

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

In the Matter of
Access to Telecommunications Equipment and Services by Persons with Disabilities
Petition for Rulemaking Filed by the Telecommunication Industry Association Regarding Hearing Aid Compatibility Volume Control Requirements
Amendment of the Commission's Rules Governing Hearing Aid-Compatible Mobile Handsets
Comment Sought on 2010 Review of Hearing Aid Compatibility Regulations

NOTICE OF PROPOSED RULEMAKING

Adopted: October 23, 2015

Released: October 30, 2015

Comment Date: [60 days after date of publication in the Federal Register]

Reply Comment Date: [90 days after date of publication in the Federal Register]

By the Commission: Commissioner O'Rielly approving in part, dissenting in part, and issuing a statement.

TABLE OF CONTENTS

Heading Paragraph #
I. INTRODUCTION..... 1
II. WIRELINE VOLUME CONTROL..... 6
A. Background..... 6
1. The Part 68 Volume Control Rule..... 6
2. The 2012 ANSI Wireline Volume Control Standard 9
B. Proposed Rules 14
1. Incorporation of the 2012 ANSI Wireline Volume Control Standard..... 14
2. Proposed Two-Year Phase-In..... 21
III. APPLICATION OF INDUCTIVE COUPLING AND VOLUME CONTROL REQUIREMENTS TO WIRELINE VOIP TELEPHONES 27
IV. VOLUME CONTROL AND OTHER ACOUSTIC COUPLING ISSUES FOR WIRELESS HANDSETS 29
A. Background..... 29
B. Proposed Rules 31
V. 2011 ANSI WIRELESS HAC STANDARD 39

A. Background.....	39
B. Proposed Rules	43
1. Testing and Rating Handsets Exclusively Under the 2011 ANSI Wireless HAC Standard.....	43
2. Power-Down Exception for GSM Operations at 1900 MHz.....	45
VI. USE OF FUTURE ANSI TECHNICAL STANDARDS.....	50
A. Background.....	50
B. Proposed Rules	53
1. Standards Development.....	55
2. Commission Review of Standards.....	63
3. Consistency with the APA	70
VII. PROCEDURAL MATTERS.....	71
A. Comment Filing Procedures	71
B. <i>Ex Parte</i> Presentations	76
C. Regulatory Flexibility Act	77
D. Paperwork Reduction Act Analysis.....	78
E. Materials in Accessible Formats.....	79
VIII. ORDERING CLAUSES	81
APPENDIX A – Proposed Rules	
APPENDIX B – List of Commenters	
APPENDIX C – Initial Regulatory Flexibility Analysis	

I. INTRODUCTION

1. The Federal Communications Commission (Commission) has a longstanding commitment to ensuring that Americans with hearing loss are able to access wireline and wireless communications services through a wide array of phones, including voice-over-Internet protocol (VoIP) telephones and wireless handsets that use advanced mobile technologies. The Commission’s actions in this area have helped enable the millions of Americans with hearing loss to have greater access to and more fully benefit from wireline and wireless communications services and emerging technologies.

2. In this Notice of Proposed Rulemaking (NPRM), we first propose to amend the Commission’s hearing aid compatibility (HAC) rules for wireline handsets. Specifically, we propose to take the following actions: (1) incorporate into the rules a revised industry standard developed by the Telecommunications Industry Association (TIA) – ANSI/TIA-4965-2012 (2012 ANSI Wireline Volume Control Standard) – that appears likely to improve the ability of people with hearing loss to select wireline telephones with sufficient volume control to meet their communication needs and provide greater regulatory certainty for the industry; and (2) apply the Commission’s wireline telephone volume control and other hearing aid compatibility requirements to handsets used with VoIP services, pursuant to the Twenty-First Century Communications and Video Accessibility Act of 2010 (CVAA).¹

3. Second, we propose a rule and request comment on setting a standard for volume control for wireless handsets to ensure more effective acoustic coupling between handsets and hearing aids² or cochlear implants.³

¹ Pub. L. No. 111-260, 124 Stat. 2751 (2010) (as codified in various sections of 47 U.S.C.). *See also* Pub. L. No. 111-265, 124 Stat. 2795 (2010) (technical corrections to the CVAA).

² Hearing aids operating in acoustic coupling mode receive sounds through a microphone and then amplify all sounds surrounding the user, including both desired sounds, such as a telephone’s audio signal, and unwanted ambient noise. Hearing aids operating in inductive coupling mode turn off their microphone to avoid amplifying unwanted ambient noise, instead using a telecoil to receive only audio signal-based magnetic fields generated by inductive coupling-capable telephones and wireless handsets. The hearing aid converts these fields back to sound.

4. Third, we propose to: require manufacturers to use exclusively the 2011 standard developed by the American National Standards Institute (ANSI) Accredited Standards Committee C63[®] (ASC C63[®]) - Electromagnetic Compatibility (EMC) – ANSI C63.19-2011 (2011 ANSI Wireless HAC Standard) – to certify future handsets as hearing aid compatible;⁴ and eliminate the power-down exception if manufacturers are required to test and rate handsets exclusively under the 2011 ANSI Wireless HAC Standard.

5. Finally, to implement section 710 of the Communications Act of 1934, as amended by section 102(b) of the CVAA,⁵ and to simplify the process for all equipment, wireline and wireless, to achieve hearing aid compatibility compliance, we seek comment on a process for enabling industry to use new or revised technical standards for assessing hearing aid compatibility compliance, prior to Commission approval of such standards. We propose that such standards are developed by an ANSI-accredited organization in accordance with a public participation process and in consultation with consumer stakeholders designated by the Commission, as required by the CVAA.⁶

II. WIRELINE VOLUME CONTROL

A. Background

1. The Part 68 Volume Control Rule

6. Pursuant to section 710 of the Communications Act of 1934, as amended (Act), all telephones manufactured or imported for use in the United States must provide an “internal means for effective use with hearing aids that are designed to be compatible with telephones which meet established

(Continued from previous page) _____

³ With a cochlear implant, a microphone in a headpiece is connected to a processor, which is worn at ear level. The processor translates the signals from the microphone into digital signals that are sent to a transmitter, which is held by a magnet on the side of the head behind the ear. The transmitter sends the coded signals via radio waves to the cochlear implant, where they are directed to auditory nerve fibers using an array of electrodes implanted in the person’s cochlea; from there, they elicit patterns of nerve activity that the brain interprets as sound. Some cochlear implants are manufactured with built-in telecoils, which can enable a user to hear more clearly when using a hearing aid compatible telephone or wireless handset. See Hearing Loss Association of America, *The Telecoil* (Mar. 2014), available at <http://www.hearingloss.org/sites/default/files/docs/HLAA_Telecoil_Brochure.pdf> (last visited Oct. 23, 2015). With respect to wireless phones, in 2003, the Commission stated that to the extent hearing aid compatibility requirements “facilitat[e] usage by hearing aid users, we expect that individuals with cochlear implants will likewise benefit.” *Section 68.4(a) of the Commission’s Rules Governing Hearing Aid-Compatible Telephones*, WT Docket No. 01-309, Report and Order, 18 FCC Rcd 16753, 16766 ¶ 29 (2003 HAC R&O). Again in 2007, the Commission noted that there was anecdotal evidence of people with cochlear implants who have had success using hearing aid compatible wireless devices. See generally *Section 68.4(a) of the Commission’s Rules Governing Hearing Aid-Compatible Telephones*, WT Docket Nos. 01-309, 06-203, Report on the Status of Implementation of the Commission’s Hearing Aid Compatibility Requirements, 22 FCC Rcd 17703, 17746-47 ¶¶ 91-94 (WTB 2007). Accordingly, questions in this NPRM pertaining to the interaction between telephones and hearing aids apply as well to cochlear implants.

⁴ Currently, the part 20 rules allow wireless handsets to be certified under either the 2011 ANSI Wireless HAC Standard or the previous version, ANSI C63.19-2007 (2007 ANSI Wireless HAC Standard). 47 C.F.R. § 20.19(b).

⁵ CVAA, § 102(b); 47 U.S.C. § 610(c).

⁶ On matters related to this NPRM, the Wireless Telecommunications Bureau (WTB) and the Consumer and Governmental Affairs Bureau (CGB) released a Public Notice last year seeking comment on two possible changes to the hearing aid compatibility rules: first, whether to apply these rules to wireless handsets in a technologically neutral way, and second, whether to replace the current fractional compliance regime (requiring only certain percentages of wireless handsets to be hearing aid compatible, depending on air interfaces and other factors) with compatibility mandates for all wireless devices. *Request for Updated Information and Comment on Wireless Hearing Aid Compatibility Regulations*, WT Docket Nos. 07-250, 10-254, Public Notice, 29 FCC Rcd 13969 (WTB/CGB 2014).

technical standards for hearing aid compatibility.”⁷ Initially, the Commission’s regulations implementing section 710 required that telephones have a built-in electromagnetic coil, or telecoil, to allow inductive coupling between telephone handsets and hearing aids.⁸ In 1996, the Commission amended its regulations to require that wireline telephones also be equipped with volume control to allow improved acoustic coupling.⁹ Finding that volume control requirements “will make telephones more accessible for a significant portion of the population, including hearing aid wearers and others with hearing [loss],”¹⁰ the Commission concluded that “the goals of the HAC Act would be best served if volume control is included within the definition of ‘hearing aid compatibility.’”¹¹

7. The rules governing volume control for wireline telephones, located in Part 68 of the Commission’s rules,¹² incorporate by reference two ANSI standards: ANSI/EIA-470-A-1987 (*Telephone Instruments with Loop Signaling*) for analog phones; and ANSI/EIA/TIA-579-1991 (*Acoustic-To-Digital and Digital-To-Acoustic Transmission Requirements for ISDN Terminals*) for digital phones.¹³ According to these rules, wireline telephones, also known as terminal equipment,¹⁴ must permit the volume to be increased by an amount that falls within the specified minimum and maximum gains, which are expressed as changes in Receive Objective Loudness Rating (ROLR) values as measured under these standards.¹⁵ Specifically, terminal equipment must allow the volume to be increased by a minimum of 12 decibels (dB) gain relative to the normal unamplified, or nominal, level.¹⁶ In addition, a terminal device may not

⁷ 47 U.S.C. §§ 610(b), (b)(1)(B).

⁸ *Access to Telecommunications Equipment and Services by the Hearing Impaired and Other Persons with Disabilities*, CC Docket No. 87-124, First Report and Order, 4 FCC Red 4596 (1989).

⁹ *Access to Telecommunications Equipment and Services by Persons with Disabilities*, Report and Order, CC Docket No. 87-124, 11 FCC Rcd 8249 (1996) (*1996 HAC R&O*).

¹⁰ *Id.* at 8278 ¶ 69.

¹¹ *Id.* at 8282 ¶ 78.

¹² 47 C.F.R. §§ 68.6, 68.112, 68.317. Part 68 of the rules governs the connection of terminal equipment to the public switched telephone network. In 2000, the Commission transferred responsibility for adopting, compiling, and publishing most of the technical requirements formerly prescribed by Part 68 and for maintaining a database of all approved terminal equipment to the Administrative Council for Terminal Attachments (ACTA). The technical requirements adopted by ACTA, which are developed by ANSI-accredited standards organizations, are subject to *de novo* Commission review on appeal. However, the hearing aid compatibility requirements, including those addressing volume control for terminal equipment, were retained in Part 68. *See 2000 Biennial Regulatory Review of Part 68 of the Commission’s Rules and Regulations*, CC Docket No. 99-216, Report and Order, 15 FCC Rcd 24944, 24966 ¶ 66 (2000).

¹³ 47 C.F.R. §§ 68.317(a), (c) (addressing analog and digital telephones, respectively).

¹⁴ *See id.* § 68.3.

¹⁵ *Id.* §§ 68.317(a), (c).

¹⁶ *Id.* A decibel (dB) is a logarithmic unit of measurement used to describe the strength of a signal – sound pressure, intensity, or RF power – in relation to a standard reference signal source. The number of dB for a given ratio of two power levels is obtained by multiplying the common logarithm of the ratio of the two power levels by 10, *i.e.*, $10 \times \log_{10}(P1/P2)$. Decibels relative to 1 Watt (W) are denoted as dBW; decibels relative to 1 milliwatt (mW) are denoted as dBm. For example, 10 W equates to 10 dBW; 10 mW equates to 10 dBm. Attenuation or amplification of a radio frequency signal or sound, the difference in dBW or dBm, is expressed in units of decibels, which is commonly abbreviated as dB. *See* ATIS Telecom Glossary 2012; ITU Recommendation ITU-R V.574-4. While attenuation or amplification of a sound is expressed in dB as the change in sound intensity power level (*i.e.*, acoustic power level or sound power per unit area), perceived loudness is a psycho-acoustic quantity that depends on the sound pressure level (the force of sound on a surface area perpendicular to the direction of the sound), the frequency spectrum, the time behavior of the sound, and the perception of an individual. Doubling the sound intensity power level is expressed as a 3 dB increase, but this only has a slight increase in the loudness perception. A perception of twice as loud has been judged to take 10 times the sound intensity power, or 10 dB. The loudness

(continued....)

allow the volume to exceed the specified maximum gain of 18 dB above the nominal level unless the volume control automatically resets to the nominal level when the device is hung up by the user.¹⁷ To prevent a manufacturer from achieving technical compliance without improving performance for people with hearing loss, the normal unamplified level of the device must fall within certain limits specified in the two standards.¹⁸

8. In 2010, the CVAA amended section 710(b) of the Act to apply the requirement for “customer premises equipment” (CPE) to “provide internal means for effective use with hearing aids” not only to traditional “telephones” used over the public switched telephone network (PSTN), but also to “[a]ll customer premises equipment used with advanced communications services that is designed to provide 2-way voice communication via a built-in speaker intended to be held to the ear in a manner functionally equivalent to a telephone.”¹⁹ For implementation of this section, the CVAA directed the Commission to “use appropriate timetables or benchmarks to the extent necessary (1) due to technical feasibility, or (2) to ensure the marketability or availability of new technologies to users.”²⁰ In addition, the CVAA amended section 710(c) to (1) expressly authorize the Commission to delegate authority to establish or approve technical standards to enforce section 710, (2) require the Commission to consult with the public, including people with hearing loss, in establishing or approving such technical standards, and (3) allow manufacturers to rely on compliance with relevant technical standards “developed through a public participation process and in consultation with interested consumer stakeholders (designated by the Commission for purposes of this section)” to establish that their products are hearing-aid compatible, even if such standards have not been incorporated into a Commission rule, provided that “[t]he Commission shall remain the final arbiter as to whether the standards meet the requirements of this section.”²¹

2. The 2012 ANSI Wireline Volume Control Standard

9. Since the adoption of the volume control requirements in 1996, the ANSI wireline telephone volume control standards have been updated multiple times (though not incorporated into the Commission’s rules) through voluntary industry consensus efforts.²² For example, as TIA explains, the standards have been modified to discontinue reliance on the IEC-318 coupler (artificial ear) to assess amplification gain and rely instead on the Head and Torso Simulator (HATS).²³ More recently, after TIA’s research disclosed both consumers’ lack of accurate information about telephone amplification and manufacturers’ use of variable methods to measure telephone amplification, it developed a new standard,

(Continued from previous page) _____

factor doubles for every 10 dB of sound intensity power level increase. A 20 dB increase in sound intensity is perceived as 4 times as loud by the normal human ear. An 18 dB sound intensity increase has a loudness factor change of between 3 and 4 times as loud as the original sound. See Eberhard Sengpiel, “The human perception of loudness,” available at <<http://www.sengpielaudio.com/calculator-loudness.htm>> (last visited Oct. 23, 2015).

¹⁷ 47 C.F.R. §§ 68.317(a), (c), (f). Pursuant to a streamlined waiver process, the volume control reset requirement has been waived for certain high-amplification telephones marketed to persons with substantial hearing loss. For such telephones, the volume control may be turned up beyond the maximum 18 dB of gain without resetting to the nominal level upon hang-up. See, e.g., *Request for Waiver of Volume Control Reset*, 47 C.F.R. § 68.317(f), *Global China Technology Limited Amplified DECT Phone # DD24*, Order, 28 FCC Rcd 17059 (CGB 2013).

¹⁸ 47 C.F.R. §§ 68.317(a), (c).

¹⁹ CVAA, § 102(a)(1), amending 47 U.S.C. §§ 610(b)(1).

²⁰ CVAA, § 102(c), amending 47 U.S.C. § 610(e).

²¹ CVAA, § 102(b), amending 47 U.S.C. § 610(c).

²² TIA, *Petition for Rulemaking*, CG Docket No. 12-32, RM-11682 (filed Oct. 25, 2012) (TIA Petition).

²³ *Id.* at 6. The IEC-318 coupler and the HATS are explained below.

TIA-4965, *Receive Volume Control Requirements for Digital and Analog Wireline Terminals*.²⁴ Specifically, TIA reports that feedback from consumers during the Hearing Loss Association of America's conventions of 2005-07 suggested that there were discrepancies between the amount of phone amplification consumers thought they needed and how much they actually needed. These inconsistencies prompted TIA's TR-41 engineering committee (User Premises Telecommunications Requirements) to undertake an analysis of phones on the market. In this 2008 study, TIA measured, in accordance with the standards referenced in the current rule,²⁵ the actual gain achieved by a sample of 7 phones that were advertised as providing above average amplification. The results did not correlate with the manufacturers' amplification claims; for example, one product claiming to offer "up to 40 dB" of gain only had 4 to 5 dB more amplification than a typical retail phone.²⁶ Thus, to the extent that the amplification claims were valid, they were based on criteria other than those contained in the industry standard. The results of this investigation led TIA to develop the TIA-4965 standard.²⁷

10. On October 25, 2012, after the TIA-4965 standard was approved by ANSI (and renamed ANSI/TIA-4965-2012), TIA filed a petition for rulemaking requesting that the Commission revise section 68.317 to incorporate this standard by reference. The TIA Petition asks for a two-year phase-in period for the new standard and requests that the Commission allow the rule to be updated to incorporate future changes in the standard without going through additional rulemaking.²⁸

11. TIA notes that the 2012 ANSI Wireline Volume Control Standard modifies in two ways the manner in which amplification is measured for wireline phones. First, TIA explains, the standard specifies a physical set-up for measuring loudness that differs from the method specified in the 1996 standard referenced in the existing volume control rule. Specifically, the new standard discontinues the use of an IEC-318 coupler, which must form a seal with the telephone handset. Instead, the 2012 ANSI Wireline Volume Control Standard specifies the HATS method, which uses a mannequin that includes a human pinna (outer ear) simulator and which TIA states is appropriate for all types of handsets.²⁹ According to TIA, because HATS "takes into account the fact that telephone receivers do not form a seal against the ear of the user in real-life situations," it "provides a much better measure of the sound actually heard by the user of the telephone."³⁰

12. Second, TIA observes, the 2012 ANSI Wireline Volume Control Standard replaces the ROLR method of calibrating amplification used in previous standards with a new method called Conversational Gain. TIA explains that, under the ROLR method, gain is determined relative to the normal unamplified, or nominal, sound level for the particular equipment that is being measured. This nominal sound level, however, can vary depending upon the equipment being used.³¹ As a result, according to TIA, the actual loudness as heard by the consumer can also vary for different models of equipment, even though they all may specify the same volume control gain. Under the ROLR measurement matrix for volume gain, therefore, a consumer cannot compare the ultimate volume level

²⁴ See <http://global.ihs.com/search_res.cfm?RID=TIA&INPUT_DOC_NUMBER=ANSI/TIA-4965> (last visited Oct. 23, 2015). The new standard combines the standards for analog and digital equipment.

²⁵ As noted in ¶ 12, *infra*, measurements under the current standard are based on the amount of amplification relative to the normal unamplified, or nominal, level for the particular equipment that is being measured.

²⁶ TIA, *Ex Parte* Letter, CG Docket No. 13-46, Attachment at 18-20 (filed Oct. 29, 2013) (TIA October 29, 2013 *Ex Parte*).

²⁷ TIA Petition at 9-10.

²⁸ *Id.* at 10-12.

²⁹ *Id.* at 6.

³⁰ *Id.*

³¹ *Id.* at 9.

achievable on two pieces of equipment, as the normal unamplified sound volume for each product may vary considerably.³² By contrast, TIA explains, under the Conversational Gain method, the starting point – 0 dB Conversational Gain – is an absolute, not a relative, value. TIA states further that this starting point of 0 dB Conversational Gain is equivalent to 64 dB sound pressure level (dBSPL) in each ear, which is the volume of a face-to-face conversation where participants are 1 meter apart.³³ As a consequence, 20 dB of Conversational Gain means that a consumer will hear a voice 20 dB louder than a face-to-face conversation at a distance of 1 meter.³⁴ TIA maintains that the 2012 ANSI Wireline Volume Control Standard offers “a more rational and intuitive way to measure telephone speech amplification than currently-referenced ROLR requirements.”³⁵ In addition, TIA asserts, the new standard will provide a more consistent experience of amplified gain level, enabling consumers with hearing loss to better assess and compare the merits of various models of terminal equipment.³⁶ In this regard, TIA states that “the new standard thus closes a loophole that currently allows for a normal unamplified level to be biased towards the lower end of the specification in order to more easily meet the 12 dB gain requirement.”³⁷

13. On July 19, 2013, the Commission released a public notice seeking comment on whether to initiate a rulemaking proceeding in response to the TIA Petition.³⁸ Comments filed in response to the *2013 Wireline Volume Control PN* indicated wide support among stakeholders for the proposed rulemaking. Consumer and professional groups, as well as hearing-aid manufacturers, express support for the proposed standard described in the TIA Petition, and the Commission has received no comments in opposition to incorporating this new standard.³⁹ In particular, the Joint Consumer Commenters, a coalition of six major hearing loss consumer and research groups who support the Petition’s proposals as “a positive step forward,”⁴⁰ point out that having an easily understood standard that ensures all manufacturers measure amplification the same way would go a long way to ease the telephone shopping process and lessen consumer frustration with the current lack of comparability among volume control ratings for different phones.⁴¹ Similarly, the American Speech-Language Hearing Association (ASHA), a

³² Another aspect of the ROLR method that can be confusing to consumers, according to TIA, is that ROLR ratings are stated in terms of decibels of loss, to reflect the loss of loudness resulting from transmission over the network, so that a higher decibel level represents a lower loudness level. *Id.* at 10 n.15. As a result, an increase in volume (*e.g.*, by the 12 dB of gain currently required) results in a lower ROLR rating.

³³ TIA explains that the determination that 0 dB Conversational Gain is equivalent to 64 dB sound pressure level in each ear is based on measurements by the Institute of Electrical and Electronics Engineers (“IEEE”). *Id.* at 8 & n.11, *citing* IEEE 269-2010, *IEEE Standard Methods for Measuring Transmission Performance of Analog and Digital Telephone Sets, Handsets, and Headsets*.

³⁴ TIA October 29, 2013 *Ex Parte* at 22.

³⁵ TIA Petition at 3.

³⁶ *Id.* at 14-15.

³⁷ *Id.* at 10. As noted above, in order to prevent a manufacturer from achieving technical compliance without improving performance for people with hearing loss, the Commission’s existing rule governing amplification on wireline phones requires that the nominal, or unamplified, sound level of the device fall within certain limits specified in the two standards incorporated in the rule. 47 C.F.R. §§ 68.317(a), (c). Within these limits, however, it is still possible to “bias” the nominal sound level in the manner TIA describes.

³⁸ *Request for Comment on Petition for Rulemaking Filed by the Telecommunications Industry Association Regarding Hearing Aid Compatibility Volume Control Requirements*, CG Docket No. 13-46, Public Notice, 28 FCC Rcd 10338 (2013) (*2013 Wireline Volume Control PN*).

³⁹ A list of commenters can be found in Appendix B.

⁴⁰ Hearing Loss Association of America (HLAA), Telecommunications for the Deaf and Hard of Hearing (TDI), Association of Late Deafened Adults (ALDA), Deaf and Hard of Hearing Consumer Advocacy Network (DHHCAN), National Association of the Deaf (NAD) and RERC-Telecommunications Access, Comments, CG Docket No. 13-46, at 1 (filed Aug. 19, 2013) (Joint Consumer *2013 Wireline Volume Control PN* Comments).

hearing professionals' organization, notes in an *ex parte* letter that “[s]tandardization of volume control for analog and digital [wireline] phones is an important step in improving access and user experience of over 36 million Americans with hearing loss,”⁴² and adds that the new standard offers “important advances for the measurement of sound from [analog and digital wireline telephones].”⁴³ The Hearing Industries Association (HIA), a trade group of hearing aid manufacturers, also supports incorporation of the new ANSI/TIA volume control standard.⁴⁴

B. Proposed Rules

1. Incorporation of the 2012 ANSI Wireline Volume Control Standard

14. We propose to amend section 68.317 of our rules to incorporate the 2012 ANSI Wireline Volume Control Standard. As the Joint Consumer Commenters point out, standards for measuring volume gain on terminal equipment can be critical to ensuring that such equipment meets the communication needs of consumers with hearing loss.⁴⁵ We believe that incorporating the 2012 ANSI Wireline Volume Control Standard into section 68.317 will make our rules more effective in ensuring that people with hearing loss have “equal access to the national telecommunications network”⁴⁶ and that telephones provide “an internal means for effective use with hearing aids.”⁴⁷ Also, incorporation of the 2012 ANSI Wireline Volume Control Standard into section 68.317 would not appear to affect terminal equipment’s compliance with the hearing aid compatibility requirements of section 68.316. We seek comment on this proposal generally and on the specific issues outlined below.

15. *Ensuring that people with hearing loss can effectively use wireline telephones.* Based on the TIA Petition and the comments filed in response, our proposal to incorporate the 2012 ANSI Wireline Volume Control Standard into our rules is likely to make ordinary telephones more usable for consumers who need telephone amplification. First, as noted by ASHA and TIA, the new standard’s HATS method for testing equipment appears to be “more representative of the user experience”⁴⁸ because it reflects the actual manner in which phones are held to the ear.⁴⁹ Second, the new standard’s measurement criterion, Conversational Gain, appears to provide “a more realistic metric for measuring speech through a phone”⁵⁰ and has the potential to close a “loophole”⁵¹ in the current rule that appears to have resulted in a less than

(Continued from previous page) _____

⁴¹ *Id.* Comments at 2.

⁴² ASHA, *Ex Parte* Letter at 1 (filed Nov. 25, 2013) (ASHA November 25, 2013 *Ex Parte*).

⁴³ *Id.* at 2.

⁴⁴ HIA, Comments, CG Docket No. 13-46 (filed Aug. 19, 2013) (HIA 2013 *Wireline Volume Control PN* Comments).

⁴⁵ *See 1996 HAC R&O*, 11 FCC Rcd at 8278-79.

⁴⁶ Pub. L. No. 100-394, § 2 (1). To ensure that our rules incorporate the most recent Congressional statement of purpose regarding hearing aid compatibility, this Notice of Proposed Rulemaking proposes to amend the statement of purpose in 47 C.F.R. § 68.1 to replace the previous statement of purpose, which was derived from the language of the 1982 amendment to the Communications Act, with the more recent language of Pub. L. No. 100-394. *See Appendix A, infra.*

⁴⁷ 47 U.S.C. § 610(b).

⁴⁸ ASHA November 25, 2013 *Ex Parte* at 2.

⁴⁹ TIA Petition at 6 (HATS “provides a much better measure of the sound actually heard by the user of the telephone” because it “takes into account the fact that telephone receivers do not form a seal against the ear of the user in real-life situations”). TIA points out that there are a declining number of telephones with handsets that can be seated on a coupler without leakage. *Id.*

⁵⁰ ASHA November 25, 2013 *Ex Parte* at 2.

⁵¹ TIA Petition at 10, 13-14.

consistent means of measuring speech amplification across manufacturers.⁵² We seek comment on these assumptions and generally on the extent to which the new approaches embodied in the standard will improve the usability of telephones by consumers with hearing loss. In addition, in light of Congress's and the Commission's emphasis on ensuring access to emergency services by people with disabilities,⁵³ we seek comment on whether incorporating the 2012 ANSI Wireline Volume Control Standard into the Commission's rules will improve the ability of the segment of the population that has hearing loss to communicate effectively with emergency services.⁵⁴

16. *Improving consumers' ability to assess and compare terminal equipment prior to purchase.* The record indicates that, currently, due to the variation in manufacturer measurements of amplification, "[t]he variability and confusion in the telephone marketplace today is quite frustrating to consumers [with hearing loss] as well as the professionals who are assisting them."⁵⁵ Indeed, TIA research confirms that some vendors of high amplification phones have made claims about the amount of amplification offered that could not be verified when tested against the industry standard.⁵⁶ The new ANSI/TIA standard's Conversational Gain method seems to address this problem because, according to ASHA, it will "allow consumers with hearing loss (and audiologists assisting them) to readily compare the sound levels of various digital and hardware phones to determine which devices best meet their amplification needs."⁵⁷ ASHA goes on to explain that "[t]he use of Conversational Gain would provide an absolute reference (starting point) of 64 dBSPL through a speakerphone and 70 dBSPL through the handset so that any additional gain (volume) provided by the phone would be clear to the user."⁵⁸ As TIA has explained, this starting point is the volume of a face-to-face conversation where the participants are 1 meter apart and listening with both ears. Thus, 20 dB of Conversational Gain simply means that a consumer will hear a voice 20 dB louder than a face-to-face conversation at a distance of 1 meter.⁵⁹ In other words, Conversational Gain measures how loud a voice is compared to a typical face-to-face conversation. We note that in addition to the 2012 ANSI Wireline Volume Control Standard, TIA has developed another voluntary standard employing Conversational Gain, ANSI/TIA-4953, which specifies measurement procedures and performance requirements for specialty high gain telephones.⁶⁰ We seek

⁵² *Id.* at 8; Joint Consumer RM Comments at 2.

⁵³ TIA Petition at 14-15; *see generally* 47 U.S.C. § 615c(g), added by CVAA, § 106 (giving the Commission authority to implement regulations and technical standards that are necessary to "achieve reliable, interoperable communication that assures access by individuals with disabilities to an Internet protocol-enabled emergency network, where achievable and technically feasible").

⁵⁴ *Id.* at 14.

⁵⁵ ASHA November 25, 2013 *Ex Parte* at 1. *See also* Joint Consumer 2013 *Wireline Volume Control PN* Comments at 2-3.

⁵⁶ TIA October 29, 2013 *Ex Parte*, Attachment at 18-20 (describing 2008 investigation finding that 7 phones advertised as providing above average amplification overstated the amount of amplification when tested against the industry standard).

⁵⁷ ASHA November 25, 2013 *Ex Parte* at 1.

⁵⁸ *Id.* at 2. The starting point – 0 dB Conversational Gain – is equivalent to 64 dBSPL in each ear. However, when listening with only one ear, a sound must be 6 dB louder in order to be perceived at the same level. Thus, the appropriate equivalence for a telephone being held to the ear is 0 dB Conversational Gain equals 70 dBSPL. TIA Petition at 8-9.

⁵⁹ TIA Petition at 9.

⁶⁰ ANSI/TIA-4953 also addresses tone control, acoustic ringer level and tone, noise, distortion, stability, transmit levels, send quality, and volume for such high gain equipment. ANSI/TIA-4953 also provides standardized labels and criteria for using such labels to designate an amplified telephone as suitable for consumers with specified levels of hearing loss (HL), as follows: "Mild" (20 dB to 40 dB HL); "Moderate" (40 dB to 70 dB HL); and "Severe" (70

(continued....)

comment on the experience of industry and consumers with implementation of the HATS Method and the Conversational Gain method for this purpose and others, and whether Commission incorporation of the new ANSI/TIA wireline volume control standard in its rules will lead to further improvement of a consumer's ability to find devices that meet his or her communication needs, and in particular, a consumer's ability to determine the need for high amplification telephones. We also seek information concerning the findings of any consumer tests or trials that may have been conducted to determine whether devices having the same conversational gain rating demonstrate comparable amplification as perceived by device users.

17. *Increasing market certainty and fairness to equipment manufacturers.*⁶¹ According to TIA, its ANSI-accredited standards-setting process ensures that new standards are developed with input from manufacturers and service providers with experience in deploying the equipment affected by the standards.⁶² TIA further notes that “numerous consultations were made with hearing loss researchers during the development of the Conversational Gain concept for use in these standards, and that well-received presentations on the subject have been made to the hearing loss community.”⁶³ In addition, HIA reports having provided input to TIA regarding the standard and supports the TIA Petition.⁶⁴ In particular, HIA champions the change from ROLR to “the more realistic Conversational Gain method” for measuring telephone amplification.⁶⁵ We seek comment on whether, in this instance, TIA's process has resulted in a standard that promotes both market certainty and a level playing field for companies that manufacture terminal equipment. We also invite comment on whether compliance with the standard poses any impediments for equipment that is marketed internationally.

18. *Costs, benefits, and technology impacts.* Pursuant to section 710(e), we seek comment on the costs and benefits of incorporating the 2012 ANSI Wireline Volume Control Standard into our rules.. We are interested in the costs and benefits to persons with and without hearing loss.⁶⁶ In particular, we seek comment on the likely impact of implementing the new standard on the cost of a telephone. We also seek comment on whether incorporation of the new standard will encourage the use of currently available technology and will not discourage or impair the development of improved technology.⁶⁷

19. *Determining required levels of gain.* TIA explains that the typical unamplified level of the older telephones to which the Commission's standards have applied in the past already provides 6 dB of Conversational Gain; that is, the output of these older telephones was 6 dB louder than a face-to-face conversation at a distance of 1 meter.⁶⁸ As a consequence, under the 2012 ANSI Wireline Volume Control Standard, 18 dB of Conversational Gain would be equivalent to the current measurement of 12

(Continued from previous page) _____
dB to 90 dB). TIA, *Ex Parte* Letter, CG Docket No. 13-46, Attachment at 33-40 (filed Nov. 8, 2013) (TIA November 8, 2013 *Ex Parte*).

⁶¹ TIA Petition at 15-16.

⁶² *Id.*

⁶³ *Id.* at 9.

⁶⁴ HIA 2013 *Wireline Volume Control PN* Comments.

⁶⁵ *Id.* at 1.

⁶⁶ See 47 U.S.C. § 610(e) (“In any rulemaking to implement the provisions of this section, the Commission shall specifically consider the costs and benefits to all telephone users, including persons with and without hearing loss.”).

⁶⁷ See *id.* (“The Commission shall ensure that regulations adopted to implement this section encourage the use of currently available technology and do not discourage or impair the development of improved technology.”).

⁶⁸ TIA Petition at 9-10. TIA uses as an example the Western Electric 500-type telephone with a G-type handset having a screw-on ear cap from the 1960s. As noted above, the Petition explains that, when listening with only one ear, a sound must be 6 dB louder in order to be perceived at the same level as a sound that is heard with both ears. TIA Petition at 8-9.

dB above the normal unamplified level of a traditional telephone. TIA goes on to explain that “[u]nder the new standard, there is no need to specify output at the normal unamplified level because the new requirement is an absolute (not relative) value based on an assumed 6 dB of Conversational Gain at the normal unamplified level.”⁶⁹ In light of these differences in measurement, we propose to require a minimum of 18 dB in amplification gain. Similarly, because under the new standard 24 dB of gain is the equivalent of a current measurement of 18 dB of gain, TIA recommends revising Part 68 to require an automatic reset if Conversational Gain is greater than 24 dB, rather than the gain of 18 dB that currently triggers a reset requirement.⁷⁰ We seek comment on these proposed rule changes and specifically, whether they will provide an appropriate degree of assurance that people with hearing loss can make effective use of telephones and that consumers generally will be protected from accidental injury due to increased volume settings.

20. *Other Rule Changes.* We seek comment generally on what other changes to our rules may be necessary or appropriate if the Commission incorporates the 2012 ANSI Wireline Volume Control Standard into section 68.317.⁷¹

2. Proposed Two-Year Phase-In

21. We propose to allow a transition period of two years after the effective date of the rules for manufacturers to come into compliance. TIA proposes to allow a two-year phase-in period for compliance with the 2012 ANSI Wireline Volume Control Standard in order to ensure that the updated requirements are implemented in a reasonable and flexible manner.⁷² TIA explains that the change from ROLR to Conversational Gain will affect product cycles for manufacturers, that some manufacturers may need to obtain Head and Torso Simulators in order to comply with the new rule, and that some manufacturers may utilize third party test houses, which also may need to update their testing equipment.⁷³ In addition, manufacturers may need time to confirm that their particular products meet the new requirement and, in some cases, might have to modify their designs slightly.⁷⁴ TIA says that two years will be sufficient to redesign products if necessary, change printed materials, and “allow for an orderly phasing out of existing telephones that do not use the new standard.”⁷⁵ The Joint Consumer Commenters support a two-year phase-in period for the 2012 ANSI Wireline Volume Control Standard.⁷⁶

22. We agree with TIA that sufficient time is needed for the design, engineering, and marketing needs of manufacturers that will be subject to the new standard⁷⁷ and seek comment on our

⁶⁹ *Id.* at 10.

⁷⁰ *Id.*

⁷¹ The TIA Petition requests that the Commission affirm that the chiefs of the Wireline Competition Bureau (WCB) and OET have the authority to revise references to the volume control standards for terminal equipment, when such standards are updated and the changes are administrative in nature. *Id.* at 12. As discussed in section V below, pursuant to 47 U.S.C. § 610(c), in this NPRM we propose, for purposes of assessing compliance with our hearing aid compatibility rules, to allow future substantive as well as “administrative” changes to the ANSI volume control standards and other hearing aid compatibility technical standards to become applicable immediately and automatically so long as they have followed certain consumer participation processes in accordance with the CVAA and are subject to Commission review.

⁷² TIA Petition at 11.

⁷³ *Id.* In doing so, TIA notes, manufacturers also may find that there are improvements that can be made in sound quality under the new standard. *Id.*

⁷⁴ *Id.*

⁷⁵ *Id.*

⁷⁶ Joint Consumer 2013 Wireline Volume Control PN Comments at 4.

⁷⁷ TIA Petition at 11.

proposal to adopt two years as the appropriate deadline for this purpose. Under our proposal, telephones manufactured or imported for use in the United States after the compliance deadline would be required to be in compliance with the new standard.⁷⁸ Until then, however, equipment that is not compliant with (or that has not been tested under) the new standard could be manufactured or imported, provided that it complies with the applicable standard that is currently referenced in section 68.317 of our rules and is otherwise compliant with Part 68.⁷⁹ We seek comment on whether two years is necessary to address the various tasks described by TIA, or whether, given the passage of time since the TIA Petition was first filed, a shorter transition period would be more appropriate.

23. We propose to amend section 68.112 of our rules to allow the existing inventory and installed base of telephones that comply with the current version of section 68.317 to remain in place until retired, rather than requiring such phones to be replaced by phones that comply with the 2012 ANSI Wireline Volume Control Standard. We also propose to amend section 68.112 of our rules to clarify that such phones need not be replaced in the future as a result of minor changes to sections 68.316 or 68.317. We seek comment on these proposals.

24. The Joint Consumer Commenters urge the Commission, during the phase-in period, to “engage, on a regular and designated basis, with the community of people with hearing loss and our representative organizations, in monitoring whether the 2012 ANSI Wireline Volume Control Standard is working as anticipated, and whether it is as easily comprehensible to people with hearing loss as is predicted.”⁸⁰ Consistent with the intent of the CVAA to involve consumer representatives more directly in the standards development process,⁸¹ we propose to adopt a requirement that wireline telephone manufacturers engage in consultation with such consumers and their representative organizations for the purpose of assessing the effectiveness of the revised standard. We propose that an initial consultation should occur one year after the effective date of the revised standard, with follow-up every three years thereafter to assess the impact of technological changes. We seek comment on this proposal and whether we should define in more detail the specifics of the required consultation. For example, should this consultation be subject to the same parameters that we propose in section V of this NPRM regarding consultation with designated consumer representatives? We also seek comment on whether, as an alternative, the Commission should consult with the consumer stakeholder(s) to be designated pursuant to section 710(c) regarding the effectiveness of the revised standard.

25. Additionally, in order to assess the effectiveness of the revised standard, we propose that manufacturers subject to the volume control rule be required to test a sample of products claiming to be compliant with the revised standard.⁸² Such testing would be designed to assess whether these products are providing a uniform and appropriate range of volume to meet the telephone needs of people with hearing loss. We seek comment on whether these or other steps could provide useful data to ensure effective communication by this population. We further seek comment on the costs of such testing.

26. The Joint Consumer Commenters raise the concern that the metric measurements used in the 2012 ANSI Wireline Volume Control Standard may be unfamiliar to many American consumers. They recommend that marketing of or outreach on handsets that use this standard in the United States

⁷⁸ See generally 47 C.F.R. § 68.6 (requiring that “all telephones . . . manufactured in the United States (other than for export) or imported for use in the United States, must have volume control in accordance with § 68.317” of the Commission’s rules).

⁷⁹ Our proposal would permit equipment in this latter category to be certified as Part 68 compliant. See TIA Petition at 11-12.

⁸⁰ Joint Consumer 2013 Wireline Volume Control PN Comments at 4.

⁸¹ See 47 C.F.R. § 610(c). See generally section V, below.

⁸² As reported by TIA, such testing led to the development of the 2012 ANSI Wireline Volume Control Standard. TIA October 29, 2013 *Ex Parte*, Attachment at 18-20.

should be based on more familiar non-metric measures.⁸³ We agree that, to the extent that measurements are referred to in marketing materials and user manuals, it would be helpful to consumers for the materials to explain, for example, that “1 meter apart” is equivalent to “approximately 1 yard” in describing how the standard utilizes a conversation between individuals as a benchmark. We seek comment on whether manufacturers currently reference such measurements in marketing and informational materials, and if so, whether the Commission has the authority to require conversion to non-metric equivalents and whether it should do so. What are the costs and benefits associated with such a requirement?

III. APPLICATION OF INDUCTIVE COUPLING AND VOLUME CONTROL REQUIREMENTS TO WIRELINE VOIP TELEPHONES

27. As noted above, the CVAA amended section 710(b) of the Act to provide that the requirement for “customer premises equipment” to “provide internal means for effective use with hearing aids” applies not only to “telephones” but also to “[a]ll customer premises equipment used with advanced communications services that is designed to provide 2-way voice communication via a built-in speaker intended to be held to the ear in a manner functionally equivalent to a telephone, subject to the regulations prescribed by the Commission under subsection (e).”⁸⁴ The Act, as amended by the CVAA, defines “advanced communications services” as including interconnected and non-interconnected VoIP service.⁸⁵ This was one of the ways in which Congress sought, through the CVAA, to update the Act’s accessibility mandates “to help ensure that individuals with disabilities are able to fully utilize communications services and equipment and better access video programming.”⁸⁶

28. Accordingly, we propose to amend Part 68 so that CPE used with interconnected and/or non-interconnected VoIP services (other than secure telephones and mobile handsets used with such services)⁸⁷ would be covered by section 710(b)(1)(C) if the CPE “is designed to provide 2-way voice communication via a built-in speaker intended to be held to the ear in a manner functionally equivalent to a telephone.”⁸⁸ We further propose that CPE covered by section 710(b)(1)(C) be subject to the existing inductive coupling and volume control requirements.⁸⁹ We also propose that complaint procedures, labeling, and certification requirements shall be applicable to such equipment with respect to hearing aid

⁸³ Joint Consumer 2013 Wireline Volume Control PN Comments at 5.

⁸⁴ 47 U.S.C. § 610(b)(1)(C). As amended by the CVAA, subsection (e) provides, in part: “In implementing the provisions of subsection (b)(1)(C), the Commission shall use appropriate timetables or benchmarks to the extent necessary (1) due to technical feasibility, or (2) to ensure the marketability or availability of new technologies to users.” *Id.* § 610(e).

⁸⁵ *Id.* § 153(1).

⁸⁶ S. Rep. No. 111-386 at 1 (2010) (Senate Report); H.R. Rep. No. 111-563 at 19 (2010) (House Report) (noting that the communications marketplace had undergone a “fundamental transformation” since Congress adopted section 255 of the Act in 1996). *See* 47 U.S.C. § 255 (requiring access to telecommunications services and equipment). In this regard, we note that according to recent market research, the United States has almost 35.3 million fixed VoIP subscribers, and the number of subscribers is expected to grow at an annual rate of 11.6 percent. <<http://www.whatech.com/market-research/telecommunications/82162-new-report-explores-the-global-public-safety-mobile-broadband-market-in-public-sector-to-grow-at-a-cagr-of-8-43-percent-from-2014-to-2019>> (last visited Oct. 23, 2015). The CVAA mandates that people with hearing loss have access to this expanding market of VoIP phones. *See* CVAA, § 716(a).

⁸⁷ The hearing aid compatibility requirements applicable to handsets used with Commercial Mobile Radio Services are contained in Part 20 of the Commission’s rules. 47 U.S.C. § 20.19. The issue of whether similar requirements should apply to mobile handsets used with advanced communications services will be addressed separately.

⁸⁸ The TIA Petition suggests that “a Commission clarification that interconnected VoIP phones are a subset of the digital telephones covered by section 68.317 would provide increased certainty and fairness to the market participants.” TIA Petition at 16, n. 27.

⁸⁹ 47 C.F.R. §§ 68.4, 68.6.

compatibility compliance, in accordance with the relevant part 68 rules regarding complaint handling, labeling, certifications, and suppliers' declarations of conformity.⁹⁰ We believe that applying these procedures and requirements to CPE used with VoIP service will promote accountability and compliance with the HAC requirements and thus better serve people with hearing loss. We seek comment on this proposal, including the costs and benefits and technical impacts of covering customer premises equipment used with a VoIP service under the inductive coupling and volume control requirements of Part 68. In particular, we seek comment on:

- the appropriate timetables or benchmarks that may be necessary for ensuring that such equipment is hearing aid compatible and provides volume control in accordance with Part 68 standards in order to take account of technical feasibility or to ensure the marketability or availability of new technologies to users;⁹¹
- whether volume control parameters for such equipment can be effectively measured under the 2012 ANSI Wireline Volume Control Standard, and if not, how such standard should be modified to permit effective measurement;⁹²
- whether inductive coupling compliance for such telephones can be effectively measured under the currently applicable inductive coupling standard,⁹³ and if not, how such standard should be modified to permit effective measurement;
- whether any different treatment of VoIP CPE is appropriate under the Part 68 rules addressing complaint handling, labeling, certifications, and suppliers' declarations of conformity; and
- whether it would be appropriate to require registration of VoIP CPE in a public database, such as the database of terminal equipment that ACTA administers.⁹⁴

IV. VOLUME CONTROL AND OTHER ACOUSTIC COUPLING ISSUES FOR WIRELESS HANDSETS

A. Background

29. While the Commission's hearing aid compatibility requirements for wireless handsets currently address inductive coupling capability⁹⁵ and the prevention of radio frequency (RF) interference with hearing aids,⁹⁶ they do not require the provision of volume control in wireless handsets. Limitations on the ability of consumers with hearing loss to adjust the volume at which wireless handsets operate, to a

⁹⁰ See, e.g., *id.* §§ 68.160-62, 68.201, 68.218-224, 68.300, 68.320-54, 68.414-23.

⁹¹ 47 U.S.C. § 610(e).

⁹² TIA notes that the 2012 ANSI Wireline Volume Control Standard includes test procedures for VoIP phones. See also TIA November 8, 2013 *Ex Parte* at 21, 41 (noting that requirements for VoIP phones were added to ANSI/TIA-1083-A (November 2010), an updated HAC magnetic coupling standard, and that TIA has an ongoing project to revise that standard, as well as TIA-4953 (addressing high-gain amplified telephones with tone control) to include wideband VoIP).

⁹³ See 47 C.F.R. § 68.316 (incorporating Electronic Industries Association Recommended Standard RS-504, *Magnetic Field Intensity Criteria for Telephone Compatibility With Hearing Aids*).

⁹⁴ Pursuant to section 68.610 of the Commission's rules, ACTA operates and maintains a public database of all terminal equipment approved for connection to the PSTN. See 47 C.F.R. § 68.610; see also <http://part68.org/tteMain.aspx> (last visited Oct. 23, 2015). The database identifies approved terminal equipment that complies with the hearing aid compatibility requirements of Part 68.

⁹⁵ 47 C.F.R. §§ 20.19(b)(2), (d).

⁹⁶ *Id.* §§ 20.19(b)(1), (c). A radio frequency is electromagnetic energy at any frequency in the radio spectrum between 9 kHz and 3,000,000 MHz. *Id.* § 15.3(u).

level that optimizes the performance of their hearing aids or cochlear implants, may present an obstacle to the effective use of their handsets, including their ability to benefit from functionality that is currently required for hearing aid compatibility.⁹⁷ The Commission adopted volume control requirements for wireline telephones in 1996,⁹⁸ but to date it has not adopted such requirements for wireless handsets.⁹⁹ In 2003, the Commission decided not to apply volume control requirements to wireless handsets because the Commission found that, “by meeting the ANSI C63.19 performance standards [for inductive coupling and reduced RF interference], compliant digital wireless phones will have improved audio quality.”¹⁰⁰ In 2007, based on indications that one of hearing aid users’ most important concerns regarding wireless devices was the lack of adequate volume control on handsets, the Commission sought comment on whether to adopt wireless volume control requirements.¹⁰¹ In 2010, the Commission declined to take action on this issue because a working group of the Alliance for Telecommunications Industry Solutions (ATIS) Incubator Solutions Program #4 - Hearing Aid Compatibility (AISP.4-HAC) had not finished studying and making recommendations regarding wireless audio output levels and volume control.¹⁰² Meanwhile, in the *2010 Review PN*, the Wireless Telecommunications Bureau (WTB) sought comment about additional measures the Commission could take to promote acoustic coupling capability between wireless handsets and hearing aids or cochlear implants, including (1) whether volume control rules and standards are necessary to ensure that wireless phones will operate at appropriate volumes to achieve acoustic coupling compatibility, (2) whether there is a need for Commission action to ensure adequate information is available to consumers and hearing aid manufacturers regarding wireless phones’ volume settings and sound quality, and (3) whether the Commission should take action to ensure that the magnetic fields emitted by wireless handsets are of sufficient strength to activate special acoustic coupling modes in hearing aids that are designed for telephone use.¹⁰³

30. Subsequently, WTB’s *2012 Refresh PN* sought comment on the relevance and benefits of TIA’s new and revised standards relating to volume control for wireline phones (including digital cordless phones), which included revised measurement procedures as well as a new metric based on conversational gain, in the wireless context.¹⁰⁴ In comments filed regarding the TIA Petition, HIA

⁹⁷ Specifically, if a handset does not have adequate volume control, a consumer with hearing loss may be unable to benefit sufficiently from the handset’s adherence to the ANSI standard for limiting RF interference with a hearing aid’s acoustic coupling mode of operation. *See id.* § 20.19(b)(1).

⁹⁸ *1996 HAC R&O*, 11 FCC Rcd at 8249. *See* 47 C.F.R. §§ 68.6, 68.317.

⁹⁹ While Congress originally exempted wireless handsets from the hearing aid compatibility requirements, it directed the Commission to “periodically assess the appropriateness” of retaining this exemption, and to revoke the exemption to the extent it determines that doing so would further the public interest, and upon making other determinations set forth in the statute. 47 U.S.C. §§ 610(b)(2)(A), (B). In 2003, the Commission lifted this exemption, approving a schedule of deadlines for certain digital wireless phones to be hearing aid compatible. *2003 HAC R&O*, 18 FCC Rcd 16753. These rules have since been updated to require manufacturers and service providers covered by the requirements to offer a greater percentage of wireless handsets that meet defined ratings for RF interference reduction and inductive coupling. 47 C.F.R. §§ 20.19(c)(1)-(3), (d)(1)-(3).

¹⁰⁰ *2003 HAC R&O*, 18 FCC Rcd at 16778 ¶ 57.

¹⁰¹ *Amendment of the Commission’s Rules Governing Hearing Aid-Compatible Mobile Handsets*, WT Docket No. 07-250, Second Report and Order and Notice of Proposed Rulemaking, 22 FCC Rcd 19670, 19702 ¶ 87 (2007).

¹⁰² *Amendment of the Commission’s Rules Governing Hearing Aid-Compatible Mobile Handsets*, WT Docket No. 07-250, Policy Statement and Second Report and Order and Further Notice of Proposed Rulemaking, 25 FCC Rcd 11167, 11194 ¶ 77 (2010) (*2010 HAC Policy Statement, R&O, and FNPRM*). We note that this working group is no longer active.

¹⁰³ *Comment Sought on 2010 Review of Hearing Aid Compatibility Regulations*, WT Docket No. 10-254, Public Notice, 25 FCC Rcd 17566, 17576-77 (WTB 2010) (*2010 Review PN*).

¹⁰⁴ *Updated Information and Comment Sought on Review of Hearing Aid Compatibility Regulations*, WT Docket No. 10-254, Public Notice, 27 FCC Rcd 13448, 13452 (WTB 2012) (*2012 Refresh PN*) (referencing ANSI/TIA-

(continued....)

suggested that the Conversational Gain method of the ANSI Wireline Volume Control Standard be applied to wireless handsets as well as wireline telephones and urged the Commission ultimately to adopt “an overall HAC acoustic rating that covers the acoustic output level, frequency response, volume control range, and distortion levels of mobile handsets.”¹⁰⁵

B. Proposed Rules

31. We propose to adopt a rule requiring wireless handsets to have a specified level of volume control to fulfill our commitment to “make telephones more accessible for a significant portion of the population, including hearing aid wearers and others with hearing [loss].”¹⁰⁶ As noted above, the Commission previously concluded that “the goals of the HAC Act would be best served if volume control is included within the definition of ‘hearing aid compatibility.’”¹⁰⁷ Additionally, section 710 directs that, to the fullest extent made possible by technology and medical science, [people who are deaf and hard of hearing] should have equal access to the national telecommunications network.”¹⁰⁸ While the Commission already has adopted wireless hearing aid compatibility standards and requirements for wireless service providers and handset manufacturers to provide “internal means for effective use with hearing aids”¹⁰⁹ via inductive coupling (*e.g.*, via a telecoil) and RF interference reduction,¹¹⁰ in order to fully implement that requirement and realize Congress’s objective to provide equal access to telephone service by people with hearing loss,¹¹¹ we believe that standards and requirements for manufacturers and service providers are needed for volume control in wireless handsets as well.¹¹² We further propose that this rule have the same scope of application as our RF interference reduction and inductive coupling rules for wireless handsets.¹¹³ We also seek comment here on whether a volume control rule should apply to all wireless handsets or to just a subset of such handsets. In addition, we seek further comment on volume control and acoustic coupling issues raised in the *2010 Review PN* and the *2012 Refresh PN*, including whether we should adopt a rule for wireless handsets addressing acoustic coupling requirements other than volume control.¹¹⁴

(Continued from previous page)

4953:2012, Telecommunications Telephone Terminal Equipment Amplified Telephone Measurement Procedures and Performance Requirements (Aug. 2012) and ANSI/TIA-4965:2012, Telecommunications Telephone Terminal Equipment Receive Volume Control Requirements for Digital and Analog Wireline Handset Terminals (Oct. 2012)).

¹⁰⁵ HIA *2013 Wireline Volume Control PN* Comments at 2. By contrast, TIA cautioned that the Commission’s action on its petition should be limited to wireline equipment and that any consideration of conversational gain in wireless HAC requirements should be appropriately channeled through ANSI C63.19. See TIA, Reply Comments, CG Docket No. 13-46, at 3 (filed Sept. 9, 2013) (TIA *2013 Wireline Volume Control PN* Reply Comments).

¹⁰⁶ *1996 HAC R&O*, 11 FCC Rcd at 8278 ¶ 69.

¹⁰⁷ *Id.* at 8282 ¶ 78.

¹⁰⁸ Pub. L. No. 100-394, § 2(1), 102 Stat. 976 (1988).

¹⁰⁹ 47 U.S.C. § 610(b).

¹¹⁰ 47 C.F.R. §§ 20.19(b)(1), (2), (c), (d).

¹¹¹ Pub. L. No. 100-394 § 2 (1).

¹¹² See *1996 HAC R&O*, 11 FCC Rcd at 8282 ¶ 78 (concluding that the statutory requirement for “internal means for effective use with hearing aids” (47 U.S.C. § 610(b)) “is broadly written, to encompass many types of evolving technology, including volume control”).

¹¹³ 47 C.F.R. §§ 20.19(c), (d).

¹¹⁴ We note that the original reason given by the Commission in 2010 for deferring action on volume control and acoustic coupling issues - *i.e.*, that an ATIS Incubator working group was studying this issue - is no longer applicable, given that this group is no longer actively working on this issue.

32. *Need for Volume Control Level Requirements and Standards.* For reasons similar to those discussed in the *1996 HAC R&O* adopting our wireline volume control rule,¹¹⁵ we believe that, today, in light of the greatly expanded role of wireless voice communications in our society, adopting a specific volume control requirement for wireless handsets is necessary to achieve effective acoustic coupling and improve communication for people with hearing loss. Although the comments in response to the *2010 Review PN* indicated that most wireless handsets at that time came equipped with some type of volume control,¹¹⁶ surveys conducted by HLAA indicate that the available volume controls for wireless handsets do not consistently allow sufficient amplification to enable effective acoustic coupling between the handset and a user's hearing aid or cochlear implant.¹¹⁷ HLAA asserts that "[m]any hearing aid wearers find that even with adjustments to their hearing aids, the acoustic output level from many mobile handsets is too low to couple effectively."¹¹⁸ We invite additional comment on the experiences that consumers with hearing loss are having when they attempt to locate wireless handsets with sufficient amplification capability to use with their hearing aids or cochlear implants. In general, we invite parties to update the record of these proceedings with respect to the need for volume control requirements for wireless handsets, including information on facts or circumstances that have changed since the Commission last addressed this issue. For example, to what extent have the amplification levels achievable with wireless handsets improved since 2010, and to what extent are they effective in enabling individuals with hearing loss to hear and understand speech received through wireless handsets?

33. *Benefits and Burdens.* What are the costs and benefits of adopting a volume control requirement for wireless handsets – for manufacturers, service providers, and consumers? If there are specific burdens associated with requiring handsets to achieve a specified amplification level for manufacturers and service providers, what are they? If a volume control requirement is adopted, should it apply to all wireless handsets or to a subset of total handset sales or models, as with the current hearing aid compatibility rule? Would such fragmented implementation approach cause confusion for consumers?

34. *Volume Control Standards Development.* We next turn to the appropriate content of a volume control requirement and the type of standard(s) that should apply. HLAA applauds TIA's development, in the wireline context, of a new testing method, HATS, that more effectively "simulates the handset holding style employed by users of hearing devices," as well as a new amplification metric based on "conversational gain." HLAA urges the use of these methods in a volume control standard for wireless handsets.¹¹⁹ TIA has requested that the Commission adopt its revised volume control standard,

¹¹⁵ See *1996 HAC R&O*, 11 FCC Rcd at 8279 ¶ 69 (stating that "the proposed volume control requirements will make telephones more accessible for a significant portion of the population, [and] we are not persuaded that market forces alone will would supply volume controlled telephones in sufficient quantity . . .").

¹¹⁶ HLAA, Comments, WT Docket No. 10-254, Appx. A at 29 (filed Feb. 14, 2011) (HLAA 2011 Comments) (only 3 percent of survey respondents indicated that their cell phones did not have volume control); CTIA, Comments, WT Docket No. 10-254, at 11 (filed Feb. 14, 2011) (CTIA *2010 Review PN* Comments) ("WG-11 preliminarily indicates that wireless handsets already have significant volume control capabilities that could benefit many hearing aid users").

¹¹⁷ See HLAA, *Ex Parte* Letter, WT Docket No. 07-250 (filed Nov. 11, 2014) (HLAA November 11, 2014 *Ex Parte*). Attached to the HLAA November 11, 2014 *Ex Parte* are documents summarizing the results of a September 2014 survey of consumers visiting the HLAA website (2014 HLAA Survey Report) and the previous version of the survey referenced in the HLAA 2011 Comments (2011 HLAA Survey Report). According to the 2014 HLAA Survey Report, 57 percent of respondents reported that they adjust the volume control on their cell phones in order to hear comfortably, but 49 percent of respondents said that with adjustments to the hearing aid or phone, speech over their cell phones was the "correct" volume either half the time, occasionally, or very rarely. These results show little change from 2011. See 2011 HLAA Survey Report.

¹¹⁸ HIA, Comments, WT Docket No. 10-254, at 5-6 (filed Feb. 14, 2011) (HIA *2010 Review PN* Comments).

¹¹⁹ HLAA, *Ex Parte* Letter, WT Docket No. 10-254, at 2 (filed Jul. 16, 2012); 2014 HLAA November 11, 2014 *Ex Parte* at 3.

which utilizes these methods, as the governing volume control standard for wireline telephones.¹²⁰ TIA and CTIA, however, have asserted that TIA's wireline standards cannot be automatically applied to wireless handsets and have urged the Commission to await the development of appropriate volume control standards by ANSI ASC C63[®]-EMC.¹²¹

35. To date, it does not appear that the development of a volume control standard for wireless handsets has been initiated by ANSI ASC C63[®]-EMC.¹²² Are there currently any plans for ANSI ASC C63[®]-EMC to initiate or explore development of such a standard, and if so, what is the likely timeline for the completion of such a standard?¹²³ Further, in light of the suggestions that hearing aid manufacturers need to participate more fully in addressing HAC issues, would ANSI ASC C63[®]-EMC be the appropriate forum for the development of a volume control standard, or should all stakeholders form a new working group to address this issue? As noted above, the ATIS Incubator Working Group that was originally tasked with studying and making recommendations regarding wireless audio output levels and volume control appears to have ceased its activities.¹²⁴ We invite additional comment on other relevant standards development activities that may be useful in establishing volume control requirements for wireless handsets.¹²⁵

36. Given the absence of a readily available ANSI standard for volume control in wireless handsets, we invite parties to submit other studies and information that may be relevant to the adoption of appropriate standards for volume control in these devices. In this regard, we seek comment on the time needed for development and adoption of a volume control standard for wireless handsets. Would 18 months be sufficient for development and adoption of such a standard? If no standards development body begins work on a wireless handset volume control standard, or if no specific time frame for development and adoption of such a standard is specified, we also seek comment on whether the Commission should adopt a volume control standard for wireless handsets based on the best currently available information,¹²⁶ subject to modification based on subsequent development of an ANSI standard,

¹²⁰ See TIA Petition.

¹²¹ CTIA, Comments, WT Docket No. 10-254, at 12-13 (filed Jan. 22, 2013) (CTIA 2012 Refresh PN Comments); TIA, Comments, WT Docket No. 10-254, at 6-8 (filed Jan. 22, 2013) (TIA 2012 Refresh PN Comments); TIA 2013 Wireline Volume Control PN Reply Comments at 3 (cautioning that the Commission's action on its petition should be limited to wireline equipment and urging that any consideration of conversational gain in wireless HAC requirements should be appropriately channeled through ANSI C63.19).

¹²² <http://www.c63.org/documents/misc/matrix/c63_standards.htm> (last visited Oct. 23, 2015). At its meeting on May 7, 2015, however, ANSI ASC C63[®]-EMC approved the initiation of a study addressing whether to add a volume control standard to ANSI C63.19-2011. See <http://www.c63.org/documents/misc/minutes/last_meeting_minutes.htm>, <http://www.c63.org/documents/misc/minutes/2015_May/C63_19_PINS_C_05_06_2015.doc> (last visited Oct. 22, 2015).

¹²³ We understand that ANSI ASC C63[®]-EMC's Subcommittee 8, which addresses hearing aid compatibility standards, is scheduled to meet on Nov. 11, 2015. See <http://www.c63.org/documents/misc/meeting/upcomingmeetingschedule.htm#Schedule> (last visited Oct. 22, 2015).

¹²⁴ 2010 HAC Policy Statement, R&O, and FNPRM, 25 FCC Rcd at 11194 ¶ 77.

¹²⁵ We note that ANSI/TIA-4953, the performance standard for high-gain amplified wireline telephones, addresses requirements for tone control, acoustic ringer level and tone, noise, distortion, stability, and transmit levels, as well as volume control, and that TIA's November 8, 2013 *ex parte* submission noted the possibility of a project to revise that standard to address mobile handsets. TIA November 8, 2013 *Ex Parte*, Attachment at 37, 41.

¹²⁶ See 47 U.S.C. § 610(c) ("The Commission shall establish or approve such technical standards as are required to enforce this section.") (emphasis added).

in order to ensure equal telephone access for people with hearing loss.¹²⁷ It appears that wireless volume control standards could be developed by taking into consideration the existing wireline standards, including the 2012 ANSI Wireline Volume Control Standard. Furthermore, we believe that volume control standards for wireless handsets should be consistent with existing wireline volume control standards, in order to ensure equal telephone access for people with hearing loss. We invite additional comment on the extent to which the 2012 ANSI Wireline Volume Control Standard is adaptable to wireless and the nature of any differences between wireline and wireless handsets that affect the applicability of TIA's new methods and/or its standard. In addition, we invite comment on the potential relevance and benefits of the new TIA procedures and metrics in the wireless context, despite such differences.

37. We also invite comment on the types of information consumers need regarding amplification levels and acoustic coupling capabilities in order to make informed purchasing decisions.¹²⁸ For example, the voluntary performance standard for wireline telephones with enhanced amplification, ANSI/TIA-4953, provides for specific, easily understood labels for amplified telephones that are suitable for consumers with mild, moderate, and severe hearing loss, respectively.¹²⁹ Would such labels be useful in the wireless context as well? Should the Commission encourage or require the use of such labels for wireless handsets, and by what means?

38. Additionally, we seek comment on whether to address, via standards or through other means, factors other than amplification that affect the ability of consumers with hearing loss to hear and understand speech received over wireless handsets, including but not limited to acoustic coupling issues such as frequency response and distortion¹³⁰ and magnetic field strength issues.¹³¹

V. 2011 ANSI WIRELESS HAC STANDARD

A. Background

39. To ensure that a selection of digital wireless handset models is available to consumers with hearing loss, the Commission's rules require both manufacturers and service providers to meet defined benchmarks for deploying hearing aid compatible wireless phones. Specifically, manufacturers and service providers are required to offer minimum numbers or percentages of handset models that meet technical standards for compatibility with hearing aids operating in both acoustic coupling and inductive coupling modes.¹³² These benchmarks apply separately to each air interface for which the manufacturer

¹²⁷ Pub. L. No. 100-394 § (2)(1). In section V below, pursuant to the CVAA, the Commission proposes to designate the ANSI process as the public participation and consultation process for purposes of hearing aid compatibility requirements.

¹²⁸ In response to previous public notices, consumer organizations have raised concerns about the difficulties consumers have experienced in attempting to shop for hearing aid compatible handsets or to determine whether a handset being considered for purchase is compliant with current HAC rules. *See, e.g.*, 2011 HLAA Survey Report; 2014 HLAA Survey Report. However, there is less information in the record specifically regarding consumers' experiences in shopping for wireless handsets with appropriate amplification capability for effective acoustic coupling with their hearing aids or cochlear implants.

¹²⁹ TIA November 8, 2013 *Ex Parte*, Attachment at 39-40. As mentioned above, the TIA November 8, 2013 *Ex Parte* noted the possibility of an ANSI project to revise that standard to address mobile handsets. *Id.* at 41.

¹³⁰ HIA 2013 *Wireline Volume Control PN* Comments at 2 (suggesting that the Commission ultimately adopt "an overall HAC acoustic rating that covers the acoustic output level, frequency response, volume control range, and distortion levels of mobile handsets").

¹³¹ 2010 *Review PN*, 25 FCC Rcd at 17576-77.

¹³² 47 C.F.R. §§ 20.19(c), (d).

or service provider offers handsets.¹³³

40. For testing and rating the hearing aid compatibility performance of wireless handsets, the Commission's rules reference the 2007 and 2011 revisions of ANSI technical standard ANSI C63.19 (the 2007 ANSI Wireless HAC Standard and the 2011 ANSI Wireless HAC Standard), developed by ANSI ASC C63[®]-EMC.¹³⁴ A handset is considered hearing aid compatible for preventing RF interference with hearing aids and cochlear implants if it meets a rating of at least M3 under the 2007 ANSI Wireless HAC Standard or 2011 ANSI Wireless HAC Standard.¹³⁵ A handset is considered hearing aid compatible for inductive coupling with hearing aids and cochlear implants if it meets a rating of at least T3.¹³⁶

41. The 2007 ANSI Wireless HAC Standard specifies testing procedures for determining the M-rating and T-rating of digital wireless handsets that operate over the air interfaces that, at the time it was promulgated, were commonly used for wireless services in the 800-950 MHz and 1.6-2.5 GHz bands. The 2011 ANSI Wireless HAC Standard expanded the range of frequencies over which hearing aid compatibility can be tested to frequencies between 698 MHz and 6 GHz and established a direct method for measuring the RF interference level of wireless devices to hearing aids, thereby enabling testing procedures to be applied to operations over any RF air interface or protocol.¹³⁷ The 2011 ANSI Wireless HAC Standard also exempted from testing certain low power transmitters that were unlikely to cause unacceptable RF interference to hearing aids.¹³⁸

42. On November 1, 2011, WTB and the Office of Engineering and Technology (OET) released the *Second Further NPRM* on delegated authority¹³⁹ proposing to adopt the 2011 revision of ANSI Standard C63.19¹⁴⁰ as an applicable technical standard for evaluating the hearing aid compatibility

¹³³ *Id.* The term air interface refers to the technology, such as 3G or LTE, that ensures compatibility between mobile radio service equipment, such as handsets, and a service provider's base stations. To further ensure that the handsets available to consumers with hearing loss include the newest and most advanced technologies, manufacturers are required to partially refresh their offerings of hearing aid compatible phones each year, and service providers must offer a range of hearing aid compatible phones with differing levels of functionality. *Id.* §§ 20.19(c)(1)(ii), (c)(4)(ii), (d)(4)(ii).

¹³⁴ *Id.* §§ 20.19(b)(1)(ii), (b)(2)(ii).

¹³⁵ *Id.* § 20.19(b)(1)(ii). To use a digital wireless phone with a hearing aid or cochlear implant in acoustic coupling mode, RF interference and other electromagnetic interference from the wireless phone must be controlled. ANSI C63.19 specifies ratings for digital wireless phones, M1 through M4, based on their RF emission levels, with M1 being the highest emissions and M4 the lowest emissions. The standard also provides a methodology for rating hearing aids from M1 to M4 based on their immunity to interference, with M1 being the least immune and M4 the most immune. To determine whether a particular digital wireless phone is likely to interfere with a particular hearing aid, the immunity rating of the hearing aid is added to the emissions rating of the wireless phone. A sum of 4 indicates that the wireless phone will be usable; a sum of 5 indicates that the wireless phone will provide normal use; and a sum of 6 or greater indicates that the wireless phone will provide excellent performance with that hearing aid. See ANSI Accredited Standards Committee C63[®] – Electromagnetic Compatibility, *American National Standard Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids*, ANSI C63.19-2007 at 5 (June 8, 2007).

¹³⁶ 47 C.F.R. § 20.19(b)(2)(ii). Handsets are rated from T1 to T4 for inductive coupling capability in a similar manner to the M-ratings.

¹³⁷ See *Amendment of the Commission's Rules Governing Hearing Aid-Compatible Mobile Handsets*, WT Docket No. 07-250, Third Report and Order, 27 FCC Rcd 3732, 3741-42 ¶¶ 21-23 (2012) (*2012 HAC R&O*).

¹³⁸ See *id.* at 3741-42 ¶¶ 21-23.

¹³⁹ See 47 C.F.R. § 20.19(k) (delegating rulemaking authority to WTB and OET).

¹⁴⁰ See ANSI Accredited Standards Committee C63[®] – Electromagnetic Compatibility, *American National Standard Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids*, ANSI C63.19-2011 (May 27, 2011). The standard is available for purchase from IEEE Operations Center, 445 Hoes Lane, Piscataway, NJ 08854-4141, (732) 981-0060, <<http://www.ieee.org>>. A copy of the standard is also available for

(continued....)

of wireless phones, along with some related implementation proposals.¹⁴¹ On April 9, 2012, in the *HAC Third Report and Order*, WTB and OET adopted the 2011 ANSI Wireless HAC Standard, thereby permitting manufacturers to test and rate new handset models under the 2007 ANSI Wireless HAC Standard or the 2011 ANSI Wireless HAC Standard.¹⁴² Currently, for operations in frequency bands covered by the 2007 ANSI Wireless HAC Standard, manufacturers have the option to certify new handsets as hearing aid compatible using either the 2007 or the 2011 ANSI Wireless HAC Standard. The *2012 Refresh PN* sought comment on the impact of the newly adopted 2011 ANSI Wireless HAC Standard.¹⁴³ We did not receive any comments in response to this inquiry.

B. Proposed Rules

1. Testing and Rating Handsets Exclusively Under the 2011 ANSI Wireless HAC Standard

43. We propose to require manufacturers to use the 2011 ANSI Wireless HAC Standard (subject to any modifications regarding the matters discussed in section IV.B.2 and subject to future modification or supersession as discussed in section V. below) exclusively to certify future handsets as compliant with the RF interference reduction and inductive coupling rules. The 2011 ANSI Wireless HAC Standard is the most recent of the ANSI standards for testing and rating wireless handsets' hearing aid compatibility and provides the most accurate available RF interference reduction and inductive coupling ratings for such handsets.¹⁴⁴ We believe there will be relatively little burden in requiring manufacturers and service providers to use the 2011 ANSI Wireless HAC Standard exclusively, and we note that since July 2013, manufacturers appear to have been using the 2011 ANSI Wireless HAC Standard to test the vast majority of their new handsets.¹⁴⁵ We seek comment on this approach. We ask commenters to include data or other specific information demonstrating whether and how the 2011 ANSI Wireless HAC Standard imposes lesser or greater burdens than the 2007 ANSI Wireless HAC Standard, as well as the advantages or disadvantages of using the 2011 ANSI Wireless HAC Standard exclusively for testing and rating wireless handsets' compliance with the RF interference reduction and inductive coupling rules.

44. We further propose to transition manufacturers and service providers, over a period of six months, to using the 2011 ANSI Wireless HAC Standard on an exclusive basis. We seek comment on whether sufficient time has passed since Commission adoption of this standard to enable it to be used on an exclusive basis, or whether additional transition time is necessary to avoid disruption. If more time is needed, what would be the appropriate timeframe to adopt the 2011 ANSI Wireless HAC Standard

(Continued from previous page) _____

inspection at the Federal Communications Commission (FCC), 445 12th St., SW., Reference Information Center, Room CY-A257, Washington, DC 20554.

¹⁴¹ *Amendment of the Commission's Rules Governing Hearing Aid-Compatible Mobile Handsets*, WT Docket No. 07-250, Second Further Notice of Proposed Rulemaking, 26 FCC Rcd 14991 (2011).

¹⁴² *2012 HAC R&O*, 27 FCC Rcd at 3734 ¶ 9. Under these rules, beginning July 17, 2013, newly introduced multi-band and multi-mode handset models that include operations not covered under the 2007 ANSI Wireless HAC Standard must be tested and rated under the 2011 ANSI Wireless HAC Standard in order to be considered hearing aid compatible. The Commission's deployment benchmarks became applicable to operations over frequency bands and air interfaces that are newly covered under the 2011 ANSI Wireless HAC Standard on July 17, 2014, for manufacturers and Tier I carriers (*i.e.*, commercial mobile radio service providers that offer such service nationwide) and became applicable on October 17, 2014, for other service providers. *See id.* at 3741-42 ¶¶ 21-23; 47 C.F.R. §§ 20.19(a)(3)(v), (c), (d).

¹⁴³ *See 2012 Refresh PN*, 27 FCC Rcd at 13452.

¹⁴⁴ ANSI ASC C63® *2012 Refresh PN* Comments at 10.

¹⁴⁵ *See FCC, Hearing Aid Compatibility Reports: Device Manufacturers*, <http://wireless.fcc.gov/hac/index.htm?job=rpt_dm_c> (last visited Oct. 28, 2015).

exclusively? In connection with this implementation timeline, we propose that handsets already certified under the 2007 ANSI Wireless HAC Standard or any previous standard would be grandfathered, and thus, there would be no need to retest or recertify this equipment. We seek comment on this proposal, its costs and benefits, and its advantages or disadvantages.

2. Power-Down Exception for GSM Operations at 1900 MHz

45. *Background.* Section 20.19(e)(1)(iii) of the Commission's rules provides an exception to the general requirement that, for purposes of determining hearing aid compatibility, handsets must be tested using their maximum output power.¹⁴⁶ This limited power-down exception applies solely to manufacturers and service providers that offer only one or two Global System for Mobile Communications (GSM) handset models, but are required, because they employ a certain number of individuals, to meet the hearing aid compatibility standards for one model.¹⁴⁷ Entities that qualify for the exception may, for purposes of meeting the M3 hearing aid compatibility rating in the 1900 MHz band, employ a user-controlled power reduction of up to 2.5 dB.¹⁴⁸ In adopting this "power-down" exception to the rules in 2010, the Commission recognized that meeting an M3 rating over the GSM air interface in the 1900 MHz band posed significant technical challenges at that time.¹⁴⁹

46. In the previous section, we proposed to require manufacturers to use the 2011 ANSI Wireless HAC Standard exclusively to certify future handsets as hearing aid compatible. Unlike the 2007 ANSI Wireless HAC Standard, the 2011 ANSI Wireless HAC Standard provides for a direct method to measure the RF interference that wireless devices cause to hearing aids.¹⁵⁰ Under the 2007 ANSI Wireless HAC Standard, certification laboratories measure the RF field intensity of a wireless device and then adjust the result to estimate the potential for hearing aid interference. In contrast, the 2011 ANSI Wireless HAC Standard directly measures the potential for RF interference of wireless handsets.¹⁵¹ As a result of this change to a direct measurement methodology, the 2011 ANSI Wireless HAC Standard is able to eliminate certain conservative interference assumptions that were incorporated into the 2007 ANSI Wireless HAC Standard and applied to achieve an acceptable M rating. The new standard gives approximately 2.2 dB more margin for a GSM handset operating in the 1900 MHz band to achieve an M3 rating.¹⁵² In other words, the 2011 ANSI Wireless HAC Standard essentially affords the same benefit as the power-down exception.

¹⁴⁶ 47 C.F.R. § 20.19(e)(1)(iii). This rule reflects that the 2007 and 2011 ANSI Wireless HAC Standards require that handsets be tested and rated for RF interference reduction and inductive coupling capability using their maximum rated RF output power. See IEEE, American National Standard Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids, ANSI C63.19-2007 and ANSI C63.19-2011.

¹⁴⁷ See 47 C.F.R. § 20.19(e)(1)(ii).

¹⁴⁸ A 3 dB reduction in signal power is $\frac{1}{2}$ as strong as the original signal; a 6 dB reduction is $\frac{1}{4}$ as strong as the original signal, and so on.

¹⁴⁹ See *2010 HAC Policy Statement, R&O, and FNPRM*, 25 FCC Rcd at 11186-90 ¶¶ 51-56. The GSM air interface at 1900 MHz uses legacy second generation (2G) technology and certain design choices in the form and function of GSM handsets, such as thin form factors and touch screens, make meeting the 2007 ANSI Wireless HAC standard difficult.

¹⁵⁰ *2012 HAC R&O*, 27 FCC Rcd at 3734, ¶ 5.

¹⁵¹ The 2007 ANSI Wireless HAC Standard is considered an indirect measurement methodology because the RF field intensity is measured and then adjusted to estimate its potential for hearing aid interference. In contrast, the 2011 ANSI Wireless HAC Standard is a direct measurement methodology because it arrives at the audio interference level in direct proportion to the RF signal without an adjustment for estimation of its potential for interference. See Supplemental Report and Comments of ANSI ASC C63[®], WT Docket Nos. 07-250, 01-309, 06-150, Annex A at ii-iv (filed June 24, 2011) (ANSI Supplemental Report).

¹⁵² *2012 HAC R&O*, 27 FCC Rcd at 3734 ¶ 5 n. 9. See also ANSI Supplemental Report, Annex A at ii-iv.

47. *Discussion.* We therefore propose to eliminate the power-down exception for handsets certified on or after the date that the 2011 ANSI Wireless HAC Standard becomes the exclusive standard.¹⁵³ We note that the power-down exception is the only exception to our general rule that handsets must be tested at full power. We require handsets to be tested at full power to ensure that Americans with hearing loss have equal access to all of the service quality and performance that a given wireless handset provides.¹⁵⁴ We believe that eliminating the power-down exception will advance this purpose and will ensure that consumers do not experience the drop off in function that can otherwise occur with handsets certified under the power-down option.¹⁵⁵ Moreover, as noted above, the 2011 ANSI Wireless HAC Standard affords essentially the same benefit as the power-down exception. Thus, it appears unnecessary to continue the exception if we adopt our proposal to require that the 2011 ANSI Wireless HAC Standard be used exclusively for testing and rating handsets' hearing aid compatibility performance.¹⁵⁶ We seek comment on this proposal.¹⁵⁷

48. We further propose to grandfather GSM handsets that operate in the 1900 MHz band that were previously certified under the exception. Even if we eliminate the exception going forward, we tentatively conclude that there will be no need to recertify these handsets and that we should continue to treat them as certified hearing aid compatible handsets. We seek comment on this tentative conclusion, and we note that it is consistent with the approach we have taken previously when adopting new ANSI standards.¹⁵⁸

49. When addressing our proposal to eliminate the power-down exception, commenters should discuss the advantages or disadvantages and quantify the costs and benefits of eliminating the exception and of any proposed alternative approaches they recommend. Commenters advocating that we retain the power-down exception should clearly explain why it would continue to be necessary and why

¹⁵³ Three commenters to the *2010 FNPRM* note that the power-down option for achieving the M3 hearing aid compatibility rating for GSM handsets operating in the 1900 MHz band could be obsolete with the Commission's adoption of the 2011 ANSI Wireless HAC Standard. *See* Consumer Groups *2010 FNPRM* Comments at 7-8; Julstrom *2010 Review PN* Comments at 3; Motorola *2010 FNPRM* Comments at 15-16. Further, in response to the *2012 Refresh PN*, Consumer Groups and HIA argue that the Commission should eliminate this exception in light of the adoption of the 2011 ANSI Standard, while CTIA and TIA assert that the Commission should continue to allow the exception. *Compare* Consumer Groups, Comments, WT Docket No. 10-254, at 7 (filed Jan. 22, 2013) (Consumer Groups *2012 Refresh PN* Comments); HIA, Comments, WT Docket No. 10-254, at 6 (filed Jan. 22, 2013) (HIA *2012 Refresh PN* Comments) with CTIA *2012 Refresh PN* Comments at 13; TIA *2012 Refresh PN* Comments at 5.

¹⁵⁴ *See* 47 C.F.R. § 20.19(e)(1)(iii). This rule reflects that the 2007 and 2011 ANSI Wireless HAC Standards require that handsets be tested using their maximum rated RF output power. *See* IEEE, American National Standard Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids, ANSI C63.19-2007 and ANSI C63.19-2011.

¹⁵⁵ *See* *2010 HAC Policy Statement, R&O, and FNPRM*, 25 FCC Rcd at 11187-88 ¶¶ 53-54; *see also* ATIS *2010 FNPRM* Comments at 6.

¹⁵⁶ *See* Consumer Groups *2010 FNPRM* Comments at 7-8; Julstrom *2010 Review PN* Comments at 3; Motorola *2010 FNPRM* Comments at 15-16.

¹⁵⁷ We note that there is currently pending a petition for reconsideration of the decision in the *2010 HAC Policy Statement, R&O, and FNPRM* to limit the applicability of the power-down rule to companies that would have otherwise been *de minimis*, except for their size. *See* LG Electronics, MobileComm U.S.A., Inc., Motorola, Inc., Nokia Inc., Research in Motion Corp., Samsung Information Systems America, Inc., and Sony Ericsson Mobile Communications (USA) Inc., Petition for Partial Reconsideration, WT Docket No. 07-250 (filed Oct. 8, 2010). Petitioners argue that the power reduction rule should be applied uniformly to all manufacturers of GSM handsets that operate in the 1900 MHz band. *Id.* If we adopt the proposal to eliminate the power-down exception, the petition will become moot and will be dismissed accordingly.

¹⁵⁸ *2012 HAC R&O*, 27 FCC Rcd at 3736 ¶ 11.

its retention would clearly advance the public interest if the 2011 ANSI Wireless HAC Standard is adopted as the exclusive testing and rating standard. Conversely, those advocating the elimination of the power-down exception should explain why it is no longer necessary and why retaining it would undermine the public interest.

VI. USE OF FUTURE ANSI TECHNICAL STANDARDS

A. Background

50. Section 710 (c) of the Act requires the Commission “to establish or approve such technical standards as are required to enforce [the hearing aid compatibility provisions].”¹⁵⁹ In the past, the Commission has relied on this authority to incorporate ANSI technical standards into its hearing aid compatibility rules as the criteria for certifying equipment as compliant with these rules.¹⁶⁰ Section 102(b) of the CVAA retained the mandate for the Commission to establish or approve such technical standards but amended section 710 (c) to provide a mechanism for technical standards for hearing aid compatibility to become effective without a Commission rulemaking, subject to Commission approval or rejection of such standards. Section 710(c) as amended by the CVAA reads as follows:

The Commission shall establish or approve such technical standards as are required to enforce this section. A telephone or other customer premises equipment that is compliant with relevant technical standards developed through a public participation process and in consultation with interested consumer stakeholders (designated by the Commission for the purposes of this section) will be considered hearing aid compatible for purposes of this section, until such time as the Commission may determine otherwise. The Commission shall consult with the public, including people with hearing loss, in establishing or approving such technical standards. The Commission may delegate this authority to an employee pursuant to section 155(c) of this title. The Commission shall remain the final arbiter as to whether the standards meet the requirements of this section.¹⁶¹

51. At present, hearing aid compatibility¹⁶² technical standards are developed for wireline equipment by TIA’s TR-41 Engineering Committee (User Premises Telecommunications Requirements), an ANSI-accredited standards development organization.¹⁶³ For wireless equipment, hearing aid compatibility technical standards are developed by ANSI ASC C63®-EMC, also an ANSI-accredited standards development organization.¹⁶⁴ ANSI currently provides a forum for more than 200 ANSI-accredited standards developers representing 200 distinct organizations in the private and public sectors, and these groups work cooperatively to develop voluntary national consensus standards and American National Standards. According to ANSI documents, the process for doing so is guided by consensus, due process principles, and openness, and depends heavily upon data gathering and compromises among a

¹⁵⁹ 47 U.S.C. § 610(c).

¹⁶⁰ See, e.g., *2012 HAC R&O*, 27 FCC Rcd at 3734 ¶ 9 (adopting 2011 ANSI Wireless HAC Standard).

¹⁶¹ 47 U.S.C. § 610(c), as amended by CVAA, § 102(b).

¹⁶² In this NPRM, the terms “hearing aid compatibility” and “hearing aid compatible” refer to compliance with any applicable requirement adopted pursuant to section 710, including requirements pertaining to volume control. See *1996 HAC R&O*, 11 FCC Rcd at 8282 ¶ 78 (finding that volume control should be included within the definition of hearing aid compatibility).

¹⁶³ See TIA Petition; 47 C.F.R. § 68.316 (identifying TR-41 as the committee that prepared the standards incorporated in the wireline hearing aid compatibility rule).

¹⁶⁴ See *2003 HAC R&O*, 18 FCC Rcd at 16769 ¶ 39; see also ANSI ASC C63® *2012 Refresh PN* Comments at 1.

diverse range of stakeholders. In order to maintain ANSI accreditation, standards developers are required to consistently adhere to a set of requirements or procedures known as the “ANSI Essential Requirements: Due process requirements for American National Standards,” which govern the consensus development process. According to ANSI, these procedures are intended to ensure that standards are developed in an environment that is equitable, accessible, and responsive to the requirements of various stakeholders. The institute maintains that it ensures that access to the standards process, including an appeals mechanism, is made available to anyone directly or materially affected by a standard that is under development. Specifically, ANSI states that the hallmarks of the American National Standards process include: consensus on a proposed standard by a group or “consensus body” that includes representatives from materially affected and interested parties; broad-based public review and comment on draft standards; consideration of and response to comments submitted by voting members of the relevant consensus body and by public review commenters; incorporation of approved changes into a draft standard; and the right to appeal by any participant that believes that due process principles were not sufficiently respected during the standards development in accordance with the ANSI-accredited procedures of the standards developer.¹⁶⁵

52. The process for developing a new or revised ANSI standard starts when the relevant ANSI-accredited standard development organization (in this case, TR-41 or ANSI ASC C63[®]-EMC) receives notice that a new standard or revision to an existing standard has been requested.¹⁶⁶ After receiving such a notice, the standards development organization exercises discretion in determining whether to launch a new standards development project by submitting a Project Initiation Notice to ANSI.¹⁶⁷ The standards development organization then convenes a subcommittee (sometimes called a “working group”) to formulate the new or revised standard. After a proposed draft is complete, the subcommittee’s members vote and comment, and then revise as necessary to reflect the members’ input. The subcommittee then submits the draft to the standards development organization’s full committee for consideration and approval. If the full committee has comments, the subcommittee works to resolve them and then resubmit the draft. The process continues until the full committee reaches agreement on the new or revised standard. At that point, the standards development organization submits the standard to ANSI for consideration and public review prior to its publication as an American National Standard.

B. Proposed Rules

53. In this section, we propose to adopt rules implementing each of the provisions of section 710(c) added by the CVAA. In particular, we propose to adopt a streamlined procedure whereby a wireline telephone or other customer premises equipment or a wireless handset may be considered hearing aid compatible if it “is compliant with relevant technical standards developed through a public participation process and in consultation with interested consumer stakeholders (designated by the Commission for the purposes of this section) . . . until such time as the Commission may determine

¹⁶⁵ See ANSI, *Standards Activities Overview: Overview of the U.S. Standardization System*, <http://www.ansi.org/standards_activities/overview/overview.aspx?menuid=3#.UTDc4qXrG1k> (last visited Oct. 28, 2015).

¹⁶⁶ See <http://www.tiaonline.org/sites/default/files/pages/TIA_PANS_2014Jan29.pdf> (last visited Oct. 28, 2015), for the procedures followed by TIA for development of American National Standards. See <http://c63.org/documents/misc/admin/Final%20C63%20Procedures_%20Clean.pdf> (last visited Oct. 28, 2015), for the procedures followed by ANSI ASC-C63[®]-EMC for the development of American National Standards.

¹⁶⁷ After the organization submits the Project Initiation Notification, ANSI places an announcement in the ANSI Standards Action seeking comment on the project. See ANSI, *ANSI Essential Requirements: Due process requirements for American National Standards* 6-7 (Jan. 2015 ed.), available at <<http://publicaa.ansi.org/sites/apdl/Documents/Forms/AllItems.aspx?RootFolder=http%3a%2f%2fpublicaa%2eansi%2eorg%2fsites%2fapdl%2fDocuments%2fStandards%20Activities%2fAmerican%20National%20Standards%2fProcedures%2c%20Guides%2c%20and%20Forms>> (last visited Oct. 28, 2015).

otherwise.”¹⁶⁸ We further propose changes to our rules to ensure consultation “with the public, including people with hearing loss, in establishing or approving such technical standards,” and that the Commission “remain[s] the final arbiter as to whether the standards meet the requirements of this section.”¹⁶⁹

54. The Commission previously sought comment on how the CVAA affects the proposals contained in the *2010 Further NPRM* and more generally on our hearing aid compatibility rules.¹⁷⁰ To date, however, the Commission has not specifically sought comment on the implementation of section 102(b) of the CVAA as it relates to the adoption of technical standards for hearing aid compatibility. We invite comment generally on whether our proposals below are consistent with section 710 and whether they will effectively advance the Congressional objective to ensure that “to the fullest extent made possible by technology and medical science, [people who are deaf and hard of hearing] should have equal access to the national telecommunications network.”¹⁷¹

1. Standards Development

a. Defining the public participation process

55. To implement section 710(c), we propose that for compliance purposes, companies be permitted to rely on a hearing aid compatibility standard prior to that standard being adopted through a formal rulemaking process so long as it is developed through a voluntary and consensus-driven public participation process reflecting consultation with interested consumer stakeholders.¹⁷² More specifically, we propose that the standards development process must (1) be open to participation by all relevant stakeholders who have legitimate and meaningful interests in the process, (2) allow all interested parties, including consumers and groups representing them, to comment on a proposed standard prior to adoption and to have their comments considered by the working groups that develop the standards, and (3) provide an appeal mechanism that allows interested parties to seek review of standards-setting decisions. We believe that the current ANSI process meets such criteria. Accordingly, we propose that a wireline telephone or other CPE or a wireless handset will be considered hearing aid compatible for purposes of section 710 if it complies with a relevant technical standard adopted by ANSI using a process compliant with the requirements of section 710(c), and further propose that this include standards that cover equipment, services, or frequency bands not presently covered by the existing ANSI standards. We believe that the “public participation” components of the existing ANSI process, when supplemented by the consumer consultation process described below, will allow for sufficient input from the public, including people with hearing loss,¹⁷³ to satisfy the section 710(c) requirements and achieve the CVAA’s objective. As noted above, ANSI describes its standards-setting process as one that develops new or revised technical standards through a voluntary and consensus-driven process that is open to participation by all relevant stakeholders who have legitimate and meaningful interests in the process.

56. We seek comment on whether it would be in the public interest for parties to be permitted to rely on technical standards developed under the ANSI process for purposes of assessing their

¹⁶⁸ CVAA, § 102(b); 47 U.S.C. § 610(c).

¹⁶⁹ *Id.*

¹⁷⁰ *Wireless Telecommunications Bureau Requests that Comments in Proceeding Address Effects of New Legislation*, WT Docket No. 07-250, Public Notice, 25 FCC Rcd 14280 (WTB 2010) (*2010 CVAA Public Notice*); *2010 Review PN*, 25 FCC Rcd at 17568.

¹⁷¹ Pub. L. No. 100-394, § 2(1).

¹⁷² We note, however, that the Commission may also, in its discretion, establish or approve hearing aid compatibility standards through traditional rulemaking procedures, including, where appropriate, standards for mobile handsets through existing delegations of rulemaking authority under section 20.19(k) of the Commission’s rules, 47 C.F.R. § 20.19(k), independently of the alternative process added by the CVAA.

¹⁷³ CVAA, § 102(b); 47 U.S.C. § 610(c) (“The Commission shall consult with the public, including people with hearing loss, in establishing or approving such technical standards.”).

equipment's compliance with our hearing aid compatibility rules. We also seek comment on whether and how the ANSI standards development process can achieve Congress's objective to ensure that the views of the public, including people with hearing loss, are considered in the establishment and approval of hearing aid compatibility technical standards.¹⁷⁴

57. Next, we seek comment on the extent to which this process is appropriate for consumer groups representing the interests of people with hearing loss to provide input into the development of hearing aid compatibility standards. Before a new standard is adopted, according to ANSI documents, all interested parties have a chance to comment on the revision and to have their comments considered by the working group. Will this process afford such individuals the opportunity to comment on proposed new or revised standards prior to their adoption even if such individuals are not ANSI members? Have consumer groups or individuals representing hearing loss interests participated in such standards-setting efforts in the past, and if so, what has been their experience with this process? What would be the most effective role for consumer groups and individual consumers in the process of setting standards for hearing aid compatibility that are based on complex engineering issues? The process also includes an appeal mechanism. Does ANSI's appeal mechanism adequately protect consumer interests? To what extent do interested parties believe that the ANSI process will be capable of ensuring that revisions to technical hearing aid compatibility standards will meet the needs of all interested stakeholders?¹⁷⁵

58. We also invite comment on whether there are other relevant standards development organizations following processes that could meet the requirements of section 710(c). Commenters who recommend that the Commission recognize a particular alternative standards development organization or process should explain why such an organization or process qualifies as a "public participation process" for purposes of section 710(c) and why it is an appropriate process for development of a standard for assessing hearing aid compatibility compliance.

b. Designating Consumer Stakeholders

59. Section 710(c) further requires that standards be developed in consultation with "interested consumer stakeholders" who are "designated by the Commission."¹⁷⁶ We propose to direct the Commission's newly formed Disability Advisory Committee (DAC) to provide recommendations on who should be designated as "interested consumer stakeholders" for purposes of section 710(c)¹⁷⁷ and further propose that the Consumer and Governmental Affairs Bureau (CGB) consider such recommendations in making these final designations.¹⁷⁸ Additionally, for the purpose of making these recommendations, we propose that the DAC be directed to consult with nationally recognized consumer organizations, both appointed to and outside of the DAC, that have expertise on hearing aid compatibility and related telecommunications issues. Further, we propose that, to qualify for designation as "interested consumer stakeholders," individuals or organizations should have technical expertise in the field of hearing loss and a high level of knowledge about the communication needs of people who are deaf and hard of hearing. We seek comment on these proposed criteria and any other applicable criteria for designation of

¹⁷⁴ *See id.*

¹⁷⁵ *See TIA 2012 Refresh PN Comments at 2-5.*

¹⁷⁶ CVAA, § 102(b); 47 U.S.C. § 610(c).

¹⁷⁷ *FCC Announces the Establishment of the Disability Advisory Committee and Solicits Nominations for Membership*, Public Notice, 79 FR 73309 (Dec. 2, 2014); *Disability Advisory Committee; Announcement of Members and Date of First Meeting*, Public Notice, 80 FR 8647 (Feb. 18, 2015).

¹⁷⁸ CGB acts for the Commission under delegated authority in matters pertaining to persons with disabilities. 47 C.F.R. §§ 0.141(f), 0.361. In the event that the DAC is unable to provide such recommendations (*e.g.*, because it is between authorizing charters), we propose that CGB seek guidance on who should be designated as "interested consumer stakeholders" from the Commission's Disability Rights Office, or other federal advisory bodies to the FCC that include stakeholders from the disability community, such as the Consumer Advisory Committee.

consumer stakeholders. Finally, we propose that each consumer representative or organization receiving a designation as an “interested consumer stakeholder” maintain such designation for a period of two years, with the process described above being repeated at the end of each two-year period. We believe that taking this approach will provide the expertise and stability needed for effective participation in the standards-setting process. We seek comment on these proposals, as well as how many consumer stakeholders to designate.

c. Defining the Consumer Consultation Process

60. We propose to define “in consultation with interested consumer stakeholders” as signifying a process in which consumer stakeholders designated by the Commission are allowed to participate from the start and throughout the standards development process. We further propose that when there is adherence to this process, the resulting standards may become effective for compliance purposes in an accelerated manner pursuant to section 710(c) as amended by the CVAA. We note that many standards-setting discussions are highly technical in nature, and effective participation in such groups may require expertise in the area. For many of the technical issues that must be addressed, it may be sufficient to provide an initial overview for such stakeholders at the start of the process and then receive their comments along with other members of the public, after TR-41 and ANSI ASC C63[®]-EMC, for example, and relevant subcommittees have completed their work. Nevertheless, we think there are likely to be some technical issues for which input and participation by informed consumer stakeholders will be beneficial, if not essential, early on.¹⁷⁹ Therefore, to ensure that the consultation is effective, consumers should be given the option to participate from the start of the standards development process. In this regard, we further believe that it would be appropriate for designated stakeholders to be invited to participate in relevant subcommittees and working groups. We seek comment on this proposal, and whether designated consumer stakeholders should also be invited to serve as voting members of relevant standards development committees such as TR-41 and ANSI ASC C63[®]-EMC. Would such voting membership be consistent with existing committee procedures, or would changes in committee procedures or by-laws be needed to accommodate it? Further, regarding possible steps to secure effective participation, we seek comment on whether, in order to qualify as a consumer consultation process under section 710(c), organization membership fees that may ordinarily be required for participation in the ANSI standards setting process should be waived for Commission-designated consumer stakeholders operating under a tax-exempt, non-profit status, and whether reasonable accommodations, such as sign language interpreters and communication access real-time translation (CART), should be provided for the attendance and participation of such designees during committee deliberations, at no cost to individuals needing such accommodations. We seek comment on these proposals, their costs and benefits, and their advantages or disadvantages in advancing the purposes of section 710.

61. Taken together, the public participation and consumer consultation proposals set forth above are intended to implement section 710(c) in a manner that will allow industry and consumer groups to work together in a cohesive and meaningful fashion and to streamline the implementation of new HAC technical standards, while ensuring that the interests of persons with hearing loss are fully considered during the process. Commenters who believe that other types of processes would be more appropriate

¹⁷⁹ For example, in recent years HLAA has conducted several surveys of consumers to determine their experiences in shopping for and using mobile phones. In the most recent survey, which was conducted in September 2014, approximately 30 percent of respondents reported that it was “difficult” or “very difficult” for them to find the right spot on their cell phones to be able to hear, and about the same percentage said that, once they found the “right spot,” it was “difficult” or “very difficult” to maintain the phone in that position during an entire conversation. 2014 HLAA Survey Report, Q24, Q25. Further, approximately 24 percent of respondents said they experienced interference from their current cell phone either half the time or every time they used the phone. 2014 HLAA Survey Report, Q28. In addition, approximately 34 percent of respondents described such interference, to the extent they experienced it, as “annoying,” “very annoying,” or “unbearable.” 2014 HLAA Survey Report, Q28. This kind of information, as well as technical research conducted by consumer organizations and non-profit institutions, could be very useful and we believe it merits consideration in developing future versions of HAC standards.

and sufficient to ensure effective public participation and “consultation with interested consumer stakeholders” as required by section 710(c) are asked to provide detailed proposals for how such alternatives would achieve the desired objectives.

62. We emphasize that section 710(c), as amended, does not *mandate* that any standards-setting organization change its procedures to provide for consultation with interested consumer stakeholders designated by the Commission. Rather, such consultation is one of the conditions under which a standard can be relied upon by industry for hearing aid compatibility compliance purposes without first having been adopted in a Commission rulemaking. In the event that a standards-setting organization were to conclude that consultation with consumer stakeholders, as defined by the rules adopted in this proceeding, is not practicable or is inconsistent with the needs of the organization, the only legal consequence would be that, as is currently the case, standards developed by that organization would need to be formally adopted in a Commission rulemaking before they could be relied upon for hearing aid compatibility compliance purposes.¹⁸⁰ Alternatively, a standard could be developed by another organization through a process that complies with section 710(c) and the Commission’s implementing rules. Above, we invite comment on whether there are other relevant standards development organizations, besides ANSI, that follow processes that could qualify as a “public participation process” under section 710(c). Similarly, we invite comment on whether, in the event that ANSI chooses not to incorporate a consumer consultation process into its standards-setting procedures, the Commission should recognize another organization for purposes of section 710(c). We also invite commenters supporting recognition of another standards-setting body to propose other bodies for consideration.

2. Commission Review of Standards

63. In the preceding section, we propose to accelerate the process for making hearing aid compatibility standards effective when they are developed through a procedure that relies on public participation and consumer involvement, consistent with the CVAA. We believe that this process will allow for a consensus-driven approach that identifies and addresses consumers’ concerns. In this section, we seek comment on the appropriate procedure for Commission review of such standards.

64. In this regard, we note that section 710(c) of the CVAA provides varying directives. One provision of section 710(c) allows industry reliance on standards that are developed through the public participation/consumer consultation process “until such time as the Commission may determine otherwise.”¹⁸¹ We interpret this provision to require the Commission to allow companies to rely on these standards without first waiting for Commission approval, and we seek comment on this interpretation. However, section 710(c) also provides that “[t]he Commission *shall establish or approve such technical standards* as are required to enforce this section.”¹⁸² Moreover, section 710(c), as amended by the CVAA, goes on to state that the Commission “shall consult with the public, including people with hearing loss, in establishing or approving such technical standards” and “shall remain the final arbiter as to whether the standards meet the requirements of this section.”¹⁸³ These provisions of section 710(c) thus maintain the Commission’s authority and mandate to approve or disapprove the use of a published technical standard, notwithstanding any prior industry reliance, to ensure that such use is consistent with the requirements of section 710 to ensure the availability of hearing aid compatible wireline telephones, other CPE, and wireless handsets.

¹⁸⁰ See n.172, *supra*.

¹⁸¹ CVAA, § 102(b); 47 U.S.C. § 610(c). Specifically, section 710(c) states: “A telephone or other customer premises equipment that is compliant with relevant technical standards developed through a public participation process and in consultation with interested consumer stakeholders (designated by the Commission for the purposes of this section) will be considered hearing aid compatible for purposes of this section, until such time as the Commission may determine otherwise.” CVAA, § 102(b); 47 U.S.C. § 610(c).

¹⁸² 47 U.S.C. § 610(c) (emphasis added). This sentence of section 710(c) predates the CVAA.

¹⁸³ CVAA, § 102(b); 47 U.S.C. § 610(c) (emphasis added).

65. In order to fully implement section 710(c), as amended, therefore, it appears necessary to provide for Commission review of hearing aid compatibility standards after they have been developed, while allowing industry to rely on such standards for hearing aid compatibility compliance purposes “until such time as the Commission may determine otherwise.”¹⁸⁴ To minimize any risk of disruption should the Commission ultimately find that the standard and/or the process by which it was developed is inconsistent with section 710, we believe this review should be conducted as early as feasible. Therefore, we propose that, upon publication by ANSI¹⁸⁵ of a new or revised hearing aid compatibility standard, the relevant Bureaus and Offices shall issue a public notice describing such standard, specifying the effective date set by ANSI and the equipment and services to which the standard applies, and indicating where the standard and related information can be obtained. We propose that in such public notice, the relevant Bureaus and Offices shall initiate a review of the standard by seeking public comment on (1) whether the public participation and consumer consultation processes specified by section 710(c) and by the rules adopted in this proceeding were followed in developing the new or revised standard, and (2) whether the use of the standard to determine whether wireline telephones, other customer premises equipment, or wireless handsets are hearing aid compatible meets the substantive requirements of section 710. We believe that section 710(c) provides the authority to adopt this approach because, as noted above, that provision directs the Commission to “establish or approve” relevant standards in consultation with the public, “including people with hearing loss,” and makes the Commission the final arbiter of such standards.¹⁸⁶ We seek comment on this proposal generally, its costs and benefits, and the following matters in particular.

a. Review prior to ANSI publication

66. We seek to expedite the Commission’s review process to the extent feasible. Therefore, we invite comment on whether ANSI should be permitted to seek Commission review of a draft standard that has been approved by a subcommittee before it is formally approved by the parent committee, or before it is adopted through a public review process. Would the benefit of earlier Commission approval that could be gained by initiating review at an intermediate stage justify the potential for administrative waste if a draft standard is subsequently revised prior to its final adoption by the standards-setting organization? What other advantages or disadvantages are there for allowing such intermediate review?

b. Parameters of the Commission review process

67. We seek to prevent unnecessary delay in the Commission’s review of standards developed through the standards-setting process laid out in this proceeding. Therefore, we propose that the Commission’s review be conducted by the relevant Bureau¹⁸⁷ in conjunction with the Office of Engineering and Technology (OET).¹⁸⁸ We also propose that such review be completed, and a determination issued by the relevant bureau approving or disapproving such standards, no later than 180

¹⁸⁴ CVAA, § 102(b); 47 U.S.C. § 610(c).

¹⁸⁵ For purposes of simplifying this discussion, we are assuming adoption of our proposal to designate the ANSI process as the “public participation process” under section 710(c). The proposed Commission review process, however, would also be applicable in the event that some other open development standards process is designated by the Commission as a “public participation process.”

¹⁸⁶ CVAA, § 102(b); 47 U.S.C. § 610(c).

¹⁸⁷ The relevant bureau would be CGB in the case of wireline standards and WTB in the case of wireless standards. WTB currently has authority, delegated to it prior to enactment of the CVAA, to incorporate new or revised hearing aid compatibility standards for commercial mobile radio service (CMRS) handsets into section 20.19 of the rules in certain circumstances. 47 C.F.R. § 20.19(k).

¹⁸⁸ See CVAA, § 102(b); 47 U.S.C. § 610(c) (“The Commission may delegate [the] authority [to establish or approve hearing aid compatibility standards] to an employee pursuant to section 5(c) of this title”).

days after the review period begins.¹⁸⁹ We seek comment on whether this timetable will be sufficient to ensure that the Commission addresses its responsibilities under section 710(c). We also seek comment on what consequences should ensue in the event that the timetable is not met. Should the standard be deemed approved? Or should the proceeding remain open, so that a decision approving or disapproving the standard could still be made based on the record compiled, despite the expiration of the timetable? Finally, we invite commenters to suggest alternative processes, such as, for CMRS handsets, modification of the existing delegations of authority under section 20.19(k), that they believe will more effectively or appropriately address the Commission's section 710(c) responsibilities.

c. Incorporation of new or revised standards into the Commission's rules

68. We seek comment on the necessity of, and the appropriate procedure for, amending the Commission's rules to reflect Commission approval of a standard developed by ANSI in accordance with the manner described above. As noted above, section 710(c) allows industry to rely on such a standard for hearing aid compatibility compliance purposes prior to any Commission approval or incorporation of the standard into the rules. However, once the Commission review process described above has been completed and the use of the standard for hearing aid compatibility compliance has been given formal Commission approval, we believe that our rules should reflect that approval, even though section 710(c) allows industry to rely on the standard before the Commission takes action. Therefore, we propose that, where a technical standard has been approved for hearing aid compatibility compliance purposes pursuant to the Commission review process described above, such approval shall be codified in the Commission's rules. We seek comment on this proposal.

d. Termination of reliance on superseded standards

69. Finally, we seek comment on the appropriate procedure for phasing out reliance on a standard when it has been superseded by a revised version. Although section 710(c) does not specifically address this situation, the language of the provision suggests that industry may continue to rely on such original standard for compliance, even though it has been superseded, "until such time as the Commission may determine otherwise."¹⁹⁰ Accordingly, we seek comment on whether and how to terminate industry's ability to rely on a superseded standard. For example, should the Commission adopt a "default" transition period, after which a superseded standard would cease to be effective, absent specific Commission action extending its effectiveness? If so, would one year be an appropriate default transition period, or would some other default period be more appropriate? Alternatively, should the termination of the effectiveness of a superseded standard be affirmatively addressed by the Commission in each case, *e.g.*, as an element or extension of the proposed Commission review process described above?

3. Consistency with the APA

70. We seek comment on whether the various processes set forth above for implementation of section 710(c) are consistent with section 559 of the APA, which states that a "[s]ubsequent statute may not be held to supersede or modify [the APA] . . . except to the extent that it does so expressly."¹⁹¹ The District of Columbia Circuit has held that a statute may be found to authorize an administrative agency to adopt rules outside of an APA procedure if "Congress has established procedures so clearly different from those required by the APA that it must have intended to displace the norm."¹⁹²

¹⁸⁹ See ¶ 66, *supra*, seeking comment on when in the standards development process Commission review should occur.

¹⁹⁰ CVAA, § 102(b); 47 U.S.C. § 610(c).

¹⁹¹ 5 U.S.C. § 559.

¹⁹² *Asiana Airlines v. FAA*, 134 F.3d 393, 397 (D.C. Cir. 1998) (*Asiana Airlines*). See also *Methodist Hospital of Sacramento v. Shalala*, 38 F.3d 1225 (D.C. Cir. 1994) (*Methodist Hospital*); *Coalition for Parity, Inc. v. Sebelius*, 709 F.Supp.2d 10, 19 (D.D.C. 2010) (discussing *Asiana Airlines* and *Methodist Hospital*).

Specifically, we seek comment on the extent to which commenters believe that any components of the above processes differ from processes required by the APA, and whether section 710(c) of the CVAA nevertheless authorizes the Commission to implement such processes.

VII. PROCEDURAL MATTERS

A. Comment Filing Procedures

71. Pursuant to sections 1.415 and 1.419 of the Commission's rules,¹⁹³ interested parties may file comments and reply comments regarding the *Notice* on or before the dates indicated on the first page of this document. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS).¹⁹⁴

72. *Electronic Filers:* Comments may be filed electronically using the Internet by accessing the Commission's Electronic Comment Filing System (ECFS): <http://apps.fcc.gov/ecfs>.

73. *Paper Filers:* Parties who 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.

74. 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 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 9300 East Hampton Drive, Capitol Heights, MD 20743.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.

75. Documents in CG Docket Nos. 12-32 and 13-46, ET Docket No. 13-____, and WT Docket Nos. 07-250 and 10-254 will be available for public inspection and copying during business hours at the FCC Reference Information Center, Portals II, 445 12th Street SW, Room CY-A257, Washington, D.C. 20554. The documents may also be purchased from BCPI, telephone (202) 488-5300, facsimile (202) 488-5563, TTY (202) 488-5562, e-mail fcc@bcpiweb.com. Documents may also be viewed using the Internet by accessing the Commission's Electronic Document Management System (EDOCS) at https://apps.fcc.gov/edocs_public/edocsLink.do and Electronic Comment Filing System (ECFS) at <http://apps.fcc.gov/ecfs>, or under Quick Links on the Commission's web page at www.fcc.gov.

B. Ex Parte Presentations

76. This proceeding shall be treated as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules.¹⁹⁵ 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 presentations must (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made,

¹⁹³ 47 C.F.R. §§ 1.415, 1.419.

¹⁹⁴ See *Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121 (1998).

¹⁹⁵ 47 C.F.R. §§ 1.1200–1.1216.

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).¹⁹⁶ In proceedings governed by rule 1.49(f)¹⁹⁷ 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.

C. Regulatory Flexibility Act

77. As required by the RFA, 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 item. The IRFA is set forth in Appendix C. 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 *Notice* provided on or before the dates indicated on the first page of this *Notice*. The Commission will send a copy of the *Notice*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.¹⁹⁸ In addition, the *Notice* and IRFA (or summaries thereof) will be published in the Federal Register.¹⁹⁹

D. Paperwork Reduction Act Analysis

78. The *Notice* seeks comment on proposed new information collection requirements. If the Commission adopts any new information collection requirement, the Commission will publish another notice in the *Federal Register* inviting the public to comment on the requirements, as required by the PRA.²⁰⁰ In addition, pursuant to the Small Business Paperwork Relief Act of 2002,²⁰¹ the Commission will seek specific comment on how it might further reduce the information collection burden for small business concerns with fewer than 25 employees.

E. Materials in Accessible Formats

79. To request materials in accessible formats (such as Braille, large print, electronic files, or audio format), send an e-mail to fcc504@fcc.gov or call the Consumer and Governmental Affairs Bureau at (202) 418-0530 (voice) or (202) 418-0432 (TTY). This *Notice* can also be downloaded in Word and Portable Document Formats (PDF) at <http://www.fcc.gov/cgb/dro/trs.html>.

80. For further information regarding this *Notice* contact Bob Aldrich, Consumer and Governmental Affairs Bureau, (202) 418-0996, e-mail Robert.Aldrich@fcc.gov, or Eli Johnson, Wireless Telecommunications Bureau, (202) 418-1395, e-mail Eli.Johnson@fcc.gov.

VIII. ORDERING CLAUSES

81. Accordingly, IT IS ORDERED that, pursuant to sections 4(i), 301, 303(r), 316, 403, and

¹⁹⁶ *Id.* § 1.1206(b).

¹⁹⁷ *Id.* § 1.49(f).

¹⁹⁸ *See id.* § 603(a).

¹⁹⁹ *Id.*

²⁰⁰ Public Law 104-13. *See* 44 U.S.C. §§ 3501-3520.

²⁰¹ Public Law 107-198. *See* 44 U.S.C. § 3506(c)(4).

710 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 301, 303(r), 316, 403, and 610, this *Notice of Proposed Rule Making* IS ADOPTED.

82. IT IS FURTHER ORDERED that pursuant to applicable procedures set forth in sections 1.415 and 1.419 of the Commission's Rules, 47 C.F.R. §§ 1.415, 1.419, interested parties may file comments on this *Notice of Proposed Rulemaking* on or before 60 days after publication of the *Notice of Proposed Rulemaking* in the *Federal Register* and reply comments on or before 90 days after publication in the *Federal Register*.

83. IT IS FURTHER ORDERED that the Commission's Consumer Information Bureau, Reference Information Center, SHALL SEND a copy of the *Notice of Proposed Rulemaking*, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

APPENDIX A

Proposed Rules

The Commission proposes to amend 47 C.F.R. part 20 as follows:

1. The authority citation for part 20 continues to read as follows:

AUTHORITY: 47 U.S.C. 154, 160, 201, 251-254, 303, 332, and 710 unless otherwise noted.

2. Section 20.19(b)(1) and (b)(2) are revised to read as follows:

(b) Hearing aid compatibility; technical standards -- (1) For radio frequency interference and other aspects of acoustic coupling. (i) Radio frequency interference. A wireless handset submitted for equipment certification or for a permissive change relating to hearing aid compatibility must either (A) comply with a standard meeting the requirements of paragraph (k)(3) of this section or (B) meet, at a minimum, the M3 rating associated with the technical standard set forth in the standard document “American National Standard Methods of Measurement of Compatibility Between Wireless Communication Devices and Hearing Aids,” ANSI C63.19-2011. Any grants of certification issued before [date that is six months after the effective date of the amended rule] under previous versions of ANSI C63.19 remain valid for hearing aid compatibility purposes.

(ii) Volume control. A wireless handset submitted for equipment certification or for a permissive change relating to hearing aid compatibility must include volume control that is compliant with a relevant technical standard established or approved by the Commission pursuant to 47 U.S.C. § 710(c).

(2) For inductive coupling. A wireless handset submitted for equipment certification or for a permissive change relating to hearing aid compatibility must either (A) comply with a standard meeting the requirements of paragraph (k)(3) of this section or (B) meet, at a minimum, the T3 rating associated with the technical standard set forth in the standard document “American National Standard Methods of Measurement of Compatibility Between Wireless Communication Devices and Hearing Aids,” ANSI C63.19-2011. Any grants of certification issued before [date that is six months after the effective date of the amended rule] under previous versions of ANSI C63.19 remain valid for hearing aid compatibility purposes.

3. Section 20.19(e)(1)(iii) is revised by adding a new paragraph (D), as follows:

(D) The handset was certified as meeting the requirements of paragraph (b)(1) of this section with the power reduction prior to [date that is six months after the effective date of the amended rule].

4. Section 20.19(k) is revised by renaming it and adding a new paragraph (3), to read as follows:

(k) Delegation of rulemaking authority and applicability of standards developed through a public participation and consumer consultation process.

(3) Reliance on standards developed through a public participation and consumer consultation process. (i) General. Wireless handsets that are compliant with a new or revised technical standard developed in accordance with this subparagraph (3) shall be considered hearing aid compatible for purposes of each relevant requirement of this section until such time as the Commission may determine otherwise.

(ii) *Qualifying public participation standards development process.* For a handset to be considered hearing aid compatible under this subparagraph (3), the handset must comply with a standard that was developed through a voluntary and consensus-driven process under the *aegis* of a standards-setting body that is recognized by the Commission for purposes of this subparagraph (3). Such process must (A) be open to participation by all relevant stakeholders who have legitimate and meaningful interests in the process, (B) allow all interested parties, including consumers and groups representing them, to comment on a proposed standard prior to adoption and to have their comments considered by the working groups that develop the standards, and (C) provide an appeal mechanism that allows interested parties to seek review of standards-setting decisions.

(iii) *Consultation with consumer stakeholders.* For a handset to be considered hearing aid compatible under this subparagraph (3), the handset must comply with a standard that was developed in consultation with interested consumer stakeholders as described in this subparagraph(3)(iii). Consumer stakeholders designated by the Consumer and Governmental Affairs Bureau shall be given the option to participate at the start of and throughout the standards development process and shall be invited to participate in relevant subcommittees and working groups. Any organization membership fees that may ordinarily be required for participation in the standards-setting process shall be waived for consumer organizations operating under a tax-exempt, non-profit status, and reasonable accommodations, such as sign language interpreters and communication access real-time translation (CART), shall be provided, as needed, for the attendance and participation of such designees during committee deliberations, at no cost to individuals needing such accommodations.

5. Section 20.19(l) is amended to read as follows:

The standards listed in this section are incorporated by reference into this section with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. All material associated with the standards listed in this paragraph is available for inspection at the Federal Communications Commission (FCC), 445 12th St. SW., Reference Information Center, Room CY-A257, Washington, DC 20554 and is available from the sources indicated below. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030 or go to

<http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.htm>

These standards may also be viewed on the “ANSI Incorporated by Reference (IBR) Portal” at <<http://ibr/ansi.org/>>.

The Commission proposes to amend 47 C.F.R. part 68 as follows:

1. The authority citation for part 68 continues to read as follows:

Authority: Secs. 4, 5, 303, 48 Stat., as amended, 1066, 1068, 1082; (47 U.S.C. 154, 155, 303).

2. Section 68.1 is amended to read as follows:

The purpose of the rules and regulations in this part is to provide for uniform standards for the protection of the telephone network from harms caused by the connection of terminal equipment and associated wiring thereto, for the compatibility of hearing aids and telephones, and the compatibility of hearing aids and customer premises equipment used to access advanced communications services, so as to ensure that, to the fullest extent made possible by technology and medical science, people who are deaf and hard of hearing have equal access to the national telecommunications network.

3. Section 68.2(a) is amended to read as follows:

Except as provided in paragraphs (b) and (c) of this section, the rules and regulations apply to direct connection of all terminal equipment to the public switched telephone network for use in conjunction with all services other than party line services. Sections 68.4, 68.5, 68.6, 68.112, 68.160, 68.162, 68.201, 68.211 (except paragraph (a)(2)), 68.218, 68.224, and subparts D (except §§ 68.318, 68.324(e)(1) and (2), and 68.354), and E also apply to “ACS telephonic CPE” as defined in § 68.3, for the purpose of achieving compliance with hearing aid compatibility and volume control requirements.

4. Section 68.3 is amended by adding definitions of “ACS telephonic CPE” and “advanced communications services” and by revising the definitions of “hearing aid compatible,” “responsible party” and “terminal equipment” to read as follows:

ACS Telephonic CPE. Customer premises equipment used with advanced communications services that is designed to provide 2-way voice communication via a built-in speaker intended to be held to the ear in a manner functionally equivalent to a telephone, except for mobile handsets.

Advanced communications services. Interconnected VoIP service, non-interconnected VoIP service, electronic messaging service, and interoperable video conferencing service.

Hearing aid compatible. Except as used at §§ 68.4(a)(3), 68.315, and 68.414, the terms “hearing aid compatible” or “hearing aid compatibility” shall have the meaning defined in § 68.316, unless it is specifically stated that hearing aid compatibility volume control, as defined in § 68.317, is intended or is included in the definition.

Responsible party. The party or parties responsible for the compliance of terminal equipment or protective circuitry that is intended for connection directly to the public switched telephone network or for use with advanced communications services with the applicable rules and regulations in this part and with any applicable technical criteria published by the Administrative Council for Terminal Attachments. If a Telecommunications Certification Body certifies the terminal equipment, the responsible party is the holder of the certificate for that equipment. If the terminal equipment is the subject of a Supplier's Declaration of Conformity, the responsible party shall be: the manufacturer of the equipment, or the manufacturer of protective circuitry that is marketed for use with terminal equipment that is not to be connected directly to the network, or if the equipment is imported, the importer, or if the equipment is assembled from individual component parts, the assembler. If the equipment is modified by any party not working under the authority of the responsible party, the party performing the modifications, if located within the U.S., or the importer, if the equipment is imported subsequent to the modifications, becomes the new responsible party. Retailers or original equipment manufacturers may enter into an agreement with the assembler or importer to assume the responsibilities to ensure compliance of the terminal equipment and to become the responsible party.

Terminal equipment. As used in this part, communications equipment located on customer premises at the end of a communications link, used to permit the stations involved to accomplish the provision of telecommunications or information services. “Terminal equipment” includes ACS telephonic CPE.

5. Section 68.112 is amended by adding new paragraph (d), to read as follows:

(d) This section shall not require replacement of a telephone after section 68.316 or section 68.317 is amended to incorporate updated standards, provided that the telephone complied with sections 68.316 and 68.317 prior to such amendment.

6. Section 68.201 is amended to read as follows:

Terminal equipment may not be connected to the public switched network unless it has either been certified by a Telecommunications Certification Body or the responsible party has followed all the procedures in this subpart for Supplier's Declaration of Conformity. ACS telephonic equipment must be certified by a Telecommunications Certification Body or the responsible party has followed all the procedures in this subpart for Supplier's Declaration of Conformity.

7. Section 68.211(d) is amended to read as follows:

Reauthorization. A product that has had its approval revoked may not be re-authorized for a period of six months from the date of revocation of the approval.

8. Section 68.218 is amended to read as follows:

Responsibility of the party acquiring equipment authorization.

(a) In acquiring approval for terminal equipment to be connected to the public switched telephone network or for ACS telephonic equipment, the responsible party warrants that each unit of equipment marketed under such authorization will comply with all applicable rules and regulations of this part and with any applicable technical criteria of the Administrative Council for Terminal Attachments.

(b) In the case of terminal equipment that is directly connected to the public switched telephone network, the responsible party or its agent shall provide the user of the approved terminal equipment the following:

9. Section 68.300(a) is amended to read as follows:

(a) Terminal equipment approved as set out in this part must be labeled in accordance with any applicable requirements published by the Administrative Council for Terminal Attachments and with requirements of this part for hearing aid compatibility and volume control.

10. A new section 68.315 is added, as follows:

Hearing Aid Compatibility; Reliance on standards developed through a public participation and consumer consultation process.

(a) *General.* Telephones that are compliant with a new or revised technical standard developed in accordance with this section shall be considered hearing aid compatible for purposes of sections 68.4 and 68.6 until such time as the Commission may determine otherwise.

(b) *Qualifying public participation standards development process.* For a telephone to be considered hearing aid compatible under this section, the telephone and telephone handset must comply with a standard that was developed through a voluntary and consensus-driven process, under the *aegis* of a standards-setting body that is recognized by the Commission for purposes of this section. Such process must (A) be open to participation by all relevant stakeholders who have legitimate and meaningful interests in the process, (B) allow all interested parties, including consumers and groups representing them, to comment on a proposed standard prior to adoption and to have their comments considered by the working groups that develop the standards, and (C) provide an appeal mechanism that allows interested parties to seek review of standards-setting decisions.

(c) *Consultation with consumer stakeholders.* For a telephone to be considered hearing aid compatible under this section, the telephone and telephone handset must comply with a standard that was developed in consultation with interested consumer stakeholders as described in this paragraph. Consumer stakeholders designated by the Consumer and Governmental Affairs Bureau shall be given the option to participate at the start of and throughout the standards development process and shall be invited to participate in relevant subcommittees and working groups. Any organization membership fees that may ordinarily be required for participation in the standards-setting process shall be waived for consumer organizations operating under a tax-exempt, non-profit status, and reasonable accommodations, such as sign language interpreters and communication access real-time translation (CART) shall be provided, as needed, for the attendance and participation of such designees during committee deliberations, at no cost to individuals needing such accommodations.

11. Section 68.316 is amended by revising the first sentence to read as follows:

A telephone handset is hearing aid compatible for the purposes of this section if it complies with a standard meeting the requirements of section 68.315 or with the following standard, published by the Telecommunications Industry Association, copyright 1983, and reproduced by permission of the Telecommunications Industry Association:

12. Section 68.317 is amended by redesignating paragraphs (a) through (f) as (b) through (g), redesignating paragraph (g) as (j), redesignating the “Note to paragraph (a)” as “Note to paragraph (b)”.
13. Section 68.317 is further amended by revising paragraph (j) and adding new paragraphs (a), (h), (i), and (k), to read as follows:

§ 68.317 Hearing aid compatibility volume control: technical standards.

(a) (1) For telephones manufactured in the United States or imported for use in the United States prior to [insert date that is two years after publication of a Final Rule in the Federal Register], such a telephone complies with the volume control requirements of this section if it complies with (A) the applicable provisions of paragraphs (b) through (g) of this section, (B) paragraphs (h) and (i) of this section, or (C) a standard meeting the requirements of section 68.315.

(2) For telephones manufactured in the United States or imported for use in the United States on or after [insert date that is two years after publication in the Federal Register], such a telephone complies with the volume control requirements of this section if it complies with (A) paragraphs (h) and (i) of this section or (B) a standard meeting the requirements of section 68.315.

(h) A telephone complies with the Commission's volume control requirements if it is equipped with a receive volume control that provides, through the receiver in the handset or headset of the telephone, 18 dB of Conversational Gain minimum and up to 24 dB of Conversational Gain maximum when measured as described in ANSI/TIA-4965-2012 (Telecommunications – Telephone Terminal Equipment – Receive Volume Control Requirements for Digital and Analog Wireline Telephones). The 18 dB of Conversational Gain minimum must be achieved without significant clipping of the speech signal used for testing.

(i) The 24 dB of Conversational Gain maximum may be exceeded provided the amplified receive capability automatically resets to a level less than 18 dB of Conversational Gain when the telephone

is caused to pass through a proper on-hook transition in order to minimize the likelihood of damage to individuals with normal hearing.

(j) These incorporations by reference of paragraph 4.1.2 (including table 4.4) of American National Standards Institute (ANSI) Standard ANSI/EIA-470-A-1987, paragraph 4.3.2 of ANSI/EIA/TIA-579-1991, and ANSI/TIA-4965-2012 were approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of these publications may be purchased from the American National Standards Institute (ANSI), Sales Department, 11 West 42nd Street, 13th Floor, New York, NY 10036, (212) 642-4900, or <<http://global.ihc.com/>>. Copies also may be inspected during normal business hours at the following locations: Consumer and Governmental Affairs Bureau, Reference Information Center, Federal Communications Commission, 445 12th Street, SW, Washington, DC 20554; and the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html>. These standards may also be viewed on the “ANSI Incorporated by Reference (IBR) Portal” at <<http://ibr.ansi.org/>>.

(k) Manufacturers and other responsible parties of telephones subject to this rule shall engage in consultation with people with hearing loss and their representative organizations for the purpose of assessing the effectiveness of the standard adopted pursuant to section 68.317(j). Such consultation shall include testing a sample of products certified to be compliant with the revised standard to evaluate whether products compliant with such standard are providing a uniform and appropriate range of volume to meet the telephone needs of consumers. Such consultation and testing shall occur one year after the effective date of the rule adopted pursuant to section 68.317(j), with follow-up every three years thereafter to assess the impact of these technological changes.

14. Section 68.320(e) is amended to read as follows:

(e) No person shall use or make reference to a Supplier's Declaration of Conformity in a deceptive or misleading manner or to convey the impression that such a Supplier's Declaration of Conformity reflects more than a determination by the responsible party that the device or product has been shown to be capable of complying with the applicable technical criteria.

15. Section 68.324(e) is amended to read as follows:

(e) For terminal equipment that is directly connected to the public switched telephone network:

(g) For ACS telephonic CPE subject to a Supplier's Declaration of Conformity, the responsible party shall make a copy of the Supplier's Declaration of Conformity freely available to the general public on its company website.

APPENDIX B**List of Commenters****2013 Wireline Volume Control PN**Comments

Consumer groups, as follows, filing jointly:

- Hearing Loss Association of America (HLAA)
- Telecommunications for the Deaf and Hard of Hearing (TDI)
- Association of Late Deafened Adults (ALDA)
- Deaf and Hard of Hearing Consumer Advocacy Network (DHHCAN)
- National Association of the Deaf (NAD)
- RERC-Telecommunications Access

Hearing Industries Association (HIA)

Reply Comments

Telecommunications Industry Association (TIA)

2010 FNPRMComments

- Alliance for Telecommunications Industry Solutions (ATIS)
- AT&T Inc. (AT&T)
- Blooston Rural Carriers (Blooston)
- Clearwire Corporation (Clearwire)
- Consumer Electronics Retailers Coalition (CERC)
- CTIA – The Wireless Association (CTIA)
- Hearing Industries Association (HIA)
- Hearing Loss Association of America (Consumer Groups)
- MetroPCS Communications, Inc. (MetroPCS)
- Motorola, Inc. (Motorola)
- Rural Telecommunications Group, Inc. (RTG)
- Telecommunications Industry Association (TIA)

Reply Comments

- Blooston
- CERC
- CTIA
- Globalstar, Inc. (Globalstar)
- Inmarsat, Inc. (Inmarsat)
- Iridium Satellite LLC (Iridium)
- TIA
- T-Mobile USA, Inc. (T-Mobile)

2010 Review PNComments

Blooston Rural Carriers (Blooston)
CTIA – The Wireless Association (CTIA)
Elizabeth Whitmore (Whitmore)
Hearing Industries Association (HIA)
Hearing Loss Association of America (HLAA)
Pulse Mobile, LLC (Pulse)
Rural Cellular Association (RCA)
Stephen D. Julstrom (Julstrom)
Telecommunications Industry Association (TIA)
T-Mobile USA, Inc. (T-Mobile)

Reply Comments

HIA

2012 Refresh PNComments

American National Standards Institute Accredited Standards Committee C63® (ANSI ASC C63®)
Blooston Rural Carriers (Blooston)
Competitive Carriers Association (CCA)
CTIA – The Wireless Association (CTIA)
East Kentucky Network, LLC (Appalachian Wireless)
Hearing Industries Association (HIA)
Hearing Loss Association of America (Consumer Groups)
Rural Telecommunications Group, Inc. (RTG)
Telecommunications Industry Association (TIA)

APPENDIX C

Initial Regulatory Flexibility Analysis

1. As required by the Regulatory Flexibility Act of 1980, as amended,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 Notice of Proposed Rulemaking (NPRM). Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the applicable deadlines for initial comments, or reply comments, as specified in the NPRM. The Commission will send a copy of the NPRM, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (“SBA”).² In addition, the NPRM and the IRFA (or summaries thereof) will be published in the Federal Register.³

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

2. The Commission proposes to amend the hearing aid compatibility rules with the goal of ensuring that Americans with hearing loss are able to access wireline and wireless communications services through a wide array of phones, including voice-over-Internet protocol (VoIP) telephones. As described more fully below, this NPRM seeks to determine, in a number of areas, whether revisions should be made to the hearing aid compatibility rules to achieve these goals.

3. Regarding wireline equipment, the NPRM seeks comment on a Commission proposal to incorporate into the rules a revised industry volume control standard developed by the American National Standards Institute (ANSI) – ANSI/TIA-4965-2012 (2012 ANSI Wireline Volume Control Standard) – that appears likely to improve the ability of people with hearing loss to select wireline telephones with sufficient volume control to meet their communication needs and provide greater regulatory certainty for the industry. The revised standard modifies the physical set-up for measuring amplification for wireline phones, by discontinuing the use of an IEC-318 coupler, which must form a seal with the telephone handset, and specifying instead the Head and Torso Simulator (HATS) method, which uses a mannequin with a human pinna (outer ear) simulator.⁴ In addition, the new standard replaces the Receive Objective Loudness Rating (ROLR) method of calibrating amplification with a new method called Conversational Gain. According to TIA, the new standard will provide a more consistent experience of amplified gain level, enabling consumers with hearing loss to better assess and compare the merits of various models of terminal equipment.⁵ The Commission believes that incorporating the 2012 ANSI Wireline Volume Control Standard into the wireline volume control rule will make the rule more effective in ensuring that people with hearing loss have “equal access to the national telecommunications network”⁶ and that telephones provide “an internal means for effective use with hearing aids.”⁷

4. The NPRM also proposes to apply the Commission’s wireline telephone volume control and other hearing aid compatibility (HAC) requirements to handsets used with voice-over-Internet-

¹ See 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. §§ 601-612, was 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 Telecommunications Industry Association (TIA), Petition for Rulemaking, CG Docket No. 12-32, RM-11682, at 6 (filed Oct. 25, 2012) (TIA Petition).

⁵ *Id.* at 14-15.

⁶ Pub. L. No. 100-394, § 2 (1).

⁷ 47 U.S.C. § 610(b).

protocol (VoIP) services.⁸ This proposal implements the Twenty-First Century Communications and Video Accessibility Act of 2010 (CVAA), which provides that the hearing aid compatibility requirements of the Communications Act apply to all customer premises equipment used with advanced communications services, including VoIP services.⁹ The Commission seeks comment on the costs, benefits, and technical impacts of applying the rules to VoIP equipment, whether volume control and inductive coupling parameters for such equipment can be effectively measured under the 2012 ANSI Wireline Volume Control Standard and the currently applicable inductive coupling standard,¹⁰ the appropriate timetables or benchmarks that may be necessary to take account of technical feasibility or to ensure the marketability or availability of new technologies to users, whether any different treatment of VoIP CPE is appropriate under the Part 68 rules addressing complaint handling, labeling, certifications, and suppliers' declarations of conformity, and whether it would be appropriate to require registration of ACS telephonic CPE in a public database, such as the database of terminal equipment that ACTA administers.¹¹

5. Regarding wireless equipment, the NPRM seeks comment on a Commission proposal to adopt a volume control rule and standard for wireless handsets. In light of the greatly expanded role of wireless voice communications in our society, the Commission believes that adopting a specific volume control requirement for wireless handsets is necessary to achieve effective acoustic coupling and improve communication for people with hearing loss. The NPRM seeks comment on the costs and benefits of adopting a volume control requirement for wireless handsets, what specific burdens, if any, are associated with requiring handsets to achieve a specified amplification level, and whether a volume control requirement should apply to all wireless handsets or to a subset of total handset sales or models, as with the current hearing aid compatibility rule. Finally, the NPRM seek comment on the appropriate standard for volume control in wireless phones and on whether to address, via standards or through other means, factors other than amplification that affect the ability of consumers with hearing loss to hear and understand speech received over wireless handsets, such as frequency response and distortion and magnetic field strength issues.

6. In addition, the NPRM seeks comment on Commission proposals to require manufacturers to use exclusively the 2011 ANSI Wireless HAC Standard for certifying future handsets as hearing aid compatible and to eliminate the power-down exception to the existing wireless hearing aid compatibility rule.¹² Since July 2013, manufacturers appear to have been using the 2011 ANSI Wireless HAC Standard to test the vast majority of their new handsets.¹³ In order to facilitate meeting the 2007 standard, certain handsets were allowed to be tested using less than maximum output power, but that exception appears to be unnecessary for purposes of meeting the 2011 standard.

7. Regarding all equipment subject to hearing aid compatibility requirements, the NPRM seeks comment on a proposed streamlined process for allowing manufacturers and service providers to rely on a new or revised technical standard as sufficient for assessing compliance with relevant hearing aid compatibility requirements, without a prior Commission rulemaking, if the standard is developed by an ANSI-accredited standards development organization in accordance with an appropriate public participation process and in consultation with consumer stakeholders designated by the Commission, as

⁸ See 47 C.F.R. §§ 68.4, 68.6.

⁹ 47 U.S.C. § 610(b)(1)(C), *added by* Pub. L. No. 111-260, 124 Stat. 2751 (2010) (as codified in various sections of 47 U.S.C.). See also Pub. L. No. 111-265, 124 Stat. 2795 (2010) (technical corrections to the CVAA).

¹⁰ 47 C.F.R. §§ 68.316, 68.317.

¹¹ See *id.* part 68, subparts D, E, G; see also <<http://part68.org/tteMain.aspx>>.

¹² *Id.* § 20.19(e)(1)(iii).

¹³ See FCC, *Hearing Aid Compatibility Reports: Device Manufacturers*, <http://wireless.fcc.gov/hac/index.htm?job=rpt_dm_c> (last visited Oct. 28, 2015).

required by the CVAA.¹⁴ In particular, the NPRM seeks comment on the Commission's proposals to recognize the ANSI process as a "public participation process" for purposes of 47 U.S.C. § 610(c), to require that for a standard to qualify for accelerated incorporation into the hearing aid compatibility rule, consumer stakeholders designated by the Commission must be allowed to participate throughout the standards development process, and to provide for streamlined Commission post-effectiveness review of standards to ensure consistency with statutory requirements.

B. Legal Basis.

8. The authority for this proposed rulemaking is contained in sections 4(i), and 710 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 610.

C. Description and Estimate of the Number of Small Entities Impacted

9. 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 rules and policies, if adopted.¹⁵ The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."¹⁶ In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.¹⁷ A "small business concern" is one that: (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.¹⁸

10. *Small Entities.* Our actions, over time, may affect small entities that are not easily categorized at present. We therefore describe here, at the outset, three comprehensive small entity size standards that encompass entities that could be directly affected by the proposals under consideration.¹⁹ As of 2011, small businesses represented 99.9% of the 28.2 million businesses in the United States, according to the SBA.²⁰ Additionally, a "small organization" is generally any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.²¹ Nationwide, as of 2007, there were approximately 1,621,215 small organizations.²² Finally, the term "small governmental jurisdiction" is defined generally as "governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand."²³ Census Bureau data for 2011 indicate that there were 90,056 local governmental jurisdictions in the United States.²⁴ We estimate that, of this

¹⁴ CVAA, § 102(b); 47 U.S.C. § 610(c).

¹⁵ 5 U.S.C. § 603(b)(3).

¹⁶ *Id.* § 601(6).

¹⁷ *Id.* § 601(3) (incorporating by reference the definition of "small-business concern" in the Small Business Act, 15 U.S.C. § 632). 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." *Id.*

¹⁸ *Id.* § 632.

¹⁹ *See id.* § 601(3)–(6).

²⁰ *See* SBA, Office of Advocacy, "Frequently Asked Questions" (March 2014), *available at* <<https://www.sba.gov/advocacy/frequently-asked-questions-about-small-business>> (last visited Oct. 28, 2015).

²¹ 5 U.S.C. § 601(4).

²² INDEPENDENT SECTOR, THE NEW NONPROFIT ALMANAC AND DESK REFERENCE (2010).

²³ 5 U.S.C. § 601(5).

²⁴ *See* SBA, Office of Advocacy, "Frequently Asked Questions".

total, as many as 89,327 entities may qualify as “small governmental jurisdictions.”²⁵ Thus, we estimate that most local governmental jurisdictions are small.

11. *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 phone services, paging services, wireless Internet access, and wireless video services.²⁶ The appropriate size standard under SBA rules is for the category Wireless Telecommunications Carriers (except satellite). For that category a business is small if it has 1,500 or fewer employees.²⁷ For this category, census data for 2007 show that there were 1,383 firms that operated for the entire year.²⁸ Of this total, 1,368 firms had employment of fewer than 1,000 employees.²⁹ Thus under this category and the associated small business size standard, the Commission estimates that the majority of wireless telecommunications carrier (except satellite) firms are small.

12. *Satellite Telecommunications*. The category of “Satellite Telecommunications” 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.”³⁰ The category has a small business size standard of \$32.5 million or less in average annual receipts, under SBA rules.³¹ For this category, Census Bureau data for 2007 show that there were a total of 512 firms that operated for the entire year. Of this total, 482 firms had annual receipts of less than \$25 million.³² Consequently, we estimate that the majority of satellite telecommunications providers are small entities that might be affected by our action.

13. *All Other Telecommunications*. “All Other Telecommunications” is defined as follows: “This U.S. industry comprises establishments primarily engaged in providing specialized telecommunications services, such as satellite tracking, communications telemetry, and radar station operation. 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

²⁵ The 2011 U.S. Census data for small governmental organizations are not presented based on the size of the population in each organization. As stated above, there were 90,056 small local governmental organizations in 2011. As a basis for estimating how many of these 90,056 local organizations were small, in 2011 we note that there were a total of 729 cities and towns (incorporated places and minor civil divisions) with populations over 50,000. See <http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>. If we subtract the 729 cities and towns that exceed the 50,000 population threshold, we conclude that approximately 89,327 are small.

²⁶ U.S. Census Bureau, North American Industry Classification System, Definition of NAICS Code 517210; <http://www.census.gov/cgi-bin/sssd/naics/naicsrch> (last visited Oct. 28, 2015).

²⁷ See 13 C.F.R. § 121.201, NAICS Code 517210.

²⁸ U.S. Census Bureau, *2007 Economic Census of the United States*, Table EC0751SSSZ5, Information: Subject Series - Estab and Firm Size: Employment Size of Firms for the United States: 2007, NAICS Code 517210, available at http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_51SSSZ5&prodType=table (last visited Oct. 28, 2015).

²⁹ *Id.* Available census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is for firms with “1,000 employees or more.”

³⁰ U.S. Census Bureau, 2007 NAICS Definitions, 517410 Satellite Telecommunications; <http://www.census.gov/naics/2007/def/ND517410.htm> (last visited Oct. 28, 2015).

³¹ 13 C.F.R. § 121.201, NAICS Code 517410.

³² U.S. Census Bureau, *2007 Economic Census of the United States*, Table EC0751SSSZ4, Information: Subject Series - Estab and Firm Size: Receipts Size of Firms for the United States: 2007, NAICS Code 517410. See http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_51SSSZ4&prodType=table (last visited Oct. 28, 2015).

transmitting telecommunications to, and receiving telecommunications from, satellite systems. Establishments providing Internet services or voice over Internet protocol (VoIP) services via client-supplied telecommunications connections are also included in this industry.”³³ 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.³⁴ For this category, census data for 2007 show that there were 2,383 firms that operated for the entire year. Of those firms, a total of 2,346 had gross annual receipts of less than \$25 million.³⁵ Thus, a majority of All Other Telecommunications firms potentially affected by the proposals in the Notice can be considered small.

14. *Telephone Apparatus Manufacturing.* The Census Bureau defines this category to comprise “establishments primarily engaged in manufacturing wire telephone and data communications equipment.” The Census Bureau further states: “These products may be stand alone or board-level components of a larger system. Examples of products made by these establishments are central office switching equipment, cordless telephones (except cellular), PBX equipment, telephones, telephone answering machines, LAN modems, multi-user modems, and other data communications equipment, such as bridges, routers, and gateways.”³⁶ In this category the SBA deems a telephone apparatus manufacturing business to be small if it has 1,000 or fewer employees.³⁷ For this category of manufacturers, Census data for 2007 showed that there were 398 such establishments that operated that year. Of those 398 establishments, 393 had fewer than 1,000 employees.³⁸ Thus, under this size standard, the majority of establishments in this industry can be considered small.

15. *Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing.* The Census Bureau defines this industry as comprising “establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. Examples of products made by the 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.”³⁹ The SBA has established a size standard for this industry that classifies any business in this industry as small if it has 750 or fewer employees.⁴⁰ Census Bureau data for 2007 indicate that in that year 939 such businesses operated. Of that number, 912 businesses operated with less than 500 employees.⁴¹ Based on this data, we conclude that a majority of businesses in this industry are small by the SBA standard.

16. *Electronic Computer Manufacturing.* This category “comprises establishments primarily engaged in manufacturing and/or assembling electronic computers, such as mainframes, personal computers, workstations, laptops, and computer servers. Computers can be analog, digital, or hybrid.

³³ U.S. Census Bureau, North American Industry Classification System, Definition of NAICS Code 517919. See <http://www.census.gov/cgi-bin/sssd/naics/naicsrch> (last visited Oct. 28, 2015).

³⁴ See 13 C.F.R. § 121.201, NAICS Code 517919.

³⁵ See http://factfinder.census.gov/faces/tableservices/productview.xhtml?pid=-ECN-20007_US-51SSSZ1&prodType=table (last visited Oct. 28, 2015).

³⁶ U.S. Census Bureau, North American Industry Classification System, Definition of NAICS Code 334210. See <http://www.census.gov/cgi-bin/sssd/naics/naicsrch> (last visited Oct. 28, 2015).

³⁷ 13 C.F.R. § 121.201, NAICS Code 334210.

³⁸ See http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?-ECN_20007-US_31SG3&prodType=table (last visited Oct. 28, 2015).

³⁹ U.S. Census Bureau, North American Industry Classification System, Definition of NAICS Code 334220. See <http://www.census.gov/cgi-bin/sssd/naics/naicsrch> (last visited Oct. 28, 2015).

⁴⁰ 13 C.F.R. § 121.201, NAICS Code 334220.

⁴¹ *Id.*

Digital computers, the most common type, are devices that do all of the following: (1) store the processing program or programs and the data immediately necessary for the execution of the program; (2) can be freely programmed in accordance with the requirements of the user; (3) perform arithmetical computations specified by the user; and (4) execute, without human intervention, a processing program that requires the computer to modify its execution by logical decision during the processing run. Analog computers are capable of simulating mathematical models and contain at least analog, control, and programming elements. The manufacture of computers includes the assembly or integration of processors, coprocessors, memory, storage, and input/output devices into a user-programmable final product.”⁴² The SBA has developed a small business size standard for this category of manufacturing; that size standard is 1,000 or fewer employees.⁴³ According to Census Bureau data for 2007, there were 425 establishments in this category that operated that year. Of these, 419 had less 1,000 employees.⁴⁴ Consequently, we estimate that the majority of these establishments are small entities that may be affected by our action.

17. *Computer Terminal Manufacturing.* This category “comprises establishments primarily engaged in manufacturing computer terminals. Computer terminals are input/output devices that connect with a central computer for processing.”⁴⁵ The SBA has developed a small business size standard for this category of manufacturing; that size standard is 1,000 or fewer employees.⁴⁶ According to Census Bureau data for 2007, there were 43 establishments in this category that operated that year. Of this total, all 43 had less than 500 employees.⁴⁷ Consequently, we estimate that the majority of these establishments are small entities that may be affected by our action.

18. *Software Publishers.* This category “comprises establishments primarily engaged in computer software publishing or publishing and reproduction. This industry comprises establishments primarily engaged in computer software publishing or publishing and reproduction. 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.”⁴⁸ The SBA has developed a small business size standard for software publishers, which consists of all such firms with gross annual receipts of \$38.5 million or less.⁴⁹ For this category, census data for 2007 show that there

⁴² U.S. Census Bureau, North American Industry Classification System, Definition of NAICS Code 334111. See <http://www.census.gov/cgi-bin/sssd/naics/naicsrch> (last visited Oct. 28, 2015).

⁴³ 13 C.F.R. § 121.201, NAICS Code 334111.

⁴⁴

http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_31SG3&prodType=table, (last visited Oct. 28, 2015).

⁴⁵ U.S. Census Bureau, *2007 NAICS Definitions*, 334113 Computer Terminal Manufacturing, <[http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=334113&search=2007 NAICS Search](http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=334113&search=2007%20NAICS%20Search)> (last visited Oct. 28, 2015). As of December 2, 2014, the category “Computer Terminal Manufacturing, NAICS Code 334113, was superseded by a new NAICS Code classification, “Computer Terminal and Other Computer Peripheral Manufacturing,” NAICS Code 334118. See 13 C.F.R. § 121.201. However, since this rule making concerns only computer terminal manufacturing, only national data from the 2007 Census has been used to provide information about that industry. The SBA size standard, defining a firm within that industry as small if it has 1,000 or less employees, remained unchanged when NAICS Code 334113 was changed to NAICS Code 334118.

⁴⁶ 13 C.F.R. § 121.201, NAICS code 334113.

⁴⁷

http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_31SG3&prodType=table (last visited Oct. 28, 2015).

⁴⁸ U.S. Census Bureau, North American Industry Classification System, Definition of NAICS Code 511210. See <http://www.census.gov/cgi-bin/sssd/naics/naicsrch> (last visited Oct. 28, 2015).

⁴⁹ See 13 C.F.R. § 121.201, NAICS Code 511210.

were 5,313 firms that operated for the entire year. Of those firms, a total of 4,956 had gross annual receipts less than \$25 million.⁵⁰ Thus, a majority of software publishers potentially affected by the proposals in the Notice can be considered small.

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

19. Certain rule changes proposed in the NPRM, if adopted by the Commission, would modify rules or add requirements governing reporting, recordkeeping, and other compliance obligations.

20. If the Commission were to incorporate the 2012 ANSI Wireline Volume Control Standard into the wireline volume control rules and eliminate the currently applicable standard after a transition period, such action would alter the compliance obligations of wireline telephone apparatus manufacturers, including small entities, by requiring them to use a different method for testing and evaluating compliance with the volume control requirement.

21. If the Commission were to explicitly apply some or all of the Commission's wireline telephone volume control and other hearing aid compatibility (HAC) rules, which include related labeling, certification, complaint processing, and registration requirements, to handsets used with voice-over-Internet-protocol (VoIP) services, such action would impose new compliance obligations and reporting and recordkeeping obligations on some wireline telephone apparatus manufacturers, electronic computer manufacturers, computer terminal manufacturers, and software publishers, including small entities.

22. If the Commission were to adopt a rule and standard for wireless handsets to address volume control and other acoustic coupling issues, such action would impose new compliance obligations and may impose additional reporting and recordkeeping obligations on wireless telecommunications carriers, satellite telecommunications providers, and wireless communications equipment manufacturers, including small entities.

23. If the Commission were to modify the 2011 ANSI Wireless HAC Standard to achieve more effective coupling between handsets and hearing aids or cochlear implants, such action would alter the compliance obligations of wireless telecommunications carriers, satellite telecommunications providers, and wireless communications equipment manufacturers, including small entities. However, such changes would not result in new regulatory burdens.

24. If the Commission were to require manufacturers to use exclusively the 2011 ANSI Wireless HAC Standard (with any modifications adopted in this rulemaking) to certify future handsets as hearing aid compatible and eliminate the power-down exception to the existing wireless hearing aid compatibility rule, such action would alter the compliance obligations of wireless telecommunications carriers, satellite telecommunications providers, and wireless communications equipment manufacturers, including small entities. However, such changes would not result in new regulatory burdens.

25. If the Commission were to adopt a rule providing that, pursuant to section 710(c) of the Act, equipment may be considered to be in compliance with hearing aid compatibility rules if it complies with relevant ANSI technical standards, such action could affect the compliance obligations of wireless telecommunications carriers, satellite telecommunications providers, and wireless communications equipment manufacturers, including small entities.

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

26. The RFA requires an agency to describe any significant alternatives that it has considered

⁵⁰

http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_51SSSZ4&prodType=table (last visited Oct. 28, 2015).

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) an exemption from coverage of the rule, or any part thereof, for small entities.⁵¹

27. Regarding the Commission's proposal to incorporate the 2012 ANSI Wireline Volume Control Standard into the wireline volume control rules, the Commission notes that 2012 ANSI Wireline Volume Control Standard is a performance standard, not a design standard, and therefore implements alternative (3) above. Further, to minimize the difficulty of adjusting to the revised standard, the NPRM proposes to allow a phase-in period during which manufacturers may comply with either the existing standard or the 2012 ANSI Wireline Volume Control Standard. Finally, to limit any potential burdens regarding the impact of the proposed rule change and future rule changes on previously manufactured telephones, the NPRM proposes to amend the Commission's rules to allow the existing inventory and installed base of telephones that comply with the existing volume control standard to remain in place until retired and to clarify that future minor changes to the HAC and volume control standards will not result in a requirement to modify existing inventories or installed telephones. Each of these possible approaches, if adopted, could help minimize the impact of the revised standard on small entities. Further, if this revised standard more accurately measures the amplification achievable by wireline telephone products, incorporation of this standard could lighten regulatory burdens by increasing market certainty, promoting a level playing field, and reducing the number of complaints made to manufacturers by consumers of their products.

28. Regarding the Commission's proposal to amend Part 68 of our rules to explicitly provide that customer premises equipment used with a VoIP service is subject to the wireline hearing aid compatibility and volume control requirements of Part 68, the Commission notes that the standards provided in the rules are performance standards, not design standards. Further, the proposed rule amendment could increase regulatory certainty and market fairness regarding the application of the wireline HAC rules. In addition, the NPRM seeks comment on the appropriate timetables or benchmarks that may be necessary in order to take account of technical feasibility or to ensure the marketability or availability of new technologies to users. Such timetables or benchmarks could help minimize the impact of the revised standard on small entities.

29. Regarding the Commission's proposals (1) to adopt a rule and standard for wireless handsets to address volume control, (2) to require manufacturers to use the 2011 ANSI Wireless HAC Standard exclusively and (3) to eliminate the power-down exception to the existing wireless hearing aid compatibility rule, the Commission notes that the 2011 ANSI Wireless HAC Standard is a performance standard, not a design standard. In addition, the existing HAC rule limits the number of models that must comply with the rule, especially for smaller carriers and manufacturers, and the NPRM asks whether a volume control requirement, if adopted, should utilize the same approach, which could help minimize the impact on small entities.

30. Regarding the Commission's proposal to permit industry to rely on hearing aid compatibility standards developed pursuant to section 710(c) of the Act, in advance of a Commission rulemaking, such action would not result in new or increased regulatory burdens and may decrease regulatory burdens on small entities.

F. Federal Rules Which Duplicate, Overlap, or Conflict With, the Commission's Proposals.

31. None.

⁵¹ 5 U.S.C. § 603(b).

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

Re: *Access to Telecommunications Equipment and Services by Persons with Disabilities*, CG Docket No. 12-32; *Petition for Rulemaking Filed by the Telecommunication Industry Association Regarding Hearing Aid Compatibility Volume Control Requirements*, CG Docket No. 13-46; *Amendment of the Commission's Rules Governing Hearing Aid-Compatible Mobile Handsets*, WT Docket No. 07-250; *Comment Sought on 2010 Review of Hearing Aid Compatibility Regulations*, WT Docket No. 10-254, Notice of Proposed Rulemaking

I have stated on several occasions that I am a strong proponent of a periodic review of the Commission's rules to see if they need to be updated or eliminated. Similarly, the Commission must undertake proceedings in order to implement congressional directives set forth by statute. For these reasons, I will support most of this notice seeking comment on potential changes to the volume control standards and other hearing aid compatibility rules. Although I will support seeking public input, I will reserve judgment on these issues until I am able to review the resulting record and meet with stakeholders about the costs and benefits of any proposed modifications.

I do have significant concerns about the portion of the notice that seeks comment on how to implement section 701(c) of the Twenty-First Century Communications and Video Accessibility Act of 2010.²⁵³ In this section, Congress created a means by which equipment that meets technical standards set by applicable standards setting bodies would be considered hearing aid compatible. More specifically, the statute states that:

[E]quipment that is compliant with relevant technical standards developed through a public participation process and in consultation with interested consumer stakeholders (designated by the Commission for the purposes of this section) will be considered hearing aid compatible for the purposes of this section, until such time as the Commission may determine otherwise.²⁵⁴

The ideas and proposals set forth in this item, if adopted, may lead to an overly expansive interpretation of the statute, allow for inappropriate Commission intervention in the standards process, and permit excessive delegation to Commission staff, all of which I cannot support.

First, the notice seeks comment on allowing the Consumer and Governmental Affairs Bureau (CGB), with recommendations from the Disability Advisory Committee (DAC), to designate the "interested consumer stakeholders" that will be part of the consultation process. This disgraceful practice extends the inaccurate assertion made in several items recently that the use of "Commission" in the statute can be interpreted to exclude input from or review by the Commissioners. And, the involvement of the DAC does not make this process any less subjective, since those members are selected by CGB without the oversight of the Commissioners. To make matters worse, there appears to be no limitation on the number of interested consumer stakeholders that staff could designate to take part in the sham standards setting process.

Second, I strenuously disagree with how the Commission may interpret Congress's directive that the technical standard must be developed "in consultation with" these public interest groups. To me, consultation is just that – the need to consult with the interested consumer stakeholders. The notice,

²⁵³ 47 U.S.C. § 610(c).

²⁵⁴ *Id.*

however, suggests that standards setting bodies would be required to do more than just consult with these public interest groups. For instance, the idea is teed up that standards setting bodies may have to invite these entities to serve as voting members of relevant committees. The item even goes so far as to question whether standards setting bodies should waive membership fees and cover the costs for these groups to participate. Such proposals cannot be located in law or legislative history and amount to mere procedures to institute biased outcomes in the standard setting bodies. While the standards setting bodies may or may not be willing or already set up to make such accommodations, mandating such actions goes far beyond the consultation level required in the statute.

Third, the notice proposes that, once the standards setting body, with the staff-appointed interested consumer stakeholders, develops a standard, the Commission's review of whether the standard should or should not be incorporated into our rules will be conducted by the relevant bureau staff. Yet again, with no Commission oversight. This will allow staff to codify a new hearing aid compatibility standard and terminate an old standard found in the rules without a Commission-level proceeding or vote. So, let me get this straight, staff will be able to designate an unlimited number of entities to sway the decisions of a so-called independent standards setting body and then have the right to codify the standard that they influenced. That could not possibly be the Commission's, or Congress's, intent and places the Commission's objective to be technologically neutral at great risk.

For these reasons, I must dissent in part to this section of the notice. In sum, I do not agree with the delegation of authority to the staff to hand-pick stakeholders, or proxies, to participate in the standards setting process and to codify these standards in the Commission rules. More generally, I remain opposed to the Commission being involved in the standards setting process, whether it be in the context of hearing aid compatibility standards or the development of LTE-U. These independent bodies have been successful because the Commission has not interfered. The Commission, and in this case its designees, should not be involved in standards setting, selecting technologies to be deployed, or picking winners and losers.