

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

In the Matter of)	
)	
Amendment of Part 11 of the Commission’s Rules)	PS Docket No. 15-94
Regarding the Emergency Alert System)	
)	
Wireless Emergency Alerts)	PS Docket No. 15-91

REPORT AND ORDER AND FURTHER NOTICE OF PROPOSED RULEMAKING

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By the Commission: Chairman Pai and Commissioners Carr and Rosenworcel issuing separate statements; Commissioner O’Reilly approving in part, dissenting in part and issuing a statement.

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I. INTRODUCTION

1. The Emergency Alert System (EAS) is an invaluable communications tool to enable the President to address the American public during a national emergency. The EAS is also used by state and local authorities to deliver important emergency information, such as AMBER alerts and weather information targeted to specific areas. This Order takes steps to improve the effectiveness of the EAS. In this Order, we adopt rules to facilitate more effective public safety tests and exercises using the EAS, as well as to help prevent the issuance of false alerts, in order to promote EAS readiness and reliability and help communities prepare for emergencies.¹ These measures will help alert initiators, as well as EAS Participants, to develop the skills necessary to effectively use the EAS.² In the companion Further Notice of Proposed Rulemaking, we seek comment on further proposals to facilitate false alert reporting, to add elements to State EAS Plans to facilitate effective testing and prevent and correct false alerts, and to ensure that Wireless Emergency Alerts (WEA) are effectively delivered to the public.

II. BACKGROUND

2. The EAS is a national public warning system through which EAS Participants deliver alerts to the public to warn them of impending emergencies.³ The primary purpose of the EAS is to provide the President of the United States (President) with “the capability to provide immediate communications and information to the general public at the National, State and Local Area levels during periods of national emergency.”⁴ State and local authorities also use this common distribution architecture of the EAS to distribute voluntary weather-related and other emergency alerts.⁵ Further,

¹ This Order addresses issues raised in the Commission’s January 29, 2016, Notice of Proposed Rulemaking. *See Amendment of Part 11 of the Commission’s Rules Regarding the Emergency Alert System, Wireless Emergency Alerts*, PS Docket Nos. 15-94 and 15-91, Notice of Proposed Rulemaking, 31 FCC Rcd 594 (2016) (*Notice*). The *Notice* proposals fell into four categories: (1) improving alerting organization at the state and local levels; (2) building effective public safety exercises; (3) ensuring that alerting mechanisms leverage advancements in technology; and (4) securing the EAS against accidental misuse and malicious intrusion. The Commission addressed the first category in a separate Report and Order. *See Amendment of Part 11 of the Commission’s Rules Regarding the Emergency Alert System*, Report and Order, FCC 18-39 (April 10, 2018) (*Alert Reporting System Order*). This Order addresses the latter three of these categories to the extent described herein and defers consideration of any remaining issues.

² EAS Participants include radio and television broadcast stations, cable systems, wireline video systems, wireless cable systems, direct broadcast satellite service providers, and digital audio radio service providers. *See* 47 CFR § 11.11(a).

³ *See* 47 CFR § 11 *et seq.* *See also Review of the Emergency Alert System*, EB Docket No. 04-296, Sixth Report and Order, 30 FCC Rcd 6520 (2015) (*Sixth Report and Order*).

⁴ 47 CFR § 11.1. *See Review of the Emergency Alert System*, EB Docket No. 04-296, First Report and Order and Further Notice of Proposed Rulemaking, 20 FCC Rcd 18625, 18628, para. 8 (2005) (*First Report and Order*). The FCC, the Federal Emergency Management Agency (FEMA), and the National Weather Service (NWS) implement the EAS at the federal level. *See Presidential Communications with the General Public During Periods of National Emergency*, The White House (September 15, 1995).

⁵ EAS Participants are required to broadcast Presidential Alerts, and they participate in broadcasting state and local EAS alerts on a voluntary basis. *See* 47 CFR § 11.55(a); *First Report and Order*, 20 FCC Rcd at 18628, para. 8. There are two distribution methods for EAS alerts. The traditional method uses a hierarchical, broadcast-based distribution system. An alert originator formats an alert using the EAS Protocol and relays it from one designated station to another until it is fully distributed, like a “daisy chain.” *See* 47 CFR § 11.31. The Integrated Public Alert and Warning System (IPAWS) is a national alerting system administered by FEMA. Under this system, EAS Participants monitor a FEMA-administered web site for EAS messages that are written in the Common Alerting

testing of the system at the state and local level increases the proficiency of local emergency personnel, provides insight into the system's functionality and effectiveness at the federal level, and enhances the public's ability to respond to EAS alerts when they occur.⁶ The integrity of the EAS is maintained through the Commission's EAS rules, which set forth the parameters and frequency with which EAS Participants must test the system,⁷ prohibit the unauthorized use of the EAS Attention Signal and codes,⁸ and require EAS Participants to keep their EAS equipment in good working order.⁹

III. REPORT AND ORDER

A. Building Effective Alerting Exercise Programs

1. Live Code Testing

3. Section 11.31(e) of the Commission's rules sets forth the event header codes that are used for alerts in specific emergency situations (e.g., TOR for tornado), as well as the specific test codes to be used for national periodic tests (NPT), required monthly tests (RMT), and required weekly tests (RWT)¹⁰ Further, Section 11.45 of the EAS rules states that "[n]o person may transmit or cause to transmit the EAS codes or Attention Signal, or a recording or simulation thereof, in any circumstance other than in an actual National, State or Local Area emergency or authorized test of the EAS."¹¹ EAS Participants regularly have sought waivers of these rules to use the event codes used for actual alerts (i.e., "live" event header codes) and the EAS Attention Signal to conduct local EAS public awareness and proficiency training exercises.¹² In the *Notice*, the Commission proposed amending the rules to allow EAS Participants to conduct tests that use live EAS header codes and the EAS Attention Signal under specific circumstances without submitting a waiver request. In order to ensure that live code tests do not diminish the integrity of the EAS, the Commission proposed to require that the EAS Attention Signal and live event codes would be used in a non-misleading manner and that steps would be taken to prevent public confusion prior to and during the tests.¹³ Correspondingly, the Commission also proposed amending

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Protocol (CAP). See FEMA, Integrated Public Alert & Warning System, <https://www.fema.gov/integrated-public-alert-warning-system> (last visited Nov. 8, 2017). IPAWS relies upon the centralized distribution of alerts using an alert aggregator and an Internet-based interface, whereas the EAS's "daisy chain" leverages the broadcast-based EAS distribution architectures as set forth in state's State EAS Plan. See 47 CFR § 11.21. The term "state" includes the District of Columbia and the United States' territories and other possessions. 47 U.S.C. § 153.

⁶ See Communications Security, Reliability and Interoperability Council IV, Working Group Three, Emergency Alert System, State EAS Plans Subcommittee, Final Report at 14 (March 2014), https://transition.fcc.gov/pshs/advisory/csric4/CSRIC_IV_WG3_EAS_Plans_Final_Report_032514.pdf (CSRIC EAS State Plan Report).

⁷ See 47 CFR §11.61.

⁸ See 47 CFR §§ 11.45, 11.46.

⁹ See 47 CFR §11.35.

¹⁰ See 47 CFR § 11.31(e).

¹¹ 47 CFR § 11.45. The EAS Attention Signal is a loud, attention-grabbing, two-tone audio signal that consists of the fundamental frequencies of 853 Hz and 960 Hz transmitted simultaneously. See 47 CFR § 11.31(a)(2).

¹² See, e.g., Letter from Frank Jazzo, Counsel for Alaska Broadcasters Association, to Tom Beers, Chief, Policy & Licensing Division, Public Safety & Homeland Security Bureau, FCC (Feb. 18, 2015) (on file in PS Docket No. 15-94); see also *Public Safety and Homeland Security Bureau Provides Guidance Regarding "Live Code" Testing of the Emergency Alert System*, Public Notice, 24 FCC Rcd 3701 (2009) (*Live Code Testing Public Notice*) (providing waiver guidance to EAS Participants).

¹³ *Notice*, 31 FCC Rcd at 623-26, paras. 59-64.

Section 11.45 to exempt state-designed EAS live code exercises from the prohibition against false or misleading use of the EAS Attention Signal.¹⁴

4. Our recent experience with the false ballistic missile alert that was issued in Hawaii in January 2018 further underscores the need to streamline our testing processes and to ensure proper safeguards are in place. The testing rules we adopt today will promote greater proficiency in the use of EAS, both by EAS alert initiators and EAS Participants, which will help address potential gaps in alert originator training, such as those that were uncovered in the Public Safety & Homeland Security Bureau's investigation of the false alert in Hawaii.¹⁵ The action we take today is consistent with the recommendation in the *Report on Hawaii False Alert* that alert initiators “[d]evelop, in a manner consistent with the Commission’s rules, protocols governing tests, uses, and corrections to alerts that are sent to the public over the EAS and WEA.”¹⁶

5. First, we amend Section 11.45 to exempt EAS live code exercises from the prohibition against false or misleading use of the EAS Attention Signal. We also amend Section 11.61 to include “Live Code Tests” as a separate category of alerting exercise that EAS Participants may undertake voluntarily, provided such live code tests are conducted in accordance with specific parameters. Specifically, EAS Participants may participate in live code tests where the entity conducting the test: (1) notifies the public before the test that live event codes will be used, but that no emergency is, in fact, occurring; (2) to the extent technically feasible, states in the test message that the event is only a test; (3) coordinates the test among EAS Participants and with state and local emergency authorities, the relevant State Emergency Communication Committee (SECC) (or SECCs, if the test could affect multiple states),¹⁷ and first responder organizations, such as Public Safety Answering Points (PSAPs), police, and fire agencies; and (4) consistent with the Commission’s rules,¹⁸ provides in widely accessible formats the required notification to the public that the test is not, in fact, a warning about an actual emergency.¹⁹ We require that live code tests state in the alert message that the event is only a test as a further safeguard against public confusion, especially among those who are blind, deaf and hearing impaired. Our qualification that this requirement must be performed “to the extent technically feasible” is based on the

¹⁴ *Notice*, 31 FCC Rcd at 623-26, paras. 59-64; *see* 47 CFR § 11.45.

¹⁵ On January 13, 2018, after the closing of the record in this proceeding, the Hawaii Emergency Management Agency issued a false ballistic missile warning over the EAS and WEA systems, causing unnecessary distress and panic to much of the Hawaiian populace. The Bureau found that flawed testing procedures and insufficient alerting proficiency contributed to the false alert. *See* FCC, Hawaii Emergency Management Agency False Alert Report and Recommendations: A Report of the Public Safety and Homeland Security Bureau at 9 (PSHSB 2018), <https://www.fcc.gov/document/fcc-releases-report-hawaii-false-emergency-alert> (*Report on Hawaii False Alert*).

¹⁶ *Id.* at 25.

¹⁷ The SECCs are volunteer organizations composed of state broadcast associations, EAS Participants, emergency management personnel, and other stakeholders. *See Amendment of Part 73, Subpart G, of the Commission’s Rules Regarding the Emergency Broadcast System*, Report and Order and Further Notice of Proposed Rulemaking, 10 FCC Rcd 1786 1834-35, paras. 132-35 (1994), *recons. granted in part, denied in part, Amendment of Part 73, Subpart G, of the Commission’s Rules Regarding the Emergency Broadcast System*, Memorandum Opinion and Order, 10 FCC Rcd 11494 (1995) (communicating expectations for SECC organization and governance).

¹⁸ *See* 47 CFR § 11.51. To make EAS alerts accessible to people with disabilities, the visual message portion of an EAS alert, whether video crawl or block text, must be displayed at the top of the television screen or where it will not interfere with other visual messages; in a manner (*i.e.*, font size, color, contrast, location, and speed) that is readily readable and understandable, which does not contain overlapping lines of EAS text or extend beyond the viewable display (except for video crawls that intentionally scroll on and off of the screen), and which displays the message in full at least once during any EAS message. Further, the audio portion of an EAS message must play in full at least once during any EAS message. Notifications must comply with the same requirements to ensure that they are accessible.

¹⁹ *Notice*, 31 FCC Rcd at 624, para. 60.

limitations of the broadcast-based daisy chain,²⁰ which generates the alert text crawl using information contained in the header codes and not in the test message generated by the alert originator.²¹ Nevertheless, to the extent the test message is initiated using the daisy chain, the audio portion of the message should still reflect that the event is only a test, thereby helping to prevent public confusion. Conversely, an EAS test initiated and delivered though through IPAWS has the technical capability to deliver a test that includes the test nature of the event in both the text crawl and audio portion of the alert message. Accordingly, we encourage entities that conduct live code tests to do so via IPAWS to minimize any risk of public confusion.

6. We agree with commenters that EAS Participants such as cable operators and broadcasters must be given sufficient notice of live code tests to benefit from them and to allow for planning and coordination to assess and mitigate the impact on downstream equipment and subscribers.²² Accordingly, we expect test alert originators to coordinate with the above-referenced stakeholders in good faith, and we encourage them to provide the notice and coordination required by the rules we adopt today no later than two weeks prior to the test. As part of that coordination and outreach, we encourage test alert originators to file notice of their intent to conduct a test in the EAS docket (PS Docket No. 15-94).²³

7. With these revisions, we remove regulatory obstacles to proficiency training exercises and reduce time and cost burdens on EAS Participants by eliminating the need to obtain a waiver.²⁴ Since 2009, we have received over 150 waiver requests for live code tests. Revising our rules to allow for live code testing will remove the burden associated with the filing of waiver requests, without diluting the outreach requirements that make “live code” tests such a useful tool for public safety exercises.

8. Commenters generally support voluntary live code testing, and agree that such testing can yield important public safety benefits.²⁵ The Alaska Commenters assert that live code testing promotes alert originator proficiency by providing an opportunity for originators to practice using alert origination software for specific event codes and geographic areas.²⁶ NYCEM states that permitting alert originators to conduct live tests of the EAS increases their proficiency, validates origination tools and technologies,

²⁰ See *supra* note 5 (explaining transmission of EAS messages using the daisy chain versus IPAWS).

²¹ See Letter from Loretta Polk, Vice President and Deputy General Counsel, NCTA – The Internet & Television Association, to Marlene H. Dortch, Secretary, Federal Communications Commission at 1 (July 3, 2028) (NCTA July 3 *Ex Parte* Letter) (alerts transmitted via the IPAWS are capable of including text announcing a live code test, but alerts generated over the broadcast-based daisy chain EAS distribution system are not). See also Trilithic Comments at 4 (noting that while the audio message included with a live code test can specify that the alert is only a test, only alerts received from CAP sources are capable of including text to visually indicate that the alert is a test. Live code tests received from traditional EAS sources will not include a visual indication that the alert is a test).

²² See Letter from Loretta Polk, Vice President and Deputy General Counsel, NCTA – The Internet & Television Association, to Marlene H. Dortch, Secretary, Federal Communications Commission at 1 (July 3, 2028) (NCTA July 3 *Ex Parte* Letter) (requesting specific advance notice); see also Letter from Brian Hurley, Vice President of Regulatory Affairs, American Cable Association, to Marlene H. Dortch, Secretary, Federal Communications Commission at 2 (July 5, 2028) (ACA July 5 *Ex Parte* Letter).

²³ See NCTA July 3 *Ex Parte* Letter at 2; ACA July 5 *Ex Parte* Letter at 2.

²⁴ See Timm Comments at 42-43.

²⁵ See, e.g., APCO Comments at 2 (observing that “testing, training, and exercises are routine and essential components of all public safety communications functions”); NAB Reply Comments at 2 (noting that live code testing can help alert originators improve their proficiency, measure the success of alert dissemination, and educate the public); NSBA Comments at 15-16; NWS Comments at 3 (arguing that periodic tests using live event codes support the NWS’s mission to protect life and property); Trilithic Comments at 3 (observing that live code tests will provide more accurate verification that specific alerts will reach the intended audiences by providing testing conditions that more accurately represent actual emergency conditions).

²⁶ Alaska Commenters Comments at 8-9.

tests downstream distribution, and better educates the public.²⁷ Trilithic notes that live code tests will help assess the configuration and operation of alerting equipment and will help verify that alerts will reach intended audiences.²⁸ The record also indicates that live code testing exercises can be tailored to improve public safety at the local or community level. The NWS notes that live code testing can become a key component of ensuring preparedness for severe weather.²⁹ The Alaska Commenters note that due to the varied capabilities of EAS Participants, and variations in EAS devices, as well as the state's need for "atypical EAS codes (e.g., TSW [Tsunami Warning]), Alaska EAS tests have demonstrated time and again that utilizing a particular live code is critical to ensuring effectiveness in the system," and that "[t]he only way to discover discrepancies is to conduct geographically targeted live code testing."³⁰

9. Finally, we recognize the public safety value of live code tests, but we also wish to avoid customer exhaustion and any dissipation of the value of alerting that could come from over-testing the system to the public. Accordingly, we limit the number of live code tests that an alert originator may conduct under the rules we adopt today to two (2) within any calendar year. This limit should address concerns that alert fatigue or public confusion can occur if live code testing occurs too frequently, or without sufficient preparation, public outreach,³¹ or safeguards to prevent false alarms. Although we agree with NAB that the entity that plans and initiates the alert is best positioned to assess and reduce the potential for alert fatigue through careful test planning,³² we note that limiting live code tests to two a year is consistent with the number of requests filed by alert initiators under the current waiver process.³³ Further, we believe the coordination requirements we adopt will help address alert fatigue or confusion concerns.³⁴ We stand ready, upon the request of stakeholders, to provide any necessary guidance to help

²⁷ NYCEM Comments at 4; *see also* Walker Comments at 1 (asserting that live code testing provides substantial benefit to broadcasters, the alerting community, and the community at large). Alert initiator proficiency is a skill that recent events such as the Hawaii false missile alert have shown to be essential to the effective use of the EAS and other alerting systems. *See, e.g., Report on Hawaii False Alert* at 16-17, para. 25.

²⁸ Trilithic Comments at 3; *see also* NWS Comments at 3 (noting that the "use of live code testing can assess if live codes will work in an actual emergency").

²⁹ NWS Comments at 3.

³⁰ Alaska Commenters Comments at 8. Specifically, the Alaska Commenters assert that as a result of Alaska's 2016 live code TSW test, they discovered a critical gap in delivering EAS messages to targeted geographic areas.

³¹ *See, e.g.,* APCO Comments at 2 (cautioning against overuse of the EAS Attention Signal and over-testing to avoid "alert fatigue" among the general public and unnecessarily taxing PSAP resources); BRETSA Comments 7-8 (noting live code testing must include coordination with and advance notice to PSAPs in the test area, as they are likely to receive calls from the public receiving EAS alerts); TAB Comments at 4 (stating that viewers and listeners will be confused by live code testing); NAB Reply Comments at 2 (cautioning against overuse of the EAS Attention Signal, "which can cause public fatigue").

³² NAB Reply Comments at 2. Thus, we decline the Washington State SECC's suggestion to adopt a "unified, nation-wide means of alerting the public" about live code tests. *See* Washington State SECC Comments at 25.

³³ By limiting the number of live code tests in this manner, we expect that only two live code tests will be conducted in any given geographic area per calendar year. If we learn that consumers in a given area are receiving more than two live code tests in a calendar year (e.g., where multiple alert originators have overlapping geographic areas and choose to conduct live code tests within the same calendar year), we will revisit this issue. We expect that alert originators in a given area will coordinate with each other to help promote the effectiveness of live code tests and reduce the potential for consumer confusion. An alert originating entity that wishes to conduct more than two live code EAS test within a calendar year may seek a waiver to do so. 33

³⁴ *See Live Code Testing Public Notice*, 24 FCC Rcd at 3701-02. Wireless RERC notes that live code testing should include the use of several PSAs explaining the use of live codes before and after the test, including PSAs in ASL, because such alerts may be the only opportunity to explain the test to ASL-fluent members of the Deaf community. Wireless RERC and GIT's CACP Comments at 14; *see* Telecommunications for the Deaf & Hard of Hearing, Inc. et al. Comments at 3-4 (requesting that the Commission's Disability Advisory Committee be asked to recommend

address and avoid alert fatigue. In a similar vein, we agree with the Alaska Commenters that the Commission should not codify specific public notification procedures.³⁵ As with the prior waiver process, we defer to the entity that plans and initiates the test regarding how and when public notice should be provided of a live code test.³⁶ We will continue to monitor the implementation of live code tests to determine whether additional measures are warranted.

2. EAS Public Service Announcements (PSAs)

10. The Commission's rules provide that PSAs, while permissible, "may not be a part of alerts or tests, and may not simulate or attempt to copy alert tones or codes."³⁷ The Commission has granted requests from non-governmental organizations (NGOs) and FEMA for waivers of these rules to raise public awareness about the EAS through PSAs that use the EAS Attention Signal,³⁸ and, in one instance, a simulation of header code sounds.³⁹ In 2016, the Commission amended its rules to allow authorized entities to use the Attention Signal in PSAs about WEA.⁴⁰ In the *Notice*, the Commission proposed allowing EAS Participants to use EAS header codes and the Attention Signal in coordination with federal, state, and local government entities without a waiver, provided that the PSAs are presented in a non-misleading manner that does not cause technical issues for downstream equipment.⁴¹

11. We believe that PSAs are an important tool in preparing and informing all Americans about the EAS in times of disaster, and to the extent the use of the Attention Signal in PSAs can further enhance community awareness, especially among populations with limited English proficiency, we amend our rules accordingly.⁴² We amend Section 11.46 of the Commission's rules to allow, under certain circumstances, EAS Participants to use the Attention Signal in EAS PSAs (including commercially-sponsored announcements, infomercials, or programs) provided by federal, state, and local government entities, and NGOs, to raise public awareness about emergency alerting. This usage is only permitted if the PSA is presented in a non-misleading and technically harmless manner, including with the explicit statement that the Attention Signal is being used in the context of a PSA for the purpose of educating the viewing or listening public about emergency alerting. We also make conforming changes to Section 11.45.

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standards for ASL-rendered emergency alerts). We encourage entities conducting live code testing to include notice to the public in ASL as part of their pre-test outreach whenever possible.

³⁵ Alaska Commenters Comments at 19.

³⁶ See *Live Code Testing Public Notice*, 24 FCC Rcd 3701 (providing guidance to assist EAS Participants seeking to participate in live code testing). In the eight years since PSHSB released the *Live Code Testing Public Notice*, it has received no complaints that the public was caught unaware by any live code tests.

³⁷ 47 CFR § 11.46.

³⁸ See, e.g., Letter from Lillian McDonald, Managing Director, ECHO, to David Simpson, Chief, Public Safety and Homeland Security Bureau, FCC (Aug. 20, 2015) (on file in PS Docket No. 15-94).

³⁹ See *Request for Waiver of Sections 10.520, 11.45 and 11.46 of the Commission's Rules to Allow Broadcast of Public Service Announcements Produced by Emergency, Community, Health and Outreach to Educate the Public on the Wireless Emergency Alert System and the Emergency Alert System*, PS Docket Nos. 07-287 and 15-94, Order, 30 FCC Rcd 10182 (2015).

⁴⁰ See *Wireless Emergency Alerts, Amendments to Part 11 of the Commission's Rules Regarding the Emergency Alert System*, PS Docket No. 15-91, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 11112, 11159, para. 75 (2016) (*WEA Report and Order and FNPRM*).

⁴¹ *Notice*, 31 FCC Rcd at 626, para. 66.

⁴² See, e.g., NSBA Comments at 16-17; NYCEM Comments at 5; Washington State SECC Comments at 25-26; Wireless RERC and GIT's CACP Comments at 12; Letter from Lillian McDonald, Managing Director, ECHO, to David Simpson, Chief, Public Safety and Homeland Security Bureau, FCC (Aug. 20, 2015) (on file in PS Docket No. 15-94).

12. All EAS alerts commence with three consecutive audible short tonal bursts, which are the EAS header codes.⁴³ The three short bursts are followed by the 8-second, two-tone Attention Signal.⁴⁴ We decline to allow live EAS header codes to be used in EAS PSAs because, as suggested by some commenters, EAS PSAs containing live EAS header codes could have unintended consequences, including triggering false alerts.⁴⁵ Unlike live code tests, where the use of an actual code is necessary for the propagation of the test, the use of actual header codes in an EAS PSA is not necessary to achieve the goals of the PSA, and could cause real harm by activating a response in any EAS equipment that may be monitoring the station that broadcasts the PSA.

13. At the same time, the public should be familiar with the sound of the EAS header codes to avoid confusion when the sound is used for an actual alert.⁴⁶ Therefore, FEMA has produced a harmless simulation of the header code audio tones for the purpose of creating EAS PSAs.⁴⁷ The audio tones of FEMA's simulation sound similar to the three consecutive audible tonal bursts associated with an actual transmission of the EAS header codes, but will not trigger the transmission of an actual EAS alert by any EAS equipment that may be monitoring the station that broadcasts the PSA. We will permit the use of the simulation developed by FEMA to deliver the familiar sounds of live EAS header codes that the public associates with the EAS in a manner that would not trigger an actual alert. Entities that want to simulate the EAS header codes in their PSAs must do so using FEMA's simulation. We note that FEMA's simulation of the header code audio tones is nonetheless subject to the restrictions of Section 11.45 and therefore should not be used for purposes other than the EAS PSAs contemplated herein.

14. We agree with commenters that EAS PSAs can be effective tools to raise public awareness of the EAS.⁴⁸ There are members of the public, particularly those that may be new to this country or have limited English proficiency, who do not recognize EAS tones and could benefit from learning about the EAS's benefits.⁴⁹ EAS PSAs can play that role. Brouder expresses concern that excessive use of the Attention Signal could "confuse the public, create mistakes, and further the 'cry wolf' effect."⁵⁰ These are valid concerns, and we will monitor the use and effects of PSAs. We generally defer to the entity issuing the PSA and to FEMA to determine how to strike the appropriate balance

⁴³ Under the EAS Protocol, an EAS alert uses a four-part message: (1) preamble and EAS header codes (containing information regarding the identity of the sender, the type of emergency, its location, and valid time period of the alert); (2) audio attention signal; (3) message; and (4) preamble and EAS end of message codes. *See* 47 CFR § 11.31(a). The EAS header codes are modulated into audible tones using the audio frequency-shift keying (AFSK) modulation scheme, so that the entire alert can be transmitted in the audio portion of an RF signal. *See id.* These header codes are then decoded by EAS decoders in EAS Participant facilities monitoring that RF transmission.

⁴⁴ *See* 47 CFR § 11.31(a).

⁴⁵ *See, e.g.,* Abbott Comments at 48-51; Brouder Comments at 1, 8.

⁴⁶ *See* 2015 ECHO EAS PSA Waiver, 30 FCC Rcd at 10187.

⁴⁷ Letter from Alfred Kenyon, Chief, Customer Support Branch, Federal Emergency Management Agency, to Marlene H. Dortch, Secretary, FCC, PS Docket No. 15-94, at 2 (filed Aug. 8, 2017). *See also* Letter from Alfred Kenyon, IPAWS Program Office, FEMA, to Marlene H. Dortch, Secretary, FCC, PS Docket No. 15-94, at 1 (filed Nov. 14, 2016). These simulated tones can be downloaded from FEMA's web site. *See* FEMA, *Emergency Alert System Sound Header for PSA Support*, <https://www.fema.gov/media-library/assets/audio/132794> (last visited May 29, 2018).

⁴⁸ *See, e.g.,* Letter from Alfred Kenyon, Chief, Customer Support Branch, IPAWS Program Office, National Continuity Programs, Department of Homeland Security – FEMA Marlene H. Dortch, Secretary, FCC, PS Docket Nos. 15-91 and 15-94 (filed July 11, 2018); California Governor's OES Comments at 4; USGS Comments at 2. As such, we expect such PSAs to be consistent with the Commission's rules regarding accessibility to individuals with disabilities. *See, e.g.,* 47 CFR § 11.51(d)(1).

⁴⁹ *See* Letter from Lillian McDonald, Managing Director, ECHO, to David Simpson, Chief, Public Safety and Homeland Security Bureau, FCC (Aug. 20, 2015) (on file in PS Docket No. 15-94).

⁵⁰ *See* Brouder Comments at 1.

between raising awareness of the EAS and reducing alert fatigue.⁵¹ We note that we have never exercised control over the frequency with which EAS PSAs are aired, and nothing in the rule that we adopt today requires EAS PSAs to be transmitted with greater frequency. Rather, our approach will reduce burdens and permit EAS PSAs to be more effective.

3. Effective Dates

15. The Commission proposed that these rules would become effective 30 days from the date of their publication in the *Federal Register*.⁵² No commenters opposed this time frame. Accordingly, the rule amendments in Appendix A for Sections 11.45 and 11.46, both of which relate to PSAs, will become effective 30 days after their publication in the *Federal Register*.

16. The live code testing rules, however, contain new or modified information collections, which pursuant to the Paperwork Reduction Act of 1995,⁵³ must be approved by the Office of Management and Budget before they can become effective. The rule amendments in Appendix A for Section 11.61, which cover “Live Code Tests,” will become effective on the date specified in a Commission notice published in the *Federal Register* announcing their approval under the Paperwork Reduction Act by the Office of Management and Budget, which date will be at least 30 days after the date that this Order and rules adopted herein are published in the *Federal Register*. We observe that these amendments do not result in any mandatory obligations on EAS Participants. Rather, these amendments will reduce burdens on those seeking to use voluntary live code tests or EAS PSAs.

B. Ensuring EAS Readiness and Reliability

1. False Alert Reporting

17. As discussed above, Section 11.45 of the Commission’s EAS rules prohibits false or deceptive EAS transmissions.⁵⁴ The Commission currently does not require an EAS Participant to report to the Commission or FEMA when its equipment has generated a false EAS alert or to disclose the underlying circumstances of that alert.⁵⁵ In the *Notice*, the Commission proposed to modify Section 11.45 to require EAS Participants to report via the EAS Test Reporting System (ETRS) the issuance or retransmission of a false EAS message, as well as other instances when their EAS equipment causes, contributes to, or participates in a lockout that adversely affects the public (e.g., when multiple cable set-top boxes cannot return to normal operation after an EAS alert or test).⁵⁶

18. We agree with commenters that false alert reporting would benefit ongoing EAS reliability, and that having timely information about false alerts could help identify and mitigate problems with the EAS.⁵⁷ At the same time, we acknowledge the concerns of some commenters that false alert

⁵¹ See NSBA Comments at 16.

⁵² *Notice*, 31 FCC Rcd at 662-63, para. 179 & Fig. 5.

⁵³ Paperwork Reduction Act of 1995, Public Law 104-13.

⁵⁴ See *supra* para. 3. Section 11.45 of the Commission’s rules prohibits persons from transmitting or causing the transmission of the EAS Attention Signal or tones, or simulations thereof, under any circumstances other than a real alert or an authorized test of the EAS. 47 CFR § 11.45.

⁵⁵ *Notice*, 31 FCC Rcd at 646-47, para. 128.

⁵⁶ *Id.* at 646-48, paras. 128-33.

⁵⁷ See, e.g., APCO Comments at 5-6 (having timely information about false alerts and equipment lockouts could be very useful to PSAPs and other officials in identifying and mitigating problems with the EAS and WEA); CD&E Comments at 2 (encouraging the Commission to “mandate [that] all stations to report within five business days any exploit, breach of security, or accidental or intentional transmission of EAS tones for a non-emergency”); NYCEM Comments at 10 (suggesting, among other things, that “[u]pon learning of or observing a false EAS activation, the affected EAS Participant(s) should be required to immediately report the alert to the Commission and, more importantly, the state and/or local governments (emergency management offices and/or public safety answering

reporting could be burdensome to EAS Participants, who may not know they have transmitted a false alert.⁵⁸ Taking into consideration the public safety concerns raised in the record, as well as the recent false missile alert in Hawaii and the impact it has had on the public's confidence in the nation's alerting system, we believe that, on balance, some level of minimally burdensome reporting from EAS Participants is essential to provide the Commission, FEMA and other affected stakeholders with the information necessary to identify and mitigate problems with the EAS. Accordingly, we revise our rules to require that no later than twenty-four (24) hours of an EAS Participant's discovery that it has transmitted or otherwise sent a false alert to the public, the EAS Participant send an email to the FCC Ops Center (at FCCOPS@fcc.gov),⁵⁹ informing the Commission of the event and of any details that the EAS Participant may have concerning the event. If an EAS Participant has no actual knowledge that it has issued a false alert, then it would not be required to take any action. In the Further Notice of Proposed Rulemaking below, we seek comment on additional proposals for the reporting of false EAS alerts.

2. Alert Authentication

19. Each of the two types of EAS alerts, both IP-based CAP alerts and broadcast-based EAS Protocol alerts, pose separate and unique challenges in determining that an alert is "authenticated," i.e., that the alert received by EAS equipment originated from an authorized source.⁶⁰ In order to improve the security of CAP-based alerting and to support extending its capabilities to all alerts, the Commission proposed requiring that EAS Participants process and validate digital signatures when handling CAP-formatted EAS alerts, and discard as invalid any CAP message where the digital signature does not match an authorized source from FEMA or a source specified in the applicable State EAS Plan.⁶¹ With respect to alerts initiated using the EAS Protocol rather than CAP, the Commission acknowledged there currently is no industry-accepted method of ensuring that an EAS Protocol alert is authenticated. The *Notice* sought comment on the desirability and feasibility of various methods to secure the legacy EAS transmissions using the EAS Protocol by including a unique message ID and/or authenticator ancillary to the EAS Protocol header codes.⁶²

20. *CAP Alerts.*—We revise Section 11.56(c) to require that EAS Participants configure their systems to reject all CAP-formatted EAS messages that contain an invalid digital signature, thus helping to prevent the transmission of a false alert.⁶³ All commenters addressing this issue support the Commission's proposal and generally acknowledge the benefits of digitally signing CAP alerts.⁶⁴ We

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points) for the jurisdictions whose public received the alert").

⁵⁸ See, e.g., ACA Comments at 5, 24-25 (the proposal is needlessly duplicative and unreasonably burdensome); NCTA Reply Comments at 7 (it is unclear what purpose the reports would serve); Ed Brouder Comments at 11 (EAS Participants are not always in a position to know the source of false alerts); NCTA Comments at 8 (EAS Participants are not always in the best position to know whether a particular EAS alert is false).

⁵⁹ FCC, *Operations Center for the Public Safety & Homeland Security Bureau*, <https://www.fcc.gov/general/operations-center-public-safety-homeland-security-bureau> (last visited Jan. 17, 2018).

⁶⁰ Alert "authentication" refers to a determination of whether an alert came from the intended trusted source. Alert "validation" assumes that an alert came from a trusted source, and asks only if it is appropriate for retransmission.

⁶¹ *Notice*, 31 FCC Red at 649, paras. 135-36.

⁶² *Notice*, 31 FCC Red at 649, paras. 137-39.

⁶³ An invalid digital signature for a CAP-formatted message is a digital signature that fails verification using a valid root or intermediate certificate. Such certificates must be either those specified by FEMA, as with IPAWS, or those specified by the appropriate governmental agency responsible for alert origination.

⁶⁴ See Brouder Comments at 13; Donelan Comments at 39-40; Monroe Comments at 20; NYCEM Comments at 9; Trilithic Comments at 7-8.

agree with Sage’s rationale that “[n]ot only does this protect against spoofing, it also verifies that the message has arrived . . . without corruption, intentional or otherwise.”⁶⁵

21. Although we require EAS Participants to configure their systems in such a way as to reject alerts with invalid digital signatures, we do not mandate the use of digital signatures at this time. The record reflects that many state and local systems do not yet use IPAWS or CAP-based digital signatures, and commenters point out that the Commission should avoid requirements that could render some legacy systems unnecessarily incompatible with our proposed requirements.⁶⁶ Further, if a state or other alert origination system is not capable of digitally signing alerts, there is a risk that any system receiving the alerts could reject an otherwise legitimate message simply because a digital signature was not present. We note that since release of the *Notice*, CSRIC VI has been tasked with making recommendations for technical solutions to support authentication of alerts through digital signatures for both Internet-based systems, such as IPAWS, as well as the broadcast-based legacy daisy chain, to ensure that the alert retransmitted by an EAS Participant was generated by an authorized alert originator and has not been modified.⁶⁷ We believe it would be premature to require universal digital signatures on all CAP-formatted messages while the CSRIC is formulating its recommendation on this issue.

22. *Broadcast-based Alerts.*—We believe it would be premature to adopt rules pertaining to specific authentication mechanisms for EAS Protocol messages for three reasons. First, the record demonstrates that the proposed authentication methods would require significant changes in equipment and processes by both Participants and FEMA while in many cases only providing limited protection from false alerts.⁶⁸ Second, there is insufficient information on details and methods of applying digital signatures to the EAS Protocol.⁶⁹ Given the lack of consensus on an approach forward in the record, we believe it would be prudent to await the recommendation from CSRIC VI on this issue rather than moving ahead with one of the originally proposed mechanisms. As noted above, CSRIC VI has been tasked with recommending authentication mechanisms to increase the security of EAS Protocol alerts in conjunction with CAP alerts. Once CSRIC VI has made its final recommendations on issues relevant to these proceedings, such recommendations will be placed in the record for our further consideration following notice and comment.

⁶⁵ Sage Comments at 12.

⁶⁶ NCTA Comments at 9-10; Sage Comments at 3-4, 6-7.

⁶⁷ *FCC Announces the Membership and First Meeting of the Communications Reliability, Security and Interoperability Council*, Public Notice, 30 FCC Rcd 7305 (PSHSB 2017). See generally Charter of the FCC’s Communications Security, Reliability, and Interoperability Council (Mar. 19, 2017), <https://www.fcc.gov/files/csric-charter-2017pdf> and CSRIC VI Working Group Descriptions, Working Group Two: Comprehensive Re-imagining of Emergency Alerting (June 23, 2013). We also note that presentations to the CSRIC VI, including to its working groups, and at any roundtable discussions sponsored by CSRIC VI, and presentations between CSRIC VI members (including members of any working groups) and Commission staff or Commissioners, will be treated as exempt presentations for ex parte purposes, as such preliminary information is not intended to directly result in the promulgation of new rules. See *Notice Concerning Ex Parte Status of Information Submitted to the Communications Security, Reliability, and Interoperability Council*, Public Notice, 32 FCC Rcd 4817 (PSHSB 2017).

⁶⁸ See, e.g., NCTA Comments at 9-10; Sean Donelan Comments at 40-41; Trilithic Comments at 8-9 (EAS equipment is not capable of interpreting a Textual Data Exchange (TDX) or audio authentication); see also Donald Walker Comments at 3 (expressing concern the impact on the audience of the lengthy audio tones required for verification). See Sean Donelan Comments at 40; Trilithic Comments at 10 (Virtual Red Envelope (VRE) solutions may increase complexity and likelihood of error while providing limited protection); see also Donald Walker Comments at 3 (“Given the non-zero chance of a station missing the weekly IPAWS RWT, basing the successful receipt and processing of the entire next week’s . . . messages on data included in that message seems ill advised.”).

⁶⁹ See, e.g., FEMA Comments at 4; Monroe Comments at 19.

3. Alert Validation

23. Along with event codes, the header to EAS messages also must possess and convey critical, accurate, and timely information regarding the time during which the alert is active. EAS equipment uses these codes to verify the validity of a particular alert by conducting technical scans of the message to confirm that a message received is, in fact, a valid EAS message.⁷⁰ To ensure that transmitted EAS alerts are valid, Section 11.33 of the Commission's rules sets forth functional requirements for EAS decoders,⁷¹ and Section 11.33(a)(10) specifies certain error detection and validation requirements for decoders.⁷²

24. Currently, the Commission's rules do not require validation of alerts based upon the time period or year parameter in the "time stamp" portion of the header code, i.e., the portion that determines the correct date and time for the alert.⁷³ Further, the Commission's rules do not require that valid alerts have an expiration time in the future. Thus, an alert's time stamp does not consistently serve as a filter through which officials can ensure an alert is confined to its relevant time frame. In the *Notice*, the Commission proposed including a year parameter in the time stamp, limiting valid alerts to those with an expiration time in the future, and validating alerts based on the Station ID of the transmitting station.⁷⁴

25. *Alert time validation.*—The alert message validation requirements in the EAS rules require that EAS decoders validate alert messages by comparing the three EAS header tone bursts that commence all EAS alerts to ensure that at least two out of three match—the content of those header tones is not reviewed for incoming alert message validity.⁷⁵ We agree with Donelan that incoming alert message validation should also confirm that the alert's expiration time is set to take place in the future, and that its origination time takes place no more than 15 minutes in the future.⁷⁶

26. As a threshold matter, it is essential that EAS equipment is capable to detect and reject expired alerts.⁷⁷ Beyond that, commenters generally support proposals that reduce the potential for repeat broadcasts of outdated alerts by validation based on specific origination and expiration times.⁷⁸ Commenters support a 15-minute timeframe,⁷⁹ and believe that such requirement is technically feasible

⁷⁰ An EAS decoder must provide error detection and validation of the header codes to ascertain if each message is valid. A header code is valid only when two of the three headers match exactly. See 47 CFR § 11.33.

⁷¹ See 47 CFR § 11.33; *Fifth Report and Order*, 27 FCC Rcd at 676-77, paras. 87-90.

⁷² See 47 CFR § 11.33(a)(10); *Fifth Report and Order*, 27 FCC Rcd at 678, para. 97.

⁷³ The "time stamp" is represented in the EAS rules defining EAS header codes as "JJJHHMM." "This is the day in Julian Calendar days (JJJ) of the year and the time in hours and minutes (HHMM) when the message was initially released by the originator using 24 hour Universal Coordinated Time (UTC)." 47 CFR § 11.31(c).

⁷⁴ *Notice*, 31 FCC Rcd at 651-653, paras. 140-145.

⁷⁵ See 47 CFR § 11.33(a)(10). The alert content – e.g., the location code that indicates the affected geographic area and the event code that indicates the nature of the alert – is reviewed after the alert has been validated to determine whether the alert is relevant to the EAS Participant and must or should be transmitted. See, e.g., 47 CFR §§ 11.52(e), 11.55(c)(4).

⁷⁶ See Donelan Comments at 42, 78 (suggesting that decoders not relay alerts unless "(iii) Originator Daytime (JJJHHMM) and, if present, Originator Year (YYYY) is not more than 15 minutes in the future (i.e., clock skew too great), and (iv) Originator Daytime (JJJHHMM) and, if present, Originator Year (YYYY) is not more than the Valid Time period (+TTTT) in the past (i.e., message expired)").

⁷⁷ *Notice*, 31 FCC Rcd at 639, para. 102.

⁷⁸ See, e.g., Brouder Comments at 13; Gorman Comments at 1-2; Monroe Comments at 26; Sage Comments at 14.

⁷⁹ See Donelan Comments at 42, 78.

because it will require minimal software updates.⁸⁰ Limiting the transmission of alerts to their valid time periods will reduce the risk of replay attacks and prevent most inadvertent retransmissions of previous alerts.⁸¹ This action will protect the integrity of the EAS by rejecting alerts that previously were transmitted for a different time frame.⁸²

27. Additionally, we find that, in rare cases, timing differences in originator and EAS Participant systems may lead to origination times that occur after receipt of the alert (i.e., “in the future”). To prevent EAS equipment from rejecting such valid alerts, we provide for a 15-minute window, or “skew time,” to account for error within the system due to differences in clock settings, system delay, and buffering.

28. Based on the record, most EAS equipment already validates the time of EAS messages, blocking alerts that have expired.⁸³ Remaining equipment can achieve this capability by installing the necessary software as part of a regularly scheduled in-version equipment software update.⁸⁴ We also observe that this time period validation operates independently from the year parameter discussed below – thus, the efficacy of the former is not contingent upon or otherwise affected by whether or not the year parameter proposal is adopted.

29. *Year Parameter.*—Although currently available equipment can reject alerts with time stamps outside the valid day and time of the alert, we decline to require a year parameter in the time stamp section of the EAS Protocol. Adopting such a parameter would require revising the EAS Protocol to add a year element to the header code time stamp. While such action would enable the EAS equipment to verify that the alert was not from the same time period in a previous year, it would require extensive and burdensome modifications throughout the EAS ecosystem. The record indicates, for example, that adding a year parameter requirement is not technically feasible without significant modification to the

⁸⁰ See Trilithic Comments at 12 (“This would reduce the margin of error to once a year for the valid time period of the alert.”).

⁸¹ The rule we adopt defines the valid time of the alert as starting 15 minutes prior to the alert origination time included in the alert header, defined in Section 11.31 as “JJJHHMM” the Julian day, hour, and minute the message was initially released by the originator. The valid time of the alert ends the number of hours and minutes after the origination time described by the valid time field in the alert header, defined in Section 11.31 as “TTTT,” which is the two-digit hour and two-digit minute (in 30-minute increments after the first hour). Thus, the alert would only be valid between JJJHHMM-15 and JJJHHMM+TTTT.

⁸² See Donelan Comments at 42 (“Tightening the acceptable clock skew would reduce, not eliminate, the window for message replay attacks A small acceptable clock skew should permit [] valid EAS messages when the EAS originator clock is not exactly synchronized. . . .”); Trilithic Comments at 12 (suggesting that messages within 15 minutes of the end of the validation period should be discarded to further reduce false or outdated alerts).

⁸³ See Letter from Edward Czarnecki, Senior Director, Strategy and Global Government Affairs, Monroe Electronics, Inc., to Marlene H. Dortch, Secretary, FCC, PS Docket No. 15-94 (filed Nov. 14, 2016) (“[Regarding] validation of messages depending on time, we noted that EAS gear should already do this.”); Letter from Harold Price, President, Sage Alerting Systems, Inc., to Marlene Dortch, Secretary, FCC, PS Docket No. 15-94, at 2 (filed Nov. 4, 2016) (“The ENDEC is by default set for ‘strict time’, which in general rejects alerts if the ENDEC’s current time does not fall within a window of an incoming alert’s start time, and start time + duration.”); Letter from Michael Maginity, EAS Engineering Manager, Trilithic, Inc., to Marlene Dortch, Secretary, FCC, PS Docket No. 15-94, at 2 (filed Nov. 7, 2016) (“Trilithic EAS Encoder/Decoders reject expired messages.”); see also Letter from Alfred Kenyon, Engineering Branch, IPAWS Program Office, Department of Homeland Security – FEMA, to Marlene H. Dortch, Secretary, FCC, PS Docket No. 15-94, at 2 (filed Nov. 10, 2016).

⁸⁴ See Trilithic at 12. See also *Amendment of Part 11 of the Commission’s Rules Regarding Emergency Alert System*, Report and Order, 32 FCC Rcd 10812, 10822 (2017) (concluding that a software update, not new equipment, would enable EAS Participants to integrate the Blue Alert code) (*Blue Alert Order*); *Amendment of Part 11 of the Commission’s Rules Regarding the Emergency Alert System*, PSHSB Docket No. 15-94, Report and Order, 31 FCC Rcd 7915, 7924, n. 77 (2016) (concluding that software updates, not new equipment, would enable EAS Participants to integrate the new NWS event codes) (*NWS Order*).

current EAS Protocol, as well as all associated equipment, which would be extremely expensive and burdensome.⁸⁵ Further, the level of revision necessary to add a year element to the EAS Protocol would cause significant disruption to the NOAA Weather Radio infrastructure, potentially causing failure of the SAME alerting feature of all legacy EAS devices and legacy radio receivers used by individuals and others, including “more than 280,000 NWR Public Alert Receivers [] distributed to preschools, Head Start programs, K-12 schools and post-secondary 2 and 4 year schools.”⁸⁶ We find that the need to prevent potential disruption to these critical operations and the broader EAS infrastructure that could result from implementing the year parameter outweigh the potential benefits of incrementally securing the EAS that such action might otherwise provide. Moreover, we find that the alert time validation measure we adopt above is a less burdensome alternative that will reasonably enhance the integrity of the EAS until a more effective solution can be developed. In addition, although we do not revise the EAS Protocol today, we will continue to monitor developments in this area to determine whether and when such an improvement may be feasible and compatible with NOAA infrastructure. As noted earlier, CSRIC VI is currently tasked with making recommendations to increase the security of EAS, which we expect will include addressing vulnerabilities associated with the lack of a year parameter in the existing EAS Protocol.

4. Compliance timeline

30. In the *Notice*, the Commission proposed to require EAS Participants to comply with alert authentication and validation measures within one year of the rules’ publication in the *Federal Register*.⁸⁷ The record indicates that most EAS Participants already have EAS equipment capable of complying with these requirements.⁸⁸ Any EAS Participant that does not have such equipment should be able to install a scheduled, in-version software update, typically downloadable and self-executing, that will permit the equipment to comply with these requirements. A one-year time frame would allow equipment manufacturers to develop and make available software updates to implement these requirements in deployed equipment that do not already meet these requirements, providing sufficient time left over for EAS Participants to install such updates into their deployed EAS devices, and would allow for integration of these requirements into production cycles for new equipment. A one-year compliance timeframe for authentication and validation requirements is consistent Commission precedent for EAS upgrades that can be accomplished with a software upgrade.⁸⁹ Thus, we believe that a one-year compliance timeframe from publication in the *Federal Register* is sufficient here.⁹⁰

⁸⁵ See generally ACA Comments at 21-22; Donelan Comments at 42-44; FEMA Comments at 4-5; Monroe Comments at 23-28; Trilithic Comments at 11-12.

⁸⁶ See NWS Comments at 5; see also Bell Comments at 19; Donelan Comments at 42; Monroe Comments at 24; Trilithic Comments at 11-12.

⁸⁷ *Notice*, 31 FCC Rcd at 662, para. 179.

⁸⁸ See, e.g., Letter from Edward Czarnecki, Senior Director, Strategy and Global Government Affairs, Monroe Electronics, Inc., to Marlene H. Dortch, Secretary, FCC, PS Docket No. 15-94 (filed Nov. 14, 2016); Letter from Harold Price, President, Sage Alerting Systems, Inc., to Marlene Dortch, Secretary, FCC, PS Docket No. 15-94, at 2 (filed Nov. 4, 2016); Letter from Michael Maginity, EAS Engineering Manager, Trilithic, Inc., to Marlene Dortch, Secretary, FCC, PS Docket No. 15-94, at 2, 7 (filed Nov. 7, 2016); Letter from Alfred Kenyon, Engineering Branch, IPAWS Program Office, Department of Homeland Security – FEMA, to Marlene H. Dortch, FCC, PS Docket No. 15-94, at 2 (filed Nov. 10, 2016); Monroe Comments at 20; Sage Comments at 3, 12; Trilithic Comments at 7. *Cf. Sixth Report and Order*, 32 FCC Rcd at 6545-46 (requiring EAS Participants to update software within 12 months of effective date of rule that adopted 6-zero national location code).

⁸⁹ See *Amendment of Part 11 of the Commission’s Rules Regarding Emergency Alert System*, PS Docket No. 15-94, Report and Order, FCC-17-170, 8, para. 22 (Dec. 14, 2017), 2017 WL 6405736, (*Blue Alert Order*) (12 month period sufficient to complete software upgrades to EAS equipment); *Amendment of Part 11 of the Commission’s Rules Regarding the Emergency Alert System*, PSHSB Docket No. 15-94, Report and Order, 31 FCC Rcd 7915, 7926, para. 27 (2016) (*NWS Report and Order*) (12-month compliance period for software upgrade to implement news EAS event codes).

31. The EAS false alert reporting rules, however, contain new or modified information collections, which pursuant to the Paperwork Reduction Act of 1995, must be approved by the Office of Management and Budget before they can become effective. The rule amendments in Appendix A for Section 11.45(b), which address the filing of false alert reports will become effective on the date specified in a Commission notice published in the *Federal Register* announcing their approval under the Paperwork Reduction Act by the Office of Management and Budget, which date will be at least 30 days after the date that this Order and rules adopted herein are published in the *Federal Register*.

C. Benefit-Cost Analysis

32. Our rules reduce burdens by eliminating waiver filing time and costs. To the extent we adopt new requirements, we do so in a minimally burdensome way that either imposes no additional costs or imposes only minimal costs. Other than the alert validation and authentication requirement, for which we provide a one-year compliance timeframe, only the new false alert reporting rule will involve new costs to EAS Participants.⁹¹ As discussed below, we conclude that the benefits of our rules exceed their costs.⁹²

1. Benefits

33. Our rules will reduce regulatory burden on EAS stakeholders. Waivers will no longer be needed for live code testing. The rule changes to Section 11.61 codify requirements that were imposed by the over 150 live code testing waivers granted by the Commission since 2009. We also reduce the regulatory burden on EAS Participants by allowing them to produce PSAs provided by federal, state, and local government entities, and NGOs about EAS using EAS header codes and a simulated Attention Signal without requesting a waiver. By making the process of producing a PSA less costly, we encourage the production of PSAs to increase public awareness of EAS. This change will promote greater proficiency in the use of EAS, both by EAS alert initiators and EAS Participants, as recommended in the *Report on Hawaii False Alert*.⁹³ It will therefore help prevent false alerts while increasing the public's familiarity with alerts.

34. Our rules will also help prevent incidents of misuse and abuse of the EAS. Our authentication and validation rules will require the use of EAS equipment's existing capabilities to help prevent misuse and abuse of the EAS, thus protecting its integrity and maintaining its credibility with the public and alerting officials. Our alert authentication and validation rules will benefit the public by reducing costs due to false alerts. False alerts impose immediate costs when they move the public to place emergency calls, potentially overwhelming PSAPs, as described in the *Report on Hawaii False*

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⁹⁰ Cf. *Amendment of Part 11 of the Commission's Rules Regarding Emergency Alert System*, PS Docket No. 15-94, Report and Order, FCC-17-170, 8, para. 22 (Dec. 14, 2017), 2017 WL 6405736, (*Blue Alert Order*) (where the Commission adopted a one-year timeframe for EAS equipment manufacturers to develop and make available software updates to implement the adoption of a new Blue Alert" event code).

⁹¹ See *Blue Alert Order*, 32 FCC Rcd at 10822, para. 22. As in the *Blue Alert Order*, sufficient time is allowed so that software updates can be made along with regularly scheduled updates, thus avoiding the cost of an additional update cycle. In contrast to the *Blue Alert Order*, which required the downloading and testing of new event code software, this *Order* only requires EAS Participants to download existing software that is already widely deployed, if needed.

⁹² The expected benefits of our rules are best expressed as enhancements to public safety outcomes, such as making emergency alerting more resilient to single points of failure and facilitating disaster readiness of emergency operations personnel and the public. We note that quantitative precision in our discussion of public safety benefits is unnecessary to conclude that the benefits of our rules will outweigh their costs. See OIRA, *Regulatory Impact Analysis: A Primer*, at 12, https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/regpol/circular-a-4_regulatory-impact-analysis-a-primer.pdf (last visited Jan. 17, 2018) (concluding that "some important benefits and costs . . . may be difficult or impossible to quantify or monetize," and urging regulatory agencies to present all available qualitative information instead).

⁹³ See *Report on Hawaii False Alert* at 9.

Alert.⁹⁴ The false alert in Hawaii resulted in a surge of over 7,000 calls to 911, and resulted in some calls not being answered by call takers.⁹⁵ When a PSAP fails to answer a legitimate emergency call, it could result in potentially significant costs due to potential injuries, as well as due to loss of life and property. False alerts also may reduce public confidence in emergency alerts. This lack of confidence can lead the public to require additional information before taking action in response to future alerts, potentially slowing evacuations and other public safety efforts. To provide an estimate of the value of the benefits of the rules we adopt today, we turn to the overall value of the EAS. Scholars agree that public safety in the United States has improved over the years because its early warning systems for recurring hazards such as lightning, floods, storms and heat waves are continually improving.⁹⁶ By reducing the frequency of false alerts, we strengthen public confidence in the EAS, thus avoiding erosion in its overall value.

35. Finally, the false alert reporting rules we adopt today will provide a significant public safety benefit by allowing the Commission to detect whether there are trends and patterns in false alerts that may indicate weaknesses that require further Commission study and action to strengthen the alerting system.⁹⁷

2. Costs

36. The rule changes to Section 11.61 for live code testing and to Sections 11.45 and 11.46 for public service announcements do not impose any new costs. Rather, they codify requirements that were previously imposed on waivers granted by the Commission. Removing the requirement to file a waiver removes the need for legal and other staff time associated with filing a waiver. The new rules therefore eliminate any legal or administrative costs that were associated with filing waiver requests.

37. We estimate that compliance with our alert authentication and validation rules will also involve only minimal costs to EAS Participants. Current EAS rules require that EAS Participants must have EAS equipment that is capable of being updated via software.⁹⁸ According to the record, most EAS equipment deployed in the field is already configured to support the validation and authentication rules we adopt today.⁹⁹ We also grant one year from the effective date of our rules to comply. This one-year period will provide sufficient time for any necessary update to be deployed within a previously scheduled

⁹⁴ See *Report on Hawaii False Alert* at 21.

⁹⁵ See *Report on Hawaii False Alert* at 21-22.

⁹⁶ See David Rodgers, Vladimir Tsirkunov, *Costs and Benefits of Early Warning Systems*, Global Assessment Report on Disaster Risk Reduction, at 3 (World Bank, 2010) (stating that “mortality fell by 45 percent and injuries by 40 percent in 15,000 tornadoes from 1986 to 1999 thanks to more timely warnings that enabled people to take shelter”) citing T.J. Teisberg and R.F. Weiher, *Benefits and Costs of Early Warning Systems for Major Natural Hazards*, World Bank (2009). Similarly, a 2005 study found that, during the 1990s, NWS installed Doppler radar systems which increased the fraction of tornadoes for which a warning was provided from 35 percent to 60 percent, and increased the average warning lead-time from 5.3 minutes to 9.5 minutes.

⁹⁷ For instance, in the past we have taken such actions as sharing our situational awareness with EAS device manufacturers and EAS Participants, as well as providing guidance to such entities, to the extent appropriate, on how to remediate any damage.

⁹⁸ *Blue Alert Order*, 32 FCC Rcd at 10823, para. 22-23 (citing *Amendment of Part 11 of the Commission’s Rules Regarding the Emergency Alert System*, PS Docket No. 15-94, Notice of Proposed Rulemaking, 32 FCC Rcd 5280, 5290, para. 26 (2017)). See *NWS Order*, 31 FCC Rcd at 7924-26, para. 22, n. 77.

⁹⁹ See *supra* notes 84 (citing comments supporting validation), 64 (citing comments supporting authentication). All EAS equipment manufacturers commenting on this subject confirmed that their equipment can authenticate CAP alerts. See Monroe Comments at 20; Sage Comments at 3 and 12; Trilithic Comments at 7. The ETRS data collected in the September 2016 nationwide EAS test indicates that 93.2% of EAS Participants use EAS equipment manufactured by the commenters who assert that their equipment already supports our authentication and validation measures.

in-version equipment software update. In combination, these factors resulting in no incremental cost to EAS Participants for installing the update.¹⁰⁰

38. The false alert reporting rules we adopt today impose costs on EAS participants that are less than those initially estimated in the *Notice*.¹⁰¹ In the *Notice*, we estimated the cost of false alert reporting to be \$46,400, based on an average of 290 EAS participants filing two false alerts per year, with each of those EAS participants spending 15 minutes to file an initial report and 45 minutes to file a final report.¹⁰² We note that commenters did not take issue with our cost estimate, and that the new rules do not require more than one report. Therefore, the burden estimate is reduced from 1 hour of filing costs (15 minutes plus 45 minutes), to 15 minutes (for one report only). We conclude that the cost of reporting false alerts will be \$11,600 per year.¹⁰³

39. Therefore, based on the foregoing analysis, we find it reasonable to conclude that the benefits of the rules we adopt today will exceed the costs of their implementation. Our rule changes will support greater testing and awareness of the EAS and promote the security of the EAS. They will also likely result in fewer false alerts, and thus fewer unnecessary 911 calls. They will also prevent unnecessary surges in calls to PSAPs, which have resulted in missed calls. The benefit of avoiding a single missed legitimate call to a PSAP would be likely to be well in excess of the total cost of our new rules. Importantly, the benefits of our rules will continue to accrue to the public each year, while the imposed costs are low. We therefore find that expected benefits will far exceed that implementation expense.

IV. FURTHER NOTICE OF PROPOSED RULEMAKING

A. False Alert Reporting

40. In the Order that accompanies this Further Notice, we adopt a minimally burdensome false alert reporting requirement to help ensure that the Commission, FEMA and affected stakeholders have sufficient information to identify and mitigate problems with the EAS. Given the negative impact that false alerts have on the public's confidence in the EAS and WEA, we also seek further comment on whether there is a need for additional false alert and lockout reporting beyond that which we have adopted today. If not, should there be a dedicated mechanism by which EAS Participants, Participating CMS Providers,¹⁰⁴ other stakeholders and the public can report false alerts? What form should such a reporting mechanism take? Should it be integrated into the Alert Reporting System (ARS)?¹⁰⁵ Should it be mandatory for EAS Participants and Participating CMS Providers? If such reporting were mandatory, what time frame, if any, should be established for the false alert report to be made (e.g., should such reports be required within five minutes of discovery)?

¹⁰⁰ See *Blue Alert Order*, 32 FCC Rcd at 10822, para. 22.

¹⁰¹ *Notice*, 31 FCC Rcd at 46-48, para. 130.

¹⁰² *Notice*, 31 FCC Rcd at 46-48, para. 130.

¹⁰³ On October 24, 2014, iHeart's station WSIX-FM, in Nashville, Tennessee, aired a false emergency alert during the broadcast of the nationally-syndicated "The Bobby Bones Show." This misuse of the EAS resulted in the interruption of regular programming by more than 70 broadcast stations and cable and wireline video television systems in 32 states and the District of Columbia for approximately two hours, or 120 minutes. See Press Release, FCC, FCC Fines iHeart Communications \$1 Million for Transmitting Fake Emergency Alerts During "The Bobby Bones Show" (May 19, 2015), https://apps.fcc.gov/edocs_public/attachmatch/DOC-333516A1.pdf. Similar false alerts would, under the new rules, result in the following costs: (1/4 hour) x (\$80 hourly salary) x (an estimated 2 incidents per year based on receiving reports of two false alerts in 2013, and one in 2014 and in 2015) x (290 entities estimated to file based on the results of the Bobby Bones Incident in which 290 entities would have been required to file a report, assuming all 290 entities had actual knowledge they had transmitted a false alert) = \$11,600.

¹⁰⁴ Participating CMS Providers are Commercial Mobile Service Providers that have voluntarily elected to transmit WEA alerts. See 47 CFR 10.10(f).

¹⁰⁵ See *Alert Reporting System Order*.

41. Alternatively, we seek comment on whether, in lieu of adopting a dedicated reporting mechanism for false EAS or WEA alerts or EAS lockouts, we should instead implement a process by which EAS Participants, Participating CMS Providers, emergency managers, and members of the public could inform the Commission about false alerts through currently available means other than that which we have adopted today. For example, could the existing Public Safety Support Center reporting portal provide a sufficient platform to facilitate such reporting?¹⁰⁶ Would adopting a dedicated reporting process be useful in redressing false alerts, such as the false alert recently issued in Hawaii? For example, would the establishment of a dedicated process for reporting false alerts encourage the implementation of standard operating procedures for reporting and responding to false alerts by alert originators? Regardless of what type of system we might use to facilitate false alert reporting, could and should we incorporate reporting parameters to minimize reports concerning the same EAS or WEA false alert, or are there benefits from receiving different descriptions, times, locations and reporting identities covering the same false alert? For example, if a false alert report covering a given geographic area and alert event type and transmittal time frame were entered into the system, should that foreclose additional false alert reports covering those same parameters?

42. We seek comment on the costs and benefits of this proposal. What burdens, if any, would a dedicated false alert reporting system impose on anyone who might want to make such a report? Would incorporating some kind of feedback mechanism into the false alert reporting system on false alerts already reported be helpful to reduce burdens on other entities that might otherwise make identical reports covering the same false alert? What quantifiable benefits might be expected to result from implementation of such reporting? To the extent offering a standard way to report on false alerts could speed corrective action, would the benefits of such an outcome outweigh whatever burdens might be associated with making the false alert report?

B. State EAS Plan Revisions

43. Section 11.21 of the Commission's EAS rules, as amended by the recently adopted *Alert Reporting System Order*,¹⁰⁷ specifies that State EAS Plans include "procedures for State emergency management and other State officials, the NWS, and EAS Participants' personnel to transmit emergency information to the public during a State emergency using the EAS."¹⁰⁸ Section 11.21, however, does not specify that these procedures include those to prevent and correct false alerts.¹⁰⁹ In the *Report on Hawaii False Alert*, the Bureau made several recommendations to state, local, Tribal, and territorial emergency alert originators and managers to help prevent the recurrence of a false alert and to improve preparedness for responding to any false alert that may occur.¹¹⁰ For example, these recommendations included "[d]evelop[ing] and memorialize[ing] standard operating procedures for responding to false alerts within their jurisdictions."¹¹¹ To the extent the Commission can aid states and localities in effecting mechanisms to prevent and correct false alerts over EAS and WEA, and promote regular communication with the SECCs to further that end, such endeavor fulfills the Commission's statutory goal promoting of safety of life and property through the regulation of wire and radio communications networks.¹¹²

44. In light of the foregoing, we propose ways the Commission can aid states and localities in implementing the Bureau's recommendations in the *Report on Hawaii False Alert*. In particular, we propose to revise Section 11.21 to require State EAS Plans to include procedures to help prevent false

¹⁰⁶ FCC, *Public Safety Support Center* (Sept. 27, 2016), <https://www.fcc.gov/general/public-safety-support-center>.

¹⁰⁷ See *Alert Reporting System Order*, Appendix D.

¹⁰⁸ 47 CFR § 11.21.

¹⁰⁹ See *id.*

¹¹⁰ See *Report on Hawaii False Alert* at 24-25.

¹¹¹ See *Report on Hawaii False Alert* at 25.

¹¹² See Section 1 of the Communications Act of 1934 (as amended) (the "Act"), 47 U.S.C § 151.

alerts, or to swiftly mitigate their consequences should a false alert occur. Such information could be supplied by state and local emergency management authorities, at their discretion, to SECCs for inclusion in the State EAS Plans they administer, and would then be available to other emergency management authorities within the state for quick and easy reference. We further propose that the State EAS Plan template recently adopted by the Commission should be revised to require SECCs to identify their states' procedures for the reporting and mitigation of false alerts, (or, where the state and local emergency management authorities either do not have or will not share such information with the SECC, to specifically note that in the EAS Plan).¹¹³ With regard to this proposal, should any listing of such procedures contain any or all of the following:

- The standard operating procedures that state and local alert initiators follow to prepare for “live code” and other public facing EAS tests and alerts.
- The standard operating procedures that state and local alert initiators have developed for the reporting and correction of false alerts, including how the alert initiator would issue any corrections to false alerts over the same systems used to issue the false alert, including the EAS and WEA.
- The procedures agreed upon by the SECC and state emergency management agency or other State-authorized alert initiator by which they plan to consult with each other on a regular basis—at least annually—to ensure that EAS procedures, including initiation and cancellation of actual alerts and tests, are mutually understood, agreed upon, and documented in the State EAS Plan.
- The procedures ensuring redundant and effective lines of communication between the SECC and key stakeholders during emergencies.
- Other information that could prevent or mitigate the issuance of false alerts.

Would inclusion of this information in State EAS Plans be beneficial to alert originators and state and local emergency management authorities in preventing and correcting false alerts, and conducting tests of the EAS. Would this action spur greater communication between alert originators and state and local emergency management authorities and their respective SECCs? Would its inclusion provide a single source of information to which state, local, Tribal and territorial emergency alert originators and managers might refer if the need arose? Alternatively, are there reasons why such information should not be included in State EAS Plans? We seek comment on these proposals. As to the development of the false alert procedures themselves, which agency or agencies are best situated to require their creation or otherwise have oversight over these processes? Is the FCC best positioned to take action with respect to helping prevent the transmission of false alerts, or is this better left to other agencies, such as DHS/FEMA or local alert originators? We note that the Integrated Public Alert and Warning System (IPAWS) Modernization Act of 2015 places FEMA in the position of implementing the public alert and warning system to disseminate timely and effective warnings, including by consulting and coordinating with the FCC; coordinating with the appropriate private sector entities and Federal, State, tribal, and local governmental authorities; and establishing or adopting, as appropriate, common alerting and warning protocols, standards, terminology, and operating procedures for the public alert and warning system.¹¹⁴

45. We seek comment on the costs and benefits of this proposal. What costs or burdens, if any, would fall on SECCs or state, local, Tribal and territorial emergency alert originators and managers, by the inclusion of the state and local alerting procedures in State EAS Plans, as described above? What quantifiable benefits might be expected to result from such action? To the extent including state and local alerting procedures in State EAS Plans might prevent false alerts from occurring, and speed corrective action with respect to any false alerts that might issue, would the potential benefits of such outcomes,

¹¹³ See *Alert Reporting System Order*, Appendix D.

¹¹⁴ See 6 U.S.C. § 321o (referencing the Integrated Public Alert and Warning System Modernization Act of 2015, Pub. L. No. 114-143, 130 Stat. 327, 329-32, §§ 2 (a)-(b) (2016)).

such as minimizing public confusion and disruptions caused by false alerts, outweigh whatever burdens might be associated with that process? Would the inclusion of this information in State EAS Plans more generally enhance the efficacy of state and local alerting?

C. Delivery of WEA to Subscriber Handsets.

46. In the *Report on Hawaii False Alert*, the Bureau indicated that some wireless subscribers did not receive either the false alert or the subsequent correction over WEA.¹¹⁵ Further, news reports in connection with the recent National Capital Region end-to-end WEA test,¹¹⁶ the recent Vail Colorado test and Ellicott City floods indicate that some subscribers did not receive timely WEA tests or alerts.¹¹⁷ Wireless providers have identified possible reasons that members of the public, who have not opted out of receipt of WEA alerts on their mobile devices, may not receive a particular WEA message, including (1) whether a mobile device can receive WEA messages; (2) whether the mobile device falls within the radio coverage of a cell site transmitting a WEA message and is not impacted with adverse radio frequency conditions such as interference, building or natural obstructions, etc.; (3) whether a handset is being served by a 3G cell site during a voice call or data session (in which case a WEA message would not be received until the voice or data session is ended); and (4) whether the device remains connected to the provider's network.¹¹⁸ Are there other reasons why a WEA may not be received by a member of the public? For example, could there be network distribution issues that would cause some members of the public to receive a WEA but not others, even where they are in close proximity and/or use the same wireless service provider and/or handset? Are WEA alert messages broadcast from all cell sites inside the alert's geo-targeted area? What about an instance where the consumer inside the geo-targeted area may be served by a tower outside the geo-targeted area? Will the manner of delivering a WEA message to a mobile device within a geo-targeted area change after the Commission's new geolocation rules go into effect in November of 2019, and if so, how?¹¹⁹ Is it possible that due to certain network conditions, such as congestion, certain cell sites within the alert's geo-target area may not transmit a particular alert message? Are there any network conditions or resource scheduler-related issues that may cause the Participating CMS Provider's network to delay or fail to transmit WEA alert messages that it has received from IPAWS? We also invite commenters to address what, if any, role that handsets and handset manufacturers play in ensuring WEA capable devices can receive WEA alerts.

47. How should WEA performance be measured and reported? We are concerned that inconsistent WEA delivery not only fails to deliver potentially life-saving information to the public, but also can erode consumer confidence in alerting systems. Accordingly, we seek comment regarding WEA delivery issues that stakeholders have encountered or are aware of, either in connection with a live alert or

¹¹⁵ See *Report on Hawaii False Alert* at 19.

¹¹⁶ *Improving Wireless Emergency Alerts and Community-Initiated Alerting*, PS Docket No. 15-91, Order, DA 18-262 (PSHSB Mar. 16, 2018).

¹¹⁷ See, e.g., Howard Buskirk, *DC Area Conducts WEA Test With Some Gaps as Officials Seek Public Input*, Communications Daily (April 5, 2018); Marissa J. Lang and Lynh Bui, *In first test of D.C. area emergency alert system, some phones beeped and buzzed. Others stayed silent.*, Washington Post (April 5, 2018), https://www.washingtonpost.com/local/in-first-test-of-dc-area-emergency-alert-system-some-phones-beeped-and-buzzed-others-stayed-silent/2018/04/05/5012f37e-38e5-11e8-acd5-35eac230e514_story.html?noredirect=on&utm_term=.2e1fee04936b. We observe that the Metropolitan Washington Council of Governments (MWCOC) has not yet released the results from this test. See also <https://www.vaildaily.com/news/police-fire-chiefs-have-several-takeaways-from-recent-vail-emergency-notification-test/> (Vail survey indicated that some people within the test area did not receive the test alert); <http://www.baltimoresun.com/news/weather/bs-md-flooding-monday-20180604-story.html> (Some residents reported that WEA alerts arrived too late).

¹¹⁸ See *Report on Hawaii False Alert* at 21.

¹¹⁹ See *Wireless Emergency Alerts; Amendments to Part 11 of the Commission's Rules Regarding the Emergency Alert System*, Second Report and Order and Second Order on Reconsideration, 33 FCC Rcd 1320 (2018).

with a regional end-to-end test.¹²⁰

48. We further seek comment on how stakeholders could report WEA performance. For example, could consumers and emergency first responders use phone apps to report back information after they receive an alert? Commenters should discuss the technical feasibility, usefulness, and desirability of this option. Are there other technical ways to get feedback automatically from a WEA recipient? What might the appropriate data points look like? Who should receive such data, and how would it be protected? Further, now that URLs have begun to be provided in WEA alerts,¹²¹ should the Commission develop a testing template for state and local governments that want to test the effectiveness of WEA alerts, including how precisely WEA alerts geotarget the desired area for various carriers?

49. We also seek comment on whether and if so, how, the Commission should take measures to address inconsistent WEA delivery. For example, should the Commission adopt technical standards (or benchmarks) for WEA performance and delivery? What form should these take? Should these be focused on internal network performance or mobile device performance, or both? Is there any practical way to ameliorate the impact of external factors (such as interference, building or natural obstructions, etc.) on WEA delivery? Should the Commission adopt rules related to WEA performance (and if so, what form should those take), or would best practices be sufficient? What are the costs and benefits of the various options available to address inconsistent WEA delivery?

V. PROCEDURAL MATTERS

50. *Ex Parte Rules.*—The proceeding this Further Notice of Proposed Rulemaking initiates shall be treated as “permit-but-disclose” proceedings in accordance with the Commission’s *ex parte* rules.¹²² Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must: (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made; and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter’s written comments, memoranda, or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with rule 1.1206(b). In proceedings governed by rule 1.49(f) or for which the Commission has made available a method of electronic filing, written *ex parte* presentations and memoranda summarizing oral *ex parte* presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (e.g., .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission’s *ex parte* rules.

51. *Comment Filing Procedures.*—Pursuant to Sections 1.415 and 1.419 of the Commission’s rules, 47 CFR §§ 1.415, 1.419, interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments may be filed using the

¹²⁰ The Bureau has previously granted waivers to permit end-to-end tests of WEA on a case by case basis. *See, e.g., Improving Wireless Emergency Alerts and Community-Initiated Alerting*, PS Docket No. 15-91, Order, DA 18-262 (PSSSB Mar. 16, 2018).

¹²¹ The five largest Participating CMS Providers have been required to support embedded URLs and other embedded references in WEA messages since November 1, 2017; all other Participating CMS Providers have until May 1, 2019, to comply with this requirement. *See Wireless Emergency Alerts; Amendments to Part 11 of the Commission’s Rules Regarding the Emergency Alert System*, PS Docket Nos. 15-91, 15-94, Order on Reconsideration, 32 FCC Rcd 9621, 9624-26, paras. 9-12 (2017).

¹²² 47 CFR §§ 1.1200 – 1.1216.

Commission's Electronic Comment Filing System (ECFS). *See Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121 (1998).

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: <http://fjallfoss.fcc.gov/ecfs2/>.
- Paper Filers: Parties that choose to file by paper must file an original and one copy of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.

Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

- All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th St., SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of before entering the building.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9050 Junction Drive, Annapolis Junction, MD 20701.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.

52. *Accessible Formats.*—To request materials in accessible formats for people with disabilities (Braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty).

53. *Initial Regulatory Flexibility Analysis.*—As required by the Regulatory Flexibility Act of 1980, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities of the policies and rules addressed in this document. The IRFA is set forth in Appendix D. Written public comments are requested in the IRFA. These comments must be filed in accordance with the same filing deadlines as comments filed in response to this Notice, as set forth on the first page of this document, and have a separate and distinct heading designating them as responses to the IRFA.

54. *Final Regulatory Analysis.*—As required by the Regulatory Flexibility Act of 1980,¹²³ the Commission has prepared a Final Regulatory Flexibility Analysis (FRFA) of the significant economic impact on small entities of the policies and rules adopted in this document. The FRFA is set forth in Appendix C.

55. *Paperwork Reduction Analysis.*—We note that pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198,¹²⁴ we previously sought specific comment on how the Commission might “further reduce the information collection burden for small business concerns with fewer than 25 employees.”¹²⁵ In addition, we have described impacts that might affect small businesses, which includes most businesses with fewer than 25 employees, in the FRFA in Appendix C, *infra*.

56. The *Further Notice of Proposed Rulemaking* in this document contains proposed new and modified information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public and the Office of Management and Budget (OMB) to comment on the information collection requirements contained in this document, as required by the

¹²³ See 5 U.S.C. § 604.

¹²⁴ See 44 U.S.C. § 3506(c)(4).

¹²⁵ See *Notice*, 31 FCC Rcd at 676, Appx. B.

Paperwork Reduction Act of 1995 (PRA).¹²⁶ Public and agency comments are due 60 days after publication of this document in the Federal Register. 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.” The Commission will submit the *Further Notice of Proposed Rulemaking* to the Office of Management and Budget for review under Section 3507(d) of the PRA.

57. We specifically seek comment on the time and cost burdens associated with the voluntary false alert and lockout, and State EAS Plan reporting proposals contained in the *Further Notice of Proposed Rulemaking* and whether there are ways of minimizing the costs burdens associated therewith.

58. *Congressional Review Act.*—The Commission will send a copy of this Order to Congress and the Government Accountability Office pursuant to the Congressional Review Act (“CRA”), *see* 5 U.S.C. § 801(a)(1)(A).

VI. ORDERING CLAUSES

59. Accordingly, IT IS ORDERED, pursuant to Sections 1, 2, 4(i), 4(o), 301, 303(r), 303(v), 307, 309, 335, 403, 624(g), 706, and 713 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 152, 154(i), 154(o), 301, 303(r), 303(v), 307, 309, 335, 403, 544(g), 606, and 613, as well as by sections 602(a),(b),(c), (f), 603, 604 and 606 of the WARN Act, 47 U.S.C. §§ 1202(a),(b),(c), (f), 1203, 1204 and 1206, and the *Twenty-First Century Communications and Video Accessibility Act of 2010*, Pub. L. No. 111-260 and Pub. L. No. 111-265, that the *Report and Order and Further Notice of Proposed Rulemaking* in PS Docket No. 15-94 IS HEREBY ADOPTED.

60. IT IS FURTHER ORDERED that the Commission’s rules ARE HEREBY AMENDED as set forth in Appendix A.

61. IT IS FURTHER ORDERED that the rules adopted herein WILL BECOME EFFECTIVE on the dates set forth in paragraphs 15-16, 30-31 above.¹²⁷

62. IT IS FURTHER ORDERED that the Commission’s Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this *Report and Order and Further Notice of Proposed Rulemaking*, including the Final Regulatory Flexibility Analysis and Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

¹²⁶ *See* Paperwork Reduction Act of 1995, Public Law 104-13.

¹²⁷ *See supra* paras. 15-16, 30-31.

APPENDIX A**Final Rules**

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR Part 11 to read as follows:

PART 11 – EMERGENCY ALERT SYSTEM (EAS)

1. Amend § 11.33 by revising paragraph (a)(10) to read as follows:

§ 11.33 EAS Decoder.

(a) * * *

(10) Message Validity. An EAS Decoder must provide error detection and validation of the header codes of each message to ascertain if the message is valid. Header code comparisons may be accomplished through the use of a bit-by-bit compare or any other error detection and validation protocol. A header code must only be considered valid when two of the three headers match exactly; the Origination Date/Time field (JJJHHMM) is not more than 15 minutes in the future and the expiration time (Origination Date/Time plus Valid Time TTTT) is in the future (i.e., current time at the EAS equipment when the alert is received is between origination time minus 15 minutes and expiration time). Duplicate messages must not be relayed automatically.

* * * * *

2. Revise § 11.45 to read as follows:

§ 11.45 Prohibition of false or deceptive EAS transmissions.

(a) No person may transmit or cause to transmit the EAS codes or Attention Signal, or a recording or simulation thereof, in any circumstance other than in an actual National, State or Local Area emergency or authorized test of the EAS; or as specified in §§ 10.520(d), 11.46, and 11.61 of this chapter.

(b) No later than twenty-four (24) hours of an EAS Participant's discovery (i.e., actual knowledge) that it has transmitted or otherwise sent a false alert to the public, the EAS Participant send an email to the Commission at the FCC Ops Center at FCCOPS@fcc.gov, informing the Commission of the event and of any details that the EAS Participant may have concerning the event.

* * * * *

3. Revise § 11.46 to read as follows:

§ 11.46 EAS public service announcements.

EAS Participants may use the EAS Attention Signal and a simulation of the EAS codes as provided by FEMA in EAS Public Service Announcements (PSAs) (including commercially-sponsored announcements, infomercials, or programs) provided by federal, state, and local government entities, or non-governmental organizations, to raise public awareness about emergency alerting. This usage is only permitted if the PSA is presented in a non-misleading and technically harmless manner, including with the explicit statement that the Attention Signal and EAS code simulation are being used in the context of a PSA for the purpose of educating the viewing or listening public about emergency alerting.

* * * * *

4. Amend § 11.56 by redesignating paragraph (c) as paragraph (d) and adding new paragraph (c) to read as follows:

§ 11.56 Obligation to process CAP-formatted EAS messages.

* * * * *

(c) EAS Participants shall configure their systems to reject all CAP-formatted EAS messages that include an invalid digital signature.

* * * * *

5. Amend § 11.61 by adding (a)(5) to read as follows:

§ 11.61 Tests of EAS procedures.

(a) * * * * *

(5) Live Code Tests. EAS Participants may participate in no more than two (2) “Live Code” EAS Tests per calendar year that are conducted to exercise the EAS and raise public awareness for it, provided that the entity conducting the test:

(i) Notifies the public before the test that live event codes will be used, but that no emergency is, in fact, occurring;

(ii) to the extent technically feasible, states in the test message that the event is only a test;

(iii) Coordinates the test among EAS Participants and with state and local emergency authorities, the relevant SECC (or SECCs, if the test could affect multiple states), and first responder organizations, such as PSAPs, police, and fire agencies); and,

(iv) Consistent with § 11.51 of this part, provides in widely accessible formats the notification to the public required by this subsection that the test is only a test, and is not a warning about an actual emergency.

* * * * *

APPENDIX B**Proposed Rules**

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR Part 11 to read as follows:

PART 11 – EMERGENCY ALERT SYSTEM (EAS)

1. Amend § 11.21 by adding new paragraph (g) to read as follows:

§ 11.21 State and Local Area plans and FCC Mapbook.

* * * * *

(g) The State EAS Plan must contain procedures implemented within the state to prevent and correct false alerts initiated over the EAS and Wireless Emergency Alert systems, including:

(1) The standard operating procedures that state and local alert initiators follow to prepare for “live code” and other public facing EAS tests and alerts.

(2) The standard operating procedures that state and local alert initiators have developed for the reporting and correction of false alerts, including how the alert initiator would issue any corrections to false alerts over the same systems used to issue the false alert, including the EAS and WEA.

(3) The procedures agreed upon by the SECC and state emergency management agency or other State-authorized alert initiator by which they plan to consult with each other on a regular basis to ensure that EAS procedures, including initiation and cancellation of actual alerts and tests, are mutually understood, agreed upon, and documented in the State EAS Plan.

(4) The procedures ensuring redundant and effective lines of communication between the SECC and key stakeholders during emergencies.

(5) Other information that could prevent or mitigate the issuance of false alerts.

Where the state and local emergency management authorities either do not have or will not share the foregoing information with the SECC, the SECC must specifically note that in the EAS Plan.

* * * * *

APPENDIX C

Final Regulatory Flexibility 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 Notice of Proposed Rulemaking (*Notice*) released in January 2016.² The Commission sought written public comment on the proposals in the *Notice*, including comment on the IRFA. No comments were filed addressing the IRFA. This present Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.³

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

2. In today's Report and Order (*Order*), the Commission adopts rules that fall into two categories: (1) building stronger alerting exercise programs and greater awareness of the EAS; and (2) taking steps to ensure the readiness and reliability of the EAS to protect it against accidental misuse and malicious intrusion.

3. With respect to building effective public safety exercises and supporting greater testing and awareness of the EAS, the Commission permits the use of "live code" EAS public safety exercises to empower communities to meet their emergency preparedness needs and to provide opportunities for system verification and proficiency training. We also allow EAS Participants to use the EAS Attention Signal and simulation of the header codes in Public Service Announcements (PSAs) provided by federal, state, and local government entities, as well as non-governmental organizations (NGOs) to raise public awareness about emergency alerting.

4. With respect to taking steps to ensure the readiness and reliability of the EAS, we require EAS Participants, upon discovery (i.e., actual knowledge) that they have transmitted or otherwise sent a false alert to the public, to provide minimal reports to the Commission. We also require EAS Participants to reject any CAP-formatted EAS messages that contain an invalid digital signature, and require EAS Participants to reject all EAS alerts that they receive with header code date/time data inconsistent with the current date and time.

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

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

C. Response to Comments by the Chief Counsel for Advocacy of the Small Business Administration

6. Pursuant to the Small Business Jobs Act of 2010, which amended the RFA, the Commission is required to respond to any comments filed by the Chief Counsel for Advocacy of the Small Business Administration (SBA), and to provide a detailed statement of any change made to the proposed rules as a result of those comments.⁴

7. The Chief Counsel did not file any comments in response to the proposed rules in this proceeding.

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 *Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System, Wireless Emergency Alerts*, PS Docket Nos. 15-94 and 15-91, Notice of Proposed Rulemaking, 31 FCC Rcd 594, Appx. B (2016) (*Notice*).

³ See 5 U.S.C. § 604.

⁴ 5 U.S.C. § 604(a)(3).

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

8. 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 SBA.⁸

9. *Small Businesses, Small Organizations, and Small Governmental Jurisdictions.* Our actions, over time, may affect small entities that are not easily categorized at present. We therefore describe here, at the outset, three broad groups of small entities that could be directly affected herein.⁹ First, while there are industry specific size standards for small businesses that are used in the regulatory flexibility analysis, according to data from the SBA’s Office of Advocacy, in general a small business is an independent business having fewer than 500 employees.¹⁰ These types of small businesses represent 99.9% of all businesses in the United States which translates to 28.8 million businesses.¹¹

10. Next, the type of small entity described as a “small organization” is generally “any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.”¹² Nationwide, as of Aug. 2016, there were approximately 356,494 small organizations based on registration and tax data filed by nonprofits with the Internal Revenue Service (IRS).¹³

11. Finally, the small entity described as a “small governmental jurisdiction” is defined generally as “governments of cities, counties, towns, townships, villages, school districts, or special

⁵ See *id.* § 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, Question 1 – What is a small business?” https://www.sba.gov/sites/default/files/advocacy/SB-FAQ-2016_WEB.pdf (June 2016).

¹¹ See SBA, Office of Advocacy, “Frequently Asked Questions, Question 2- How many small business are there in the U.S.?” https://www.sba.gov/sites/default/files/advocacy/SB-FAQ-2016_WEB.pdf (June 2016).

¹² 5 U.S.C. § 601(4).

¹³ Data from the Urban Institute, National Center for Charitable Statistics (NCCS) reporting on nonprofit organizations registered with the IRS was used to estimate the number of small organizations. Reports generated using the NCCS online database indicated that as of August 2016 there were 356,494 registered nonprofits with total revenues of less than \$100,000. Of this number, 326,897 entities filed tax returns with 65,113 registered nonprofits reporting total revenues of \$50,000 or less on the IRS Form 990-N for Small Exempt Organizations and 261,784 nonprofits reporting total revenues of \$100,000 or less on some other version of the IRS Form 990 within 24 months of the August 2016 data release date. See <http://nccs.urban.org/sites/all/nccs-archive/html/tablewiz/tw.php> where the report showing this data can be generated by selecting the following data fields: Report: “The Number and Finances of All Registered 501(c) Nonprofits”; Show: “Registered Nonprofits”; By: “Total Revenue Level (years 1995, Aug to 2016, Aug)”; and For: “2016, Aug” then selecting “Show Results”.

districts, with a population of less than fifty thousand.”¹⁴ U.S. Census Bureau data from the 2012 Census of Governments¹⁵ indicates that there were 90,056 local governmental jurisdictions consisting of general purpose governments and special purpose governments in the United States.¹⁶ Of this number there were 37,132 General purpose governments (county¹⁷, municipal and town or township¹⁸) with populations of less than 50,000 and 12,184 Special purpose governments (independent school districts¹⁹ and special districts²⁰) with populations of less than 50,000. The 2012 U.S. Census Bureau data for most types of governments in the local government category shows that the majority of these governments have populations of less than 50,000.²¹ Based on this data we estimate that at least 49,316 local government jurisdictions fall in the category of “small governmental jurisdictions.”²²

12. *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.”²³ The SBA has established a small business

¹⁴ 5 U.S.C. § 601(5).

¹⁵ See 13 U.S.C. § 161. The Census of Government is conducted every five (5) years compiling data for years ending with “2” and “7”. See also Program Description Census of Government <https://factfinder.census.gov/faces/affhelp/jsf/pages/metadata.xhtml?lang=en&type=program&id=program.en.COG#>.

¹⁶ See U.S. Census Bureau, 2012 Census of Governments, Local Governments by Type and State: 2012 - United States-States. <https://factfinder.census.gov/bkmk/table/1.0/en/COG/2012/ORG02.US01>. Local governmental jurisdictions are classified in two categories - General purpose governments (county, municipal and town or township) and Special purpose governments (special districts and independent school districts).

¹⁷ See U.S. Census Bureau, 2012 Census of Governments, County Governments by Population-Size Group and State: 2012 - United States-States. <https://factfinder.census.gov/bkmk/table/1.0/en/COG/2012/ORG06.US01>. There were 2,114 county governments with populations less than 50,000.

¹⁸ See U.S. Census Bureau, 2012 Census of Governments, Subcounty General-Purpose Governments by Population-Size Group and State: 2012 - United States – States. <https://factfinder.census.gov/bkmk/table/1.0/en/COG/2012/ORG07.US01>. There were 18,811 municipal and 16,207 town and township governments with populations less than 50,000.

¹⁹ See U.S. Census Bureau, 2012 Census of Governments, Elementary and Secondary School Systems by Enrollment-Size Group and State: 2012 - United States-States. <https://factfinder.census.gov/bkmk/table/1.0/en/COG/2012/ORG11.US01>. There were 12,184 independent school districts with enrollment populations less than 50,000.

²⁰ See U.S. Census Bureau, 2012 Census of Governments, Special District Governments by Function and State: 2012 - United States-States. <https://factfinder.census.gov/bkmk/table/1.0/en/COG/2012/ORG09.US01>. [The U.S. Census Bureau data did not provide a population breakout for special district governments.](#)

²¹ See U.S. Census Bureau, 2012 Census of Governments, County Governments by Population-Size Group and State: 2012 - United States-States - <https://factfinder.census.gov/bkmk/table/1.0/en/COG/2012/ORG06.US01>; Subcounty General-Purpose Governments by Population-Size Group and State: 2012 - United States–States - <https://factfinder.census.gov/bkmk/table/1.0/en/COG/2012/ORG07.US01>; and Elementary and Secondary School Systems by Enrollment-Size Group and State: 2012 - United States-States. <https://factfinder.census.gov/bkmk/table/1.0/en/COG/2012/ORG11.US01>. [While U.S. Census Bureau data did not provide a population breakout for special district governments, if the population of less than 50,000 for this category of local government is consistent with the other types of local governments the majority of the 38,266 special district governments have populations of less than 50,000.](#)

²² *Id.*

²³ U.S. Census Bureau, 2017 NAICS Definition, “515112 Radio Stations,” <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?input=515112&search=2017+NAICS+Search&search=2017>.

size standard for this category as firms having \$38.5 million or less in annual receipts.²⁴ Economic Census data for 2012 shows that 2,849 radio station firms operated during that year.²⁵ Of that number, 2,806 operated with annual receipts of less than \$25 million per year, 17 with annual receipts between \$25 million and \$49,999,999 million and 26 with annual receipts of \$50 million or more.²⁶ Therefore, based on the SBA's size standard the majority of such entities are small entities.

13. According to Commission staff review of the BIA/Kelsey, LLC's Media Access Pro Radio Database as of January 2018, about 11,261 (or about 99.9 percent) of 11,383 commercial radio stations had revenues of \$38.5 million or less and thus qualify as small entities under the SBA definition.²⁷ The Commission has estimated the number of licensed commercial AM radio stations to be 4,639 stations and the number of commercial FM radio stations to be 6,744, for a total number of 11,383.²⁸ We note, that the Commission has also estimated the number of licensed NCE radio stations to be 4,120.²⁹ Nevertheless, the Commission does not compile and otherwise does not have access to information on the revenue of NCE stations that would permit it to determine how many such stations would qualify as small entities.

14. We also note, that in assessing whether a business entity qualifies as small under the above definition, business control affiliations must be included.³⁰ The Commission's estimate therefore likely overstates the number of small entities that might be affected by its action, because the revenue figure on which it is based does not include or aggregate revenues from affiliated companies. In addition, to be determined a "small business," an entity may not be dominant in its field of operation.³¹ We further note, that it is difficult at times to assess these criteria in the context of media entities, and the estimate of small businesses to which these rules may apply does not exclude any radio station from the definition of a small business on this basis, thus our estimate of small businesses may therefore be over-inclusive. Also, as noted above, an additional element of the definition of "small business" is that the entity must be independently owned and operated. The Commission notes that it is difficult at times to assess these criteria in the context of media entities and the estimates of small businesses to which they apply may be over-inclusive to this extent.

15. *Low-Power FM Stations.* Low Power FM Stations are classified in the category of Radio Stations and are assigned the same NAICS Code as licensees of radio stations.³² This U.S. industry, Radio Stations, comprises establishments primarily engaged in broadcasting aural programs by radio to the public.³³ Programming may originate in their own studio, from an affiliated network, or from external

²⁴ 13 CFR § 121.201; NAICS code 515112.

²⁵ U.S. Census Bureau, Table No. EC1251SSSZ4, *Information: Subject Series - Establishment and Firm Size: Receipts Size of Firms for the United States: 2012* NAICS Code 515112, https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ4//naics~515112.

²⁶ *Id.*

²⁷ BIA/Kelsey, MEDIA Access Pro Database (viewed Jan. 26, 2018).

²⁸ Broadcast Station Totals as of December 31, 2017, Press Release (MB Jan. 5, 2018) (January 2018 Broadcast Station Totals), https://apps.fcc.gov/edocs_public/attachmatch/DOC-348570A1.pdf.

²⁹ *Id.*

³⁰ "[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 power to control both." 13 CFR § 121.103(a)(1).

³¹ 13 CFR § 121.102(b).

³² See, U.S. Census Bureau, 2017 NAICS Definitions, "515112 Radio Stations," <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?input=515112&search=2017+NAICS+Search&search=2017>.

³³ *Id.*

sources.³⁴ The SBA has established a small business size standard which consists of all radio stations whose annual receipts are \$38.5 million dollars or less.³⁵ U.S. Census data for 2012 indicates that 2,849 radio station firms operated during that year.³⁶ Of that number, 2,806 operated with annual receipts of less than \$25 million per year, 17 with annual receipts between \$25 million and \$49,999,999 million and 26 with annual receipts of \$50 million or more.³⁷ Based on U.S. Census data, we conclude that the majority of Low Power FM Stations are small.

16. *Television Broadcasting.* This Economic Census category “comprises establishments primarily engaged in broadcasting images together with sound.”³⁸ These establishments operate television broadcast studios and facilities for the programming and transmission of programs to the public.³⁹ These establishments also produce or transmit visual programming to affiliated broadcast television stations, which in turn broadcast the programs to the public on a predetermined schedule. Programming may originate in their own studio, from an affiliated network, or from external sources. The SBA has created the following small business size standard for such businesses: those having \$38.5 million or less in annual receipts.⁴⁰ The 2012 Economic Census reports that 751 firms in this category operated in that year.⁴¹ Of that number, 656 had annual receipts of \$25,000,000 or less, 25 had annual receipts between \$25,000,000 and \$49,999,999 and 70 had annual receipts of \$50,000,000 or more.⁴² Based on this data we therefore estimate that the majority of commercial television broadcasters are small entities under the applicable SBA size standard.

17. The Commission has estimated the number of licensed commercial television stations to be 1,378.⁴³ Of this total, 1,258 stations (or about 91 percent) had revenues of \$38.5 million or less, according to Commission staff review of the BIA Kelsey Inc. Media Access Pro Television Database (BIA) on November 16, 2017, and therefore these licensees qualify as small entities under the SBA definition. In addition, the Commission has estimated the number of licensed noncommercial educational (NCE) television stations to be 395.⁴⁴ Notwithstanding, the Commission does not compile and otherwise does not have access to information on the revenue of NCE stations that would permit it to determine how many such stations would qualify as small entities. There are also 2,367 low power television stations, including Class A stations (LPTV) and 3,750 TV translator stations.⁴⁵ Given the nature of these services, we will presume that all of these entities qualify as small entities under the above SBA small business

³⁴ *Id.*

³⁵ 13 CFR § 121.201, NAICS code 515112 Radio Stations.

³⁶ U.S. Census Bureau, Table No. EC1251SSSZ4, *Information: Subject Series - Establishment and Firm Size: Receipts Size of Firms for the United States: 2012* (515112 Radio Stations), https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ4//naics~515112.

³⁷ *Id.*

³⁸ U.S. Census Bureau, 2012 NAICS Definitions, “515120 Television Broadcasting,” <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?input=515120&search=2017+NAICS+Search&search=2017>.

³⁹ *Id.*

⁴⁰ 13 CFR § 121.201; 2012 NAICS code 515120.

⁴¹ U.S. Census Bureau, Table No. EC1251SSSZ4, *Information: Subject Series - Establishment and Firm Size: Receipts Size of Firms for the United States: 2012* (515120 Television Broadcasting), https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ4//naics~515120.

⁴² *Id.*

⁴³ Broadcast Station Totals as of September 30, 2017 Press Release (MB Oct. 2, 2017) (September 30, 2017 Broadcast Station Totals), https://apps.fcc.gov/edocs_public/attachmatch/DOC-346998A1.pdf.

⁴⁴ *Id.*

⁴⁵ *Id.*

size standard.

18. We note, however, that in assessing whether a business concern qualifies as “small” under the above definition, business (control) affiliations⁴⁶ 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. In addition, another element of the definition of “small business” requires that an 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 broadcast 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. Also, as noted above, an additional element of the definition of “small business” is that the entity must be independently owned and operated. The Commission notes that it is difficult at times to assess these criteria in the context of media entities and its estimates of small businesses to which they apply may be over-inclusive to this extent.

19. *Wired Telecommunications Carriers.* The U.S. Census Bureau defines this industry as “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 communications networks. Transmission facilities may be based on a single technology or a combination of technologies. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephony services, including VoIP services, wired (cable) audio and video programming distribution, and wired broadband internet services. By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry.”⁴⁷ The SBA has developed a small business size standard for Wired Telecommunications Carriers, which consists of all such companies having 1,500 or fewer employees.⁴⁸ U.S. Census Bureau data for 2012 shows that there were 3,117 firms that operated that year.⁴⁹ Of this total, 3,083 operated with fewer than 1,000 employees.⁵⁰ Thus, under this size standard, the majority of firms in this industry can be considered small.

20. *Cable and Other Subscription Programming.* This industry comprises establishments primarily engaged in operating studios and facilities for the broadcasting of programs on a subscription or fee basis. The broadcast programming is typically narrowcast in nature (e.g., limited format, such as news, sports, education, or youth-oriented). These establishments produce programming in their own facilities or acquire programming from external sources. The programming material is usually delivered to a third party, such as cable systems or direct-to-home satellite systems, for transmission to viewers.⁵¹ The SBA size standard for this industry establishes as small, any company in this category which has

⁴⁶ “[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 the power to control both.” 13 CFR § 21.103(a)(1).

⁴⁷ See 13 CFR § 120.201. The Wired Telecommunications Carrier category formerly used the NAICS code of 517110. As of 2017 the U.S. Census Bureau definition shows the NAICS code as 517311 for Wired Telecommunications Carriers. See, <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517311&search=2017>.

⁴⁸ *Id.*

⁴⁹ See U.S. Census Bureau, *2012 Economic Census of the United States*, Table No. EC1251SSSZ5, *Information: Subject Series - Estab & Firm Size: Employment Size of Firms: 2012* (517110 Wired Telecommunications Carriers). https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ5//naics~517110.

⁵⁰ *Id.*

⁵¹ U.S. Census Bureau, *2012 NAICS Definition: “515210 Cable and Other Subscription Programming”* <https://factfinder.census.gov/faces/affhelp/jsf/pages/metadata.xhtml?lang=en&type=ib&id=ib.en/ECN.NAICS2012.515210#>.

annual receipts of \$38.5 million or less.⁵² According to 2012 U.S. Census Bureau data, 367 firms operated for that entire year.⁵³ Of that number, 319 operated with annual receipts of less than \$25 million a year and 48 firms operated with annual receipts of \$25 million or more.⁵⁴ Based on this data, the Commission estimates that the majority of firms operating in this industry are small.

21. *Cable Companies and Systems (Rate Regulation)*. The Commission has developed its own small business size standards for the purpose of cable rate regulation. Under the Commission's rules, a "small cable company" is one serving 400,000 or fewer subscribers nationwide.⁵⁵ Industry data indicate that there are currently 4,600 active cable systems in the United States.⁵⁶ Of this total, all but nine cable operators nationwide are small under the 400,000-subscriber size standard.⁵⁷ In addition, under the Commission's rate regulation rules, a "small system" is a cable system serving 15,000 or fewer subscribers.⁵⁸ Current Commission records show 4,600 cable systems nationwide.⁵⁹ Of this total, 3,900 cable systems have fewer than 15,000 subscribers, and 700 systems have 15,000 or more subscribers, based on the same records.⁶⁰ Thus, under this standard as well, we estimate that most cable systems are small entities.

22. *Cable System Operators (Telecom Act Standard)*. 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 one 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."⁶¹ There are approximately 52,403,705 cable video subscribers in the United States today.⁶² Accordingly, an operator serving fewer than 524,037 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.⁶³ Based on available data, we find that all but nine incumbent cable operators are small entities under this size standard.⁶⁴ We note that the Commission neither requests nor collects information on whether cable system operators are affiliated with entities whose gross annual

⁵² See 13 CFR § 121.201, NAICS Code 515210.

⁵³ See U.S. Census Bureau, *2012 Economic Census of the United States*, Table EC1251SSSZ4, Information: Subject Series - Estab & Firm Size: Receipts Size of Firms for the U.S.: 2012, NAICS Code 515210, https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ4//naics~515210.

⁵⁴ *Id.* Available census data does not provide a more precise estimate of the number of firms that have receipts of \$38.5 million or less.

⁵⁵ 47 CFR § 76.901(e).

⁵⁶ The number of active, registered cable systems comes from the Commission's Cable Operations and Licensing System (COALS) database on August 15, 2015. See FCC, *Cable Operations and Licensing System (COALS)*, www.fcc.gov/coals (last visited Jan. 17, 2018).

⁵⁷ See SNL KAGAN, *Top Cable MSOs*, <https://www.snl.com/Interactivex/TopCableMSOs.aspx> (last visited Oct. 25, 2016).

⁵⁸ 47 CFR § 76.901(c).

⁵⁹ See *supra* note 56.

⁶⁰ See FCC, *Cable Operations and Licensing System (COALS)*, www.fcc.gov/coals (last visited Jan. 17, 2018).

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

⁶² See SNL KAGAN, *Multichannel Industry Benchmarks*, <https://www.snl.com/interactivex/MultichannelIndustryBenchmarks.aspx> (last visited Oct. 25, 2016).

⁶³ See 47 CFR § 76.901(f) & nn.1-3.

⁶⁴ See SNL KAGAN, *Top Cable MSOs*, <https://www.snl.com/Interactivex/TopCableMSOs.aspx> (last visited Oct. 25, 2016).

revenues exceed \$250 million.⁶⁵ Although it seems certain that some of these cable system operators are affiliated with entities whose gross annual revenues exceed \$250,000,000, we are unable at this time to estimate with greater precision the number of cable system operators that would qualify as small cable operators under the definition in the Communications Act.

23. *Satellite Telecommunications.* This category comprises firms “primarily engaged in providing telecommunications services to other establishments in the telecommunications and broadcasting industries by forwarding and receiving communications signals via a system of satellites or reselling satellite telecommunications.”⁶⁶ Satellite telecommunications service providers include satellite and earth station operators. The category has a small business size standard of \$32.5 million or less in average annual receipts under SBA rules.⁶⁷ For this category, U.S. Census Bureau data for 2012 shows that there were a total of 333 firms that operated for the entire year.⁶⁸ Of this total, 299 firms had annual receipts of less than \$25 million.⁶⁹ Consequently, we estimate that the majority of satellite telecommunications providers are small entities.

24. *All Other Telecommunications.* The “All Other Telecommunications” category is comprised of establishments primarily engaged in providing specialized telecommunications services, such as satellite tracking, communications telemetry, and radar station operation.⁷⁰ This industry also includes establishments primarily engaged in providing satellite terminal stations and associated facilities connected with one or more terrestrial systems and capable of transmitting telecommunications to, and receiving telecommunications from, satellite systems.⁷¹ Establishments providing Internet services or voice over Internet protocol (VoIP) services via client-supplied telecommunications connections are also included in this industry.⁷² The SBA has developed a small business size standard for All Other Telecommunications, which consists of all such firms with annual receipts of \$ 32.5 million or less.⁷³ For this category, U.S. Census Bureau data for 2012 shows that there were 1,442 firms that operated for the entire year.⁷⁴ Of those firms, a total of 1,400 had annual receipts less than \$25 million and 42 firms had annual receipts of \$25 million to \$49, 999,999.⁷⁵ Thus, the Commission estimates that the majority of “All Other Telecommunications” firms potentially affected by our action can be considered small.

25. *The Educational Broadcasting Services.* Cable-based Educational Broadcasting Services

⁶⁵ The Commission receives 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 Section 76.901(f) of the Commission’s rules. See 47 CFR § 76.901(f).

⁶⁶ U.S. Census Bureau, 2012 NAICS Definitions: “517410 Satellite Telecommunications”, <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?input=517410&search=2017+NAICS+Search&search=2017>.

⁶⁷ 13 CFR § 121.201, NAICS code 517410.

⁶⁸ U.S. Census Bureau, 2012 Economic Census of the United States, Table. EC1251SSSZ4, Information: Subject Series - Estab and Firm Size: Receipts Size of Firms for the United States: 2012, NAICS code 517410 https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ4//naics~517410.

⁶⁹ *Id.*

⁷⁰ See U.S. Census Bureau, 2017 NAICS Definitions, NAICS Code “517919 All Other Telecommunications”, <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?input=517919&search=2017+NAICS+Search&search=2017>.

⁷¹ *Id.*

⁷² *Id.*

⁷³ See 13 CFR § 121.201, NAICS code 517919.

⁷⁴ U.S. Census Bureau, 2012 Economic Census of the United States, Table EC1251SSSZ4, Information: Subject Series - Estab and Firm Size: Receipts Size of Firms for the United States: 2012, NAICS code 517919, https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ4//naics~517919.

⁷⁵ *Id.*

have been included in the broad economic census category and Small Business Administration (SBA) size standard for Wired Telecommunications Carriers since 2007. Wired Telecommunications Carriers, which was developed for small wireline businesses 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. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephony services, including VoIP services; wired (cable) audio and video programming distribution; and wired broadband Internet services.”⁷⁶ The SBA has developed a small business size standard for this category, which is all such businesses having 1,500 or fewer employees.⁷⁷ U.S. Census data for 2012 shows that there were 3,117 firms that operated that year. Of this total, 3,083 operated with fewer than 1,000 employees.⁷⁸ Thus, under this size standard, the majority of firms in this industry can be considered small. In addition to Census Bureau data, the Commission’s internal records indicate that, as of October 2014, there were 2,206 active EBS licenses.⁷⁹ The Commission estimates that of these 2,206 licenses, the majority are held by non-profit educational institutions and school districts, which are defined by statute as small businesses.⁸⁰

26. *Direct Broadcast Satellite (DBS) Service.* DBS Service is a nationally distributed subscription service that delivers video and audio programming via satellite to a small parabolic “dish” antenna at the subscriber’s location. DBS is included in the SBA’s economic census category “Wired Telecommunications Carriers.”⁸¹ The Wired Telecommunications Carriers 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.⁸² Transmission facilities may be based on a single technology or combination of technologies. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephone services, including

⁷⁶ U.S. Census Bureau, *2012 NAICS Definition: 517110 Wired Telecommunications Carriers*, (providing a partial definition). <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517311&search=2017>. Examples of this category are: broadband Internet service providers (e.g., cable, DSL); local telephone carriers (wired); cable television distribution services; long-distance telephone carriers (wired); closed circuit television (CCTV) services; VoIP service providers, using owner operated wired telecommunications infrastructure; direct-to-home satellite system (DTH) services; telecommunications carriers (wired); satellite television distribution systems; and multichannel multipoint distribution services (MMDS).

⁷⁷ 13 CFR § 121.201. The Wired Telecommunications Carrier category formerly used the NAICS code of 517110. As of 2017 the U.S. Census Bureau definition shows the NAICS code as 517311 for Wired Telecommunications Carriers. See, <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517311&search=2017>.

⁷⁸ *Id.*

⁷⁹ FCC, *Universal Licensing System*, http://wireless2.fcc.gov/UlsApp/UlsSearch/results.jsp;JSESSIONID_ULS_SEARCH=wJ50JkbCQKvNWBjv1s0ZZWQQs1FnmNDjQwvSHsDG2FHSyGV6hdf!2036946231-701794836 (last visited Oct. 24, 2016).

⁸⁰ The term “small entity” within the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA) applies to small organizations (non-profits) and to small governmental jurisdictions (cities, counties, towns, townships, villages, school districts, and special districts with populations of less than 50,000). 5 U.S.C. § 601(4)-(6).

⁸¹ See 13 CFR § 120.201. The Wired Telecommunications Carrier category formerly used the NAICS code of 517110. As of 2017 the U.S. Census Bureau definition shows the NAICS code as 517311 for Wired Telecommunications Carriers. See, <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517311&search=2017>.

⁸² *Id.*

VoIP services, wired (cable) audio, and video programming distribution, and wired broadband Internet services.⁸³ By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry.⁸⁴ The SBA determines that a wireline business is small if it has fewer than 1,500 employees.⁸⁵ U.S. Census Bureau data for 2012 indicates that 3,117 wireline companies were operational during that year.⁸⁶ Of that number, 3,083 operated with fewer than 1,000 employees.⁸⁷ Based on that data, we conclude that the majority of wireline firms are small under the applicable standard. However, currently, only two entities provide DBS service, which requires a great deal of capital for operation: DIRECTV (owned by AT&T) and DISH Network.⁸⁸ DIRECTV and DISH Network each report annual revenues that are in excess of the threshold for a small business. Accordingly, we must conclude that internally developed FCC data are persuasive, that, in general, DBS service is provided only by large firms.

27. *Wireless Telecommunications Carriers (Except Satellite)*. This industry comprises establishments engaged in operating and maintaining switching and transmission facilities to provide communications via the airwaves. Establishments in this industry have spectrum licenses and provide services using that spectrum, such as cellular services, paging services, wireless internet access, and wireless video services.⁸⁹ The appropriate size standard under SBA rules is that such a business is small if it has 1,500 or fewer employees.⁹⁰ For this industry, U.S. Census data for 2012 shows that there were 967 firms that operated for the entire year.⁹¹ Of this total, 955 firms had fewer than 1,000 employees. Thus, under this category and the associated size standard, the Commission estimates that the majority of wireless telecommunications carriers (except satellite) are small entities.

28. The Commission's own data—available in its Universal Licensing System—indicate that, as of October 25, 2016, there are 280 Cellular licensees that will be affected by our actions today.⁹² The Commission does not know how many of these licensees are small, as the Commission does not collect that information for these types of entities. Similarly, according to internally developed Commission data, 413 carriers reported that they were engaged in the provision of wireless telephony, including

⁸³ See *id.* Examples of this category are: broadband Internet service providers (*e.g.*, cable, DSL); local telephone carriers (wired); cable television distribution services; long-distance telephone carriers (wired); CCTV services; VoIP service providers, using own operated wired telecommunications infrastructure; DTH services; telecommunications carriers (wired); satellite television distribution systems; and MMDS.

⁸⁴ *Id.*

⁸⁵ 13 CFR § 121.201, NAICS code 517110.

⁸⁶ See U.S. Census Bureau, *2012 Economic Census of the United States*, Table No. EC1251SSSZ5, *Information: Subject Series - Estab & Firm Size: Employment Size of Firms: 2012* (517110 Wired Telecommunications Carriers). https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ5//naics~517110.

⁸⁷ *Id.*

⁸⁸ See *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, Eighteenth Report, Table III.A.5, 32 FCC Rcd 568, 595 (Jan. 17, 2017).

⁸⁹ U.S. Census Bureau, *2012 NAICS Definitions*, “517210 Wireless Telecommunications Carriers (Except Satellite),” See <https://factfinder.census.gov/faces/affhelp/jsf/pages/metadata.xhtml?lang=en&type=ib&id=ib.en./ECN.NAICS2012.517210>.

⁹⁰ 13 CFR § 121.201, NAICS code 517210.

⁹¹ U.S. Census Bureau, *2012 Economic Census of the United States*, Table EC1251SSSZ5, *Information: Subject Series: Estab and Firm Size: Employment Size of Firms for the U.S.: 2012 NAICS Code 517210* (rel. Jan. 8, 2016). https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ5//naics~517210.

⁹² See <http://wireless.fcc.gov/uls>. For the purposes of this FRFA, consistent with Commission practice for wireless services, the Commission estimates the number of licensees based on the number of unique FCC Registration Numbers.

cellular service, Personal Communications Service (PCS), and Specialized Mobile Radio (SMR) services.⁹³ Of this total, an estimated 261 have 1,500 or fewer employees and 152 have more than 1,500 employees.⁹⁴ Thus, using available data, we estimate that the majority of wireless firms can be considered small.

29. *Broadband Personal Communications Service.* The broadband personal communications service (PCS) spectrum is divided into six frequency blocks designated A through F, and the Commission has held auctions for each block. The Commission initially defined a “small business” for C- and F-Block licenses as an entity that has average gross revenues of \$40 million or less in the three previous calendar years.⁹⁵ For F-Block licenses, an additional small business size standard for “very small business” was added and is defined as an entity that, together with its affiliates, has average gross revenues of not more than \$15 million for the preceding three calendar years.⁹⁶ These standards defining “small entity”, in the context of broadband PCS auctions, have been approved by the SBA.⁹⁷ No small businesses within the SBA-approved small business size standards bid successfully for licenses in Blocks A and B. There were 90 winning bidders that claimed small business status in the first two C-Block auctions. A total of 93 bidders that claimed small business status won approximately 40 percent of the 1,479 licenses in the first auction for the D-, E-, and F-Blocks.⁹⁸ On April 15, 1999, the Commission completed the reauction of 347 C-, D-, E-, and F-Block licenses in Auction No. 22.⁹⁹ Of the 57 winning bidders in that auction, 48 claimed small business status and won 277 licenses.

30. On January 26, 2001, the Commission completed the auction of 422 C- and F-Block Broadband PCS licenses in Auction No. 35. Of the 35 winning bidders in that auction, 29 claimed small business status.¹⁰⁰ Subsequent events concerning Auction No. 35, including judicial and agency determinations, resulted in a total of 163 C- and F-Block licenses being available for grant. On February 15, 2005, the Commission completed an auction of 242 C-, D-, E-, and F-Block licenses in Auction No. 58. Of the 24 winning bidders in that auction, 16 claimed small business status and won 156 licenses.¹⁰¹ On May 21, 2007, the Commission completed an auction of 33 licenses in the A-, C-, and F-Blocks in

⁹³ See Federal Communications Commission, Wireline Competition Bureau, Industry Analysis and Technology Division, Trends in Telephone Service at Table 5.3 (Sept. 2010) (*Trends in Telephone Service*), https://apps.fcc.gov/edocs_public/attachmatch/DOC-301823A1.pdf.

⁹⁴ See *id.*

⁹⁵ See *Amendment of Parts 20 and 24 of the Commission’s Rules – Broadband PCS Competitive Bidding and the Commercial Mobile Radio Service Spectrum Cap; Amendment of the Commission’s Cellular/PCS Cross-Ownership Rule*, WT Docket No. 96-59, GN Docket No. 90-314, Report and Order, 11 FCC Rcd 7824, 7850-52, paras. 57-60 (1996) (*PCS Report and Order*); see also 47 CFR § 24.720(b).

⁹⁶ See *PCS Report and Order*, 11 FCC Rcd at 7852, para. 60.

⁹⁷ See Letter from Aida Alvarez, Administrator, SBA, to Amy Zoslov, Chief, Auctions & Industry Analysis Division, Wireless Telecommunications Bureau, FCC, (Dec. 2, 1998) (*Alvarez Letter 1998*).

⁹⁸ See *D, E and F Block Auction Closes*, Public Notice, DA 97-81, 1 (Jan. 15, 1997) 1997 WL 20711.

⁹⁹ See *C, D, E, and F Block Broadband PCS Auction Closes*, Public Notice, 14 FCC Rcd 6688 (WTB 1999). Before Auction No. 22, the Commission established a very small standard for the C Block to match the standard used for F Block. *Amendment of the Commission’s Rules Regarding Installment Payment Financing for Personal Communications Services (PCS) Licensees*, WT Docket No. 97-82, Fourth Report and Order, 13 FCC Rcd 15743, 15768, para. 46 (1998).

¹⁰⁰ See *C and F Block Broadband PCS Auction Closes; Winning Bidders Announced*, Public Notice, 16 FCC Rcd 2339 (2001).

¹⁰¹ See *Broadband PCS Spectrum Auction Closes; Winning Bidders Announced for Auction No. 58*, Public Notice, 20 FCC Rcd 3703 (2005).

Auction No. 71.¹⁰² Of the 12 winning bidders in that auction, five claimed small business status and won 18 licenses.¹⁰³ On August 20, 2008, the Commission completed the auction of 20 C-, D-, E-, and F-Block Broadband PCS licenses in Auction No. 78.¹⁰⁴ Of the eight winning bidders for Broadband PCS licenses in that auction, six claimed small business status and won 14 licenses.¹⁰⁵

31. *Narrowband Personal Communications Services.* Two auctions of narrowband personal communications services (PCS) licenses have been conducted. To ensure meaningful participation of small business entities in future auctions, the Commission has adopted a two-tiered small business size standard in the *Narrowband PCS Second Report and Order*. Through these auctions, the Commission has awarded a total of 41 licenses, 11 of which were obtained by small businesses.¹⁰⁶ A “small business” is an entity that, together with affiliates and controlling interests, has average gross revenues for the three preceding years of not more than \$40 million. A “very small business” is an entity that, together with affiliates and controlling interests, has average gross revenues for the three preceding years of not more than \$15 million. The SBA has approved these small business size standards.¹⁰⁷

32. *700 MHz Guard Band Licensees.* In 2000, in the *700 MHz Guard Band Order*, the Commission adopted size standards for “small businesses” and “very small businesses” for purposes of determining their eligibility for special provisions such as bidding credits and installment payments.¹⁰⁸ A small business in this service is an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$40 million for the preceding three years.¹⁰⁹ Additionally, a very small business is an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than \$15 million for the preceding three years.¹¹⁰ SBA approval of these

¹⁰² See *Auction of Broadband PCS Spectrum Licenses Closes; Winning Bidders Announced for Auction No. 71*, Public Notice, 22 FCC Rcd 9247 (2007).

¹⁰³ *Id.*

¹⁰⁴ See *Auction of AWS-1 and Broadband PCS Licenses Closes; Winning Bidders Announced for Auction 78*, Public Notice, 23 FCC Rcd 12749 (WTB 2008).

¹⁰⁵ *Id.*

¹⁰⁶ *Amendment of the Commission’s Rules to Establish New Personal Communications Services, Narrowband PCS*, GEN Docket No. 90-314, ET Docket No. 92-100, and PP Docket No. 93-253, Second Report and Order and Second Further Notice of Proposed Rulemaking, 15 FCC Rcd 10456 (2000).

¹⁰⁷ See *Alvarez Letter 1998*.

¹⁰⁸ See *Service Rules for the 746-764 MHz Bands, and Revisions to Part 27 of the Commission’s Rules, Second Report and Order*, 15 FCC Rcd 5299 (2000). Service rules were amended in 2007, but no changes were made to small business size categories. See *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 (2007).

¹⁰⁹ See *id.* at 5343, para. 108.

¹¹⁰ See *id.*

definitions is not required.¹¹¹ An auction of 52 Major Economic Area (“MEA”) licenses commenced on September 6, 2000, and closed on September 21, 2000.¹¹² Of the 104 licenses auctioned, 96 licenses were sold to nine bidders. Five of these bidders were small businesses that won a total of 26 licenses. A second auction of 700 MHz Guard Band licenses commenced on February 13, 2001, and closed on February 21, 2001. All eight of the licenses auctioned were sold to three bidders. One of these bidders was a small business that won a total of two licenses.¹¹³

33. *Lower 700 MHz Band Licenses.* The Commission previously adopted criteria for defining three groups of small businesses for purposes of determining their eligibility for special provisions such as bidding credits.¹¹⁴ The Commission defined a “small business” as an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$40 million for the preceding three years.¹¹⁵ A “very small business” is defined as an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than \$15 million for the preceding three years.¹¹⁶ Additionally, the lower 700 MHz Service had a third category of small business status for Metropolitan/Rural Service Area (MSA/RSA) licenses—“entrepreneur”—which is defined as an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than \$3 million for the preceding three years.¹¹⁷ The SBA approved these small size standards.¹¹⁸ An auction of 740 licenses (one license in each of the 734 MSAs/RSAs and one license in each of the six Economic Area Groupings (EAGs)) commenced on August 27, 2002, and closed on September 18, 2002. Of the 740 licenses available for auction, 484 licenses were won by 102 winning bidders. Seventy-two of the winning bidders claimed small business, very small business or entrepreneur status and won a total of 329 licenses.¹¹⁹ A second auction commenced on May 28, 2003, closed on June 13, 2003, and included 256 licenses: 5 EAG licenses and 476 Cellular Market Area licenses.¹²⁰ Seventeen winning bidders claimed small or very small business status and won 60 licenses, and nine winning bidders claimed entrepreneur status and won 154 licenses.¹²¹ On July 26, 2005, the Commission completed an auction of five licenses in the Lower 700 MHz band (Auction No. 60). There were three winning bidders for five licenses. All three winning bidders claimed small business status.

34. In 2007, the Commission reexamined its rules governing the 700 MHz band in the *700 MHz Second Report and Order*.¹²² An auction of 700 MHz licenses commenced January 24, 2008, and

¹¹¹ See *id.* at 5343, para. 108 n.246 (noting that for the 746–764 MHz and 776–794 MHz bands, the Commission is exempt from 15 U.S.C. § 632, which requires federal agencies to obtain SBA approval before adopting small business size standards).

¹¹² See “700 MHz Guard Bands Auction Closes: Winning Bidders Announced,” Public Notice, 15 FCC Rcd 18026 (2000).

¹¹³ See “700 MHz Guard Bands Auction Closes: Winning Bidders Announced,” Public Notice, 16 FCC Rcd 4590 (WTB 2001).

¹¹⁴ See *Reallocation and Service Rules for the 698–746 MHz Spectrum Band (Television Channels 52–59)*, GN Docket No. 01-74, Report and Order, 17 FCC Rcd 1022 (2002) (*Channels 52–59 Report and Order*).

¹¹⁵ See *id.* at 1087-88, para. 172.

¹¹⁶ See *id.*

¹¹⁷ See *id.* at 1088, para. 173.

¹¹⁸ See *Alvarez Letter 1998*.

¹¹⁹ See *Lower 700 MHz Band Auction Closes*, Public Notice, 17 FCC Rcd 17272 (WTB 2002).

¹²⁰ See *id.*

¹²¹ See *id.*

¹²² *Service Rules for the 698–746, 747–762 and 777–792 MHz Band; Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems; Section 68.4(a) of the Commission’s Rules*

closed on March 18, 2008, which included: 176 Economic Area licenses in the A-Block, 734 Cellular Market Area licenses in the B-Block, and 176 EA licenses in the E-Block.¹²³ Twenty winning bidders, claiming small business status (those with attributable average annual gross revenues that exceed \$15 million and do not exceed \$40 million for the preceding three years) won 49 licenses. Thirty-three winning bidders claiming very small business status (those with attributable average annual gross revenues that do not exceed \$15 million for the preceding three years) won 325 licenses.

35. *Upper 700 MHz Band Licenses.* In the *700 MHz Second Report and Order*, the Commission revised its rules regarding Upper 700 MHz licenses.¹²⁴ On January 24, 2008, the Commission commenced Auction No. 73, in which several licenses in the Upper 700 MHz band were available for licensing: 12 Regional Economic Area Grouping licenses in the C-Block, and one nationwide license in the D-Block.¹²⁵ The auction concluded on March 18, 2008, with three winning bidders claiming very small business status (those with attributable average annual gross revenues that do not exceed \$15 million for the preceding three years) and winning five licenses.

36. *Advanced Wireless Services: AWS Services (1710–1755 MHz and 2110–2155 MHz bands (AWS-1); 1915–1920 MHz, 1995–2000 MHz, 2020–2025 MHz and 2175–2180 MHz bands (AWS-2); 2155–2175 MHz band (AWS-3)).* For the AWS-1 bands,¹²⁶ the Commission has defined a “small business” as an entity with average annual gross revenues for the preceding three years not exceeding \$40 million, and a “very small business” as an entity with average annual gross revenues for the preceding three years not exceeding \$15 million. For AWS-2 and AWS-3, although we do not know for certain which entities are likely to apply for these frequencies, we note that the AWS-1 bands are comparable to those used for cellular service and personal communications service. The Commission has not yet adopted size standards for the AWS-2 or AWS-3 bands, but proposes to treat both AWS-2 and AWS-3 similarly to broadband PCS service and AWS-1 service due to the comparable capital requirements and other factors, such as issues involved in relocating incumbents and developing markets, technologies, and services.¹²⁷

37. *Broadband Radio Service and Educational Broadband Service.* Broadband Radio Service systems, previously referred to as Multipoint Distribution Service (MDS) and Multichannel

(Continued from previous page)

Governing Hearing Aid-Compatible Telephones; Biennial Regulatory Review—Amendment of Parts 1, 22, 24, 27, and 90 to Streamline and Harmonize Various Rules Affecting Wireless Radio Services; Former Nextel Communications, Inc. Upper 700 MHz Guard Band Licenses and Revisions to Part 27 of the Commission’s Rules; Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band; Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010; Declaratory Ruling on Reporting Requirement under Commission’s Part 1 Anti-Collusion Rule, WT Docket Nos. 07-166, 06-169, 06-150, 03-264, and 96-86, PS Docket No. 06-229, CC Docket No. 94-102, Second Report and Order, 22 FCC Rcd 15289, 15359 n.434 (2007) (700 MHz Second Report and Order).

¹²³ See *Auction of 700 MHz Band Licenses Closes*, Public Notice, 23 FCC Rcd 4572 (WTB 2008).

¹²⁴ *700 MHz Second Report and Order*, 22 FCC Rcd 15289.

¹²⁵ See *Auction of 700 MHz Band Licenses Closes*, Public Notice, 23 FCC Rcd 4572 (WTB 2008).

¹²⁶ The service is defined in Section 90.1301 *et seq.* of the Commission’s rules, 47 CFR § 90.1301 *et seq.*

¹²⁷ See *Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands*, WT Docket No. 02-353, Report and Order, 18 FCC Rcd 25162, Appx. B (2003), modified by *Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands*, WT Docket No. 02-353, Order on Reconsideration, 20 FCC Rcd 14058, Appx. C (2005); *Service Rules for Advanced Wireless Services in the 1915–1920 MHz, 1995–2000 MHz, 2020–2025 MHz and 2175–2180 MHz Bands*; *Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands*, WT Docket Nos. 04-356 and 02-353, Notice of Proposed Rulemaking, 19 FCC Rcd 19263, Appx. B (2005); *Service Rules for Advanced Wireless Services in the 2155–2175 MHz Band*, WT Docket No. 07-195, Notice of Proposed Rulemaking, 22 FCC Rcd 17035, Appx. (2007).

Multipoint Distribution Service (MMDS) systems, and “wireless cable,” transmit video programming to subscribers and provide two-way high-speed data operations using the microwave frequencies of the Broadband Radio Service (BRS) and Educational Broadband Service (EBS) (previously referred to as the Instructional Television Fixed Service (ITFS)).¹²⁸

38. *BRS* -In connection with the 1996 BRS auction, the Commission established a small business size standard as an entity that had annual average gross revenues of no more than \$40 million in the previous three calendar years.¹²⁹ The BRS auctions resulted in 67 successful bidders obtaining licensing opportunities for 493 Basic Trading Areas (BTAs). Of the 67 auction winners, 61 met the definition of a small business. BRS also includes licensees of stations authorized prior to the auction. At this time, we estimate that of the 61 small business BRS auction winners, 48 remain small business licensees. In addition to the 48 small businesses that hold BTA authorizations, there are approximately 392 incumbent BRS licensees that are considered small entities.¹³⁰ After adding the number of small business auction licensees to the number of incumbent licensees not already counted, we find that there are currently approximately 440 BRS licensees that are defined as small businesses under either the SBA or the Commission’s rules.

39. In 2009, the Commission conducted Auction No. 86, the sale of 78 licenses in the BRS areas.¹³¹ The Commission offered three levels of bidding credits: (i) a bidder with attributed average annual gross revenues that exceed \$15 million and do not exceed \$40 million for the preceding three years (small business) received a 15 percent discount on its winning bid; (ii) a bidder with attributed average annual gross revenues that exceed \$3 million and do not exceed \$15 million for the preceding three years (very small business) received a 25 percent discount on its winning bid; and (iii) a bidder with attributed average annual gross revenues that do not exceed \$3 million for the preceding three years (entrepreneur) received a 35 percent discount on its winning bid.¹³² Auction No. 86 concluded in 2009 with the sale of 61 licenses.¹³³ Of the ten winning bidders, two bidders that claimed small business status won four licenses; one bidder that claimed very small business status won three licenses; and two bidders that claimed entrepreneur status won six licenses.

40. *EBS* – Educational Broadband Service has been included within the broad economic census category and the SBA size standard for Wired Telecommunications Carriers since 2007. Wired Telecommunications Carriers are comprised of 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.

¹²⁸ *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, PP Docket No. 93-253, Report and Order, 10 FCC Rcd 9589, 9593, para. 7 (1995).

¹²⁹ 47 CFR § 21.961(b)(1).

¹³⁰ 47 U.S.C. § 309(j). Hundreds of stations were licensed to incumbent MDS licensees prior to implementation of Section 309(j) of the Communications Act of 1934, 47 U.S.C. § 309(j). For these pre-auction licenses, the applicable standard is SBA’s small business size standard of 1,500 or fewer employees.

¹³¹ *Auction of Broadband Radio Service (BRS) Licenses, Scheduled for October 27, 2009, Notice and Filing Requirements, Minimum Opening Bids, Upfront Payments, and Other Procedures for Auction 86*, AU Docket No. 09-56, Public Notice, 24 FCC Rcd 8277 (2009).

¹³² *Id.* at 8296, para. 73.

¹³³ *Auction of Broadband Radio Service Licenses Closes, Winning Bidders Announced for Auction 86, Down Payments Due November 23, 2009, Final Payments Due December 8, 2009, Ten-Day Petition to Deny Period*, Public Notice, 24 FCC Rcd 13572 (2009).

Transmission facilities may be based on a single technology or a combination of technologies.¹³⁴ The SBA's small business size standard for this category is all such firms having 1,500 or fewer employees.¹³⁵ U.S. Census data for 2012 shows that there were 3,117 firms that operated that year.¹³⁶ Of this total, 3,083 operated with fewer than 1,000 employees.¹³⁷ Thus, under this size standard, the majority of firms in this industry can be considered small. In addition to Census Bureau data, the Commission's Universal Licensing System indicates that as of October 2014, there are 2,206 active EBS licenses. The Commission estimates that of these 2,206 licenses, the majority are held by non-profit educational institutions and school districts, which are by statute defined as small businesses.¹³⁸

41. *Wireless Communications Service.* This service can be used for fixed, mobile, radiolocation, and digital audio broadcasting satellite uses. The Commission defined "small business" for the wireless communications services (WCS) auction as an entity with average gross revenues of \$40 million for each of the three preceding years, and a "very small business" as an entity with average gross revenues of \$15 million for each of the three preceding years.¹³⁹ The SBA has approved these small business size standards.¹⁴⁰ In the Commission's auction for geographic area licenses in the WCS service there were seven winning bidders that qualified as "very small business" entities, and one that qualified as a "small business" entity.

42. *Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing.* This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment.¹⁴¹ 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.¹⁴² The SBA has established a small business size standard for this industry of 1,250 employees or less.¹⁴³ U.S. Census data for 2012 shows that 841 establishments operated in this

¹³⁴ U.S. Census Bureau, 2017 NAICS Definitions, "517311 Wired Telecommunications Carriers," (partial definition), <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517311&search=2017>.

¹³⁵ See 13 CFR § 120.201. The Wired Telecommunications Carrier category formerly used the NAICS code of 517110. As of 2017 the U.S. Census Bureau definition shows the NAICS code as 517311 for Wired Telecommunications Carriers. See, <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517311&search=2017>.

¹³⁶ See U.S. Census Bureau, 2012 *Economic Census of the United States*, Table No. EC1251SSSZ5, *Information: Subject Series - Estab & Firm Size: Employment Size of Firms: 2012* (517110 Wired Telecommunications Carriers). https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ5//naics~517110.

¹³⁷ *Id.*

¹³⁸ The term "small entity" within SBREFA applies to small organizations (non-profits) and to small governmental jurisdictions (cities, counties, towns, townships, villages, school districts, and special districts with populations of less than 50,000). [5 U.S.C. §§ 601\(4\)-\(6\)](#).

¹³⁹ *Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service (WCS)*, Report and Order, 12 FCC Rcd 10785, 10879, para. 194 (1997).

¹⁴⁰ *Alvarez Letter 1998*.

¹⁴¹ The NAICS Code for this service is 334220. 13 C.F.R 121.201. See also U.S. Census Bureau, 2012 NAICS Definitions, "334220 Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing" <https://factfinder.census.gov/faces/affhelp/jsf/pages/metadata.xhtml?lang=en&type=ib&id=ib.en./ECN.NAICS2012.334220#>.

¹⁴² *Id.*

¹⁴³ 13 CFR § 121.201, NAICS Code 334220.

industry in that year.¹⁴⁴ Of that number, 819 establishments operated with less than 500 employees.¹⁴⁵ Based on this data, we conclude that a majority of manufacturers in this industry are small.

43. *Software Publishers.* This industry comprises establishments primarily engaged in computer software publishing or publishing and reproduction.¹⁴⁶ Establishments in this industry carry out operations necessary for producing and distributing computer software, such as designing, providing documentation, assisting in installation, and providing support services to software purchasers. These establishments may design, develop, and publish, or publish only.¹⁴⁷ The SBA has established a size standard for this industry of annual receipts of \$38.5 million per year.¹⁴⁸ U.S. Census data for 2012 indicates that 5,079 firms operated in that year.¹⁴⁹ Of that number, 4,697 firms had annual receipts of \$25 million or less.¹⁵⁰ Based on that data, we conclude that a majority of firms in this industry are small.

44. *NCE and Public Broadcast Stations.* Non-commercial educational and public broadcast television stations fall within the U.S. Census Bureau's definition for Television Broadcasting.¹⁵¹ This industry comprises establishments primarily engaged in broadcasting images together with sound and operating television broadcasting studios and facilities for the programming and transmission of programs to the public.¹⁵² The SBA has created a small business size standard for Television Broadcasting entities, which is such firms having \$38.5 million or less in annual receipts.¹⁵³ The 2012 Economic Census reports that 751 firms in this category operated in that year.¹⁵⁴ Of that number, 656 had annual receipts of \$25,000,000 or less, 25 had annual receipts between \$25,000,000 and \$49,999,999 and 70 had annual receipts of \$50,000,000 or more.¹⁵⁵ Based on this data we conclude that the majority of NCEs and Public Broadcast Stations are small entities under the applicable SBA size standard.

45. According to Commission staff review of the BIA Kelsey Inc. Media Access Pro Television Database (BIA) as of November 16, 2017, approximately 1,258 of the 1,378¹⁵⁶ licensed commercial television stations (or about 91 percent) had revenues of \$38.5 million or less, and therefore

¹⁴⁴ U.S. Census Bureau, *2012 Economic Census of the United States*, Table EC1231SG2, Manufacturing: Summary Series: General Summary: Industry Statistics for Subsectors and Industries by Employment Size: 2012, NAICS Code 334220, https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/31SG2//naics~334220.

¹⁴⁵ *Id.*

¹⁴⁶ See U.S. Census Bureau, 2017 NAICS Definitions, "511210 Software Publishers", <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=511210&search=2017>.

¹⁴⁷ *Id.*

¹⁴⁸ 13 CFR § 121.201.

¹⁴⁹ See U.S. Census Bureau, *2012 Economic Census of the United States*, Table EC1251SSSZ4, Information: Subject Series - Estab and Firm Size: Receipts Size of Firms for the United States: 2012, NAICS code 511210, https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ4//naics~511210.

¹⁵⁰ *Id.*

¹⁵¹ U.S. Census Bureau, 2017 NAICS Definitions, "515120 Television Broadcasting," <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?input=515120&search=2017+NAICS+Search&search=2017>.

¹⁵² *Id.* (partial definition).

¹⁵³ 13 CFR § 121.201, NAICS code 515120.

¹⁵⁴ U.S. Census Bureau, Table No. EC1251SSSZ4, *Information: Subject Series - Establishment and Firm Size: Receipts Size of Firms for the United States: 2012* (515120 Television Broadcasting). https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ4//naics~515120.

¹⁵⁵ *Id.*

¹⁵⁶ Broadcast Station Totals as of September 30, 2017 Press Release (MB Oct. 2, 2017) (September 30, 2017 Broadcast Station Totals), https://apps.fcc.gov/edocs_public/attachmatch/DOC-346998A1.pdf.

these licensees qualify as small entities under the SBA definition. The Commission also estimates that there are 395 licensed noncommercial educational NCE television stations.¹⁵⁷ Notwithstanding, the Commission does not compile and otherwise does not have access to information on the revenue of NCE stations that would permit it to determine how many such stations would qualify as small entities. In addition to licensed commercial television stations and NCEs, there are also an estimated 2,367 low power television stations (LPTV), including Class A stations and 3,750 TV translator stations.¹⁵⁸ 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.

46. We note, however, that in assessing whether a business concern qualifies as small under the above definition, business (control) affiliations¹⁵⁹ 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. Moreover, the definition of “small business” also requires that an entity not be dominant in its field of operation and that the entity be independently owned and operated.¹⁶⁰ The estimate of small businesses to which rules may apply does not exclude any television station from the definition of a small business on these bases and is therefore over-inclusive to that extent. Further, 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. The Commission further notes that it is difficult at times to assess these criteria in the context of media entities, and therefore our estimates of small businesses to which they apply may be over-inclusive to this extent.

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

47. The *Order* allows EAS Participants to take part in live code EAS public safety exercises, provided that the entity conducting the test provides notification during the test to the extent technically feasible that there is no actual emergency and provides notice to the public and coordinates with EAS Participants, state and local emergency authorities, the SECC, and other entities before the test to inform the public and other affected entities that live event codes will be used and that no emergency is occurring. In addition, the *Order* allows EAS Participants to use the EAS Attention Signal and a harmless simulation of EAS header codes in PSAs provided by federal, state, and local government entities, as well as NGOs. These measures will obviate recurring costs associated with the filing of live code waiver requests (e.g., legal, administrative, printing, and mailing costs) and will not create any cost burdens for EAS Participants. The *Order* also requires that no later than twenty-four (24) hours of an EAS Participant’s discovery (i.e., actual knowledge) that it has transmitted or otherwise sent a false alert to the public that the it send an email to the FCC Ops Center (at FCCOPS@fcc.gov) informing the Commission of the event and of any details that the EAS Participant may have concerning the event. This measure will help ensure that all alerting stakeholder have sufficient situational awareness of a false alert to quickly respond to and remediate the situation.

48. The *Order* requires EAS Participants to reject all digitally-signed CAP-formatted EAS alerts that are invalidly signed. It further requires EAS Participants to reject all EAS alerts that are received with header code date/time data inconsistent with the current date and time. Most EAS equipment deployed in the field already supports these authentication and validation rules, but we anticipate that a small minority of EAS Participants may need to update software to comply with these

¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

¹⁵⁹ “[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 CFR § 21.103(a)(1).

¹⁶⁰ *See* 15 U.S.C. § 632.

rules. Such an update should result in minimal costs to EAS Participants, as it can be performed during a scheduled in-version equipment software update.

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

49. The RFA requires an agency to describe any significant alternatives that it has considered in reaching 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 or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) and exemption from coverage of the rule, or any part thereof, for small entities.”¹⁶¹

50. The Commission does not expect its actions in the *Order* to have a significant economic impact on small entities. The rule changes to Section 11.61 with respect to live code tests do not impose any new requirements or new costs for small entities or other EAS Participants. The steps taken by the Commission eliminating the waiver filing requirement will benefit small entities by reducing the need for legal and other staff time associated with filing a waiver, which will translate into cost reductions and have a positive economic impact. Thus, as an alternative to the existing process, the record supports our conclusion that removing the need for entities to request a waiver of our rules to conduct live code tests will reduce costs and remove regulatory burdens for small entities as well as other entities subject to these rules.

51. The false alert reporting rules we adopt today similarly impose minimal burdens on small entities. The reporting requirement is triggered only upon discovery of the false alert, allows twenty-four hours for the submission of the report and imposes no obligation to and investigate the false report. Further, we recognize that smaller entities often face particular challenges in achieving authentication and validation of EAS messages due to limited human, financial, or technical resources. Due, in part, to the potentially significant burdens that the originally-proposed requirements would pose, we decline, at this time, to adopt certain of the proposals and defer consideration of others.¹⁶² Those we adopt are unlikely to pose burdens that are not already incurred in the normal course of business.

52. Finally, we adopt implementation timeframes for each of our rules that are intended to allow EAS Participants to come into compliance with our rules in a manner that balances the need for improving EAS organization and effectiveness as soon as possible with any potential burdens that may be imposed by adoption of our proposals.

53. The Commission concludes that the adopted mandates provide small entities as well as other EAS Participants with a sufficient measure of flexibility to account for technical and cost-related concerns. The Commission has determined that implementing these improvements to the EAS is technically feasible. In the event that small entities face unique circumstances that restrict their ability to comply with the Commission’s rules, the Commission can address them through the waiver process.

Report to Congress

54. The Commission will send a copy of this *Order*, including this FRFA, in a report to Congress pursuant to the Congressional Review Act.¹⁶³ In addition, the Commission will send a copy of this *Order*, including this FRFA, to the Chief Counsel for Advocacy of the SBA. A copy of this *Order*

¹⁶¹ 5 U.S.C. § 603(c)(1)-(4).

¹⁶² See, e.g., Order, paras. 12, 22, and 29 (declining to adopt proposals related to the use of live EAS header codes in PSAs; implementation of specific authentication mechanisms into the EAS Protocol; and, requiring a year parameter in the time stamp section of the EAS Protocol).

¹⁶³ See 5 U.S.C. § 801(a)(1)(A).

and FRFA (or summaries thereof) will also be published in the *Federal Register*.¹⁶⁴

¹⁶⁴ See 5 U.S.C. § 604(b).

APPENDIX D

Initial Regulatory Flexibility Analysis

1. As required by the Regulatory Flexibility Act of 1980, as amended (RFA),¹ the Commission has prepared this Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on a substantial number of small entities by the policies and rules proposed in the Further Notice of Proposed Rulemaking (*Further Notice*). Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on the *Further Notice*. The Commission will send a copy of the *Further Notice*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (SBA).² In addition, the *Further Notice* and IRFA (or summaries thereof) will be published in the Federal Register.³

A. Need for, and Objectives of, the Proposed Rules

2. In the *Further Notice*, the Commission proposes actions to prevent and correct false alerts and to otherwise improve the effectiveness of the EAS and WEA. First, the Commission seeks comment on whether to adopt a dedicated reporting system, or use currently available means, such as the Commission's Operations Center or Public Safety Support Center, so that EAS Participants,⁴ Participating CMS Providers,⁵ emergency managers, and members of the public can inform the Commission about false alerts. Second, the Commission proposes to revise its rules governing State EAS Plans⁶ to require the inclusion of standard operating procedures implemented within states to prevent and correct false alerts, where such information has been provided by state and local emergency management authorities. Finally, the Commission seeks comment on whether to adopt technical benchmarks or best practices to help ensure effective delivery of WEA alerts to the public. These proposed and contemplated actions and rule revisions potentially would enhance the Commission's awareness of false alerts issued over the EAS and WEA, and provide state, local, Tribal and territorial emergency alert originators and managers with a common source to find standard operating procedure applicable within their jurisdictions to conduct EAS tests and correct false alerts. To the extent these proposed and contemplated actions may prevent the transmittal of false alerts and hasten corrective action of any false alerts issued, they would benefit the public by minimizing confusion and disruption caused by false alerts.

B. Legal Basis

3. The proposed action is taken pursuant to Sections 1, 2, 4(i), 4(o), 301, 303(r), 303(v), 307, 309, 335, 403, 624(g), 706, and 715 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 152, 154(i), 154(o), 301, 303(r), 303(v), 307, 309, 335, 403, 544(g), 606, and 615, as well as by sections 602(a),(b),(c), (f), 603, 604 and 606 of the WARN Act, 47 U.S.C. §§ 1202(a),(b),(c), (f), 1203, 1204 and 1206

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 5 U.S.C. § 603(a).

³ See *id.*

⁴ EAS Participants are the broadcasters, cable systems, and other service providers subject to the Emergency Alert System (EAS) rules. See 47 CFR § 11.11(a).

⁵ Participating CMS Providers are Commercial Mobile Service Providers that have voluntarily elected to transmit Wireless Emergency Alerts (WEA) alerts. See 47 CFR § 10.10(f).

⁶ See 47 CFR § 11.21.

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

4. The RFA directs agencies to provide a description of and, where feasible, an estimate of, the number of small entities that may be affected by the proposed actions, if adopted.⁷ The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.”⁸ In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act.⁹ 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 SBA.¹⁰

5. *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 broad groups of small entities that could be directly affected herein.¹¹ First, while there are industry specific size standards for small businesses that are used in the regulatory flexibility analysis, according to data from the SBA’s Office of Advocacy, in general a small business is an independent business having fewer than 500 employees.¹² These types of small businesses represent 99.9% of all businesses in the United States which translates to 28.8 million businesses.¹³

6. Next, the type of small entity described as a “small organization” is generally “any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.”¹⁴ Nationwide, as of August 2016, there were approximately 356,494 small organizations based on registration and tax data filed by nonprofits with the Internal Revenue Service (IRS).¹⁵

7. Finally, the small entity described as a “small governmental jurisdiction” is defined generally as “governments of cities, counties, towns, townships, villages, school districts, or special

⁷ 5 U.S.C. § 603(b)(3).

⁸ 5 U.S.C. § 601(6).

⁹ 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.”

¹⁰ 15 U.S.C. § 632.

¹¹ See 5 U.S.C. § 601(3)-(6).

¹² See SBA, Office of Advocacy, “Frequently Asked Questions, Question 1 – What is a small business?” https://www.sba.gov/sites/default/files/advocacy/SB-FAQ-2016_WEB.pdf (June 2016)

¹³ See SBA, Office of Advocacy, “Frequently Asked Questions, Question 2- How many small business are there in the U.S.?” https://www.sba.gov/sites/default/files/advocacy/SB-FAQ-2016_WEB.pdf (June 2016).

¹⁴ 5 U.S.C. § 601(4).

¹⁵ Data from the Urban Institute, National Center for Charitable Statistics (NCCS) reporting on nonprofit organizations registered with the IRS was used to estimate the number of small organizations. Reports generated using the NCCS online database indicated that as of August 2016 there were 356,494 registered nonprofits with total revenues of less than \$100,000. Of this number, 326,897 entities filed tax returns with 65,113 registered nonprofits reporting total revenues of \$50,000 or less on the IRS Form 990-N for Small Exempt Organizations and 261,784 nonprofits reporting total revenues of \$100,000 or less on some other version of the IRS Form 990 within 24 months of the August 2016 data release date. See <http://nccs.urban.org/sites/all/nccs-archive/html/tablewiz/tw.php> where the report showing this data can be generated by selecting the following data fields: Report: “The Number and Finances of All Registered 501(c) Nonprofits”; Show: “Registered Nonprofits”; By: “Total Revenue Level (years 1995, Aug to 2016, Aug)”; and For: “2016, Aug” then selecting “Show Results”.

districts, with a population of less than fifty thousand.”¹⁶ U.S. Census Bureau data from the 2012 Census of Governments¹⁷ indicate that there were 90,056 local governmental jurisdictions consisting of general purpose governments and special purpose governments in the United States.¹⁸ Of this number there were 37,132 General purpose governments (county¹⁹, municipal and town or township²⁰) with populations of less than 50,000 and 12,184 Special purpose governments (independent school districts²¹ and special districts²²) with populations of less than 50,000. The 2012 U.S. Census Bureau data for most types of governments in the local government category show that the majority of these governments have populations of less than 50,000.²³ Based on this data we estimate that at least 49,316 local government jurisdictions fall in the category of “small governmental jurisdictions.”²⁴

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.”²⁵ The SBA has established a small business

¹⁶ 5 U.S.C. § 601(5).

¹⁷ See 13 U.S.C. § 161. The Census of Government is conducted every five (5) years compiling data for years ending with “2” and “7”. See also Program Description Census of Government <https://factfinder.census.gov/faces/affhelp/jsf/pages/metadata.xhtml?lang=en&type=program&id=program.en.COG#>.

¹⁸ See U.S. Census Bureau, 2012 Census of Governments, Local Governments by Type and State: 2012 - United States-States. <https://factfinder.census.gov/bkmk/table/1.0/en/COG/2012/ORG02.US01>. Local governmental jurisdictions are classified in two categories - General purpose governments (county, municipal and town or township) and Special purpose governments (special districts and independent school districts).

¹⁹ See U.S. Census Bureau, 2012 Census of Governments, County Governments by Population-Size Group and State: 2012 - United States-States. <https://factfinder.census.gov/bkmk/table/1.0/en/COG/2012/ORG06.US01>. There were 2,114 county governments with populations less than 50,000.

²⁰ See U.S. Census Bureau, 2012 Census of Governments, Subcounty General-Purpose Governments by Population-Size Group and State: 2012 - United States – States. <https://factfinder.census.gov/bkmk/table/1.0/en/COG/2012/ORG07.US01>. There were 18,811 municipal and 16,207 town and township governments with populations less than 50,000.

²¹ See U.S. Census Bureau, 2012 Census of Governments, Elementary and Secondary School Systems by Enrollment-Size Group and State: 2012 - United States-States. <https://factfinder.census.gov/bkmk/table/1.0/en/COG/2012/ORG11.US01>. There were 12,184 independent school districts with enrollment populations less than 50,000.

²² See U.S. Census Bureau, 2012 Census of Governments, Special District Governments by Function and State: 2012 - United States-States. <https://factfinder.census.gov/bkmk/table/1.0/en/COG/2012/ORG09.US01>. [The U.S. Census Bureau data did not provide a population breakout for special district governments.](#)

²³ See U.S. Census Bureau, 2012 Census of Governments, County Governments by Population-Size Group and State: 2012 - United States-States - <https://factfinder.census.gov/bkmk/table/1.0/en/COG/2012/ORG06.US01>; Subcounty General-Purpose Governments by Population-Size Group and State: 2012 - United States–States - <https://factfinder.census.gov/bkmk/table/1.0/en/COG/2012/ORG07.US01>; and Elementary and Secondary School Systems by Enrollment-Size Group and State: 2012 - United States-States. <https://factfinder.census.gov/bkmk/table/1.0/en/COG/2012/ORG11.US01>. While U.S. Census Bureau data did not provide a population breakout for special district governments, if the population of less than 50,000 for this category of local government is consistent with the other types of local governments the majority of the 38,266 special district governments have populations of less than 50,000.

²⁴ *Id.*

²⁵ U.S. Census Bureau, 2017 NAICS Definitions, “515112 Radio Stations,” <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?input=515112&search=2017+NAICS+Search&search=2017>.

size standard for this category as firms having \$38.5 million or less in annual receipts.²⁶ Economic Census data for 2012 show that 2,849 radio station firms operated during that year.²⁷ Of that number, 2,806 firms operated with annual receipts of less than \$25 million per year, 17 with annual receipts between \$25 million and \$49,999,999 million and 26 with annual receipts of \$50 million or more.²⁸ Therefore, based on the SBA's size standard the majority of such entities are small entities.

9. According to Commission staff review of the BIA/Kelsey, LLC's Media Access Pro Radio Database as of January 2018, about 11,261 (or about 99.9 percent) of 11,383 commercial radio stations had revenues of \$38.5 million or less and thus qualify as small entities under the SBA definition.²⁹ The Commission has estimated the number of licensed commercial AM radio stations to be 4,639 stations and the number of commercial FM radio stations to be 6,744, for a total number of 11,383.³⁰ We note the Commission has also estimated the number of licensed noncommercial (NCE) FM radio stations to be 4,120.³¹ Nevertheless, the Commission does not compile and otherwise does not have access to information on the revenue of NCE stations that would permit it to determine how many such stations would qualify as small entities.

10. We also note, that in assessing whether a business entity qualifies as small under the above definition, business control affiliations must be included.³² The Commission's estimate therefore likely overstates the number of small entities that might be affected by its action, because the revenue figure on which it is based does not include or aggregate revenues from affiliated companies. In addition, to be determined a "small business," an entity may not be dominant in its field of operation.³³ We further note, that it is difficult at times to assess these criteria in the context of media entities, and the estimate of small businesses to which these rules may apply does not exclude any radio station from the definition of a small business on these basis, thus our estimate of small businesses may therefore be over-inclusive. Also, as noted above, an additional element of the definition of "small business" is that the entity must be independently owned and operated. The Commission notes that it is difficult at times to assess these criteria in the context of media entities and the estimates of small businesses to which they apply may be over-inclusive to this extent.

11. *FM Translator Stations and Low-Power FM Stations.* FM translators and Low Power FM Stations are classified in the category of Radio Stations and are assigned the same NAICS Code as licensees of radio stations.³⁴ This U.S. industry, Radio Stations, comprises establishments primarily engaged in broadcasting aural programs by radio to the public.³⁵ Programming may originate in their own

²⁶ 13 CFR § 121.201; NAICS code 515112.

²⁷ U.S. Census Bureau, Table No. EC1251SSSZ4, *Information: Subject Series – Establishment and Firm Size: Receipts Size of Firms for the United States: 2012* NAICS Code 515112, https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ4//naics~515112.

²⁸ *Id.*

²⁹ BIA/Kelsey, MEDIA Access Pro Database (viewed Jan. 26, 2018).

³⁰ Broadcast Station Totals as of December 31, 2017, Press Release (MB Jan. 5, 2018) (January 2018 Broadcast Station Totals), https://apps.fcc.gov/edocs_public/attachmatch/DOC-348570A1.pdf.

³¹ *Id.*

³² "[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 power to control both." 13 CFR § 121.103(a)(1).

³³ 13 CFR § 121.102(b).

³⁴ See, U.S. Census Bureau, 2017 NAICS Definitions, "515112 Radio Stations," <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?input=515112&search=2017+NAICS+Search&search=2017..>

³⁵ *Id.*

studio, from an affiliated network, or from external sources.³⁶ The SBA has established a small business size standard which consists of all radio stations whose annual receipts are \$38.5 million dollars or less.³⁷ U.S. Census Bureau data for 2012 indicate that 2,849 radio station firms operated during that year.³⁸ Of that number, 2,806 operated with annual receipts of less than \$25 million per year, 17 with annual receipts between \$25 million and \$49,999,999 million and 26 with annual receipts of \$50 million or more.³⁹ Therefore, based on the SBA's size standard we conclude that the majority of FM Translator Stations and Low Power FM Stations are small.

12. *Television Broadcasting.* This Economic Census category “comprises establishments primarily engaged in broadcasting images together with sound.”⁴⁰ These establishments operate television broadcast studios and facilities for the programming and transmission of programs to the public.⁴¹ These establishments also produce or transmit visual programming to affiliated broadcast television stations, which in turn broadcast the programs to the public on a predetermined schedule. Programming may originate in their own studio, from an affiliated network, or from external sources. The SBA has created the following small business size standard for such businesses: those having \$38.5 million or less in annual receipts.⁴² The 2012 Economic Census reports that 751 firms in this category operated in that year.⁴³ Of that number, 656 had annual receipts of \$25,000,000 or less, 25 had annual receipts between \$25,000,000 and \$49,999,999 and 70 had annual receipts of \$50,000,000 or more.⁴⁴ Based on this data we therefore estimate that the majority of commercial television broadcasters are small entities under the applicable SBA size standard.

13. The Commission has estimated the number of licensed commercial television stations to be 1,378.⁴⁵ Of this total, 1,258 stations (or about 91 percent) had revenues of \$38.5 million or less, according to Commission staff review of the BIA Kelsey Inc. Media Access Pro Television Database (BIA) on November 16, 2017, and therefore these licensees qualify as small entities under the SBA definition. In addition, the Commission has estimated the number of licensed noncommercial educational television stations to be 395.⁴⁶ Notwithstanding, the Commission does not compile and otherwise does not have access to information on the revenue of NCE stations that would permit it to determine how many such stations would qualify as small entities. There are also 2,367 low power television stations,

³⁶ *Id.*

³⁷ 13 CFR § 121.201, NAICS code 515112 Radio Stations.

³⁸ U.S. Census Bureau, Table No. EC1251SSSZ4, *Information: Subject Series - Establishment and Firm Size: Receipts Size of Firms for the United States: 2012* (515112 Radio Stations) https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ4//naics~515112|515120.

³⁹ *Id.*

⁴⁰ U.S. Census Bureau, 2017 NAICS Definitions, “515120 Television Broadcasting,” <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?input=515120&search=2017+NAICS+Search&search=2017>.

⁴¹ *Id.*

⁴² 13 CFR § 121.201; 2012 NAICS code 515120.

⁴³ U.S. Census Bureau, Table No. EC1251SSSZ4, *Information: Subject Series - Establishment and Firm Size: Receipts Size of Firms for the United States: 2012* (515120 Television Broadcasting) https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ4//naics~515120.

⁴⁴ *Id.*

⁴⁵ Broadcast Station Totals as of September 30, 2017, Press Release (MB, rel. Oct. 2, 2017) (September 30, 2017 Broadcast Station Totals Press Release), https://apps.fcc.gov/edocs_public/attachmatch/DOC-346998A1.pdf.

⁴⁶ *Id.*

including Class A stations (LPTV) and 3,750 TV translator stations.⁴⁷ 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. We note, however, that in assessing whether a business concern qualifies as “small” under the above definition, business (control) affiliations⁴⁸ 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. In addition, another element of the definition of “small business” requires that an 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 broadcast 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. Also, as noted above, an additional element of the definition of “small business” is that the entity must be independently owned and operated. The Commission notes that it is difficult at times to assess these criteria in the context of media entities and its estimates of small businesses to which they apply may be over-inclusive to this extent.

15. *Cable and Other Subscription Programming.* This industry comprises establishments primarily engaged in operating studios and facilities for the broadcasting of programs on a subscription or fee basis. The broadcast programming is typically narrowcast in nature (e.g., limited format, such as news, sports, education, or youth-oriented). These establishments produce programming in their own facilities or acquire programming from external sources. The programming material is usually delivered to a third party, such as cable systems or direct-to-home satellite systems, for transmission to viewers.⁴⁹ The SBA size standard for this industry establishes as small, any company in this category which receives annual receipts of \$38.5 million or less.⁵⁰ According to 2012 U.S. Census Bureau data, 367 firms operated for the entire year.⁵¹ Of that number, 319 operated with annual receipts of less than \$25 million a year and 48 firms operated with annual receipts of \$25 million or more.⁵² Based on this data, the Commission estimates that the majority of firms operating in this industry are small.

16. *Cable System Operators (Rate Regulation Standard).* The Commission has developed its own small business size standards for the purpose of cable rate regulation. Under the Commission’s rules, a “small cable company” is one serving 400,000 or fewer subscribers nationwide.⁵³ Industry data

⁴⁷ *Id.*

⁴⁸ “[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 the power to control both.” 13 CFR § 21.103(a)(1).

⁴⁹ See U.S. Census Bureau, 2012 NAICS Definitions, “515210 Cable and other Subscription Programming”, <https://factfinder.census.gov/faces/affhelp/jsf/pages/metadata.xhtml?lang=en&type=ib&id=ib.en./ECN.NAICS2012.515210#>.

⁵⁰ See 13 CFR 121.201, NAICS Code 515210.

⁵¹ See U.S. Census Bureau, 2012 Economic Census of the United States, Table EC1251SSSZ4, Information: Subject Series - Estab & Firm Size: Receipts Size of Firms for the U.S.: 2012, NAICS Code 515210, https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ4/naics~515210.

⁵² *Id.* Available census data does not provide a more precise estimate of the number of firms that have receipts of \$38.5 million or less.

⁵³ 47 CFR § 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 Cable Television Consumer Protection And Competition Act of 1992: Rate Regulation*, MM Docket No. 92-266, MM Docket No. 93-215, Sixth Report and Order and Eleventh Order on Reconsideration, 10 FCC Rcd 7393, 7408 (1995).

indicate that there are currently 4,600 active cable systems in the United States.⁵⁴ Of this total, all but nine cable operators nationwide are small under the 400,000-subscriber size standard.⁵⁵ In addition, under the Commission's rate regulation rules, a "small system" is a cable system serving 15,000 or fewer subscribers.⁵⁶ Current Commission records show 4,600 cable systems nationwide.⁵⁷ Of this total, 3,900 cable systems have fewer than 15,000 subscribers, and 700 systems have 15,000 or more subscribers, based on the same records.⁵⁸ Thus, under this standard as well, we estimate that most cable systems are small entities.

17. *Cable System Operators (Telecom Act Standard)*. 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 one 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."⁵⁹ There are approximately 52,403,705 cable video subscribers in the United States today.⁶⁰ Accordingly, an operator serving fewer than 524,037 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.⁶¹ Based on available data, we find that all but nine incumbent cable operators are small entities under this size standard.⁶² 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.⁶³ Although it seems certain that some of these cable system operators are affiliated with entities whose gross annual revenues exceed \$250 million, we are unable at this time to estimate with greater precision the number of cable system operators that would qualify as small cable operators under the definition in the Communications Act.

18. *Satellite Telecommunications*. This category comprises firms "primarily engaged in providing telecommunications services to other establishments in the telecommunications and broadcasting industries by forwarding and receiving communications signals via a system of satellites or reselling satellite telecommunications."⁶⁴ Satellite telecommunications service providers include satellite and earth station operators. The category has a small business size standard of \$32.5 million or less in

⁵⁴ The number of active, registered cable systems comes from the Commission's Cable Operations and Licensing System (COALS) database on August 15, 2015. See FCC, *Cable Operations and Licensing System (COALS)*, www.fcc.gov/coals (last visited Oct. 25, 2016).

⁵⁵ See SNL KAGAN, *Top Cable MSOs*, <https://www.snl.com/Interactivex/TopCableMSOs.aspx> (last visited Oct. 25, 2016).

⁵⁶ 47 CFR § 76.901(c).

⁵⁷ See *supra* Note 54.

⁵⁸ See FCC, *Cable Operations and Licensing System (COALS)*, www.fcc.gov/coals (last visited Oct. 25, 2016).

⁵⁹ 47 CFR § 76.901(f) and notes ff. 1, 2, and 3.

⁶⁰ See SNL KAGAN at <http://www.snl.com/interactivex/MultichannelIndustryBenchmarks.aspx>.

⁶¹ 47 CFR § 76.901(f) and notes ff. 1, 2, and 3.

⁶² See SNL KAGAN at <http://www.snl.com/interactivex/TopCableMSOs.aspx>.

⁶³ 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 CFR § 76.901(f).

⁶⁴ U.S. Census Bureau, 2017 NAICS Definitions, "517410 Satellite Telecommunications"; <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?input=517410&search=2017+NAICS+Search&search=2017>.

average annual receipts, under SBA rules.⁶⁵ For this category, U.S. Census Bureau data for 2012 show that there were a total of 333 firms that operated for the entire year.⁶⁶ Of this total, 299 firms had annual receipts of less than \$25 million.⁶⁷ Consequently, we estimate that the majority of satellite telecommunications providers are small entities.

19. *All Other Telecommunications.* The “All Other Telecommunications” category is comprised of establishments that are primarily engaged in providing specialized telecommunications services, such as satellite tracking, communications telemetry, and radar station operation.⁶⁸ This industry also includes establishments primarily engaged in providing satellite terminal stations and associated facilities connected with one or more terrestrial systems and capable of transmitting telecommunications to, and receiving telecommunications from, satellite systems.⁶⁹ Establishments providing Internet services or voice over Internet protocol (VoIP) services via client-supplied telecommunications connections are also included in this industry.⁷⁰ The SBA has developed a small business size standard for “All Other Telecommunications,” which consists of all such firms with gross annual receipts of \$32.5 million or less.⁷¹ For this category, U.S. Census data for 2012 show that there were 1,442 firms that operated for the entire year.⁷² Of these firms, a total of 1,400 had gross annual receipts of less than \$25 million.⁷³ Thus, the Commission estimates that the majority of “All Other Telecommunications” firms potentially affected by our action can be considered small.

20. *Broadband Radio Service and Educational Broadband Service.* Broadband Radio Service systems, previously referred to as Multipoint Distribution Service (MDS) and Multichannel Multipoint Distribution Service (MMDS) systems, and “wireless cable,” transmit video programming to subscribers and provide two-way high speed data operations using the microwave frequencies of the Broadband Radio Service (BRS) and Educational Broadband Service (EBS) (previously referred to as the Instructional Television Fixed Service (ITFS)).⁷⁴

21. *BRS -* In connection with the 1996 BRS auction, the Commission established a small business size standard as an entity that had annual average gross revenues of no more than \$40 million in the previous three calendar years.⁷⁵ The BRS auctions resulted in 67 successful bidders obtaining licensing opportunities for 493 Basic Trading Areas (BTAs). Of the 67 auction winners, 61 met the definition of a small business. BRS also includes licensees of stations authorized prior to the auction. At

⁶⁵ 13 CFR § 121.201, NAICS code 517410.

⁶⁶ U.S. Census Bureau, *2012 Economic Census of the United States*, Table EC1251SSSZ4, Information: Subject Series - Estab and Firm Size: Receipts Size of Firms for the United States: 2012, NAICS code 517410 https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ4/naics~517410.

⁶⁷ *Id.*

⁶⁸ See U.S. Census Bureau, 2017 NAICS Definitions, NAICS Code “517919 All Other Telecommunications”, <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?input=517919&search=2017+NAICS+Search&search=2017>.

⁶⁹ *Id.*

⁷⁰ *Id.*

⁷¹ 13 CFR § 121.201; NAICS Code 517919.

⁷² U.S. Census Bureau, *2012 Economic Census of the United States*, Table EC1251SSSZ4, Information: Subject Series - Estab and Firm Size: Receipts Size of Firms for the United States: 2012, NAICS code 517919, https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ4/naics~517919.

⁷³ *Id.*

⁷⁴ *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*, Report and Order, 10 FCC Rcd 9589, 9593, para. 7 (1995).

⁷⁵ 47 CFR § 21.961(b)(1).

this time, we estimate that of the 61 small business BRS auction winners, 48 remain small business licensees. In addition to the 48 small businesses that hold BTA authorizations, there are approximately 86 incumbent BRS licensees that are considered small entities (18 incumbent BRS licensees do not meet the small business size standard).⁷⁶ After adding the number of small business auction licensees to the number of incumbent licensees not already counted, there are currently approximately 133 BRS licensees that are defined as small businesses under either the SBA or the Commission's rules.

22. In 2009, the Commission conducted Auction 86, the sale of 78 licenses in the BRS areas.⁷⁷ The Commission offered three levels of bidding credits: (i) a bidder with attributed average annual gross revenues that exceed \$15 million and do not exceed \$40 million for the preceding three years (small business) received a 15 percent discount on its winning bid; (ii) a bidder with attributed average annual gross revenues that exceed \$3 million and do not exceed \$15 million for the preceding three years (very small business) received a 25 percent discount on its winning bid; and (iii) a bidder with attributed average annual gross revenues that do not exceed \$3 million for the preceding three years (entrepreneur) received a 35 percent discount on its winning bid.⁷⁸ Auction 86 concluded in 2009 with the sale of 61 licenses.⁷⁹ Of the ten winning bidders, two bidders that claimed small business status won 4 licenses; one bidder that claimed very small business status won three licenses; and two bidders that claimed entrepreneur status won six licenses.

23. *EBS* - Educational Broadband Service has been included within the broad economic census category and SBA size standard for Wired Telecommunications Carriers since 2007. Wired Telecommunications Carriers are comprised of 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.⁸⁰ The SBA's small business size standard for this category is all such firms having 1,500 or fewer employees.⁸¹ U.S. Census Bureau data for 2012 show that there were 3,117 firms that operated that year.⁸² Of this total, 3,083 operated with fewer than 1,000 employees.⁸³ Thus, under this size standard, the majority of firms in this industry can be considered small. In addition to Census data, the Commission's Universal Licensing System indicates that as of October 2014, there are 2,206 active EBS licenses. The

⁷⁶ 47 U.S.C. § 309(j). Hundreds of stations were licensed to incumbent MDS licensees prior to implementation of Section 309(j) of the Communications Act of 1934, 47 U.S.C. § 309(j). For these pre-auction licenses, the applicable standard is SBA's small business size standard of 1500 or fewer employees.

⁷⁷ *Auction of Broadband Radio Service (BRS) Licenses, Scheduled for October 27, 2009, Notice and Filing Requirements, Minimum Opening Bids, Upfront Payments, and Other Procedures for Auction 86*, Public Notice, 24 FCC Rcd 8277 (2009).

⁷⁸ *Id.* at 8296 para. 73.

⁷⁹ *Auction of Broadband Radio Service Licenses Closes, Winning Bidders Announced for Auction 86, Down Payments Due November 23, 2009, Final Payments Due December 8, 2009, Ten-Day Petition to Deny Period*, Public Notice, 24 FCC Rcd 13572 (2009).

⁸⁰ U.S. Census Bureau, 2017 NAICS Definitions, "517311 Wired Telecommunications Carriers," (partial definition), <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517311&search=2017>.

⁸¹ *See*, 13 CFR § 121.201. The Wired Telecommunications Carrier category formerly used the NAICS code of 517110. As of 2017 the U.S. Census Bureau definition shows the NAICS code as 517311 for Wired Telecommunications Carriers. *See*, <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517311&search=2017>.

⁸² *See* U.S. Census Bureau, 2012 Economic Census of the United States, Table No. EC1251SSSZ5, *Information: Subject Series - Estab & Firm Size: Employment Size of Firms: 2012* (517110 Wired Telecommunications Carriers). https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ5/naics~517110.

⁸³ *Id.*

Commission estimates that of these 2,206 licenses, the majority are held by non-profit educational institutions and school districts, which are by statute defined as small businesses.⁸⁴

24. *Direct Broadcast Satellite (“DBS”) Service.* DBS service is a nationally distributed subscription service that delivers video and audio programming via satellite to a small parabolic “dish” antenna at the subscriber’s location. DBS is included in SBA’s economic census category “Wired Telecommunications Carriers.”⁸⁵ The Wired Telecommunications Carriers 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.⁸⁶ Transmission facilities may be based on a single technology or combination of technologies. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephony services, including VoIP services, wired (cable) audio and video programming distribution; and wired broadband internet services.⁸⁷ By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry.⁸⁸ The SBA determines that a wireline business is small if it has fewer than 1,500 employees.⁸⁹ U.S. Census Bureau data for 2012 indicates that 3,117 wireline companies were operational during that year.⁹⁰ Of that number, 3,083 operated with fewer than 1,000 employees.⁹¹ Based on that data, we conclude that the majority of wireline firms are small under the applicable SBA standard. Currently, however, only two entities provide DBS service, which requires a great deal of capital for operation: DIRECTV (owned by AT&T) and DISH Network.⁹² DIRECTV and DISH Network each report annual revenues that are in excess of the threshold for a small business. Accordingly, we must conclude that internally developed FCC data are persuasive that, in general, DBS service is provided only by large firms.

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

25. We expect the actions proposed in the *Further Notice*, if adopted, will impose additional reporting, recordkeeping and/or other compliance obligations on small as well as other entities who inform the Commission about false alerts, and who submit additional information in State EAS Plans

⁸⁴ The term “small entity” within SBREFA applies to small organizations (non-profits) and to small governmental jurisdictions (cities, counties, towns, townships, villages, school districts, and special districts with populations of less than 50,000). [5 U.S.C. §§ 601\(4\)-\(6\)](#).

⁸⁵ See 13 CFR § 120.201. The Wired Telecommunications Carrier category formerly used the NAICS code of 517110. As of 2017 the U.S. Census Bureau definition shows the NAICS code as 517311 for Wired Telecommunications Carriers. See, <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517311&search=2017>.

⁸⁶ *Id.*

⁸⁷ See *id.* Examples of this category are: broadband Internet service providers (*e.g.*, cable, DSL); local telephone carriers (wired); cable television distribution services; long-distance telephone carriers (wired); CCTV services; VoIP service providers, using own operated wired telecommunications infrastructure; DTH services; telecommunications carriers (wired); satellite television distribution systems; and MMDS.

⁸⁸ *Id.*

⁸⁹ 13 CFR § 121.201, NAICS CODE 517110.

⁹⁰ See U.S. Census Bureau, *2012 Economic Census of the United States*, Table No. EC1251SSSZ5, *Information: Subject Series - Estab & Firm Size: Employment Size of Firms: 2012* (517110 Wired Telecommunications Carriers). https://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/51SSSZ5//naics~517110.

⁹¹ *Id.*

⁹² See *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, Eighteenth Report*, Table III.A.5, 32 FCC Rcd 568, 595 (Jan. 17, 2017).

about the procedures they are using to prevent and correct false alerts. More specifically, the *Further Notice* seeks comment on implementing a mechanized process, or utilizing currently available means, such as the Public Safety Support Center reporting portal,⁹³ to enable EAS Participants, Participating CMS Providers, emergency managers, and members of the public to inform the Commission about false alerts. Additionally, the *Further Notice* seeks comment on whether the Commission should adopt additional requirements regarding false alert reporting in light of the Hawaii false alert and the recommendations in the *Report on Hawaii False Alert*, which has the potential to impact reporting requirements.⁹⁴ For example, the Commission seeks comment on whether requiring false alert reporting, or specifying the false alert information required in a false alert report, would encourage implementation of standard operating procedures for reporting and responding to false alerts by alert originators.

26. The *Further Notice* also proposes to amend its rules governing State EAS Plans to allow them to include procedures implemented by alert originators within states to prevent and correct false alerts. This information includes standard operating procedures that alert initiators follow to prepare for “live code” and other public facing EAS tests and alerts; standard operating procedures that alert initiators have developed for the reporting and correction of false alerts; procedures agreed upon by the SECC and state emergency management agency or other State-authorized alert initiator by which they plan to consult with each other on a regular basis; and the procedures ensuring redundant and effective lines of communication between the SECC and key stakeholders during emergencies.

27. Finally, the *Further Notice* seeks comment on whether to adopt technical benchmarks or best practices to help ensure effective delivery of WEA alerts to the public.

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

28. The RFA requires an agency to describe any significant, specifically small business alternatives that it has considered in reaching its proposed 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 or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) and exemption from coverage of the rule, or any part thereof, for small entities.”⁹⁵

29. The Commission does not expect the actions in the *Further Notice* to have a significant economic impact on small entities. Although the Commission seeks further comment on additional requirements regarding false alert reporting in light of the Hawaii false alert and the recommendations in the *Report on Hawaii False Alert*, the comments are designed to be minimally burdensome to all affected entities, including small businesses. A potential burden associated filing a false alert report would likely be limited to the time expended to make such report – which would entail entering false alert information into an online filing portal. Given the relatively rare occurrence of false alerts, however, the number of individuals or entities that might ultimately use the online filing portal is likely to be extremely small.

30. The proposed changes to the State EAS Plan requirements will enable state and local alert originators to include procedures implemented by alert originators within states to prevent and correct false alerts, standard operating procedures that alert initiators follow to prepare for “live code” and other public facing EAS tests and alerts; standard operating procedures that alert initiators have developed for the reporting and correction of false alerts. To the extent that there are costs associated with submitting

⁹³ FCC, *Public Safety Support Center* (Sept. 27, 2016), <https://www.fcc.gov/general/public-safety-support-center>.

⁹⁴ See FCC, *Hawaii Emergency Management Agency False Alert Report and Recommendations: A Report of the Public Safety and Homeland Security Bureau* at 9 (PSHSB 2018), <https://www.fcc.gov/document/fcc-releases-report-hawaii-false-emergency-alert> (*Report on Hawaii False Alert*).

⁹⁵ 5 U.S.C. §§ 603(c)(1)-(4).

this information to SECCs, and to the Commission, these costs are expected to be de minimis. With respect to the Commission's request for comment on whether and how to address inconsistent WEA delivery, there is a range of measures that could ultimately be adopted. The Commission has requested comment on the relative costs and benefits of these various approaches to ensure it has input from small entities and others to minimize the economic impacts of whatever actions it might take. Nevertheless, in addition to the steps taken by the Commission discussed herein, commenters are invited to propose steps that the Commission may take to further minimize any economic impact on small entities. When considering proposals made by other parties, commenters are also invited to propose alternatives that serve the goals of these proposals.

F. Federal Rules that May Duplicate, Overlap, or Conflict with the Proposed Rules

31. None.

APPENDIX E

List of CommentersPS Docket 15-94

Initial Commenters	Abbreviation
Aaron Conti	Conti
AC&C	AC&C
Adrienne Abbott, Nevada SECC Chairwoman, filing in her individual capacity	Abbott
Alaska Broadcasters Association, Alaska State Emergency Communications Committee, and The State of Alaska Department of Military and Veterans Affairs, The Division of Homeland Security and Emergency Management	Alaska Commenters
American Cable Association	ACA
America's Public Television Stations, The Corporation for Public Broadcasting, National Public Radio, and The Public Broadcasting Service	APTS, CPB, NPR, and PBS
Association of Public-Safety Communications Officials International, Inc.	APCO
AT&T Services, Inc.	AT&T
AWARN Alliance	AWARN Alliance
Boulder Regional Emergency Telephone Service Authority	BRETSA
California Governor's Office of Emergency Services	California Governor's OES
Cohen, Dippell & Everist, P.C.	CD&E
Comcast Corporation	Comcast
Convergence Services, Inc.	Convergence
CTIA	CTIA
David L. Turnmire, Idaho SECC Chairman, filing in his individual capacity	Turnmire
Donald Walker	Walker
New Hampshire SECC Chairman and New Hampshire Association of Broadcasters Director Ed Brouder	Brouder
Federal Emergency Management Agency, Integrated Public Warning System Program Management Office	FEMA
Frank W. Bell	Bell
Frank LoPinto	LoPinto
Gary E. Timm, Wisconsin SECC Broadcast Chair, filing in his individual capacity	Timm
Gorman Redlich Manufacturing Company	Gorman Redlich

Jacob Epstein	Epstein
James T. Gorman	Gorman
Kenneth Evans, Delaware SECC EAS Co-Chair, filing in his individual capacity	Evans
Lance Seidman	Seidman
Mayco Ayala	Ayala
Matthew Biddle	Biddle
MED-EL Elektromedizinische Geraete ZGmbH	MED-L
Monroe Electronics, Inc.	Monroe
Named State Broadcasters Associations	NSBA
National Association of Broadcasters	NAB
National Cable and Telecommunications Association	NCTA
National Oceanic and Atmospheric Administration's National Weather Service	NWS
New York City Emergency Management Department	NYCEM
Nolan Peek	Peek
Ohio Educational Television Stations, Inc., Monroe Electronics, Inc., and Triveni Digital, Inc.	OETS, Monroe, and Triveni
Rehabilitation Engineering Research Center for Wireless Technologies and the Georgia Institute of Technology's Center for Advanced Communications Policy	Wireless RERC and GIT's CACP
Richard A. Rudman	Rudman
Robert Kluver	Kluver
Rodney V. Zeigler, Nebraska SECC Chairman	Zeigler
Sage Alerting Systems, Inc.	Sage
Sean Avne	Avne
Sean Digiacommo	Digiacommo
Sean Donelan	Donelan
Sylvana Berry	Berry
Telecommunications for the Deaf and Hard of Hearing, Inc., National Association of the Deaf, Deaf and Hard of Hearing Consumer Advocacy Network, Hearing Loss Association of America, Association of Late- Deafened Adults, Inc., and Gallaudet University Rehabilitation Engineering Research Center on Technology for the Deaf and Hard of Hearing	Telecommunications for the Deaf & Hard of Hearing, Inc. et al.
Tennessee Association of Broadcasters	TAB
Trilithic, Inc.	Trilithic
United States Geological Survey	USGS
Washington State SECC	Washington State

William W. Shields	SECC Shields
<u>Reply Commenters</u>	<u>Abbreviation</u>
American Cable Association	ACA
DISH Network LLC	DISH
Federal Emergency Management Agency, Integrated Public Warning System Program Management Office	FEMA
Frank W. Bell	Bell
Gary E. Timm, Wisconsin SECC Broadcast Chair, filing in his individual capacity	Timm
Monroe Electronics, Inc.	Monroe
National Association of Broadcasters	NAB
National Cable and Telecommunications Association	NCTA
<u>Ex Parte Commenters</u>	<u>Abbreviation</u>
American Cable Association	ACA
America's Public Television Stations, Corporation for Public Broadcasting, and Public Broadcasting Service	APTS, CPB, and PBS
AT&T Services, Inc.	AT&T
Charter Communications	Charter
Comcast Corporation	Comcast
Federal Emergency Management Agency, Integrated Public Warning System Program Management Office	FEMA
Google, Inc.	Google
Monroe Electronics, Inc.	Monroe
National Association of Broadcasters	NAB
National Cable and Telecommunications Association	NCTA
Sage Alerting Systems, Inc.	Sage
Trilithic, Inc.	Trilithic

**STATEMENT OF
CHAIRMAN AJIT PAI**

Re: *Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System*, PS Docket No. 15-94; *Wireless Emergency Alerts*, PS Docket No. 15-91.

In an episode of *The Office*,¹ Dwight Schrute decides to conduct a surprise fire drill for his fellow Dunder Mifflin employees. He starts a fire in a trash can, cuts the phone lines, and seals the office exits. Needless to say, this drill doesn't end well. Among other things, Angela's cat "Bandit" fell through a ceiling panel; Stanley suffered a heart attack; windows were smashed; and office equipment was destroyed. The absurd scene makes us laugh, but it also shows the dangers posed by false emergency alerts and poorly conducted emergency tests, as well as the consequences of not adequately preparing for real emergencies.

Today, we seek to improve emergency preparedness, facilitate better testing, and reduce the frequency of false alerts by making changes to our Emergency Alert System (EAS) rules. First, we amend our rules to recognize "Live Code Tests" as a separate category of alert exercise. This will enable alert originators to simulate an end-to-end test of the EAS. Live code testing can help identify gaps in training, assess the readiness of equipment, and ensure that alerts reach intended audiences. And to minimize public confusion and alert fatigue, we require that jurisdictions limit their tests to two per year and that each live code test explicitly state that the event is a test by text crawl and/or audio, as technically feasible.

Second, we amend our rules to allow EAS participants to include the two-tone Attention Signal in EAS public service announcements (PSAs). We also permit the use of a simulation of the Header Code tones—the familiar three audible tones that precede the Attention Signal. If used properly, PSAs can help raise public awareness and emergency preparedness. Therefore, the PSA must explain that the Attention Signal and/or simulated Header Code is only being used in the context of a PSA to familiarize and educate the public about emergency alerting.

Third, we require EAS participants to reconfigure their equipment to reject alerts that contain invalid digital signatures and alerts whose expiration time falls outside of an alert's specified time limits. This should reduce the frequency of false alerts reaching the American people.

Fourth, based on a report issued by the Public Safety and Homeland Security Bureau on Hawaii's false missile alert earlier this year, we require any EAS participant to notify the FCC's Operations Center no later than 24 hours after having actual knowledge that it has transmitted or otherwise sent a false alert to the public. We believe such notifications will help inform the FCC and the Federal Emergency Management Agency as we aim to identify and solve problems with the EAS.

And finally, in the *Further Notice*, we propose to require that State EAS Plans include procedures to help prevent false alerts and to swiftly mitigate their consequences should one occur. We also seek comment on whether we should do more to improve reporting on false alerts and a situation known as "lockouts," when multiple cable set-top boxes cannot return to normal operation after an EAS alert or test; whether we should take more steps to protect against false alerts at the state level; and how we can measure the accuracy and reliability of Wireless Emergency Alerts, or WEA, through technical criteria, performance standards, or public feedback.

¹ *The Office: Stress Relief* (NBC television broadcast Feb. 1, 2009), available at <https://www.youtube.com/watch?v=wEIUb6OcOSE>.

Getting back to *The Office*, when Michael Scott thought that his employees were trapped in a burning building during Dwight's fire simulation, he declared, "Everyone for himself!"² Fortunately, our nation's first responders don't embrace that attitude, and neither do the FCC's terrific staff. Speaking of, thanks to Steven Carpenter, Rochelle Cohen, Greg Cooke, Lisa Fowlkes, Nikki McGinnis, David Munson, Rasoul Safavian, Emily Talaga, and Michael Wilhelm from the Public Safety and Homeland Security Bureau; David Horowitz, Bill Richardson, and Anjali Singh from the Office of General Counsel; Chuck Needy from the Office of Strategic Planning and Policy Analysis; and Maureen McCarthy from the Enforcement Bureau.

² See also George Costanza, *Seinfeld: The Fire* (NBC television broadcast May 5, 1994), available at <https://www.youtube.com/watch?v=DOhNlt4Nsjo>.

**STATEMENT OF
COMMISSIONER MICHAEL O'RIELLY
APPROVING IN PART, DISSENTING IN PART**

Re: *Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System*, PS Docket No. 15-94; *Wireless Emergency Alerts*, PS Docket No. 15-91.

The Emergency Alert System (EAS) serves many important purposes. First and foremost, it is the method for the President to communicate with Americans during a time of crisis, which, luckily, has never needed to be used. EAS also serves as a means for local government agencies to inform communities of hazards, especially potential catastrophic weather events, as well as AMBER alerts. Basically, if you hear those specific, catchy tones, you should know it is serious.

Generally, I can support the item's authorization of conducting live code tests to ensure that the system works. At the same time, however, the code should be used sparingly so that people take it seriously when there is an actual emergency. I am pleased that today's item incorporates my suggestion to limit the number of live code tests. An alert originator may conduct no more than two per year, and the item states that it is the Commission's intention that a particular area should not receive any more than two live code tests per year. Such limitations should ensure that people do not disregard these alerts. If people come to expect that when those alert signals go off they may not be real, there is a very high likelihood that they will ignore potentially life-saving information.

For this reason and others, I oppose using simulated EAS tones for public service announcements (PSAs). It is one thing to test the system, albeit infrequently, but it is quite another to allow these sacrosanct tones to be used for PSAs. Americans should not fear that they are in imminent danger just to realize it's an announcement intended to inform them that the loud, screeching sound is what they will hear if truly in harm's way. Talk about creating an environment where people are likely to grow to ignore real warnings. We've been told that this will only codify waivers we have been giving for years to the Department of Homeland Security (DHS) to conduct such PSAs. But, somehow after years and years, we need to give blanket authority to do PSAs without any limitations? I dissented to the adoption of similar rules for Wireless Emergency Alerts in 2016 and still disagree with its inclusion today. Therefore, I dissent to this one portion of the item.

Additionally, if you want Americans to trust and pay attention to these signals, they must be confident that they convey accurate information. Erroneous alerts about incoming missiles, tsunamis, and other misinformation are frightening, inexcusable, and must stop. However, when it comes to the content of an EAS or wireless emergency alert (WEA) message, Federal Emergency Management Agency (FEMA) is the expert agency, as designated by Congress. The role of the Commission is to ensure that the alerts get passed through communications networks to consumers.

I am generally concerned that we are overstepping our bounds into territory provided to DHS and FEMA. Today's order now adopts new mandates that require communications providers that have actual knowledge that a false EAS alert was issued to contact the FCC Operations Center. But, the near-catastrophic mistake in Hawaii was the fault of a delusional individual, who still thought he did the right thing days later and was eventually terminated from employment. That incident does not justify new burdens on the private sector that did nothing wrong. At least my suggestion that the standard be based on actual knowledge was accepted. But, private sector entities that pass through these messages should not bear the burden or responsibility of having to determine whether a message they did not originate is, in fact, accurate and report to the Commission if it is not.

Similarly, the notice portion of the item contains a proposal requiring states and localities to add information about their procedures to prevent and mitigate false alerts in their State EAS Plans and seeks comment on what procedures should be detailed in these descriptions. In the IPAWS Modernization Act of 2015, Congress specifically gave FEMA the authority to “modernize” the integrated public alert and warning system “to disseminate timely and effective warnings regarding natural disasters, acts of terrorism, and other man-made disasters or threats to public safety.”¹ And, the law clearly states that FEMA shall, among others, “establish or adopt, as appropriate, common alerting and warning protocols, standards, terminology, and operating procedures for the public alert and warning system.”² Pursuant to this Act, FEMA should be determining what types of procedures should be in place when a false alert is issued and what information should be reported to the government, not the FCC.

I find it necessary to reiterate that WEA is a voluntary program, albeit a truly involuntary voluntary program, since I do not see a way for a mobile provider to say that it no longer wants to participate without getting dragged through the mud. And yet, the Commission seems to be engaging in never-ending proceedings that seek to add burdens before others are even effective. And, we have a sizable list of items that are still outstanding, including multimedia alerts, crowd-sourcing feedback on the effectiveness of the alert and emergency response, WEA notices to tablets, earthquake alerts, non-Spanish multi-language alerts, and even more reporting requirements.

Consider that the Commission just adopted geo-targeting for WEA alerts in January. Today, prior to the conclusion of the standards process and its implementation, which is scheduled to be completed by November 30, 2019, we consider, yet again, measures to increase the reliability of WEA delivery and the possible adoption of technical standards for WEA performance and delivery. It is not irrational to first see what benefits geo-targeting technologies bring. And, once again, we ask about whether crowd-sourced information should be collected to find trends in who is and is not receiving them, with no consideration of whether such feedback being provided is accurate or causes network congestion.

I thank the Chairman for incorporating some of my edits as discussed above and others, such as acknowledging that cable operators passing through a live code test using the old broadcast daisy chain only have the technical ability to add “this is a test” to the audio message and not to the text crawl. Cable operators should not be required to do something that a legacy system cannot do, so by adding that this requirement applies only if “technically feasible” is justified, as the remaining entities migrate to IPAWs.

¹ Integrated Public Alert and Warning System Modernization Act of 2015 § 2(a), 6 U.S.C. § 3210(a).

² *Id.*, 6 U.S.C. at §3210(b)(1).

**STATEMENT OF
COMMISSIONER BRENDAN CARR**

Re: *Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System*, PS Docket No. 15-94; *Wireless Emergency Alerts*, PS Docket No. 15-91

For the Emergency Alert System (EAS) to be effective, two conditions must be met: First, the public must know what emergency alerts are—what they sound or look like and what they signify. Second, Americans must have confidence that when they hear or see an emergency alert, they can rely and act on the potentially life-saving information that's provided. These essential conditions are at the heart of today's decision.

Although the beeps and screeches of EAS signals are known by many of us, first responders recognize a need to ensure the public is familiar with these alerts. Indeed, EAS participants have urged the Commission to allow the broadcast of public service announcements (PSAs) that include the EAS Attention Signal as one educational tool. For example, New York City's Emergency Management Department notes that people with cognitive disabilities, as well as those who are hard of hearing, would benefit from EAS PSAs.

Many organizations have created such PSAs. But our rules currently prevent alert tones from being used in PSAs given our concern about alert fatigue and commercial actors potentially misusing signals to get the attention of consumers' eyes or ears. Over the past few years, we've dealt with the tension between our rule and the need for educational PSAs by issuing a string of condition-laden waivers to select groups. Given our experience under these waivers, I am glad that we are now codifying our process for the use of alert tones in these PSAs. And we do so in a way that allows the entities with substantial expertise on emergency alerts, such as FEMA and local emergency management agencies, to determine their appropriate use.

We all know that false alerts can shake Americans' confidence in the emergency alert system. And after what happened in Hawaii a few months ago, we've seen the panic and harm that a false alert can cause. So I want to thank my colleagues for agreeing to two changes to today's decision that will help us act on some lessons learned. First, we are now moving straight to a rule that requires EAS participants to inform the FCC when they know they've transmitted a false alert, rather than seeking comment on the idea for a second time. Second, in the Public Safety and Homeland Security Bureau's report on the Hawaii false alert, agency staff recommended that states develop standard operating procedures for responding to false alerts. So I am glad that my colleagues have agreed to propose implementing this recommendation through our review of state EAS plans, rather than only seeking comment on doing so.

I want to thank my colleagues for agreeing to these changes, which can help strengthen our EAS system and Americans' confidence in these alerts. Thank you as well to the Public Safety and Homeland Security Bureau for its work on the item. It has my support.

**STATEMENT OF
COMMISSIONER JESSICA ROSENWORCEL**

Re: *Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System*, PS Docket No. 15-94; *Wireless Emergency Alerts*, PS Docket No. 15-91.

In January, the people of Hawaii woke to ominous messages flashing on their mobile phones, streaming in from social media, booming from radio stations, and lighting up their television screens. These messages commanded all who saw and heard them to seek immediate shelter due to a ballistic missile threat. They included the haunting words: "This is not a drill." But it was. In fact, it was a false missile alert that went horribly wrong causing fear and panic throughout a state keenly aware of security threats in the Pacific.

In April, I testified at a field hearing in Honolulu organized by Senator Brian Schatz to investigate what went wrong and identify ways to make it right. I joined the Director of Operations of US Pacific Command, the leadership of the Hawaii Department of Defense and other public safety officials to offer ideas to help prevent a false alert of this magnitude from ever happening again. I put forth two ideas in my testimony. First, I suggested that we set up a system for reporting false alerts, so we can learn from our errors going forward. Second, I suggested that we use the filing of State Emergency Alert System plans at this agency to promote best practices and help halt the problems that we saw in Hawaii.

Today, I am pleased to see the Federal Communications Commission has taken up these ideas in this order by ensuring that Emergency Alert System participants report false alerts and seeking comment in this rulemaking on how to revise state plans in order to prevent future false alerts. I sincerely hope we can conclude this rulemaking before we reach the one-year anniversary of the events in Hawaii. In the order before us, we also adopt a policy to support live testing of the Emergency Alert System under specific conditions in order to improve training and public understanding. In sum, today's effort is good for public safety communications nationwide and it has my full support.