, the estimate of small businesses to which rules may apply does not exclude any television station from the definition of a small business on this basis and is therefore possibly over-inclusive to that extent.

12. In addition, the Commission has estimated the number of licensed noncommercial educational (NCE) television stations to be 396.²⁶ These stations are non-profit, and therefore considered to be small entities.²⁷

13. There are also 2,414 low power television stations, including Class A stations and 4,046 television translator stations.²⁸ Given the nature of these services, we will presume that all of these entities qualify as small entities under the above SBA small business size standard.

14. **Cable Television Distribution Services.** Since 2007, these services have been defined within the broad economic census category of Wired Telecommunications Carriers; that category is defined as follows: “This industry comprises establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired telecommunications networks. Transmission facilities may be based on a single technology or a combination of technologies.”²⁹ The SBA has developed a small business size standard for this category, which is: all such firms having 1,500 or fewer employees.³⁰ Census data for 2007 shows that there were 3,188 firms that operated for the duration of that year.³¹ Of those, 3,144 had fewer than 1,000 employees, and 44 firms had more than 1,000 employees. Thus under this category and the associated small business size standard, the majority of such firms can be considered small.

15. **Cable Companies and Systems.** The Commission has also developed its own small business size standards, for the purpose of cable rate regulation. Under the Commission’s rules, a “small

²⁵ “[Business concerns] are affiliates of each other when one concern controls or has the power to control the other or a third party or parties controls or has to power to control both.” 13 C.F.R. § 21.103(a)(1).

²⁶ See *FCC News Release*, Broadcast Station Totals as of December 31, 2013 (rel. January 8, 2014), http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0108/DOC-325039A1.pdf.

²⁷ See generally 5 U.S.C. §§ 601(4), (6).

²⁸ See *FCC News Release*, Broadcast Station Totals as of December 31, 2013 (rel. January 8, 2014), http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0108/DOC-325039A1.pdf.

²⁹ U.S. Census Bureau, *2012 NAICS Definitions: 517110 Wired Telecommunications Carriers*, <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517110&search=2012> (last visited May 5, 2014).

³⁰ U.S. Small Business Administration, Table of Small Business Size Standards Matched to North American Industry Classification System Codes, at 28 (2014), http://www.sba.gov/sites/default/files/files/size_table_01222014.pdf.

³¹ See U.S. Census Bureau, American FactFinder, 2007 Economic Census of the United States, Table No. EC0751SSSZ5, Establishment and Firm Size: Employment Size of Firms for the United States: 2007, NAICS code 517110, http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_51SSSZ5 (last visited May 7, 2014).

cable company” is one serving 400,000 or fewer subscribers, nationwide.³² Industry data indicate that of approximately 1,100 cable operators nationwide, all but ten are small under this size standard.³³ In addition, under the Commission’s rules, a “small system” is a cable system serving 15,000 or fewer subscribers.³⁴ Industry data indicate that of 6,635 systems nationwide, 5,802 systems have fewer than 10,000 subscribers, and an additional 302 systems have 10,000-19,999 subscribers.³⁵ Thus, under this second size standard, most cable systems are small.

16. **Cable System Operators.** The Communications Act of 1934, as amended, also contains a size standard for small cable system operators, which is “a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1 percent of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed \$250,000,000.”³⁶ The Commission has determined that an operator serving fewer than 677,000 subscribers shall be deemed a small operator, if its annual revenues, when combined with the total annual revenues of all its affiliates, do not exceed \$250 million in the aggregate.³⁷ Industry data indicate that of approximately 1,100 cable operators nationwide, all but ten are small under this size standard.³⁸ We note that the Commission neither requests nor collects information on whether cable system operators are affiliated with entities whose gross annual revenues exceed \$250 million,³⁹ and therefore we are unable to estimate more accurately the number of cable system operators that would qualify as small under this size standard.

17. **Motion Picture and Video Producers.** This economic census category comprises “establishments primarily engaged in producing, or producing and distributing motion pictures, videos, television programs, or television commercials.”⁴⁰ The SBA has developed a small business size standard for this category that includes all such businesses having \$30 million dollars or less in annual receipts.⁴¹

³² 47 C.F.R. § 76.901(e). The Commission determined that this size standard equates approximately to a size standard of \$100 million or less in annual revenues. Implementation of Sections of the 1992 Cable Act: Rate Regulation, *Sixth Report and Order and Eleventh Order on Reconsideration*, 10 FCC Rcd 7393, 7408 (1995).

³³ Industry Data, National Cable & Telecommunications Association, <https://www.ncta.com/industry-data> (last visited May 6, 2014); R.R. Bowker, *Broadcasting & Cable Yearbook 2010*, “Top 25 Cable/Satellite Operators,” p. C-2 (data current as of December, 2008).

³⁴ 47 C.F.R. § 76.901(c).

³⁵ Warren Communications News, *Television & Cable Factbook 2008*, “U.S. Cable Systems by Subscriber Size,” page F-2 (data current as of Oct. 2007). The data do not include 851 systems for which classifying data were not available.

³⁶ 47 U.S.C. § 543(m)(2); see 47 C.F.R. § 76.901(f) & nn. 1-3.

³⁷ 47 C.F.R. § 76.901(f); see Public Notice, *FCC Announces New Subscriber Count for the Definition of Small Cable Operator*, DA 01-158 (Cable Services Bureau, Jan. 24, 2001).

³⁸ R.R. Bowker, *Broadcasting & Cable Yearbook 2006*, “Top 25 Cable/Satellite Operators,” pages A-8 & C-2 (data current as of June 30, 2005); Warren Communications News, *Television & Cable Factbook 2006*, “Ownership of Cable Systems in the United States,” pp. D-1805 to D-1857.

³⁹ The Commission does receive such information on a case-by-case basis if a cable operator appeals a local franchise authority’s finding that the operator does not qualify as a small cable operator pursuant to § 76.901(f) of the Commission’s rules. See 47 C.F.R. § 76.909(b).

⁴⁰ U.S. Census Bureau, *2007 NAICS Definitions, 512110 Motion Picture and Video Production*, <http://www.census.gov/cgi-bin/sssd/naics/naicsrch> (last visited May 7, 2014).

⁴¹ 13 C.F.R. § 121.201, 2012 NAICS code 512110.

Census data for 2007 show there were 9,478 establishments that that operated that year.⁴² Of that number, 9,128 had annual receipts of \$24,999,999 or less, and 350 had annual receipts ranging from not less than \$25,000,000 to \$100,000,000 or more.⁴³ Thus, under this size standard, the majority of such businesses can be considered small entities.

18. **Broadband Radio Service (formerly Multipoint Distribution Service) and Educational Broadband Service (formerly Instructional Television Fixed Service).** Multichannel Multipoint Distribution Service (MMDS) systems, often referred to as “wireless cable,” transmit video programming to subscribers using the microwave frequencies of the Multipoint Distribution Service (MDS) and Instructional Television Fixed Service (ITFS).⁴⁴ In its BRS/EBS Report and Order in WT Docket No. 03-66, the Commission comprehensively reviewed its policies and rules relating to the ITFS and MDS services, and replaced the MDS with the Broadband Radio Service and ITFS with the Educational Broadband Service in a new band plan at 2495-2690 MHz.⁴⁵ In connection with the 1996 MDS auction, the Commission defined “small business” as an entity that, together with its affiliates, has average gross annual revenues that are not more than \$40 million for the preceding three calendar years.⁴⁶ The SBA approved of this standard.⁴⁷

19. The SBA developed a small business size standard for Cable and Other Distribution, and the activities under that classification have been reclassified into Wired Telecommunications Carriers. The SBA has developed a small business size standard for Wired Telecommunications Carriers, which is all such firms having 1,500 or fewer employees.⁴⁸ Census data for 2007 shows that there were 3,188 firms that operated for the duration of that year.⁴⁹ Of those, 3,144 firms had fewer than 1,000 employees, and 44 firms had 1,000 or more employees.⁵⁰ Thus under this category and the associated small business size standard, the majority of such firms can be considered small. In addition to Census data, the

⁴² U.S. Census Bureau, Table No. EC0751SSSZ5, *Information: Subject Series - Establishment and Firm Size: Employment Size of Firms for the United States: 2007* (NAICS code 512110), http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_51SSSZ5.

⁴³ *See id.*

⁴⁴ Amendment of Parts 21 and 74 of the Commission’s Rules with Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service and Implementation of Section 309(j) of the Communications Act – Competitive Bidding, MM Docket No. 94-131 and PP Docket No. 93-253, *Report and Order*, 10 FCC Rcd 9589, 9593 ¶ 7 (1995) (*MDS Auction R&O*).

⁴⁵ *See* Amendment of Parts 1, 21, 73, 74 and 101 of the Commission’s Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands, *Report and Order and Further Notice of Proposed Rulemaking*, WT Docket No. 03-66, 19 FCC Rcd 14165, 14169 ¶ 6 (2004) (*BRS/EBS Report and Order and Further Notice*).

⁴⁶ 47 C.F.R. § 21.961(b)(1).

⁴⁷ *See* Letter to Margaret Wiener, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, Federal Communications Commission, from Gary Jackson, Assistant Administrator for Size Standards, Small Business Administration, dated March 20, 2003 (noting approval of \$40 million size standard for MDS auction).

⁴⁸ 13 C.F.R. § 121.201, NAICS code 517110.

⁴⁹ *See* U.S. Census Bureau, American FactFinder, 2007 Economic Census of the United States, Table No. EC0751SSSZ5, *Establishment and Firm Size: Employment Size of Firms for the United States: 2007*, NAICS code 517110, http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_51SSSZ5 (last visited May 6, 2014).

⁵⁰ *Id.*

Commission's internal records indicate that, as of September 2012, there are 2,241 active EBS licenses. The Commission estimates that of these 2,241 licenses, the majority are held by non-profit educational institutions and school districts, which are by statute defined as small businesses.

20. **Low Power Auxiliary Device Manufacturers: Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing.** 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."⁵¹ The SBA has developed a small business size standard for Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing, which is: all such firms having 750 or fewer employees.⁵² According to Census Bureau data for 2007, there were a total of 939 establishments in this category that operated for the entire year.⁵³ Of this total, 912 establishments had employment of less than 500, and an additional 10 establishments had employment of 500 to 999.⁵⁴ Thus, under this size standard, the majority of firms can be considered small.

21. **Low Power Auxiliary Device Manufacturers: Other Communications Equipment Manufacturing.** The Census Bureau defines this category as follows: "This industry comprises establishments primarily engaged in manufacturing communications equipment (except telephone apparatus, and radio and television broadcast, and wireless communications equipment)."⁵⁵ The SBA has developed a small business size standard for Other Communications Equipment Manufacturing, which is: all such firms having 750 or fewer employees.⁵⁶ According to Census Bureau data for 2007, there were a total of 452 establishments in this category that operated for the entire year.⁵⁷ Of this total, 448

⁵¹ U.S. Census Bureau, 2012 NAICS Definitions: 334220 Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing, <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=334220&search=2012> (last visited May 6, 2014).

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

⁵³ U.S. Census Bureau, Table No. EC0731SG3, Manufacturing: Summary Series: General Summary: Industry Statistics for Subsectors and Industries by Employment Size: 2007 (NAICS code 334220), http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_31SG3. 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.

⁵⁴ *Id.* An additional 17 establishments had employment of 1,000 or more.

⁵⁵ U.S. Census Bureau, 2012 NAICS Definitions: 334290 Other Communications Equipment Manufacturing, <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=334290&search=2012> (last visited May 6, 2014).

⁵⁶ 13 C.F.R. § 121.201, NAICS code 334290.

⁵⁷ U.S. Census Bureau, Table No. EC0731SG3, Manufacturing: Summary Series: General Summary: Industry Statistics for Subsectors and Industries by Employment Size: 2007 (NAICS code 334290), http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_31SG3&prodType=table (last visited May 6, 2014). 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.

establishments had employment below 500, and an additional 4 establishments had employment of 500 to 999.⁵⁸ Thus, under this size standard, the majority of firms can be considered small.

22. **Radio, Television, and Other Electronics Stores.** The Census Bureau defines this economic census category as follows: “This U.S. industry comprises: (1) establishments known as consumer electronics stores primarily engaged in retailing a general line of new consumer-type electronic products such as televisions, computers, and cameras; (2) establishments specializing in retailing a single line of consumer-type electronic products; (3) establishments primarily engaged in retailing these new electronic products in combination with repair and support services; (4) establishments primarily engaged in retailing new prepackaged computer software; and/or (5) establishments primarily engaged in retailing prerecorded audio and video media, such as CDs, DVDs, and tapes.”⁵⁹ The SBA has developed a small business size standard for Electronic Stores, which is: all such firms having \$30 million or less in annual receipts.⁶⁰ According to Census Bureau data for 2007, there were 11,358 firms in this category that operated for the entire year.⁶¹ Of this total, 11,323 firms had annual receipts of under \$25 million, and 35 firms had receipts of \$25 million or more but less than \$50 million.⁶² Thus, the majority of firms in this category can be considered small.

23. **Professional Lighting and Sound Services.** After an extensive review of the NAICS industry classification system, we were unable to find an exact category match for the firms which provide professional sound services for live events. The industry association for these firms, Professional Lighting and Sound Association, is an international body with 1,240 members and offices in London and New York.⁶³ As its membership is both foreign and domestic, we cannot ascertain how many of its members operate in the United States and would be subject to the new rules in this order.

D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements for Small Entities

24. As with other licensed operations for LPAS, a licensee that is eligible under the revised rule will be subject to all applicable rules, including the requirement that wireless microphone use is “secondary to TV broadcasting and land mobile stations operating in the UHF-TV spectrum and must not cause harmful interference.”⁶⁴ If such interference occurs, the operation must immediately cease and may not resume until the interference problem has been resolved.⁶⁵ Moreover, where two or more LPAS

⁵⁸ *Id.* There were no establishments that had employment of 1,000 or more.

⁵⁹ U.S. Census Bureau, *2012 NAICS Definitions, 443142 Electronics*, [http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=443142&search=2012 NAICS Search](http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=443142&search=2012%20NAICS%20Search) (last visited May 6, 2014).

⁶⁰ 13 C.F.R. § 121.201, NAICS code 443142.

⁶¹ U.S. Census Bureau, *2007 Economic Census, Subject Series: Retail Trade, Estab & Firm Size: Summary Statistics by Sales Size of Firms for the United States: 2007*, NAICS code 443142 (released 2010), <http://www2.census.gov/econ2007/EC/sector44/EC0744SSSZ4.zip> (last visited May 7, 2014). Though the current small business size standard for electronic store receipts is \$30 million or less in annual receipts, in 2007 the small business size standard was \$9 million or less in annual receipts. In 2007, there were 11,214 firms in this category that operated for the entire year. Of this total, 10,963 firms had annual receipts of under \$5 million, and 251 firms had receipts of \$5 million or more but less than \$10 million. *Id.*

⁶² *Id.* An additional 33 firms had annual receipts of \$50 million or more.

⁶³ PLASA, *Membership: Industry Overview*, <http://www.plasa.org/about/overview/> (last visited May 8, 2014).

⁶⁴ 47 C.F.R. § 74.803(b).

⁶⁵ 47 C.F.R. §§ 74.803(b), 74.861(g).

licensees seek to operate in the same area, the licensees should “select frequencies or schedule operation in such manner as to avoid mutual interference.”⁶⁶

25. The *Incentive Auction Report and Order* requires wireless microphones to vacate the repurposed UHF spectrum by the end of the post-auction transition period, which will be 39 months after the release of the *Channel Reassignment Public Notice*.⁶⁷ Consistent with this deadline, the Second Report and Order conditions any new LPAS licenses granted between now and that date, including licenses granted to newly eligible licensees, on the requirement to cease operating in the repurposed spectrum no later than that date. Further, we delegate authority to the Wireless Telecommunications Bureau (WTB) to modify these licenses to delete the frequencies identified as repurposed in the *Channel Reassignment Public Notice*, effective as of the end of the post-auction transition period, and to make any other related changes as necessary. Following the post-auction transition period, licensees may operate only in the bands allocated for TV broadcasting.

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

26. The RFA requires an agency to describe any significant, specifically small business 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.”⁶⁸

27. In the Second Report and Order, we decline to modify our licensing procedures or the information required from an applicant, except to the extent necessary to reflect the modification to the rules we adopt here. The new class of eligible entities consists of professional sound companies and owners and operators of large venues that routinely use a large number of wireless microphones, and we do not anticipate that the licensing process should be difficult for them to follow. Further, we conclude that it is not necessary to grant the request for separate licenses for individual frequency ranges because an applicant is already able to specify individual frequency ranges on its license.⁶⁹ Finally, we reject requests to modify or waive the fees relating to LPAS,⁷⁰ because the Commission is required to assess and collect application fees pursuant to Section 8 of the Communications Act of 1934, as amended.⁷¹

⁶⁶ 47 C.F.R. § 74.803(a).

⁶⁷ See Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, Docket No. 12-268, *Report and Order*, FCC 14-50, ¶¶ 687-689 (adopted May 15, 2014) (*Incentive Auction Report and Order*).

⁶⁸ 5 U.S.C. § 603(c)(1)–(4).

⁶⁹ See Letter from Annette M. Moody, PSAV Presentation Services, to Julius Genachowski, Chairman, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed March 1, 2010) at 2.

⁷⁰ See Letter from Dan Hladun, Dan’s Portable PA, to Julius Genachowski, Chairman, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Feb. 13, 2010) at 1; Letter from Dale Janus, Guys Without Ties, to Julius Genachowski, Chairman, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Feb. 11, 2010) at 1; Letter from Matthew Wentz, Willow Creek Community Church – McHenry County, to Julius Genachowski, Chairman, FCC, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Feb. 23, 2010) at 1.

⁷¹ See 47 U.S.C. § 158; see also 47 C.F.R. § 1.1102.

28. Our approach to eligibility in the Second Report and Order provides a balance by affording the benefits of a license for entities and events that have a demonstrated need, while ensuring that spectrum is shared effectively with existing LPAS operations and remains available for other uses, including TV white space (TVWS) devices. To the extent any of the entities that will be eligible for a license under the new eligibility rule are small entities, they will be able to obtain a license for their wireless microphone operations. In addition, other entities, including small entities, which do not meet the eligibility requirement, have alternatives for their operations. Under the waiver granted in the *Wireless Microphone Report and Order* and continued in effect in the Second Report and Order, such entities may still operate their wireless microphones on an unlicensed basis subject to the waiver and certain other requirements. Also, operators of wireless microphones that are not licensed, which may include small entities, may also be able to register certain events, such as major sporting contests or live theatrical productions, in the TV bands databases for protection against interference from TVWS devices provided they meet the requirements in the Commission's rules.⁷²

29. The Second Report and Order provides newly eligible licensees an initial and renewal license term not to exceed ten years. A ten-year license term provides these licensees with flexibility because it is a relatively long period of time and will give them a greater degree of certainty in connection with their status and ability to receive the benefits of a license. In contrast, the existing rule ties the license term to that of broadcast stations in the same area of operation.⁷³ We note that if we applied the existing rule to the new licensees, they would have an initial license term that is no more than eight years but could be substantially less if the license were obtained in the middle of the license term of broadcast stations located in the same area of operation.⁷⁴ Also, many new professional sound company licensees may provide services in different regions.⁷⁵ Application of the existing LPAS license term would be burdensome and confusing because it would result in different license terms for the same entity operating in different geographic areas. We anticipate that many of these new licensees could be small entities and that it would ease regulatory burdens on them if their initial license term were to run for the full ten-year period.

F. Report to Congress

30. The Commission will send a copy of the Second Report and Order, including this FRFA, in a report to be sent to Congress pursuant to the Congressional Review Act.⁷⁶ In addition, the Commission will send a copy of the Second Report and Order, including this FRFA, to the Chief Counsel for Advocacy of the SBA. A copy of the Report and Order and FRFA (or summaries thereof) will also be published in the *Federal Register*.⁷⁷

⁷² See 47 C.F.R. § 15.713(h)(9).

⁷³ See 47 C.F.R. § 74.15(b).

⁷⁴ We note that we are only revising the license term rule for newly-eligible licensees. Currently eligible LPAS licenses remain subject to the existing license term requirements in 47 C.F.R. § 74.15(b).

⁷⁵ See, e.g., Professional Wireless Systems Feb. 28, 2010 Letter at 1.

⁷⁶ See 5 U.S.C. § 801(a)(1)(A).

⁷⁷ See 5 U.S.C. § 604(b).