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

In the Matter of	)	
	)	
Improvements to Benchmarks and Related Requirements Governing Hearing Aid-Compatible Mobile Handsets	)	WT Docket No. 15-285
	)	
Amendment of the Commission's Rules Governing Hearing Aid-Compatible Mobile Handsets	)	WT Docket No. 07-250

FOURTH REPORT AND ORDER AND NOTICE OF PROPOSED RULEMAKING

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By the Commission: Chairman Wheeler and Commissioners Clyburn, Rosenworcel, Pai and O'Rielly issuing separate statements.

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I. INTRODUCTION

1. Today, we take steps to modernize our wireless hearing aid compatibility rules and ensure that people with hearing loss have full access to innovative handsets and technologies. In so doing, we recognize the need to pursue a flexible approach that continues to encourage innovation and investment by industry. Since 2003f, the Commission's wireless hearing aid compatibility rules have sought to ensure that Americans with hearing loss have access to telephone service through a wide array of wireless handsets used for voice communications. Over the past decade, we have witnessed unprecedented innovation in the wireless handset marketplace. To ensure full participation in today's society and economy by consumers with hearing loss, it is essential , as reflected in the statutory directives embodied in the Twenty-First Century Communications and Video Accessibility Act of 2010 (CVAA),[1] that the Commission update its hearing aid compatibility rules to keep pace with technological developments. At the same time, it is also important that our rules create a regulatory environment in which accessibility and innovation and investment in new technology are not competing objectives but complementary ones, with innovation creating better, and more seamlessly integrated, accessibility options. Accordingly, in the Fourth Report and Order, we make common sense updates to ensure that the hearing aid compatibility rules cover modes of voice communications access that are increasingly available to the public. In the Notice of Proposed Rulemaking, we propose to adopt, and seek comment on, a landmark consensus approach developed cooperatively by consumer advocates and industry trade associations. This stakeholder-driven approach, which would require manufacturers and service providers to increase the percentage of new wireless handset models that are hearing aid compatible over time, would culminate in a system in which all wireless handset models are accessible to people with hearing loss. Together, these steps will result in greater access to existing wireless communications services and emerging technologies for the tens of millions of Americans with hearing loss.[2]

2. Until now, the hearing aid compatibility rules have generally been limited only to handsets used with two-way switched voice or data services classified as Commercial Mobile Radio Service (CMRS), and only to the extent they are provided over networks meeting certain architectural requirements that enable frequency reuse and seamless handoff. In this Fourth Report and Order, we expand the scope of these rules to cover the emerging wireless technologies of today and tomorrow. The rules we adopt today eliminate uncertainty about the scope of our hearing aid compatibility requirements

[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] *See* American Speech Language Hearing Association, *Untreated Hearing Loss in Adults – A Growing National Epidemic*, http://www.asha.org/Aud/Articles/Untreated-Hearing-Loss-in-Adults/. *See also* NIDCD, *Quick Statistics*, http://www.nidcd.nih.gov/health/statistics/Pages/quick.aspx.

and ensure that emerging voice services will be covered regardless of their classification for other regulatory purposes and without restriction to a particular network architecture. Specifically, the rules now extend to handsets (those mobile device that contain a built-in speaker and are typically held to the ear in any of their ordinary uses) used with any terrestrial mobile service that enables two-way real-time voice communications among members of the public or a substantial portion of the public, including through the use of pre-installed software applications.[3] We also adopt a transition period that ensures industry stakeholders will be able to comply with these rules while continuing to innovate and invest. By expanding the scope of our rules to those consumer mobile devices that are typically held to the ear, are heavily relied on for voice communications, and operate in bands covered by approved standards—and only where compliance is technically feasible—we target our efforts to those situations where Commission action can make a significant impact and best serve the public interest. In this regard, we have been mindful of our obligations to expand hearing aid compatibility requirements only in those instances where the record supports the necessary statutory findings mandated by the Hearing Aid Compatibility Act. In addition, the action we take today will require that future technologies comply with our hearing aid compatibility rules, ensuring that consumers with hearing loss are not always trying to catch up to technology and providing industry with additional regulatory certainty.

3. In our Notice of Proposed Rulemaking, we seek comment on an historic agreement among key consumer and industry stakeholders that would encourage future innovation while ensuring that 100 percent of all new wireless handset models will be accessible for consumers with hearing loss.[4] Our current rules require service providers and handset manufacturers to ensure that a specified fraction or number of their offered handsets meet applicable standards for hearing aid compatibility. While we find that these fractional benchmarks have been successful in making a broad variety of hearing aid-compatible handsets available to consumers with hearing loss, we recognize our statutory obligation to periodically reassess any exemptions from the hearing aid compatibility requirements. The consensus approach proposed jointly by industry trade associations and consumer advocates provides an effective approach to replacing the fractional system with one that will give consumers with hearing loss the same selection of wireless handsets that is available to the general public. We give great credit to the organizations that forged this landmark proposal and, with gratitude for their efforts and enthusiasm for their work product, we propose to adopt it.

II. THE HEARING AID COMPATIBILITY ACT OF 1988

4. The Hearing Aid Compatibility Act of 1988, as codified in Section 710 of the Communications Act, require that all telephones manufactured or imported for use in the United States meet established technical standards for hearing aid compatibility, but provide certain exemptions. Both public mobile services (encompassing what are now referred to as CMRS) and private mobile services are exempt from this requirement.[5] To ensure that the hearing aid compatibility requirement keeps pace with

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[3] Compliance with the hearing aid compatibility obligations is required, however, only to the extent these handsets are used for voice communications services provided over frequencies covered by Commission-approved standards for hearing aid compatibility. At present, this extends to services provided between the 698 MHz and 6 GHz bands.

[4] *See* Letter from James Reid, Senior Vice President, Government Affairs, Telecommunications Industry Association, Scott Bergmann, Vice President, Regulatory Affairs, CTIA-The Wireless Association, Rebecca Murphy Thompson, General Counsel, Competitive Carriers Association, Anna Gilmore Hall, Executive Director, Hearing Loss Association of America, Claude Stout, Executive Director, Telecommunications for the Deaf and Hard of Hearing, and Howard A. Rosenblum, Chief Executive Officer, National Association of the Deaf, to Marlene H. Dortch, Secretary, FCC, WT Docket Nos. 07-250, 10-254, filed Nov. 12, 2015 ("Joint Consensus Proposal").

[5] 47 U.S.C. § 610(b)(2)(A). The statutory exemption references "public mobile service," which is defined to include certain services covered under Part 22 of the Commission's rules. 47 U.S.C. § 610(b)(4)(B); 47 C.F.R. § 68.3. In 1994, Congress amended Section 332 of the Communications Act, replacing the public mobile service and private radio service categories with commercial mobile [radio] services (CMRS) and private mobile [radio] services (PMRS). *See Section 68.4(a) of the Comm'n's Rules Governing Hearing Aid-Compatible Telephones*, WT Docket

(continued….)

the evolution of telecommunications technology, Congress directed the Commission to "revoke or otherwise limit" the exemptions to this requirement if the Commission finds at any point that four specific criteria are met: (1) revoking or limiting an exemption serves the public interest; (2) continuing the exemption would have an adverse effect on people with hearing loss; (3) compliance with the hearing aid compatibility requirements is technologically feasible; and (4) compliance would not increase costs to such an extent that the telephones could not be successfully marketed.[6]

5. In the *2003 Hearing Aid Compatibility Report and Order*, the Commission determined that these statutory criteria had been met for digital CMRS wireless handsets if the CMRS provider offered real-time, two-way switched voice or data service that operated over frequencies covered by an approved technical standard, was interconnected with the public switched network, and met certain architectural requirements that enable frequency reuse and seamless handoff (hereinafter referred to as "covered CMRS").[7] The Commission therefore promulgated rules to require service providers and the manufacturers of handsets used with these services to offer a selection of hearing aid-compatible handsets, specifically meeting two separate benchmarks for compatibility in acoustic coupling mode and inductive coupling mode. Thus, under the rules, a handset can be compatible in acoustic coupling mode without being compatible in inductive coupling mode.[8]

6. These rules were later modified by several additional orders, including the *First Report and Order* in 2008, the *Second Report and Order* in 2010, and the *Third Report and Order* in 2012.[9] As a result of these subsequent actions, the wireless hearing aid compatibility rules now include the following components:

(Continued from previous page)
No. 01-309, Report and Order, 18 FCC Rcd 16753, 16764-65 para. 26 (2003) (*2003 Hearing Aid Compatibility Report and Order*).

[6] 47 U.S.C. § 610(b)(2)(B). In addition, the existence of an established, applicable technical standard is a statutory requirement for imposing hearing aid compatibility obligations. *See* 47 U.S.C. § 610(b)(1).

[7] *2003 Hearing Aid Compatibility Report and Order*, 18 FCC Rcd at 16764-65 para. 26. The *2003 Hearing Aid Compatibility Report and Order* did not address the exemption for private mobile services, and the Commission's rules do not currently impose any hearing aid compliance obligations with respect to such services.

[8] Hearing aids operating in acoustic coupling mode receive sound from the handset 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. In such a mode, the hearing aid user may experience static in the hearing aid due to Radio Frequency (RF) interference caused by the handset's RF emissions. A handset's hearing aid compatibility rating in this mode is therefore indicative of a reduction in the handset's potential to cause such RF interference. Hearing aids operating in inductive coupling mode turn off the 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. In telecoil mode, with the microphone turned off, the telecoil picks up the audio signal-based magnetic field generated by the voice coil of a dynamic speaker in hearing aid-compatible telephones, audio loop systems, or powered neck loops. The hearing aid converts the magnetic field into electrical signals, amplifies them as needed, and converts them back into sound via the speaker. Using a telecoil avoids the feedback that often results from putting a hearing aid up against a telephone earpiece, can help prevent exposure to over amplification, and eliminates background noise, providing improved access to the telephone.

[9] *Amendment of the Comm'n's Rules Governing Hearing Aid-Compatible Mobile Handsets*, WT Docket No. 07-250, First Report and Order, 23 FCC Rcd 3406 (2008) (*First Report and Order)*; *Amendment of the Comm'n'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 (2010) (*2010 Policy Statement*, *Second Report and Order*, *and Further Notice*; or referencing particular sections as "*Policy Statement*," "*Second Report and Order*," or "*Further Notice*," as appropriate); *Amendment of the Comm'n's Rules Governing Hearing Aid-Compatible Mobile Handsets*, WT Docket No. 07-250, Third Report and Order, 27 FCC Rcd 3732 (2012) (*Third Report and Order*).

- For each type of air interface[10] that they incorporate into their handsets, manufacturers and service providers must meet two defined benchmarks – either a minimum number or fraction of offered handset models (one-third for manufacturers or one-half for service providers) that meet at least an M3 rating for reduced Radio Frequency (RF) interference with hearing aids in acoustic coupling mode under the American National Standards Institute (ANSI) C63.19 technical standard, and either a minimum number or fraction (one-third for both manufacturers and service providers) that meet at least a T3 rating for inductive coupling capability under the same standard;[11]
- Service providers must make hearing aid-compatible models available for consumer testing in retail stores that they own or operate;[12]
- Handset manufacturers must regularly refresh their hearing aid-compatible offerings with new handset models, and service providers must offer hearing aid-compatible models with differing levels of functionality;[13]
- Handset manufacturers and service providers must disclose information about their hearing aid-compatible models in packaging materials, at the point of sale, and on their websites, including disclosures regarding handset operations that do not have established hearing aid compatibility technical standards;[14] and
- Manufacturers and service providers must comply with annual reporting requirements.[15]

7. While the Commission has thus imposed substantial responsibilities on manufacturers and service providers to ensure that consumers with hearing aids or cochlear implants are able to access mobile wireless communications services through a wide selection of handsets without experiencing disabling interference, the current rules have left coverage of such handsets uncertain or incomplete in several important respects. As noted, the requirements have applied only to CMRS, and only to the subset of those services provided over a traditional switched cellular network providing seamless handoff and frequency reuse.[16] Further, even for those handsets that are subject to the scope and requirements of

[10] The term air interface refers to a communications protocol that ensures compatibility between mobile radio service equipment, such as handsets, and the service provider's base systems. *See 2010 Policy Statement*, *Second Report and Order*, *and Further Notice*, 25 FCC Rcd at 11170 n.10.

[11] 47 C.F.R. § 20.19(c)(1)-(3), (d)(1)-(3); *see also* 47 C.F.R. § 20.19(e) (*de minimis* exception). As noted above, using a digital wireless phone with a hearing aid or cochlear implant in acoustic coupling mode requires measures to control radiofrequency (RF) interference and other electromagnetic interference from the wireless phone. ANSI C63.19 specifies ratings for digital wireless phones measuring the extent to which they control for RF emissions. An "M1" rating identifies handsets with the highest emissions, and an "M4" rating identifies those with 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 identifying 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* 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 (June 8, 2007) at 5. Handsets and hearing aids are rated from T1 to T4 for inductive coupling capability in a similar manner to the M-ratings.

[12] 47 C.F.R. § 20.19(c)(4)(i), (d)(4)(i).

[13] *Id*. § 20.19(c)(1)(ii), (c)(4)(ii), (d)(4)(ii).

[14] *Id*. § 20.19(f), (h).

[15] *Id*. § 20.19(i).

[16] *See id.* § 20.19(a).

the rules, the current rules require that manufacturers and service providers ensure compatibility only in a certain number or fraction of these models (varying based on several factors, but generally ranging from one-third to one-half of the covered models).[17] In the sections that follow, we adopt or seek comment on changes to the rules to move closer to comprehensive coverage of consumer handsets, consistent with Congressional intent to afford individuals with hearing loss with equal access to communications networks to the fullest extent feasible.[18]

III. FOURTH REPORT AND ORDER

8. In this Fourth Report and Order, we modify the wireless hearing aid compatibility rules to keep pace with developments in technology and the wireless market. Specifically, we expand the scope of the rules, which up until now have covered only handsets used with a subset of CMRS networks operating in the 698 MHz to 6 GHz bands, to cover handsets used with any terrestrial mobile service that enables two-way real-time voice communications among members of the public or a substantial portion of the public, including through the use of pre-installed software applications. Compliance with these obligations will be required, however, only to the extent the handsets operate in frequency bands covered by Commission-approved standards for hearing aid compatibility. The change in scope we adopt today ensures that, consistent with the requirements of the CVAA, emerging voice technologies are subject to our hearing aid compatibility requirements, without regard to outdated scope restrictions or regulatory service classifications.

A. Background

9. In the *2010 Policy Statement, Second Report and Order, and Further Notice,* the Commission took several steps in connection with its wireless hearing aid compatibility rules to ensure that consumers with hearing loss would continue to have access to innovative and advanced handsets and services in a rapidly evolving wireless marketplace.[19] In the *Policy Statement*, the Commission found that the wireless hearing aid compatibility rules must ensure that people who use hearing aids and cochlear implants have access to the most advanced and innovative communications technologies, while at the same time accounting for technological feasibility and impacts on marketability to avoid disruptions to innovation and investment.[20]

10. In the *Second Report and Order*, the Commission adopted revised rules designed to address new and emerging wireless technologies. First, it amended the wireless hearing aid compatibility rules to define a covered "handset" as any device that contains a built-in speaker and is typically held to the ear in any of its ordinary uses, including handsets that may include both computing and covered voice communication capabilities.[21] The Commission found that "[t]his scope is necessary to ensure that people

[17] *Id*. § 20.19(c)(1)-(3), (d)(1)-(3); *see also* 47 C.F.R. § 20.19(e).

[18] *See* Pub. L. No. 100-394, 102 Stat. 976 (1988) (Sec. 2. "47 U.S.C. 610 note"); *2010 Policy Statement, Second Report and Order, and Further Notice*, 25 FCC Rcd at 11174 para. 18.

[19] *See 2010 Policy Statement, Second Report and Order, and Further Notice*, 25 FCC Rcd at 11168-69 paras. 1-2.

[20] *See id*. at 11174 para. 18, 11194 para. 78. The Policy Statement set forth three separate principles: "First, given that consideration of accessibility from the outset is more efficient than identifying and applying solutions retroactively, we intend for developers of new technologies to consider and plan for hearing aid compatibility at the earliest stages of the product design process; Second, we will continue to account for technological feasibility and marketability as we promulgate rules pertaining to hearing aid compatibility, thereby maximizing conditions for innovation and investment; and Third, we will provide industry with the ability to harness innovation to promote inclusion by allowing the necessary flexibility for developing a range of solutions to meet consumers' needs while keeping up with the rapid pace of technological advancement." *Id.* at 11174 para. 18.

[21] *See id*. at 11175 paras. 20-21.

with hearing loss will have access to all means of voice communication as devices become increasingly multifunctional and the lines among device categories continue to blur."[22]

11. Next, the Commission adopted a measure to address new handset models that operated on frequencies and air interfaces that were not covered by the then-current technical standard, ANSI C63.19-2007.[23] Specifically, it provided that a handset may be counted as hearing aid-compatible only if (1) it meets the compatibility requirements for all of the air interfaces and frequency bands on which it operates and for which technical standards have been established, and (2) to the extent the handset includes other voice operations not covered by established standards, manufacturers and service providers clearly inform consumers that the handset has not been tested and rated for hearing aid compatibility for those additional operations.[24] The Commission specified that such disclosure was required for handsets that were capable of supporting software that can activate additional voice capability.[25]

12. Finally, building on these steps, and consistent with the policy of providing people who use hearing aids and cochlear implants with continuing access to the most advanced and innovative communications technologies as they develop, the Commission sought comment in the *Further Notice* on a proposed expansion of the scope of services covered by the wireless hearing aid compatibility rules.[26] As described above, under Section 20.19(a) of the Commission's rules, the wireless hearing aid compatibility requirements apply only to providers of digital CMRS networks that "offer real-time, two-way switched voice or data service that is interconnected with the public switched network and utilize an in-network switching facility that enables the provider to reuse frequencies and accomplish seamless hand-offs of subscriber calls," and to manufacturers of handsets used in the delivery of these services.[27] The Commission proposed to amend this scope language to encompass wireless handsets used to provide voice communications over any type of network among members of the public or a substantial portion of the public, and sought comment on whether the four statutory criteria for lifting the wireless exemption were satisfied.[28] The Commission also sought comment on how the rule should address circumstances where someone other than the manufacturer enables voice capability on a handset—by, for example, installing a software program or downloading an application.[29] It further sought comment on an appropriate transition period for implementing a wider scope.[30]

13. On October 8, 2010, prior to the due date for initial comments in response to the 2010 *Further Notice*, Congress enacted the CVAA, to "ensure that individuals with disabilities have access to emerging Internet Protocol-based communication and video programming technologies in the 21st

[22] *See id*. at 11175 para. 21.

[23] *See id*. at 11179 para. 31. For example, the ANSI C63-19.2007 standard covered only the 850 – 900 MHz and 1.6 – 2.5 GHz frequency bands, and therefore, did not cover services in the 700 MHz spectrum auctioned in early 2008. *See*, *e.g.*, *id.* at 11175 para. 22.

[24] *See id*. at 11179 para. 31.

[25] *See id*. at 11180 para. 34.

[26] *See id*. at 11194-11200 paras. 77-93.

[27] 47 C.F.R. § 20.19(a)(1), (2); *see 2003 Hearing Aid Compatibility Report and Order*, 18 FCC Rcd at 16764-65 para. 26.

[28] *2010 Policy Statement, Second Report and Order, and Further Notice*, 25 FCC Rcd at 11194 para. 77, 11195-96 para. 82, 11196 para. 84.

[29] *See id.* at 11198-99 para. 89; *see also id.* at 11180 n.72.

[30] *See id.* at 11200 para. 93.

century."[31] The CVAA amended the hearing aid compatibility requirements under Section 710 of the Communications Act in several relevant respects. First, the CVAA broadened the types of equipment covered by the hearing aid compatibility mandate to include, in addition to telephones, "all 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."[32] The legislation in turn defined "advanced communications services" to include, among other things, "interconnected VoIP service" and "non-interconnected VoIP service."[33] Second, the CVAA amended the exemption for public and private mobile service equipment. Specifically, it defined the "telephones" subject to the exemption (previously undefined) to include "telephones and other customer premises equipment used in whole or in part with" public mobile services or private radio services, thus clarifying that the customer premises equipment newly covered under Section 710(b)(1) were also, to the extent they were used with mobile services, subject to the exemption under Section 710(b)(2)(A).[34] Third, Congress amended Section 710(b)(2)(B), which requires the Commission to periodically reassess whether to continue the mobile services exemption, so that the requirement similarly applies to both telephones and other customer premises equipment.[35] Finally, Congress directed the Commission, when applying the hearing aid compatibility requirements to customer premises equipment used with advanced communications services, 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."[36] Subsequent to the enactment of the CVAA, the Wireless Telecommunications Bureau (WTB) issued the *CVAA Public Notice* requesting that comments on the *Further Notice* also address the effects, if any, that the CVAA had on the rules proposed in that item.[37]

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[31] S. Rep. No. 111-386 at 1 (2010) (CVAA Senate Report); H.R. Rep. No. 111-563 at 1 (2010) (CVAA House Report). *See also* Pub. L. No. 111-260, 124 Stat. 2751 (2010) (as codified in various sections of 47 U.S.C.); Pub. L. No. 111-265, 124 Stat. 2795 (2010) (technical corrections to the CVAA).

[32] 47 U.S.C. § 610(b)(1)(C).

[33] *See id.* § 153(1). Other "advanced communications services" includes electronic messaging services and interoperable video conferencing services. *Id.* Interconnected VoIP service is defined by reference to Section 9.3 of the Commission's rules as a service that enables real-time, two-way voice communications; requires a broadband connection from the user's location; requires Internet Protocol-compatible customer premises equipment (CPE); and permits users generally to receive calls that originate on the public switched telephone network and to terminate calls to the public switched telephone network. *Id*. § 153(25); *see* 47 C.F.R § 9.3. Non-interconnected VoIP service means a service other than an interconnected VoIP service that enables real-time voice communications that originate from or terminate to the user's location using Internet Protocol or any successor protocol and requires Internet Protocol-compatible CPE. 47 U.S.C. § 153(36).

[34] *See* 47 U.S.C. § 610(b)(4)(B) (defining telephones used with public mobile radio services to include equipment used with air-to-ground radiotelephone services, cellular radio telecommunications services, offshore radio, rural radio service, public land mobile telephone service, or other common carrier radio communication services covered by the Commission's rules, or any functionally equivalent unlicensed wireless services); *id*. § 610(b)(4)(C) (defining telephones used with private radio services to include equipment used with private land mobile radio services and other communications services characterized by the Commission in its rules as private radio services).

[35] *Id*. § 610(b)(2)(B).

[36] *Id*. § 610(e).

[37] *Wireless Telecommunications Bureau Requests that Comments in Hearing Aid Compatibility Proceeding Address Effects of New Legislation*, WT Docket No. 07-250, Public Notice, 25 FCC Rcd 14280 (2010) (*CVAA Public Notice)*. Comments on the 2010 *Further Notice* were due on October 25, 2010, and reply comments were due on November 22, 2010. Amendment of the Comm'n's Rules Governing Hearing Aid-Compatible Mobil Handsets, FCC 10-145, Proposed Rule, 75 Fed. Reg. 54546 (Sept. 8, 2010). The Commission received 12 comments and 9 reply comments. These comments are cited as "[Commenter Name] 2010 Further NPRM Comments/Reply Comments." *See* App. A for a list of commenters and reply commenters.

14. In response to the *Further Notice* and the *CVAA Public Notice*, commenters including AT&T, Consumer Groups, CTIA, Motorola, and TIA, generally support the Commission's proposals to expand the scope of Section 20.19 to a broader range of consumer handsets and noted that the proposal was consistent with the CVAA.[38] Many commenters, including AT&T, ATIS, CTIA, and MetroPCS, as well as other commenters, also agree that the hearing aid compatibility rules generally should not extend to third-party software applications installed by consumers.[39] The Hearing Industries Association (HIA), however, supports extending the rules to cover such cases, contending that hearing aid compatibility "must be ensured at the time of sale or installation of a voice feature."[40] Commenters also disagree on whether the rules should apply to the Mobile Satellite Service (MSS). Whereas Inmarsat and Iridium argue that the rules should not be extended to the MSS,[41] Globalstar supports extending the rules to the MSS provided that the Commission adopts a reasonable transition period.[42] Motorola also comments that the hearing aid compatibility rules should not be extended to private systems such as public safety and private enterprise networks.[43] On the issue of an appropriate transition period, some commenters, including Clearwire, CTIA, and Motorola, favor a two-year period before applying deployment benchmarks,[44] while Blooston supports an additional year for Tier III service providers,[45] and HIA supports a transition period no longer than the minimum new product cycle.[46]

15. Subsequent to the closing of the comment period, ANSI Accredited Standards Committee C63® - Electromagnetic Compatibility (ANSI ASC C63® - EMC) adopted an updated version of the ANSI C63.19 standard (2011 ANSI Standard)[47] and requested that the Commission adopt the newer version of

[38] *See, e.g.*, AT&T 2010 Further NPRM Comments at 2; Consumer Groups 2010 Further NPRM Comments at 2; CTIA 2010 Further NPRM Comments at 6; Motorola 2010 Further NPRM Comments at 4; TIA 2010 Further NPRM Comments at 3-4. *See also* Blooston 2010 Further NPRM Comments at 4 (supporting "the policy goal of extending hearing aid compatibility requirements to all public telephone services, without regard to regulatory status, whenever this is technologically and economically feasible"). The Consumer Groups include: Hearing Loss Association of America (HLAA), the Association of Late-Deafened Adults (ALDA), the Deaf and Hard of Hearing Consumer Advocacy Network (DHHCAN), the National Association of the Deaf (NAD), the Alexander Graham Bell Association for the Deaf and Hard of Hearing (AG Bell), and Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI).

[39] *See, e.g.*, AT&T 2010 Further NPRM Comments at 3-4; ATIS 2010 Further NPRM Comments at 4-5; CTIA 2010 Further NPRM Comments at 9-11; MetroPCS 2010 Further NPRM Comments at 6-8.

[40] *See* HIA 2010 Further NPRM Comments at 8-9. Consumer Groups state that hearing aid compatibility testing should be required except where manufacturers have no control over software installed by consumers. *See* Consumer Groups 2010 Further NPRM Comments at 5-6.

[41] *See* Inmarsat 2010 Further NPRM Reply Comments at 5-6; Iridium 2010 Further NPRM Reply Comments at 4.

[42] *See* GlobalStar 2010 Further NPRM Reply Comments at 1, 3-4.

[43] *See* Motorola 2010 Further NPRM Comments at ii (arguing that the Commission should "specify that all devices designed and marketed for use on public safety wireless communications networks are exempted from hearing aid compatibility compliance at this time, even if these networks have some interconnection with the public switched telephone network, or if these devices are capable of roaming on to commercial wireless networks"). *See also* Motorola 2014 Refresh PN Comments at 1-3 (arguing the Commission should not expand the hearing aid compatibility rules to apply to public safety and enterprise communications devices).

[44] *See, e.g.*, Clearwire 2010 Further NPRM Comments at 5; CTIA 2010 Further NPRM Comments at 11-12; Motorola 2010 Further NPRM Comments at 10-11.

[45] *See* Blooston 2010 Further NPRM Comments at 5-6.

[46] *See* HIA 2010 Further NPRM Comments at 9; *see infra* note 62 (the definition of Tier III service providers).

[47] *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, by calling (732) 981-0060, or going to http://www.ieee.org. A copy of the standard is

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the standard into its wireless hearing aid compatibility rules.[48] On April 9, 2012, WTB and the Office of Engineering and Technology (OET), acting "to ensure that the hearing aid compatibility rules cover the greatest number of wireless handsets and reflect recent technological advances," released the *Third Report and Order* on specific delegated authority,[49] adopting the 2011 ANSI Standard as an applicable technical standard for evaluating the hearing aid compatibility of wireless handsets, alongside the 2007 version of the ANSI C63.19 standard (ANSI Standard),[50] which remained an applicable standard as well.[51] Whereas the 2007 ANSI Standard covered only the 850 – 900 MHz and 1.6 – 2.5 GHz frequencies, the 2011 ANSI standard expanded the testable range of frequencies to 698 MHz – 6 GHz. It also established a new approach for measuring a handset's RF interference impact on hearing aids, thereby enabling M-rating testing procedures that apply to operations over any RF air interface or protocol operating within the covered frequencies.[52] Thus, the new standard covered wireless devices operating on air interfaces that had not been covered by the 2007 ANSI Standard, including Long Term Evolution (LTE) and Wi-Fi.[53]

16. The *Third Report and Order* did not otherwise address the scope of the hearing aid compatibility rule, however. As a result, although the *Third Report and Order* adopted an applicable technical standard that covers wireless handsets that operate over air interfaces like LTE and Wi-Fi, the scope of the rule itself remained limited to handsets used for covered CMRS.[54] Accordingly, handsets that support voice communications over Wi-Fi and LTE, although covered under the 2011 ANSI

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also available for inspection at the Federal Communications Commission (FCC), 445 12th St., SW., Reference Information Center, Room CY-A257, Washington, DC 20554. 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/cfr/ibr-locations.html.

[48] *See* Supplemental Report and Comments of ANSI ASC C63®, WT Docket Nos. 07-250, 01-309, 06-150, at 3 (June 24, 2011).

[49] To ensure that the hearing aid compatibility standard codified in the rules remains current, the Commission has delegated to the Chief of WTB and the Chief of OET authority to update its rules as revisions to ANSI technical standard C63.19 are published, subject to certain specified limitations. *See* 47 C.F.R. § 20.19(k) (delegating rulemaking authority to WTB and OET).

[50] *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 (June 8, 2007).

[51] *See Third Report and Order*, 27 FCC Rcd at 3736 paras. 10-11.

[52] *Id*.

[53] *See id*. at 3739 n.42, 3742 n.62; *see also* Office of Engineering and Technology, Laboratory Division, *Guidance for Performing T-Coil tests for Air Interfaces Supporting Voice over IP (e.g., LTE and Wi-Fi) to support CMRS based Telephone Services* (Oct. 31, 2013), https://apps.fcc.gov/kdb/GetAttachment.html?id=unTjPJBfcYUxDO2czc1S8g%3D%3D (*T-Coil Testing Guidance*). Long Term Evolution (LTE) refers to a high performance air interface for cellular mobile communications systems, increasing the capacity and speed of wireless networks relative to 3G deployments. *See*, *e.g.*, *Connect America Fund*, WC Docket No. 10-90, Notice of Inquiry and Notice of Proposed Rulemaking, 25 FCC Rcd 6657, 6861 (2010) (OBI Technical Paper No. 1, "The Broadband Availability Gap"). Although LTE supports a purely packet-switched interface without legacy circuit-switched voice, and was originally designed for the provision of high speed data services, it currently also includes a specification for Voice over Long Term Evolution (VoLTE), a technology that enables LTE systems to be used for the provision of IP-based voice communications services. More specifically, VoLTE refers to the native voice capability of an LTE system, as distinguished from the Voice over Internet Protocol (VoIP) capability that may be provided through a third-party application. *See Third Report and Order*, 27 FCC Rcd at 3737 n.29.

[54] *See Third Report and Order*, 27 FCC Rcd at 3735 n.15; *Further Notice*, 27 FCC Rcd at 11192-93 para. 74, 11195 para. 80.

Standard, are subject to the hearing aid compatibility rules only to the extent those interfaces are used to provide covered CMRS.

17. On November 21, 2014, WTB and the Consumer and Governmental Affairs Bureau (CGB) released the *2014 Refresh PN*, to refresh the record on the 2010 *Further Notice*, as well as the record on the Commission's general review of the wireless hearing aid compatibility rules, which had been commenced by public notice in 2010.[55] The Commission received 16 comments and 8 reply comments.[56]

B. Discussion

1. Overview

18. After review of the record and consideration of both the requirements of Section 710 as amended by the CVAA and the previous actions taken in this proceeding, we revise the scope of the wireless hearing aid compatibility rules largely as proposed in the 2010 *Further Notice*. Specifically, we broaden the scope of the wireless hearing aid compatibility rules, which have until now covered only handsets that are used with CMRS networks meeting specified characteristics enabling frequency reuse and seamless handoff. We now extend the scope to cover handsets (that is, devices with a built-in speaker held to the ear in any of their ordinary uses) used with any terrestrial mobile service that enables two-way real-time voice communications among members of the public or a substantial portion of the public, including both interconnected and non-interconnected VoIP services provided through pre-installed software applications. In doing so, we establish a comprehensive hearing aid compatibility requirement that ensures consumers with hearing loss will have access to the same rapidly evolving voice technology options available to other consumers.[57] To ensure testability under the currently approved technical standard, we will require compliance only to the extent these handsets are used in connection with voice communication services in bands covered by Commission-approved standards for hearing aid compatibility.

19. While the Commission has taken steps previously to bring such emerging voice services under the rules, the steps we take today are necessary to complete the process. As discussed above, the *Third Report and Order* adopted a technical standard that can be applied to test VoLTE, Wi-Fi-based calling, and other IP-based voice capabilities for hearing aid compatibility, and indicated an expectation that handsets that support covered CMRS voice communications services over IP-based air interfaces such as LTE would indeed be subject to the hearing aid compatibility requirements as a result.[58] The

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[55] *See* Request for Updated Information and Comment on Wireless Hearing Aid Compatibility Regulations, WT Docket Nos. 07-250, 10-254, 29 FCC Rcd 13969 (WTB, CGB 2014) (*2014 Refresh PN*).

[56] These comments are cited as "[Commenter Name] 2014 Refresh PN Comments/Reply Comments." *See* App. A for a list of commenters and reply commenters.

[57] As the Commission has previously observed, Section 20.19(a) is limited to mobile handsets consistent with the scope of ANSI Standard C63.19, and remains so under our expansion. *See 2010 Policy Statement, Second Report and Order, and Further Notice*, 25 FCC Rcd at 11195 para. 82 n.173. We therefore affirm that cordless telephones remain subject to Section 68.4 of the Commission's rules, including the hearing aid compatibility requirements applicable to telephones under Part 68, and are not affected by the change in scope. *See* 47 C.F.R. § 68.4. We note that the CVAA eliminated the exemption for cordless phones from Section 710. *See* Pub. L. No. 111-260, Section 102(b)(2)(A)(ii)-(iv) (striking cordless phones from provision of statute). We also note, however, that, as under the prior scope, the expanded scope applies to providers that are resellers or mobile virtual network operators (MVNOs) as well as to facilities-based providers. *See*, *e.g.*, *Amendment of the Comm'n's Rules Governing Hearing Aid-Compatible Mobile Handsets*, WT Docket No. 07-250, *Section 68.4(a) of the Comm'n's Rules Governing Hearing Aid Compatible Telephones*, WT Docket No. 01-309, Second Report and Order and Notice of Proposed Rulemaking, 22 FCC Rcd 19670, 19705 para. 95 (2007) ("Section 20.19 of our rules imposes hearing aid compatibility obligations only on manufacturers and providers of services within its scope, including resellers and MVNOs").

[58] *See supra* Section III.A.

Third Report and Order did not, however, expand the scope provision of the rule beyond covered CMRS, or clarify the extent to which the new IP-based voice technologies and air interfaces constituted covered CMRS services.[59] Consistent with the provisions of the CVAA that expressly extend Section 710 to both interconnected and non-interconnected VoIP services, adopting the expanded scope will ensure that the wireless hearing aid compatibility requirements apply to handsets used for such services regardless of how the services are classified for other regulatory purposes, and without regard to the network architecture over which the services are provided. We thus resolve any uncertainty regarding the extent to which IP-based voice services covered by the 2011 ANSI Standard are also within the scope of the hearing aid compatibility rules.

20. Our actions also ensure that the hearing aid compatibility rules cover modes of voice communications access that are increasingly available to the public as well as those that may develop in the future. For example, the expanded scope will cover handsets that enable voice communications through VoIP software applications installed by the manufacturer or service provider regardless of whether the calling functionality provides interconnection to the public switched telephone network. It will also cover advances in voice technology that have rendered obsolete some of the current rule's limitations on scope, such as provisions that apply hearing aid compatibility requirements only to services that involve frequency reuse and cell site handoff.[60] Thus, unlike the current scope, the expanded scope will also apply to a voice communications service over Wi-Fi that does not utilize an in-network switching facility that enables reuse of frequencies and seamless hand-off.[61]

21. In the discussion that follows, we analyze the statutory framework for expanding the scope of our rules under Section 710 as amended by the CVAA, and we explain our decision to expand the scope of Section 20.19(a) in light of this framework. In particular, we analyze the four statutory criteria for lifting the mobile services exemption and we find that those criteria are met for services within the expanded scope. We also determine that the rules should not, at this time, extend beyond terrestrial services providing for voice communications among the public or a substantial portion of the public, and accordingly do not cover services not generally available to the public, including public safety and private enterprise networks, or non-terrestrial networks like the MSS. We further clarify below that testing a handset for hearing aid compatibility requires testing software-based voice functions to the extent that such software is installed by the manufacturer or service provider (or an authorized agent). We provide that the existing deployment benchmarks will apply to newly covered handsets and air interfaces as of January 1, 2018, with an additional period until April 1, 2018, for handsets offered by non-Tier I service providers.[62] We further provide that, during this transition period, manufacturers may continue to obtain

[59] *See Third Report and Order*, 27 FCC Rcd at 3734 para. 6 & 3735 n.15 (noting, while the authoring Bureaus had been delegated certain authority to incorporate new versions of the ANSI technical standard C63.19, "the Commission has not delegated authority to expand the rules' applicability beyond [the currently covered] services").

[60] *See* 47 C.F.R. § 20.19(a)(1).

[61] While VoLTE has a mode that routes VoIP calls over Wi-Fi through a CMRS server, voice communications over Wi-Fi in general may or may not be routed to a CMRS server. For example, when a consumer who is using a service provider's handset makes a voice call over Wi-Fi through the use of a pre-installed third-party application or other software-supported operation, the call may be routed over the Internet directly between the caller and called party without ever utilizing the service provider's network. Even in such cases, the hearing aid compatibility rules apply. Thus, devices used with Wi-Fi-only calling services offered by providers to the public, such as Freewheel, are now within the scope of the rules. *See* https://freewheel.com/.

[62] Tier I service providers are CMRS providers that offer such service nationwide. 47 C.F.R. § 20.19(a)(3)(v). Tier II service providers are non-nationwide mid-sized CMRS providers with greater than 500,000 subscribers as of the end of 2001. Tier III service providers are non-nationwide small CMRS providers with no more than 500,000 subscribers as of the end of 2001. *See* Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems; Phase II Compliance Deadlines for Non-Nationwide Carriers, CC Docket No. 94-102, *Order to Stay*, 17 FCC Rcd 14841, 14846-48 paras. 19-24 (2002).

hearing aid compatibility ratings for a handset's operation on a given interface without testing software-enabled voice functions provided they meet applicable disclosure requirements.

2. Statutory Analysis of Expanded Scope

22. We first find that Section 710, as amended by the CVAA, provides authority to require hearing aid compatibility in any device that meets the Commission's definition of handset and that is used in whole or in part for the delivery of services within the new scope of the rule.[63] As discussed above, the CVAA expressly extended Section 710 to cover mobile devices used with advanced communications services, including interconnected and non-interconnected VoIP services, to the extent that such devices are designed to provide two-way voice communication via a built-in speaker intended to be held to the ear in a manner functionally equivalent to a telephone.[64] Thus, as amended by the CVAA, Section 710 clearly supports expanding the scope of Section 20.19 to cover the full range of handsets used to provide consumers with voice communications services, including IP-based services and voice communications software.[65]

23. Similarly, the CVAA amendments to Section 710 confirm the Commission's prior determination that obligations should extend to cover a broad range of mobile handset, and not merely those used exclusively as telephones. For example, these amendments make clear that covered devices used with public mobile service and private radio service include devices used "in whole or in part" to provide those services.[66] While the Commission has recognized that engineering hearing aid compatibility for multi-use handsets may require adjustments to non-voice-communication features, the statute provides that equipment must meet hearing aid compatibility standards without any specific limitation based on non-communication adjustments.[67] Accordingly, we reaffirm that the hearing aid compatibility rules apply to a multi-use handset that can function as a telephone even though it may serve additional purposes or have another primary intended purpose.[68]

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[63] Section 20.19 defines "handset" as "a device used in delivery of the services specified in paragraph (a)(1) of this section that contains a built-in speaker and is typically held to the ear in any of its ordinary uses." 47 C.F.R. § 20.19(a)(3)(i).

[64] 47 U.S.C. § 610(b)(1)(C).

[65] In the *Further Notice*, we sought comment on whether the version of Section 710 in force at the time applied to handsets that incorporate these new technologies. See *2010 Policy Statement, Second Report and Order, and Further Notice*, 25 FCC Rcd at 11195 para. 81; *see also* MetroPCS 2010 Further NPRM Comments at 4-6; TIA 2010 Further NPRM Comments at 3-5. For the reasons explained in the text, the CVAA's subsequent revisions to Section 710 render that question moot.

[66] 47 U.S.C. § 610(b)(4)(B), (C).

[67] *See 2010 Policy Statement, Second Report and Order, and Further Notice*, 25 FCC Rcd at 11195 para. 81. Of course, the need for such adjustments may be considered in determining whether hearing aid compatibility is technologically feasible or would preclude marketability. *See* 47 U.S.C. § 610(b)(2)(B).

[68] *See* CTIA 2010 FNPRM Reply Comments at 3-4 (arguing CVAA expressly retains the Commission's current regime for multi-mode handsets "that utilize both traditional CMRS as well as new technologies"). We decline to adopt HIA's proposal to require hearing aid compatibility in any device "that is brought to the ear for voice…." HIA 2014 Refresh PN Comments at 4. We find that our definition better comports with the scope of coverage under Section 710 as amended by the CVAA, which specified coverage of devices used with VoIP when those devices are designed to provide two-way voice communications "via a built-in speaker *intended to be held to the ear* in a manner functionally equivalent to a telephone." 47 U.S.C. § 610(b)(1)(C) (emphasis added). Our requirement that the device must be one that is "typically held to the ear in any of its ordinary uses" is consistent with that scope. *See 2010 Policy Statement, Second Report and Order, and Further Notice*, 25 FCC Rcd at 11175 para. 21 (clarifying that "typically" encompasses any intended or anticipated ordinary use, and does not mean "usually" or "most often"). *See also* CTIA 2014 Refresh PN Comments at 10. We emphasize, however, that in using the term "handset" in this context, we include any device that meets the definition in Section 20.19(a)(3), 47 C.F.R. §

(continued….)

24. We further find that, in deciding whether to extend the scope of the wireless hearing aid compatibility obligations, the Commission must determine whether the statutory criteria for lifting the wireless exemption are satisfied, as it did in 2003 when it first modified the exemption for wireless telephones. We therefore examine each of the four criteria for lifting the exemption below, and we determine that each criterion has been satisfied. Specifically, we find that (1) individuals with hearing loss would be adversely affected absent the expansion of the rule's scope; (2) compliance with the Commission's hearing aid compatibility rules for the handsets within the expanded scope is technologically feasible; (3) compliance would not increase costs to such an extent that such equipment could not be successfully marketed; and (4) in consideration of these factors, and the costs and benefits of the rule change, expanding the scope of the hearing aid compatibility rules beyond covered CMRS is in the public interest.

25. We emphasize that our analysis of the four criteria for lifting the exemption is not restricted to voice communications services that are deployed in the 698 MHz to 6 GHz band, and that, accordingly, we find that the criteria for lifting the exemption are met for such services in any frequency band, including frequencies outside the band covered by the ANSI 2011 Standard. Consistent with prior Commission determinations, however, we retain the current restriction in the scope of the rule to the 698 MHz to 6 GHz band at this time, so that compliance under the rule is required only for operations in spectrum bands for which there is an approved technical standard. As new frequencies are deployed for comparable voice services and standards for them approved, however, incorporating such frequencies into the rule early in their deployment will better facilitate access to handsets using such frequencies when they are rolled out to the public. For example, the Incentive Auction scheduled to begin in early 2016 will involve new, flexible-use licenses in the 600 MHz Band that are suitable for providing mobile broadband services.[69] We expect that the technical standards needed for any such frequencies will be developed in timely fashion. To the extent that a manufacturer believes that compliance is not technically feasible or would prevent marketability for devices used with a future public mobile service—such as one that operates in the 600 MHz Band—the manufacturer may apply for a waiver under Section 710(b)(3) for the applicable "new telephones, or telephone associated with a new technology or service."[70] Further, by addressing the statutory exemption as it applies to additional frequencies now, we ensure that the Commission need not engage in a similar statutory analysis each time ANSI adopts a revision to cover an additional frequency range, which will help to expedite incorporation of such revisions into the rules and therefore speed the testing and offering of new hearing aid-compatible technologies to consumers. Thus, our determinations in this Fourth Report and Order should remove any doubt that, as new frequencies are deployed for comparable voice services and corresponding hearing aid compatibility standards are developed, we intend to incorporate them into our requirements. This will advance the Commission's goal that our rules provide people who use hearing aids and cochlear implants with continuing access to the most advanced and innovative technologies as they develop.

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20.19(a)(3)(i), and that we continue to interpret "typically" as encompassing any intended or anticipated ordinary use.

[69] *See Broadcast Incentive Auction Scheduled To Begin On March 29, 2016; Procedures For Competitive Bidding In Auction 1000, Including Initial Clearing Target Determination, Qualifying To Bid, And Bidding In Auctions 1001 (Reverse) And 1002 (Forward)*, AU Docket No. 14-252, GN Docket No. 12-268, WT Docket No. 12-269, MB Docket No. 15-146, Public Notice, 30 FCC Rcd 8975, 8977-78 ¶¶ 1-2 (2015). We note that ANSI ASC C63®-EMC, at its November 2015 meeting, formally approved a project to revise the ANSI C63.19 standard for hearing aid compatibility to address a number of topics, including testing for services in the 600 MHz band. We applaud the efforts of the relevant participants to address the issue in a timeframe that will ensure that standards are in place during the earliest phases of product development, and we will act expeditiously on proposed revisions to facilitate that outcome.

[70] 47 U.S.C. § 610(b)(3).

26. *Adverse Effect on People with Hearing Loss.* In the *Further Notice*, the Commission proposed to find that failure to extend hearing aid compatibility requirements broadly to handsets used for voice communications with members of the public or a substantial portion of the public, including those operating over new and developing technologies, would have an adverse effect on people with hearing loss and deny such consumers an opportunity to use advanced functionalities and services becoming commonplace in society.[71] The Commission further suggested that the inability to access such innovative technologies as they develop would have an adverse effect on individuals with hearing loss, and that a broad scope could address that concern by encouraging manufacturers to consider hearing aid compatibility at the earliest stages of the product design process.[72]

27. Consumer Groups and ASHA comment that people with hearing loss who use hearing aids need access to mobile phone services just like every other American, including at home, work, school, and in emergency situations, and that updated regulations can help to ensure that these people can be fully integrated into society.[73] TIA comments that manufacturers have made gains to enhance access by deaf or hard of hearing individuals to new technologies and hearing aid-compliant products, while CTIA contends that the current rules for hearing aid-compatibility have been highly effective in ensuring that a wide variety of compliant wireless handsets are available to the public.[74]

28. Consistent with the Commission's proposed findings, we conclude that failure to adopt the expanded scope would adversely affect people with hearing loss. As discussed above, absent the amended scope, mobile VoIP services would be covered only to the extent that they were determined to both satisfy the definition of CMRS and involve the use of "an in-network switching facility that enables the provider to reuse frequencies and accomplish seamless hand-offs of subscriber calls."[75] Those limitations, we find, would materially impede the ability of people with hearing loss to use many advanced devices and networks, and we note that ongoing innovation would likely amplify this harmful impact over time.[76] If handsets encompassing these emerging technologies are not broadly made hearing aid-compatible, consumers with hearing loss who use hearing aids or cochlear implants could be left without full access to new technologies and networks that are used increasingly by members of the public to communicate with one another at home, at work, and as they travel, including for communications in critical emergencies.[77] We note that mobile technologies generally are increasingly important to members of the public. According to the National Center for Health Statistics, the percentage of adults living in households with only wireless telephones has been steadily increasing with about 44.1 percent of adults (about 106 million adults) living in wireless-only households as of the last six months of 2014; in addition, as of the last six months of 2014, 54.1 percent of all children (nearly 40 million children) lived in households that only used wireless telephones.[78] Further, having access to emerging IP-based voice

[71] *Further Notice*, 25 FCC Rcd at 11196-97 para. 85.

[72] *Id*.

[73] *See* Consumer Groups 2010 Further NPRM Comments at 2, 5; ASHA 2014 Refresh PN Comments at 1. *See also* HIA 2014 Refresh PN Comments at 2 (in supporting a "to the ear" requirement, comments that updated regulations will ensure that people with hearing loss will be fully integrated into society).

[74] *See* TIA 2014 Refresh PN Reply Comments at 1,2; CTIA 2014 Refresh PN Reply Comments at 3-4.

[75] 47 C.F.R. § 20.19(a).

[76] As an example of the constant evolution of technology in this area, we note Google's introduction of new handset models that will permit seamless calling transition between unlicensed Wi-Fi hotspots and traditional cellular networks. *See, e.g.,* "Google's new Nexus phones will work on its Project Fi network," *available at* http://www.cnet.com/news/googles-new-nexus-phones-to-work-on-project-fi/.

[77] *See* Consumer Groups 2010 Further NPRM Comments at 2.

[78] Blumberg SJ, Luke JV, *Wireless substitution: Early release of estimates from the National Health Interview Survey, July–December 2014*, National Center for Health Statistics (June, 2015), 2, at http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201506.pdf.

technologies such as High Definition Voice may prove particularly important to individuals with hearing loss.[79] In addition, as these emerging handsets evolve to encompass a wide and growing range of computing and other functions, a lack of hearing aid-compatible handsets may force individuals with hearing loss to choose between limiting their voice communications or limiting their access to many of the other features that these new handsets offer.

29. In broadening the scope of the rule, we are mindful that it is important to ensure hearing aid-compatible access to handsets, voice technologies, and networks not only once they are established but also as they develop in the future. We anticipate ongoing innovation in mobile voice technologies that will lead to more services for consumers to communicate that do not use the North American Numbering Plan or involve the cellular system architecture reflected in the current rule. By making clear that hearing aid compatibility requirements apply not only to currently available technologies such as VoLTE but to all mobile terrestrial services that enable two-way, real-time voice communications among members of the public, we ensure that new consumer devices—that might be developed or emerge in the future—will be covered as technical standards become available, regardless of regulatory classification or network architecture, unless a waiver is granted. Accordingly, we expect manufacturers to take hearing aid compatibility into account during the early stages of product development, consistent with the policies announced in the 2010 *Policy Statement*.[80]

30. *Technological Feasibility*. In the *Further Notice*, the Commission sought comment on whether handsets that are currently on the market or are planned for introduction that fall within the coverage of the proposed rule, but are not covered by the existing rule, would meet the existing ANSI standard or a similar performance standard, for frequency bands and air interfaces that are not addressed by the existing standard.[81] Given that hearing aid compatibility standards were already being met for handsets that operate on a variety of 2G and 3G air interfaces over two frequency bands, the Commission stated that, absent evidence to the contrary, it was likely that such standards could be met for handsets not within the class of covered CMRS but that provide similar services.[82] The Commission further indicated that commenters arguing that compliance was not feasible should provide specific engineering evidence related to a defined class of handsets.[83]

31. TIA comments that the Commission should not expand the application of the hearing aid-compatibility requirements beyond the scope of consumer wireless handsets with CMRS functionality until there is a better understanding of the obstacles in making the products and expanding services, and

[79] *See* Consumer Groups and Telecom-RERC Comments in CG Docket No. 10-213 at 3 (emphasizing their support for high definition voice-enabled phones, noting that "more natural sounding calls go a long way in making it possible . . . to make calls with or without assistive technology."); CTIA 2104 Refresh PN Comments at 2 (noting that "new applications and innovative services, including HD Voice . . . are revolutionizing the way that consumers with hearing loss use wireless products and services."), 6 ("HD Voice provides mobile users with crisp voice quality and decreased background noise, which can benefit people with hearing loss."). In turn, this underscores the importance of ensuring that the scope is not limited to services that provide interconnection with the traditional public switched telephone network (PSTN), as calls over the PSTN default to a standard-voice-quality codec. *See*, *e.g.*, http://www.webtorials.com/content/2012/10/getting-ready-for-hd-voice.html (noting that "[t]he challenge is that HD voice calls cannot be routed through the public telephone network, PSTN.").

[80] *See 2010 Policy Statement, Second Report and Order, and Further Notice*, 25 FCC Rcd at 11174 para. 18; *see also* 47 U.S.C. § 610(e).

[81] *Further Notice*, 25 FCC Rcd at 11197-98 para. 88.

[82] *Id*.

[83] *Id*.

argues that issues relating to applying the rules to VoLTE and Wi-Fi with CMRS capability illustrate that emerging technologies create new and previously unanticipated technical challenges.[84]

32. We conclude that it is technologically feasible to manufacture newly covered handsets so they meet the minimum ratings for hearing aid compatibility under the current technical standard or, to the extent they may be deployed in frequencies not addressed under the 2011 ANSI Standard, under a similar performance standard. Since the Commission proposed its analysis in 2010, subsequent developments have only confirmed that compliance with the hearing aid compatibility requirements will generally be feasible for consumer mobile voice technologies.[85] Indeed, manufacturers are already successfully testing and rating VoLTE operations for both T- and M-rating compliance, and they are also successfully testing and rating CMRS-enabled voice communications over Wi-Fi (hereinafter "Wi-Fi Calling") for M-rating compliance, demonstrating empirically that compliance in those areas is technologically feasible.[86] In addition, OET's Laboratory Division issued guidance in October 2013 describing the technical parameters related in part to testing VoLTE and Wi-Fi Calling functionalities for both M-ratings and T-ratings, and did not identify any challenges related to technological feasibility.[87] While the 2013 guidance did observe that the equipment needed to test for T-coil compliance for Wi-Fi Calling "may not be readily available" and therefore excluded such operations from the testing obligation,[88] nothing in the record suggests that the availability of testing equipment remains a challenge, and perhaps more significantly, this limitation does not bear on technological feasibility.[89]

33. We find that any technical challenges to achieving hearing aid compatibility in handsets will not differ significantly from those that manufacturers have already addressed in achieving hearing aid

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[84] *See* TIA 2014 Refresh PN Comments at 2-4, 6-7. TIA notes the exemption in place for T-coil testing for VoLTE and suggests a "careful and informed" approach, and contends that voice over Wi-Fi presents "unique technical challenges" for testing and urges restraint pending appropriate technical guidance from the Commission. *Id*. at 5-6. MMF supports TIA "particularly with respect to maintaining the existing scope of [hearing aid compatible] requirements and not creating product development obstacles by expanding those requirements to other wireless handset and device categories." *See* MMF 2014 Refresh PN Comments at 4.

[85] Based on the FCC Form 655 status reports filed by device manufacturers as of July 15, 2015 (for the reporting period from July 1, 2014 to June 30, 2015) and the hearing aid compatibility test reports manufacturers have submitted to OET to obtain hearing aid compatibility certification, 265 handset models from 21 manufacturers operating on a variety of new and old air interfaces, such as GSM, CDMA, WCDMA, and LTE, have been certified as having at least an M3 and T3 rating under the 2011 ANSI Standard. *See* FCC, *Hearing Aid Compatibility Reports: Device Manufacturers*, http://wireless.fcc.gov/hac/index.htm?job=rpt_dm_c. This includes, for example, a number of VoLTE-enabled handsets that are certified as meeting at least the minimum ratings for both acoustic and inductive coupling. *See*, *e.g.*, Samsung Note 4 (FCC ID A3LSMN910T) Test Reports (indicating device received both an M4 rating and a T4 rating for VoLTE, and an overall rating of M4 and T3), *available at* https://apps.fcc.gov/oetcf/eas/reports/ViewExhibitReport.cfm?mode=Exhibits&RequestTimeout=500&calledFromFrame=N&application_id=fswna7hxJSjzSZfQRL6oUA%3D%3D&fcc_id=A3LSMN910T.

[86] *See id.*; *see also*, *.e.g.,* Motorola Moto E XT1019 (FCC ID IHDT56PJ4) Test Report RFE 1 (indicating device was rated M4 for CMRS IP voice service over WiFi), *available* at https://apps.fcc.gov/oetcf/eas/reports/ViewExhibitReport.cfm?mode=Exhibits&RequestTimeout=500&calledFromFrame=N&application_id=zodwqYDa5v4yT4vxurj5HA%3D%3D&fcc_id=IHDT56PJ4; LG V10 (FCC ID ZNFH901) HAC RFE Test Report, (same), *available at* https://apps.fcc.gov/oetcf/eas/reports/ViewExhibitReport.cfm?mode=Exhibits&RequestTimeout=500&calledFromFrame=N&application_id=77sWa5dxoRe8hDmThbbN6g%3D%3D&fcc_id=ZNFH901.

[87] *See T-coil Testing Guidance*.

[88] *Id.* at 3.

[89] In order to test and rate Wi-Fi Calling operations, a manufacturer must receive from the applicable service providers information about the audio power level at which the service provider intends to operate the service. The absence of this information could prevent the manufacturer from testing and rating these operations, but it would not mean that compliance is technologically infeasible.

compatibility in the broad range of mobile handsets noted above. Indeed, because the specifications for new air interface technologies (such as the Fifth Generation or 5G wireless technology) will now be developed with the expectation that hearing aid compatibility requirements will apply, we anticipate that the need to meet such requirements will be taken into account early in the design process, which should help to ensure that compatibility for such technologies is feasible. We further note that industry commenters have provided no example of developing technology within the adopted scope for which achieving hearing aid compatibility was found to be infeasible, and we know of no reason that consumer handsets that operate over systems within the expanded scope could not achieve these ratings.[90] Further, as the Commission noted in 2010, to the extent we are presented with the rare case of a new technology that cannot feasibly meet the requirements, or cannot do so in full, Section 710 expressly provides for a waiver.[91]

34. *Marketability*. In the *Further Notice*, the Commission stated that based on the number of hearing aid-compatible models that were already being successfully marketed across multiple air interfaces and frequency bands, it anticipated, in the absence of convincing evidence to the contrary, that other telephones offering similar capabilities and meeting the same or comparable compliance standards could also be successfully marketed.[92] The Commission sought comment on this statement and on whether there is any class of handsets for which the cost of achieving compliance would preclude successful marketing.[93] In addition, the Commission sought comment on whether, for reasons of technological infeasibility or prohibitive costs, any rule provisions could not be applied to any class of handsets.[94]

35. Generally, aside from the impact relating to satellite phones, commenters did not address in detail whether compliance would increase costs to such an extent that equipment could not be successfully marketed. TIA argues that an open-ended application of the rules to other types of wireless handsets with voice capability but which are not typically held to the ear would, among other matters, impose undue financial burdens.[95] HIA comments that in terms of costs, compatibility with other devices is already a factor in hearing aid design, and thus does not anticipate that a "to the ear" standard it supports would impose additional costs on its members.[96]

36. In order to expand the scope of Section 20.19, the Commission must also find that compliance would not increase costs to a degree that would prevent successfully marketing of the equipment. As discussed above in our analysis of technological feasibility, manufacturers already offer numerous hearing aid-compatible handsets with differing features and physical characteristics over a

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[90] Although, as noted above, *see supra* para. 14, TIA's comments in response to the 2010 *Further Notice* indicate support for an expanded scope, TIA subsequently raised concerns when responding to the *2014 Refresh PN*. In its Reply Comments, TIA asserts that "[s]ome non-CMRS wireless handsets may not be appropriate for [hearing aid compatibility] obligations based on their design intent and additionally, the specific technical considerations of expanding the rules beyond CMRS are not yet fully understood." TIA 2014 Refresh PN Reply Comments at 4. Such general assertions are not persuasive, however, given the wide range of comparable consumer devices for mobile voice service that have been certified compatible already. We also note that TIA's specific concerns are focused on the potential application of the rules to public safety devices or to "any wireless device that is not designed to be used . . . as a device typically held to the ear." TIA 2014 Refresh PN Comments at 7. The expanded scope we adopt does not extend to either case, however.

[91] 47 U.S.C. § 610(b)(3).

[92] *Further Notice*, 25 FCC Rcd at 11199 para. 90.

[93] *Id*.

[94] *Id*. at 11199 para. 91.

[95] See TIA 2014 Refresh PN Comments at 7.

[96] *See* HIA 2014 Refresh PN Comments at 5.

variety of air interfaces, including a number of models certified as hearing aid-compatible over LTE. Further, while Iridium and Inmarsat raise concerns about the impact of hearing aid compatibility requirements on the marketability of satellite phones,[97] no commenter raises any concerns about marketability with respect to handsets and operations within the expanded scope we adopt today.[98] Considering the absence of anything in the record demonstrating compliance costs that would depart materially from the costs for handsets that already comply, we anticipate that handsets offering comparable voice communications capabilities to the public will similarly be marketable. We therefore find that requiring hearing aid compatibility for handsets newly within the scope of the requirements will not undermine their marketability. Further, to the extent we are presented with the rare case of a new technology for which compliance would increase costs to the extent that the technology could not be successfully marketed, Section 710 expressly provides that the Commission may waive the requirements.[99]

37. *Public Interest*. In the *Further Notice*, the Commission proposed to find that expanding the scope of the hearing aid compatibility requirements to reach handsets using new technologies would serve the public interest.[100] In seeking comments on this proposal, the Commission stated that its policy "is to encourage manufacturers to consider hearing aid compatibility at the earliest stages of the product design process."[101] The Commission further stated that the Hearing Aid Compatibility Act makes clear that consumers with hearing loss should be afforded equal access to communications networks to the fullest extent feasible.[102] The Commission stated that commenters should address the proposed finding that further modification of the exemption to reach handsets using new technologies is in the public interest.[103]

38. Consumer Groups argue that there are millions of Americans with hearing loss, technological innovations help people with disabilities, and they need access to their mobile phones in different settings.[104] ASHA and Hearing Access & Innovations note the importance of wireless phones to those who suffer from hearing loss.[105]

39. We conclude, in light of the findings above and consideration of the costs and benefits to all telephone users, that applying the hearing aid compatibility requirements to all handsets and services within the expanded scope, including current and emerging IP-based voice services, will serve the public interest. Most notably, an expanded scope will ensure that the country's approximately 36 million individuals with hearing loss have access to the advances in communications and related technology that are becoming increasingly essential to participation in our society.[106] The expanded scope makes it more likely that individuals with hearing loss will have access to the latest technology in mobile handsets since technological innovations will generally have to be considered in the design stage for the handsets.[107] We

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[97] *See* Iridium 2014 Refresh PN Comments at 4-5; Inmarsat 2014 Refresh PN Comments at 6-7.

[98] As we discuss below, our expanded scope does not encompass satellite phones. *See infra* para. 41.

[99] 47 U.S.C. § 610(b)(3).

[100] *Further Notice*, 25 FCC Rcd at 11197 para. 86.

[101] *Id*.

[102] *Id*.

[103] *Id*.

[104] *See* Consumer Groups 2010 Further Notice Comments at 2,3,5.

[105] *See* ASHA 2014 Refresh PN Comments at 1; Lintz 2014 Refresh PN Comments at 3.

[106] *See* Consumer Groups 2010 Further NPRM Comments at 2.

[107] *See* Consumer Groups 2010 Further NPRM Comments at 3; *see also Policy Statement*, 25 FCC Rcd at 11174 para. 18.

further find that enabling access to the full—and growing—range of handsets available to all other consumers will provide both social and economic benefits to consumers with hearing loss. In addition, access to mobile handsets with innovative technologies as they develop can benefit not just an employee with hearing loss who uses his or her own mobile phone but the employer and co-workers as well, by facilitating the full participation and valuable input of employees with hearing loss who otherwise may be restricted in their ability to fully communicate with their colleagues.[108] Members of the public will also generally benefit from being able to communicate with people with hearing loss as fully and robustly as possible.[109] We also note that the wireless industry's comments demonstrate broad support for covering advanced services. For example, in its comments to the 2010 *Further Notice*, TIA supports "expand[ing] the scope of the hearing aid compatibility rules to advanced communications technologies" guided by our Policy Statement and consistent with Section 710 of the Act.[110] For these reasons, we find that expanding the scope of Section 20.19 as discussed herein advances the public interest.

40. *Public Safety and Private Enterprise Networks.* We decline, at this time, to extend the hearing aid compatibility rules to handsets used exclusively with services that are not available to the public, such as services over public safety or private enterprise networks.[111] Thus, for example, we do not extend hearing aid compatibility requirements to state, local, and Tribal public safety radio systems used by police, fire, or emergency medical personnel for dispatch and emergency response.[112] In the past, our decisions to lift the exemption for devices used with some wireless services, and particularly our determination that doing so is in the public interest, have been based in part on our findings that these devices and services have become part of the mass market for communications.[113] Generally, handsets for network services such as public safety or private enterprise networks are designed for a specialized market with a limited set of users.[114] Based on the record before us, there is little evidence on the extent that these specialized public safety and private enterprise devices would satisfy the criteria of technical feasibility and marketability.[115] Rather, the record supports the Commission's tentative conclusion in the

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[108] *See* Consumer Groups 2010 Further NPRM Comments at 2, 5.

[109] *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.").

[110] *See* TIA 2010 Further NRPM Comments at 3. *See also*, *e.g.*, CTIA 2010 Further NPRM Reply Comments at 1, 3 (supporting expansion of the rule to encompass advanced communications services); Motorola 2010 Further NPRM Comments at 4 (endorsing the Commission's proposal to apply the hearing aid compatibility rules "to all customer equipment used to provide wireless voice communications over any type of network among members of the public or a substantial portion of the public" that meet the definition of handsets, subject to technological feasibility and marketability). While CTIA subsequently argued that these services were already covered as a result of the adoption of the 2011 ANSI Standard in the *Third Report and Order*, *see*, *e.g.*, CTIA 2014 Refresh PN Comments at 10; CTIA 2014 Refresh PN Reply Comments at 7-8, it did not assert that coverage of such services is not in the public interest.

[111] We use the term "private enterprise networks" here to refer to those private networks that are designed and deployed to meet a business's specific communications needs. *See* LMCC 2014 Refresh PN Reply Comments at 4. Such systems may include, for example, internal networks to support the operations of "power and petroleum companies, airlines, railroad, trucking and other transportation concerns, [and] manufacturing facilities." *Id.*

[112] Consistent with this determination, we further clarify that the incorporation of a VoIP functionality operating over Wi-Fi in a public safety or private enterprise device does not bring the device under the expanded scope of the rule. Rather, as discussed above, the expanded scope will cover only devices used with the provision of a service available to the public or a substantial portion of the public.

[113] *See*, *e.g.*, *2003 Hearing Aid Compatibility Report and Order,* 18 FCC Rcd at 16756-57 para. 7.

[114] *See* LMCC 2014 Refresh PN Reply Comments at 4; *see also* TIA 2014 Refresh PN Comments at 7.

[115] Several parties support such an extension of the rules as in the public interest to benefit consumers with hearing loss, *see, e.g.*, ASHA 2014 Refresh PN Comments at 2; Consumer Groups 2014 Refresh PN Comments at 2; HIA 2014 Refresh PN Comments at 4-5; Wireless RERC 2014 Refresh PN Comments at 6, but they do not provide

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Further Notice that the different market circumstances for public safety or private enterprise networks and the absence of an existing universe of hearing aid-compatible handsets would increase the burden of meeting the hearing aid compatibility requirements.[116] In addition, although we recognize there are benefits to ensuring accessibility to public safety or private enterprise devices, the record reflects that the typical weight, shape, and other aspects of the physical design of public safety and private enterprise devices are such that the radios conventionally are not held up to the ear but rather used with audio that emanates from a loudspeaker with adjustable volume control rather than from a telephone earpiece.[117] As such, we find that these devices are generally not comparable in their typical use to the wireless handsets covered by the hearing aid compatibility obligations.[118] We also find that the public interest requires that we proceed with caution in order to avoid requirements that may discourage, delay, or increase the cost of equipment where public safety or critical infrastructure operations are directly at stake.[119] Taking these factors into consideration, the record precludes us from finding that the benefit associated with expanding the rule to public safety and private enterprise networks would outweigh the cost.[120] Accordingly, we find, at this time, that the statutory requirements are not met in order to expand the scope of the hearing aid compatibility rules to include these devices. We continue to be sensitive to the needs of those individuals with hearing loss, however, and will consider re-visiting this issue if it comes to our attention that the benefits associated with expanding the rule come to outweigh the costs.

41. *Non-terrestrial Networks.* Based on the existing record, we are unable to find that the statutory criteria for lifting the hearing aid compatibility exemption have been satisfied for radio communication devices operating over non-terrestrial networks, such as those operating in the MSS. As Iridium has explained, MSS handsets operate at significantly higher power levels than mass market devices and must communicate with stations over a dramatically greater distance than comparable terrestrial technologies.[121] Iridium also notes that lower sales volumes, in-house product development, and longer product development and marketing cycles due to infrequent product replacements pose additional impediments to achieving hearing aid compatibility.[122] Even if such challenges could be

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evidence on technological feasibility and marketability, *see* Motorola 2014 Refresh PN Comments at 6, 8; LMCC 2014 Refresh PN Reply Comments at 4; *see also* CTIA 2014 Refresh PN Reply Comments at 9.

[116] *See* Motorola 2010 Further NPRM Comments at 5-6; Motorola 2014 Refresh PN Comments at 7 (noting that "[p]ublic safety and enterprise devices are used in discrete networks for specialized purposes, which differ greatly from consumer networks in terms of technical, operational, and economic demands").

[117] *See*, *e.g.*, http://www.motorolasolutions.com/en_us/products/two-way-radios/project-25-radios/portable-radios/apx-8000.html#tabproductinfo-specifications; *see also* LMCC 2014 Refresh PN Comments at 4; Motorola 2014 Refresh PN Comments at 5-6.

[118] We further note that under other federal statutes, including Sections 501 and 503 of the Rehabilitation Act of 1973 and provisions of Title I of the Americans with Disabilities Act of 1990, private and public employers may be required to obtain hearing aid compatible devices for their individual employees. *See* Sections 501 and 503 of the Rehabilitation Act of 1973, 29 U.S.C. §§ 791, 793; 42 U.S.C. § 12111; *see also* H.R. Rep. No. 101-485(II), at 64 (1990), *reprinted in* 1990 U.S.C.C.A.N. 303, 346 ("For persons with hearing impairments, reasonable accommodations may include . . . telephones compatible with hearing aids .").

[119] *See* Motorola 2010 Further NPRM Comments at 2 (stating that "the Commission must not inadvertently add unnecessary complexity, cost, and delay to next generation public safety broadband deployments").

[120] Although HIA claims that Motorola has offered no technological reason why hearing aid compatibility cannot be incorporated into such devices, *see* HIA 2014 Refresh PN Reply Comments at 8-9, without a showing of technological feasibility by HIA or any other party, as required by the statute, we are unable to lift the exemption for these devices.

[121] *See* Iridium 2014 Refresh PN Comments at 2-3; *see also id.* at 4-5 (arguing that high power levels and use of proprietary waveforms "raise substantial questions about the technological feasibility" of requiring hearing aid compatibility for handsets used in the MSS).

[122] *See id.* at 2-3.

overcome, the record supports the conclusion that each MSS provider would need to develop its own solution, and we are concerned that the increased costs associated with complying with the rules in those circumstances, and the MSS industry's need to recover those costs over a relatively limited market, would prevent the successful marketing of MSS handsets or discourage further innovation in such handsets.[123] Further, because MSS providers offer a specialized service over customized technology to a small customer base that is focused on government, critical infrastructure, and other large enterprise users, and not the public at large, we find that extending hearing aid compatibility requirements to the MSS raises concerns similar to those noted above regarding public safety and private enterprise networks.[124] Indeed, we found last year that these characteristics justified not extending to MSS the text-to-911 requirements that we otherwise imposed broadly on CMRS providers and all other providers of interconnected text-messaging applications.[125] Although there could be benefits to individuals with hearing loss from extending the scope of the hearing aid compatibility rules to cover such devices and services,[126] the current differences between MSS and terrestrial services, as well as concerns and uncertainty regarding the marketability and technological feasibility of hearing aid-compatible MSS devices, do not allow us at this time to make the determinations necessary to lift the exemption for these devices.[127] We will reevaluate in the future whether the MSS should remain exempt from the scope of the hearing aid compatibility rules.

3. Voice Capability Provided through Software

42. *Background*. When the Commission first promulgated hearing aid compatibility rules, applications that enable voice communications through third-party software did not exist. If a digital handset enabled voice communications, it could do so only through the native voice capabilities of the service provider's network technology relying on a voice coder-decoder (codec) embedded in the hardware.[128] Today, however, mobile voice communications can be enabled in a variety of ways, including: applications pre-installed by the manufacturer, its operating system software partner, or a service provider; applications downloaded by the end user from the manufacturer's store; or applications that the end user obtains from an independent source. Further, while third-party voice applications may rely on a voice codec built into the operating system or hardware of the device, they may also use their own proprietary codec.[129] Accordingly, while seeking comment in the 2010 *Further Notice* on expanding the scope of the hearing aid compatibility rules beyond covered CMRS, the Commission also sought comment on how its hearing aid compatibility rules should address circumstances where voice capability may be enabled on a handset by a party other than the manufacturer.[130]

43. AT&T, ATIS, Consumer Groups, CTIA, MetroPCS, Motorola, TIA, and T-Mobile agree that manufacturers and service providers should not be required to ensure compliance for voice

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[123] *See id.* at 4-5; Inmarsat 2014 Refresh PN Comments at 5-7.

[124] *See* Iridium 2014 Refresh PN Comments at 2, 4-6; Inmarsat 2014 Refresh PN Comments at 2, 5-7.

[125] *See Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications,* PS Docket No. 11-153, *Framework for Next Generation 911 Deployment*, PS Docket No. 10-255, Second Report and Order and Third Further Notice of Proposed Rulemaking, 29 FCC Rcd 9846, 9863 para. 35 n.96 (2014) (excluding the MSS based on finding that the "MSS is a specialized offering with a focus on enterprise and government users").

[126] *See, e.g.*, Consumer Groups 2014 Refresh PN Reply Comments at 4.

[127] We again note, however, that other federal statutes may require private and public employers to obtain hearing aid-compatible devices for their individual employees. *See supra* para. 40.

[128] A codec is used to convert an analog voice signal to a digital signal and vice versa. *See generally* http://www.voip-info.org/wiki/view/Codecs.

[129] *See generally* http://www.voipsupply.com/hd-voice-codecs.

[130] *See 2010 Policy Statement, Second Report and Order, and Further Notice*, 25 FCC Rcd at 11198 para. 89.

communication capabilities added to a handset by consumers or third parties after original purchase.[131] In connection with this argument, AT&T, CTIA, and TIA cite Section 2(a) of the CVAA, which they claim limits liability for certain third-party activities, as support for exempting them from compliance responsibility for third party actions.[132] These commenters oppose subjecting manufacturers and service providers to testing requirements for third party applications unless the manufacturer and service provider have themselves affirmatively incorporated the application into a device, arguing, in the main, that manufacturers and providers lack control over third party applications installed in the device by someone else.[133] In contrast, HIA argues that hearing aid compatibility should be ensured both "at the time of sale" and upon "installation of a voice feature."[134] As an alternative approach, Consumer Groups urge the Commission to require manufacturers and service providers to include provisions in their licensing agreements or contracts with software application developers to ensure that software maintains the hearing aid compatibility of a device.[135]

44. *Discussion*. After consideration of the record, we agree with those commenters that argue against applying the hearing aid compatibility requirements to voice applications added by consumers after their purchase of the device. As noted above, the record demonstrates that testing a device for hearing aid compatibility for all possible applications is infeasible at this time because manufacturers and service providers are unable to predict what third-party software a consumer may choose to install. In addition, we believe it would create incentives to restrict the open development of new voice applications if we hold manufacturers and service providers responsible for hearing aid compatibility compliance for all third-party voice applications.[136] Accordingly, certifying a handset for

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[131] *See* AT&T 2010 Further NPRM Comments at 4; ATIS 2010 Further NPRM Comments at 4-5; Consumer Groups 2010 Further NPRM Comments at 5-6; CTIA 2010 Further NPRM Comments at 9; MetroPCS 2010 Further NPRM Comments at 5-8; Motorola 2010 Further NPRM Comments at 10; TIA 2010 Further NPRM Comments at 6; T-Mobile 2010 Further NPRM Reply Comments at 5-6; TIA 2010 Further NPRM Reply Comments at 2-4.

[132] *See* AT&T 2010 Further NPRM Comments at 4; CTIA 2010 Further NPRM Comments at 9-10; TIA 2010 Further NPRM Comments at 6. Section 2(a) of the CVAA provides that no person shall be liable for a violation of the requirements of the CVAA to the extent that person "transmits, routes, or stores in intermediate or transient storage the communications made available through the provision of advanced communications services by a third party" or who "provides an information location tool, such as a directory, index, reference, pointer, menu, guide, user interface, or hypertext link, through which an end user obtains access to such video programming, online content, applications, services, advanced communications services, or equipment used to provide or access advanced communications services." Pub. L. No. 111-260, § 2(a). These limitations on liability do not apply "to any person who relies on third-party applications, services, software, hardware, or equipment to comply with the requirements of the [CVAA]." *Id.* at § 2(b).

[133] TIA 2010 Further NPRM Reply Comments at 2-4; *see* ATIS 2010 Further NPRM Comments at 5 (stating that manufacturers and service providers should not be "held responsible for any software not originally installed or packaged in the box" and that, therefore, "testing procedures should not be required for these applications"); AT&T 2010 Further NPRM Comments at 3 ("[T]he extent to which a device can accommodate voice operations acquired from third party software after device purchase should not control whether the device can be considered [hearing aid compatible] . . . unless the manufacturer or carrier offers the software."); CTIA 2010 Further NPRM Comments at 9 ("For [hearing aid compatibility] certification purposes, manufacturers should not be required to test voice functions that are not available at the point of purchase or that the user may add thereafter."); Consumer Groups 2010 Further NPRM Comments at 5-6 (agreeing that "in cases where manufacturers or service providers have no control over the software installed by consumers, they cannot be held accountable for the impact that software has on hearing aid compatibility").

[134] HIA 2010 Further NPRM Comments at 8-9.

[135] Consumer Groups 2010 Further NPRM Comments at 6; *but see* CTIA 2010 Further NPRM Reply Comments at 4-6.

[136] We therefore need not address whether extending hearing aid compatibility requirements to such applications would be inconsistent with Section 2(a) of the CVAA.

hearing aid compatibility does not require testing software-based voice functions except to the extent that such software applications are installed by the manufacturer or service provider, or at their direction, for use by a consumer over a given air interface.[137] More specifically, we require that, when testing a device's operations over a given air interface, manufacturers must ensure the hearing aid compatibility of all voice communication functionality they provide over that interface whether such functionality is provided through software, hardware, or both.[138] We decline to limit responsibility to the subset of such software installed prior to certification, as suggested by TIA.[139] Such a restriction would not ensure compatibility of software that manufacturers or service providers install after certification, and we see no reason not to require compatibility of such software. Because, under our approach, manufacturers and service providers need only ensure the compatibility of the software-based voice operations that are installed by the manufacturer or service provider or at their direction, and such operations are necessarily within their control, we find that testing any software-based voice functionality is technically feasible, not unduly burdensome, and beneficial to consumers with hearing loss who may wish to use such operations.[140]

45. Previously, the Commission has permitted manufacturers and service providers to obtain hearing aid compatibility certification for handsets that are capable of supporting additional voice capability without testing for such operations, including the operations we address above, but has required them to disclose to consumers that not all of the handsets' operations have been tested and rated for hearing aid compatibility.[141] While we now establish a requirement to test and rate software applications

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[137] Thus, to offer a handset as hearing aid-compatible and count the handset toward compliance with the benchmarks, manufacturers or service providers are responsible for ensuring that the handset is tested not only for the software-based voice functions that they pre-install themselves, but also for functions installed by an agent or other authorized third party before the handset leaves the manufacturer's or provider's direct control, as well as software they provide to the consumer on a physical medium such as a CD, or require the consumer to download. We note that, under Section 716(a)(1), we have required manufacturers to be responsible for the accessibility of software components of equipment used for advanced communications services under similar circumstances. *Cf. Implementation of Sections 716 and 717 of the Communications Act of 1934, as Enacted by the Twenty-First Century Communications and Video Accessibility Act of 2010,* CG Docket No. 10-213, *Amendments to the Commission's Rules Implementing Sections 255 and 251(a)(2) of the Communications Act of 1934, as Enacted by the Telecommunications Act of 1996,* WT Docket No. 96-168, *Accessible Mobile Phone Options for People who are Blind, Deaf-Blind, or Have Low Vision*, CG Docket No. 10-145, Report and Order, 26 FCC Rcd 14557, 14585 para. 69 n.150 (2011) (providing that manufacturers of equipment used for advanced communications services be responsible for the accessibility of the software components on their equipment, whether it is software they install, or provide or require to be installed).

[138] We note that, under Section 20.19(g) of the Commission's rules, if a manufacturer or service provider changes the voice operations on a previously certified handset by installing additional software or through any other means, then in order to continue offering the handset as hearing aid-compatible, it must ensure that the relevant air interface remains hearing aid-compatible using worst-case results, and if not, must change the ratings and assign the handset a new model number. *See* 47 C.F.R. § 20.19(g).

[139] TIA 2010 Further NPRM Reply Comments at 3-4.

[140] We emphasize that manufacturers and service providers are only responsible for ensuring the hearing aid-compatibility of the software they install or cause to be installed. Thus, for example, if a manufacturer has properly tested and rated a handset, and a service provider, after purchasing units of the handset, installs new software, this installation affects only whether the service provider may count the handset as one of its hearing aid-compatible offerings.

[141] The Commission previously adopted a requirement of disclosure for handsets that are capable of supporting software that can activate additional voice capability in the *Second Report and Order*. *See 2010 Policy Statement, Second Report and Order, and Further Notice*, 25 FCC Rcd at 11180 para. 34. Although the Commission codified a requirement of disclosure only in the context of handsets that could not be tested and rated for all of their operations under the 2007 version of ANSI Standard C63.19, *see* 47 C.F.R. § 20.19(f)(2), it is clear from the Commission's discussion that it intended for the disclosure requirement to also apply in cases of devices that are capable of

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installed under the circumstances specified above in order to obtain hearing aid compatibility certification, we find it appropriate to provide a period of time during which manufacturers may continue to certify handsets based on disclosure rather than testing. We anticipate that implementing the requirement to test and rate software-based voice functionality will require additional guidance on testing parameters, the development of new systems capable of testing the applicable codec/air interface combinations, as well as coordination between manufacturers, service providers, and third-party application providers.[142] Given these implementation issues, we provide that during the transition period for applying deployment benchmarks discussed below,[143] manufacturers may continue to obtain hearing aid compatibility ratings for a device's operation on a given air interface without testing and rating software-enabled voice functions, as long as they disclose to consumers that certain operations have not been tested and rated for hearing aid compatibility, consistent with the disclosure required in Section 20.19(f)(2)(i).[144] We note again that ANSI ASC C63®-EMC, at its November 2015 meeting, formally approved a project to revise the ANSI C63.19 standard for hearing aid compatibility to address a number of topics, including some technologies not covered in the current version of the standard. The application of the transition period to software-based voice operations reflects, in part, our expectation that industry groups will work through the standards process to finalize all necessary guidance well before the end of the transition period.[145] If manufacturers and service providers come to conclude that such guidance is not available sufficiently far in advance of the transition date to allow parties to come into compliance, they may seek an extension of the transition deadline by petitioning the Commission for a waiver of this regulatory deadline under our waiver rules (*e.g.*, Sections 1.3 and/or 1.925, as appropriate).[146] As part of its review of any petitions to waive this regulatory deadline, the Commission will consider possible impacts on consumers with hearing loss.

4. Transition Period for Applying Existing Deployment Benchmarks

46. *Background*. To ensure that a wide selection of digital wireless handset models is available to consumers with hearing loss, the Commission's hearing aid compatibility rules require both manufacturers and service providers to meet defined benchmarks for deploying hearing aid-compatible wireless handsets. Specifically, manufacturers and service providers are required to offer minimum numbers or percentages of handset models that meet the technical standards for compatibility with

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supporting software that can activate additional voice capability, *see 2010 Policy Statement*, *Second Report and Order*, *and Further Notice*, 25 FCC Rcd at 11180 para. 34 (clarifying "that the disclosure requirement includes handsets that are capable of supporting software that can activate additional voice capability"); *see also id*. at 11198 para. 89 n.188.

[142] We note again that ANSI ASC C63®-EMC, at its November 2015 meeting, formally approved a project to revise the ANSI C63.19 standard for hearing aid compatibility to address a number of topics, which expressly included VoIP. We expect that industry groups will work with the standards process to finalize all guidance necessary to facilitate full application of the expanded scope well before the end of the transition period.

[143] *See generally infra* Section III.B.4.

[144] *See* 47 C.F.R. § 20.19(f)(2)(i) (requiring disclosure to consumers by clear and effective means that a handset has not been rated for hearing aid compatibility with respect to some of its operations, and specifying particular language to include). We further note that this disclosure requirement will continue to apply during and after the transition where handsets are capable of supporting additional untested voice capability even if software installed by the manufacturer or service provider is tested.

[145] *See supra* note 69.

[146] *See* 47 C.F.R. §§ 1.3, 1.925*; see also Northeast Cellular Telephone Co., L.P. v. FCC*, 897 F. 2d 1164, 1166 (D.C. Cir. 1990) (citing *WAIT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969)) ("The FCC has authority to waive its rules if there is 'good cause' to do so. . . . The FCC may exercise its discretion to waive a rule where particular facts would make strict compliance inconsistent with the public interest.").

hearing aids operating in modes for acoustic coupling (M-rating) and inductive coupling (T-rating).[147] These benchmarks apply separately to each air interface for which the manufacturer or service provider offers handsets.[148]

47. In the 2010 *Further Notice*, the Commission sought comment on the appropriate transition period before applying these hearing aid compatibility deployment benchmarks to lines of handsets that are "outside the subset of CMRS that is currently covered by Section 20.19(a)."[149] In this regard, the Communications Act, as amended by the CVAA, directs 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."[150]

48. In their comments, Clearwire, CTIA, T-Mobile, and Motorola support a two-year transition as adequate for many handsets to come into compliance with existing benchmarks.[151] RWA, Blooston, and RTG support longer time frames of up to an additional 12 months for small, rural, and/or Tier III service providers who, these commenters contend, do not have the same access to new handsets as Tier I providers.[152] While it did not propose any specific time period, HIA states that the transition period should be no longer than the minimum amount of time needed for a new product design cycle.[153]

49. *Discussion*. Based on the record in this proceeding, we find it in the public interest to adopt a January 1, 2018 transition date (for manufacturers and Tier I carriers) and an April 1, 2018 transition date (for other service providers) for applying Section 20.19's deployment benchmarks and related requirements to newly covered air interfaces, *i.e.*, those air interfaces that operate outside the former scope of the hearing aid compatibility rules due to either regulatory status or network architecture issues. We will begin enforcing the benchmarks for these newly covered air interfaces once the applicable transition period expires. After the transition is complete, the M- and T-rating deployment benchmarks for handsets supporting any newly covered operations will be the same as those used for currently covered operations in handsets,[154] and we will apply the same benchmark requirements (including the *de minimis* rules) to all handsets, including newly covered operations, that a manufacturer or a service provider offers. In this regard, we note that TIA argues that we should extend the *de minimis* exception to handsets offered over air interfaces that a manufacturer or service provider is phasing out of

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[147] *See* 47 C.F.R. § 20.19(c), (d).

[148] *Id*. 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 handsets each year, and service providers must offer a range of hearing aid-compatible handsets with differing levels of functionality. *Id*. § 20.19(c)(1)(ii), (c)(4)(ii), (d)(4)(ii).

[149] *2010 Policy Statement, Second Report and Order, and Further Notice*, 25 FCC Rcd at 11200 para. 93.

[150] 47 U.S.C. § 610(e).

[151] *See* Clearwire 2010 Further NPRM Comments at 5; CTIA 2010 Further NPRM Comments at 11-12; CTIA 2010 Further NPRM Reply Comments at 7; T-Mobile 2010 Further NPRM Reply Comments at 4; *see also* Motorola 2010 Further NPRM Comments at 10-11 (supporting generally a two-year transition period, but recommending a five year transition period for new classes of devices "that have been designed and refined over time with no expectation of being subject to [hearing aid compatibility] requirements"); RWA 2014 Refresh PN Comments at 4.

[152] RWA 2014 Refresh PN Comments at 4; Blooston 2010 Further NPRM Comments at 5-6; Blooston 2010 Further NPRM Reply Comments at 3; RTG 2010 Further NPRM Comments at 3-5; *see also supra* note 62 (the definition of Tier I, Tier II, and Tier III service providers).

[153] *See* HIA 2010 Further NPRM Comments at 9; *see also* HIA 2014 Refresh PN Comments at 6.

[154] *See* 47 C.F.R. § 20.19. Service providers' reports must include all air interfaces supported on a given handset model offered to customers, and the service provider must report the total number of compliant and non-compliant models offered to customers for each air interface over which the service provider offers service, including air interfaces and frequencies used to offer domestic and international roaming service. *See* 47 C.F.R. § 20.19(i)(3).

its portfolio.[155] This comment appears to go to the exception's operation generally and not to its application after a possible transition, and therefore it is outside the scope of the *Further Notice.* Furthermore, the Commission considered this possibility in the *Second Report and Order* and determined that while situations could theoretically occur where a manufacturer or service provider would need the exception to manage a technology phase-out, there was no evidence they had occurred in practice and any individual instances would be best addressed through waiver requests.[156]

50. We find that a January 1, 2018 transition date is appropriate for both manufacturers and Tier I service providers. When the Commission adopted its initial hearing aid compatibility rules in 2003, it gave manufacturers and Tier I carriers 24 months to comply with acoustic coupling requirements.[157] Similarly, in 2012, OET and WTB adopted a 24-month transition period for covered CMRS operations that use frequency bands and air interfaces that can be tested under the 2011 ANSI Standard.[158] As discussed above, we find that any challenges related to technical feasibility and marketability will not be significantly different for newly covered handsets than for handsets that are currently being made hearing aid-compatible under the rule. Accordingly, we find that a similar transition period provides adequate time to adjust handset portfolios to ensure compliance with the benchmarks that apply independently to each air interface, regardless of whether the voice communications functionality is network-based or software-based. In addition, this transition period affords manufacturers a reasonable amount of time to implement requirements to test and rate software-based voice functionality.[159] Although HIA argues that the transition period should be limited to the length of a typical product design cycle, the Commission has previously determined that two years is an appropriate period to accommodate the typical handset industry product development cycle, and the record in this proceeding further supports that conclusion.[160] We therefore find that a January 1, 2018 transition date for manufacturers and Tier I service providers is an appropriate timetable to account for any issues of technical feasibility and marketability.

51. We afford an additional three months for non-Tier I service providers to meet the deployment benchmarks and related requirements for handsets newly subject to the hearing aid compatibility rules. In allowing additional time until the April 1, 2018 transition date, we recognize that non-Tier I service providers often have difficulty obtaining the newest handset models.[161] While some commenters argue that the transition period should be longer in certain instances, the record does not demonstrate a need for an even greater transition period for non-Tier I service providers nor any reason to depart from prior hearing aid compatibility transitions in which the Commission afforded non-Tier I providers an additional three months beyond the transition period provided to Tier I service providers.[162]

52. Given that many manufacturers and service providers began meeting benchmarks in 2014 for handsets with operations over the additional air interfaces and frequency bands covered by the 2011

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[155] *See* TIA 2010 Further NPRM Comments at 7-8.

[156] *See 2010 Policy Statement, Second Report and Order, and Further Notice*, 25 FCC Rcd at 11189 para. 58.

[157] *2003 Hearing Aid Compatibility Report and Order*, 18 FCC Rcd at 16780 para. 65.

[158] *Third Report and Order,* 27 FCC Rcd at 3740 para. 22.

[159] *See supra* para. 45; *see also, e.g.*, Clearwire 2010 Further NPRM Comments at 5.

[160] *See 2010 Policy Statement, Second Report and Order, and Further Notice*, 25 FCC Rcd at 11185 para. 49; CTIA 2010 Further NPRM Comments at 11-12; Motorola 2010 Further NPRM Comments at 10 (supporting a two-year transition because "[t]wo years roughly corresponds to the product development cycle"). We further note that certain handsets, such as those with software-based voice operations, will require additional testing guidance and, possibly, additional testing equipment.

[161] *See, e.g.*, RWA 2014 Refresh PN Comments at 4; Blooston 2010 Further NPRM Comments at 5-6; Blooston 2010 Further NPRM Reply Comments at 3; RTG 2010 Further NPRM Comments at 3-5.

[162] *See*, *e.g.*, *Third Report and Order*, 27 FCC Rcd at 3741-42 para. 23 (providing two-year transition to manufacturers and Tier I service providers and an additional three months to other service providers).

ANSI Standard, including in the case of the LTE air interface, we anticipate that these parties will continue to meet existing benchmarks during the transition. We find this expectation reasonable for any IP-based voice services, including VoLTE and Wi-Fi Calling, given that affected parties are already meeting deployment benchmarks for VoLTE operations, and the record reflects that manufacturers and service providers are in some cases already widely complying with hearing aid compatibility requirements.[163]

53. We note that, due to a lack of testing equipment availability, manufacturers are currently permitted to obtain certification of handset models for inductive coupling capability under the 2011 ANSI Standard without testing and rating any present VoLTE or Wi-Fi Calling operations, subject to a disclosure that such handsets have not been tested and rated for all of their operations.[164] We emphasize that, at the January 1, 2018 transition date, parties will need to meet requirements to test and rate for inductive coupling capability, including for VoLTE and Wi-Fi Calling if such services are included in the handset, in order to certify such handsets as hearing aid-compatible and meet applicable deployment requirements. During the transition, however, we will continue the interim process permitting disclosure instead of inductive coupling testing and rating for VoLTE and Wi-Fi Calling when used to provide CMRS-based voice services. We note that some newer VoLTE-enabled handsets have been tested and rated for inductive coupling capability.[165] Further, the record reflects an industry understanding that the current process allowing for disclosure instead of testing and rating for inductive coupling capability in all modes of operation is temporary.[166] Indeed, the industry has had notice for over a year that Commission staff are reassessing how long the Commission should use the current process as testing equipment and protocols become increasingly available.[167] Thus, we find that the January 1, 2018 transition date is a reasonable point in time at which we will require full inductive coupling testing and rating of handsets with VoLTE and Wi-Fi Calling functionality before certifying these handsets so manufacturers and service providers can meet their deployment benchmarks.[168]

IV. NOTICE OF PROPOSED RULEMAKING

54. We issue this Notice of Proposed Rulemaking (Notice) to develop a record on an innovative and groundbreaking proposal, advanced collaboratively by industry and consumer groups, to replace the current fractional regime with the staged adoption of a system under which all covered wireless handsets will be hearing aid compatible. We propose to adopt this consensus approach, which recognizes that the stakeholders themselves are best positioned to craft a regime that ensures full accessibility while protecting incentives to innovate and invest. We seek comment on this proposal.

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[163] *See*, *e.g.*, TIA 2014 Refresh PN Comments at 4-5 & n.13 (stating that "VoLTE handsets are already within the scope of the Commission's [hearing aid compatibility] rules because VoLTE is a CMRS IP voice service" and citing the *Third Report and Order* and the *T-Coil Testing Guidance*); CTIA 2014 Refresh PN Reply Comments at 7-8; *see also* CTIA Comments on Draft Guidance, WT Docket 07-250, filed Aug. 26, 2013 (supporting adoption of the guidance).

[164] *See Third Report and Order*, 27 FCC Rcd at 3739-40 para. 17; *T-Coil Testing Guidance*.

[165] *See also* "HAC Update," FCC/OET, Laboratory Division, April 2015, *available at* https://transition.fcc.gov/bureaus/oet/ea/presentations/files/apr15/31-HAC-update-apr-2015-JS.pdf (stating that "[i]nstrumentation is available for VoLT[E] and handsets are being rated for T-Coil").

[166] *See* TIA 2014 Refresh PN Comments at 5 n.15 (citing Office of Engineering and Technology Laboratory Division, TCB Workshop, October 2014, (October 2014 TCB Workshop) *available at* https://transition.fcc.gov/bureaus/oet/ea/presentations/files/oct14/22-HAC-Update-Oct-2014-JSZ.pdf).

[167] In the October 2014 TCB Workshop presentation, OET staff members indicated that they were "reviewing if the exemption should continue" and "looking for feedback from test labs and manufacturers." *See* October 2014 TCB Workshop at 2.

[168] We note that the record in this proceeding does not address the appropriate period for ending the interim process for testing of VoLTE or Wi-Fi Calling.

A. Background

55. To ensure that a wide 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 offering hearing aid-compatible wireless phones.[169] Specifically, manufacturers and service providers are required to offer minimum numbers or percentages of handset models that meet specified technical standards for compatibility with hearing aids operating in both acoustic coupling and inductive coupling modes.[170] These benchmarks apply separately to each air interface for which the manufacturer or service provider offers handsets.[171]

56. The wireless hearing aid compatibility rules have incorporated this fractional benchmark approach since the provision was first established in 2003, but the Commission has on occasion revised the specific benchmarks that manufacturers and service providers are required to meet.[172] The current benchmarks were established in 2008 when the Commission adopted a consensus plan submitted by an Alliance for Telecommunications Industry Solutions (ATIS) working group that included Tier I carriers, handset manufacturers, and several organizations representing the interests of people with hearing loss.[173] That plan provided for benchmarks to increase over time, up to a final set of benchmarks that became effective in 2010 and remain in place today.[174]

57. The current deployment benchmarks require that, subject to a *de minimis* exception described below, a handset manufacturer must meet, for each air interface over which its models operate, (1) at least an M3 rating for RF interference reduction for at least one-third of its models using that air interface (rounded down), with a minimum of two models, and (2) a T3 rating for inductive coupling for at least one-third of its models using that interface (rounded down), with a minimum of two models.[175] Similarly, for each of the air interfaces their handsets use, service providers also must meet an M3 rating for at least 50 percent of their models or ten models, and must meet a T3 rating for at least one-third of their models or ten models.[176] In general, under the *de minimis* exception, manufacturers and service

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[169] *See, e.g.*, *2010 Policy Statement, Second Report and Order, and Further NPRM*, 25 FCC Rcd at 11168 para. 1.

[170] 47 C.F.R. §§ 20.19(c), (d).

[171] *Id*. 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).

[172] *See, e.g., 2003 Hearing Aid Compatibility Report and Order*, 18 FCC Rcd at 16780-16785 paras. 65-81.

[173] *See* Supplemental Comments of ATIS in WT Docket No. 06-203 (filed June 25, 2007); *First Report and Order*, 23 FCC Rcd at 3414 para. 23. Tier I carriers are Commercial Mobile Radio Service (CMRS) providers with nationwide footprints. *See Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems; Phase II Compliance Deadlines for Non-Nationwide Carriers*, CC Docket No. 94-102, Order to Stay, 17 FCC Rcd 14841, 14843 para. 7 (2002). In contrast, Tier II carriers are non-nationwide CMRS providers with greater than 500,000 subscribers as of the end of 2001, while Tier III carriers are non-nationwide CMRS providers with no more than 500,000 subscribers as of the end of 2001. *See id.* at 14846-14848 paras. 19-24.

[174] *See First Report and Order*, 23 FCC Rcd at 3418-3419 paras. 35-36; 47 C.F.R. §§ 20.19(c), (d), (e).

[175] 47 C.F.R. §§ 20.19(c)(1), (d)(1). To define and measure the hearing aid compatibility of handsets, the Commission's rules reference a technical standard formulated by the ANSI Accredited Standards Committee C63® – Electromagnetic Compatibility which is part of the American National Standards Institute (ANSI Standard). A handset is considered hearing aid-compatible for acoustic coupling if it meets a rating of at least M3 under the applicable ANSI Standard and for inductive coupling if it meets a rating of at least T3. *See Third Report and Order*, 27 FCC Rcd at 3733 para. 4.

[176] 47 C.F.R. §§ 20.19(c)(2), (c)(3), (d)(2), (d)(3).

providers that offer two or fewer wireless handset models for any given covered air interface are exempt from these benchmarks for those models.[177]

58. To help ensure compliance with these benchmarks, the hearing aid compatibility rules also require wireless handset manufacturers and wireless service providers to submit annual reports to the Commission detailing the covered handsets that they offer for sale, the models that are hearing aid-compatible (and the specific rating), and other information relating to the requirements of the rule.[178] In June 2009, the Commission introduced the electronic FCC Form 655 as the mandatory form for filing these reports, and since that time, both service providers and manufacturers have filed reports using the electronic system.[179] Service provider compliance filings are due January 15 each year and manufacturer reports are due July 15 each year.[180]

59. After adoption of the fractional deployment benchmarks that were part of the ATIS consensus plan, WTB released a Public Notice in December 2010 seeking comment on, among other issues, the effectiveness of these fractional benchmarks.[181] Specifically, the *2010 Review PN* asked whether the Commission should move toward ensuring that all wireless handsets meet hearing aid compatibility standards.[182] The *2010 Review PN* sought comment on whether the fractional deployment benchmarks are working, whether they should be increased or restructured, and whether the Commission should move toward a rule that requires all wireless handsets to meet hearing aid compatibility standards.[183] The *2010 Review PN* asked how a 100 percent compatibility requirement would affect investment and innovation.[184] The *2010 Review PN* also asked whether the Commission should consider applying different benchmarks to different technologies in light of the circumstances surrounding each technology or on a market segmented basis, and whether it should increase the T3 benchmark to equal the M3 benchmark.[185]

60. In response to the *2010 Review PN*, commenters were divided on whether to modify the existing hearing aid compatibility deployment benchmarks, and whether to transition towards a 100 percent hearing aid compatibility requirement for all wireless handsets. HLAA and Whitmore supported rules and benchmarks that increase the number of hearing aid-compatible handsets offered to the public.[186] HLAA cited the results of an online survey of mobile phone use in which 78 percent of respondents thought that 100 percent of mobile phones should be hearing aid-compatible.[187] Blooston stated that it would support the Commission's move toward a 100 percent compatibility requirement as

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[177] *Id.* § 20.19(e) (*de minimis* exception).

[178] *Id*. § 20.19(i)(1)-(3).

[179] *See The Wireless Telecommunications Bureau Reminds Wireless Handset Manufacturers of Their Obligation to Report on the Status of Compliance with the Commission's Hearing Aid Compatibility Requirements by July 15, 2009*, Public Notice, 24 FCC Rcd 5821 (2009).

[180] 47 C.F.R. § 20.19(i)(1).

[181] *Comment Sought on 2010 Review of Hearing Aid Compatibility Regulations*, WT Docket No. 10-254, Public Notice, 25 FCC Rcd 17566, 17570 (2010) (*2010 Review PN*).

[182] *Id*.

[183] *Id*.

[184] *Id*.

[185] *Id*.

[186] *See* HLAA 2010 Review PN Comments at 5, 6-7; Whitmore 2010 Review PN Comments at 1.

[187] HLAA 2010 Review PN Comments at 2, 7. According to HLAA, in an effort to provide the Commission with information from people with hearing loss who use or have attempted to use mobile phones, it conducted its online survey of mobile phone use from January 28 through February 7, 2011 and received 728 comments. *See id.* at 1, app. A.

long as the requirement is applied only "at the manufacturer level" and if the Commission eliminated the need for service providers to file annual hearing aid compatibility reports.[188]

61. In contrast to those commenters, CTIA, TIA, and T-Mobile opposed moving toward a 100 percent compatibility requirement, arguing that such a requirement would limit manufacturers' ability to introduce new handsets, harm competition, and impede investment and innovation.[189] Further, they asserted that the wireless industry will be better prepared to engage in meaningful discussion on the merits of potential changes after it gains more experience in complying with the deployment benchmarks and expanded requirements adopted in 2008 and 2010.[190] T-Mobile also stated that handsets using GSM technology continue to face challenges in meeting the Commission's hearing aid compatibility requirements and such lingering challenges render it premature to consider new deployment benchmarks.[191]

62. On November 1, 2012, WTB released a follow-up Public Notice seeking comment on any developments since the *2010 Review PN* record closed that could affect any of the matters raised in that notice.[192] With regard to the fractional deployment benchmarks, the *2012 Refresh PN* asked whether the Commission's rules continue to ensure that a full range of hearing aid-compatible handsets are available to all consumers, and whether the benchmarks for inductive coupling capability remain appropriate given the increasing prevalence of telecoils in hearing aids.[193] The *2012 Refresh PN* did not specifically ask whether the fractional benchmark approach should be replaced with a 100 percent requirement, and the comments that the Commission received in response to the *2012 Refresh PN* did not directly address this issue. HLAA commented, however, that the Commission's deployment benchmarks did not sufficiently ensure the availability of a full range of hearing aid-compatible handsets and that the benchmarks for inductive coupling should be increased.[194] On the other hand, CCA argued that manufacturers are producing increasing numbers of hearing aid-compatible models.[195] CTIA argued that the existing fractional benchmark approach should be kept in place.[196] RTG asserted that the Commission should reduce the minimum number of T- and M-rated handsets that small carriers must offer.[197]

63. On November 21, 2014, WTB and CGB issued a Public Notice seeking updated information on whether the Commission's hearing aid compatibility rules for wireless handsets effectively meet the needs of individuals who are deaf and hard of hearing.[198] The *2014 Refresh PN* again sought comment on whether the Commission should move away from fractional deployment

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[188] *See* Blooston 2010 Review PN Comments at 2. Blooston further argued that the Commission should eliminate the requirement of annual reporting for Tier III service providers regardless of whether it adopts a 100 percent requirement. *See id.*

[189] *See* CTIA 2010 Review PN Comments at 5-6; T-Mobile 2010 Review PN Comments at 4; TIA 2010 Review PN Comments at 5.

[190] CTIA 2010 Review PN Comments at 4-5; T-Mobile 2010 Review PN Comments at 3-4; TIA 2010 Review PN Comments at 3-5.

[191] T-Mobile 2010 Review PN Comments at 2-3.

[192] *Updated Information and Comment Sought on Review of Hearing Aid Compatibility Regulations*, WT Docket No. 10-254, Public Notice, 27 FCC Rcd 13448 (2012) (*2012 Refresh PN*).

[193] *Id.* at 13451.

[194] HLAA 2012 Refresh PN Comments at 3-4.

[195] CCA 2012 Refresh PN Comments at 3.

[196] CTIA 2012 Refresh PN Comments at 6.

[197] RTG 2012 Refresh PN Comments at 2.

[198] *Request for Updated Information and Comment on Wireless Hearing Aid Compatibility Regulations*, WT Docket No. 07-250, Public Notice, 29 FCC Rcd 13969 (2014) (*2014 Refresh PN*).

benchmarks,[199] asked whether the current deployment approach effectively meets the communication needs of people with hearing loss,[200] and renewed WTB's request for comment on how consumers with hearing loss would benefit if all newly manufactured handsets were hearing aid-compatible.[201] The *2014 Refresh PN* also sought comment on the challenges that may exist with ensuring that all future handsets are compliant,[202] as well as on the costs and benefits associated with that approach.[203]

64. As with the *2010 Review PN*, comments in response to the *2014 Refresh PN* that address a 100 percent requirement again present divergent views. Groups representing those with hearing loss,[204] small and rural service providers,[205] and the Hearing Industries Association[206] support a 100 percent requirement. In a joint filing, several associations representing individuals with hearing loss (collectively, "Consumer Groups") argue that consumers with hearing loss should have access to the full range of handset choices available to other consumers.[207] On the other hand, AT&T, CTIA, the Mobile Manufacturers Forum, and TIA oppose moving to a 100 percent compliance regime.[208] CTIA states that the proposal to move to 100 percent would not significantly improve access to wireless products and services, but it would reduce industry flexibility to innovate.[209]

65. On November 12, 2015, three consumer advocacy organizations joined with three industry trade associations to submit a joint proposal (hereinafter, "Joint Consensus Proposal") for moving away from the current fractional regime.[210] In brief, the Joint Consensus Proposal envisions a staged increase in the applicable benchmark percentages, culminating in a 100 percent benchmark in eight years, subject to a formal assessment by the Commission of whether complete compatibility is achievable.

66. More specifically, the Joint Consensus Proposal provides that within two years of the effective date of the adoption of the new benchmark rules, 66 percent of wireless handset models offered to consumers should be compliant with our acoustic coupling radio frequency interference (M rating) and inductive coupling (T rating) requirements.[211] The proposal provides that within five years of the

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[199] *Id*.

[200] *Id*. at 13973-13974 para. 13.

[201] *Id*. at 13974 para. 14.

[202] *Id*. at 13974 para. 16.

[203] *Id*. at 13974-13975 para. 17.

[204] *See* ASHA 2014 Refresh PN Comments at 2; Consumer Groups 2014 Refresh PN Comments at 1; DHH-RERC 2014 Refresh PN Comments at 5, Lintz 2014 Refresh PN Comments at 3; Wireless RERC 2014 Refresh PN Comments at 12.

[205] *See* ARC 2014 Refresh PN Comments at 2; ATA 2014 Refresh PN Comments at 3; CCA 2014 Refresh PN Comments at 2; RWA 2014 Refresh PN Comments at 5.

[206] *See* HIA 2014 Refresh PN Comments at 7.

[207] Consumer Groups 2014 Refresh PN Comments at 2.

[208] *See* AT&T 2014 Refresh PN Reply Comments at 2; CTIA 2014 Refresh PN Comments at 3; MMF 2014 Refresh PN Comments at 4; TIA 2014 Refresh PN Comments at 8.

[209] CTIA 2014 Refresh PN Comments at 6.

[210] *See* Letter from James Reid, Senior Vice President, Government Affairs, TIA, Scott Bergmann, Vice President, Regulatory Affairs, CTIA, Rebecca Murphy Thompson, General Counsel, CCA, Anna Gilmore Hall, Executive Director, HLAA, Claude Stout, Executive Director, Telecommunications for the Deaf and Hard of Hearing, and Howard A. Rosenblum, Chief Executive Officer, National Association of the Deaf, to Marlene H. Dortch, Secretary, FCC, WT Docket Nos. 07-250, 10-254, filed Nov. 12, 2015 (Joint Consensus Proposal).

[211] *Id.* at 1.

effective date of new rules adopted, 85 percent of wireless handset models offered to consumers should be compliant with our M and T ratings.[212]

67. In addition to these two-year and five-year benchmarks, the proposal provides that "[t]he Commission should commit to pursue that 100% of wireless handsets offered to consumers should be compliant with [the M and T rating requirements] within eight years."[213] The Joint Consensus Proposal conditions the transition to 100 percent, however, on a Commission determination within seven years of the rules' effective date that reaching the 100 percent goal is "achievable."[214] The Joint Consensus Proposal prescribes the following process for making that determination:

> [The Commission shall create] a task force, including all stakeholders, identifying questions for exploration in year four after the effective date that the benchmarks described above are established. After convening, the stakeholder task force will issue a report to the Commission within two years.
>
> The Commission, after review and receipt of the report described above, will determine whether to implement 100 percent compliance with [the M and T ratings requirements] based on concrete data and information about the technical and market conditions involving wireless handsets and the landscape of hearing improvement technology collected in years four and five. Any new benchmarks resulting from this determination, including 100 percent compliance, would go into effect no less than twenty-four months after the Commission's determination.
>
> Consumer groups and the Wireless Industry shall work together to hold meetings going forward to ensure that the process will include all stakeholders: including at a minimum, consumer groups, independent research and technical advisors, wireless industry policy and technical representatives, hearing aid manufacturers and Commission representatives.[215]

68. The proposal provides that these new benchmarks should apply to manufacturers and carriers that offer six or more digital wireless handset models in an air interface, except that Tier I and Non-Tier I carriers would receive six months and eighteen months of additional compliance time, respectively, to account for availability of handsets and inventory turn-over rates.[216] The proposal states that the existing *de minimis* exception should continue to apply for manufacturers and carriers that offer three or fewer handset models in an air interface and that manufacturers and carriers that offer four or five digital wireless handset models in an air interface should ensure that at least two of those handsets models are compliant with our M and T rating requirements.[217] In addition, the proposal provides that these benchmarks should only be applicable if testing protocols are available for a particular air interface.[218]

B. Discussion

69. We propose to adopt the general approach discussed in the Joint Consensus Proposal, including the staged benchmark revisions, the Commission determination of achievability, and the process for moving to a 100 percent compliance standard, and we seek comment on this proposal and its various components. We recognize that the Joint Consensus Proposal reflects the intensive efforts and commitment of consumer and industry stakeholders to develop an approach that expands access for

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[212] *Id.* at 2.

[213] *Id.*

[214] *Id.*

[215] *Id*. at 2.

[216] *Id*. at n.1, n.2.

[217] *Id*.

[218] *Id*.

consumers with hearing loss while preserving the flexibility that allows innovation to flourish. We note that the current hearing aid compatibility rules, including the current benchmarks, are also based on a consensus proposal developed and submitted in 2007 by representatives of the wireless industry and consumers with hearing loss. In substantially adopting the terms of that proposal, the Commission found that broad multi-stakeholder support "testifie[d] to the success of the proffered proposals in meeting the goals of the Hearing Aid Compatibility Act, and in addressing the concerns of manufacturers and service providers while still advancing the interests of consumers with hearing loss in having greater access to advanced digital wireless communications."[219] Given the success of the previous consensus proposal, and recognizing that the Joint Consensus Proposal was generated by the very stakeholders that it will impact most directly, we consider favorably the Joint Consensus Proposal -- particularly to the extent that it moves toward a 100 percent hearing aid compatibility requirement without discouraging or impairing the development of improved technology. We also believe that an approach developed through consensus among the relevant stakeholders may yield outcomes that most effectively leverage innovative technological solutions.

70. Accordingly, below, we seek comment on the merits of the Joint Consensus Proposal, both with respect to its overall effectiveness in fulfilling Congress's intent to ensure access to telephones for people with hearing loss under Section 710 of the Communications Act as amended by the CVAA, and more specifically with respect to its various components as these have been presented jointly by the consumer and industry stakeholders. We also seek comment on several related matters.

1. The Joint Consensus Proposal

71. *Benchmarks.* First, we ask commenters to address the timeframes that the proposal describes as well as the process for the Commission's determination of achievability. The Joint Consensus Proposal provides that within two years of the effective date of new rules adopted, 66 percent of wireless handsets offered to consumers should be compliant with our acoustic coupling radio frequency interference (M rating) and inductive coupling (T rating) requirements.[220] The proposal provides that this benchmark should apply directly to manufacturers and carriers that offer six or more digital wireless handset models in an air interface, with additional compliance periods for Tier I and Non-Tier I carriers of six months and eighteen months, respectively, to account for limits on handset availability and inventory turn-over rates.[221] The proposal provides that within five years of the effective date of new rules adopted, 85 percent of wireless handsets offered to consumers should be compliant with our M and T ratings.[222]

72. Are these benchmarks appropriate for all covered entities and handsets? How will these benchmarks effectively meet the needs of consumers while protecting innovation and competition for current and future operations? We ask commenters who recommend different benchmarks for small entities, for certain technologies or services, or for meeting the standards for acoustic coupling and inductive coupling to explain their reasoning in detail, along with justifications for why their preferred alternatives would be better than the approach contained in the Joint Consensus Proposal, taking into consideration the purposes and goals of Section 710. The Joint Consensus Proposal provides that the Commission should commit to pursuing a goal of 100 percent compatibility within eight years of the effective date at the time the revised benchmarks are established.[223] We seek comment on this eight-year period. Would a longer or shorter transition period be more appropriate and, if so, why?

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[219] *First Report and Order,* 23 FCC Rcd at 3407 para. 2.

[220] Joint Consensus Proposal at 1.

[221] *Id*. at n.1.

[222] *Id.* at 2.

[223] *Id*. at 2.

73. *De minimis exception to two- and five-year benchmarks.* As noted above, the proposal recommends that the existing *de minimis* exception to the benchmarks should continue to apply for manufacturers and carriers that offer three or fewer handset models in an air interface and that the rule should further provide that manufacturers and carriers that offer four or five digital wireless handset models in an air interface should ensure that at least two of those handsets models are compliant with Sections 20.19(b)(1) and (b)(2).[224] We seek comment on these proposed exceptions to the new benchmarks.

74. *Determination of Achievability.* The Joint Consensus Proposal conditions the transition to 100 percent hearing aid compatibility on a Commission determination, after the receipt and review of a report from a newly established task force, that reaching the 100 percent goal is "achievable." The Joint Consensus Proposal also provides that the Commission should base its achievability determination on "concrete data and information" that were "collected in years four and five" about the technical and market conditions involving wireless handsets and the landscape of hearing improvement technology.[225] Regarding the proposed task force, the Joint Consensus Proposal recommends "[c]reating a task force, including all stakeholders, identifying questions for exploration in year four after the effective date that the benchmarks described above are established." The Joint Consensus Proposal further provides that "[a]fter convening, the stakeholder task force will issue a report to the Commission within two years" to inform the Commission's determination of whether 100 percent compatibility is achievable.

75. We seek comment on the proposed process for determining achievability. For example, in determining achievability, should the Commission limit itself to assessing information and data collected in years four and five, or should it also take account of more recent data and information that may be available at that time? Should the Commission seek public comment in connection with reaching the achievability determination? Are there any aspects of the Joint Consensus Proposal's benchmarks, timing, and achievability determination that we should not adopt? Should we supplement them with any additional requirements or considerations? Regarding the proposed task force, we seek comment on how and through what process or mechanism the Commission should establish the task force, on whether the task force should be established without delay even if its primary functions would not begin until year four, and on how the task force should be structured and its membership determined, including how to ensure that "all stakeholders" are adequately represented. We also seek comment on which issues or questions the Commission should ask the task force to explore, on the scope and content of the task force's report, and on the processes or rules, if any, that should govern its activities.

76. We also seek comment on how the Commission should determine achievability, including the appropriate substantive definition, standard, or framework to govern the Commission's determination. For example, should the determination of achievability be based on relevant factors specified in Section 710, *e.g.*, technological feasibility, marketability, and impact on the use and development of technology? Alternatively, we note that the CVAA contains a specific definition of achievability that applies in the context of Sections 716 and 718 of the Act. Specifically, Section 716(g) of the Act defines the term "achievable" to mean "with reasonable effort or expense, as determined by the Commission."[226] Section 716 requires providers of advanced communications services and manufacturers of equipment used for those services to make their offerings accessible to and usable by individuals with disabilities, unless not achievable.[227] Section 718 requires manufacturers of telephones used with public mobile services to ensure that web browsers on those devices are accessible to and usable by individuals who are blind or have a visual impairment, unless doing so is not achievable.[228] Given that these sections

[224] *Id*.

[225] *Id*.

[226] 47 U.S.C. § 616(g).

[227] *Id*. at §§ 616(a), (b).

[228] *Id*. at § 619(a).

similarly contain mandates for equipment accessibility by people with disabilities, is it appropriate to apply the CVAA achievability definition here as well? Or would an alternative be preferable in the context of the Joint Consensus Proposal?

77. In considering whether the 100 percent goal is achievable, should we consider innovative approaches, including standards or technologies that are different from the currently applicable ANSI standard, that can achieve telephone access for consumers with hearing loss? For example, Apple has explained that it "work[ed] outside the existing Part 20 framework to advance its goal of dramatically improving the user experience for individuals with hearing loss," and that it developed a new hearing aid platform that relies on Bluetooth® technology.[229] We urge stakeholders to think broadly in developing alternative approaches, whether they build on Apple's experience or other efforts, as we are confident that creativity and innovation can significantly advance the interests of consumers with hearing loss without hobbling wireless innovation. We are particularly interested in commenters' insights regarding alternative compliance approaches that can, in a technologically neutral manner, ensure that devices are fully accessible for users with hearing loss.

2. Stakeholders' Suggested Requests for Comment

78. The Joint Proposal itself recommends that the Commission seek comment on various issues related to modifying the benchmark regime. In particular, it suggests that we seek comment on the following issues, which we now do:

> The Commission should seek comment in the NPRM on how the FCC's rules should be modified to ensure manufacturers and service providers meet the new benchmarks while preserving the ability to offer innovative wireless handsets in a rapidly changing market. For example, the Commission should seek comment on whether wireless handsets can be deemed compliant with the HAC rules through means other than by measuring RF interference and inductive coupling. In addition, the Commission should seek comment on which compliance processes, such as waivers, should be modified to accommodate innovation and carriers', especially rural and regional carriers', handset inventories and turn-over rates, within a compliance regime with the enhanced benchmarks described above. The Commission also should seek comment on whether disclosures to consumers could serve as a means of compliance for wireless handsets utilizing new air interfaces or technologies where HAC standards or testing protocols are not yet available. In addition to examining the effect on innovation, the Commission should seek comment on the impact of the new benchmarks on U.S. product offerings.
>
> The Commission should also seek comment on the best ways to improve collaboration on consumer education including but not limited to: making information about the HAC ratings of wireless handsets and hearing aids more easily discoverable and accessible by consumers as well as how HAC information should be updated on websites in a timely manner that is usable by consumers. The Commission should also request comment on how the hearing aid industry and other relevant stakeholders should take measures to ensure that consumers have improved access to the HAC ratings of hearing aids.[230]

79. In connection with the suggested questions regarding waivers, we also seek comment on how to best to apply the Section 710(b)(3) waiver process in the context of the Joint Consensus Proposal. Should we establish a fixed time period within which the Commission must take action on waiver requests? If so, would 180 days be an appropriate amount of time, considering both the need to develop a full record and the importance of avoiding delay in the introduction of new technologies? If not 180 days,

[229] Apple 2014 Refresh PN Reply Comments at 3.

[230] *Id.* at 2-3.

what amount of time would be appropriate? If we establish a time period for Commission action, are there situations in which the Commission should have the ability to extend the deadline?

3. Analysis of Statutory Factors.

80. We seek comment on whether the Joint Consensus Proposal is consistent with and warranted under Section 710 of the Communications Act. Section 710(b)(2)(B) directs the Commission to use a four-part test to periodically reassess exemptions from the hearing aid compatibility requirements for wireless handsets.[231] Specifically, the statute directs the Commission to revoke or limit an exemption if it finds that (1) continuing the exemption without such revocation or limitation would have an adverse effect on individuals with hearing loss; (2) compliance with the hearing aid compatibility requirements would be technologically feasible for devices to which the exemption applies; (3) the cost of compliance would not increase costs to such an extent that the newly covered devices could not be successfully marketed; and (4) revoking or limiting the exemption is in the public interest.[232] We seek comment on whether this analysis is applicable to the changes proposed in the Joint Consensus Proposal, whether such changes would meet this four-part test, and whether the proposal requires any modifications to satisfy the statutory standard.

81. Section 710 further directs that, in any rulemaking to implement hearing aid compatibility requirements, the Commission should (1) specifically consider the costs and benefits to all telephone users, including people with and without hearing loss, (2) ensure that hearing aid compatibility regulations encourage the use of currently available technology and do not discourage or impair the development of improved technology, and (3) use appropriate timetables and benchmarks to the extent necessary due to technical feasibility or to ensure marketability or availability of new technologies to users.[233] We therefore ask commenters to address these factors in their analysis of the proposal and to explain whether modifications are warranted.

4. Standards and Technologies for Meeting Compatibility.

82. As discussed above, and as recommended by the Joint Consensus Proposal, we seek comment on "whether wireless handsets can be deemed compliant with the HAC rules through means other than by measuring RF interference and inductive coupling."[234] In this section, we further explore this issue.

83. We seek comment on whether the compatibility requirement -- revised pursuant to the Joint Consensus Proposal or in any other manner -- should specifically require both a minimum M3 and minimum T3 rating, or whether manufacturers should be allowed to meet the requirement by incorporating other methods of achieving compatibility with hearing aids, such as Bluetooth®.[235] We are mindful that some innovative advances in accessibility features have resulted from outside-of-the-box solutions, and we do not wish to discourage these types of pioneering advances.[236] We seek comment on the extent to which such alternative approaches are able to meet the communications needs of people with hearing loss. Specifically, in addition to commenting on the effectiveness of such alternatives for aiding in comprehending telephone conversation, we ask commenters to provide information about the cost of such devices to consumers, as well as the ease of procuring devices needed to use such alternatives. Given these criteria, what approaches should the Commission recognize as viable alternatives, how

[231] 47 U.S.C. § 610(b)(2)(B).

[232] *Id*.

[233] *Id*. § 610(e).

[234] Joint Consensus Proposal at 2.

[235] *See* MMF 2014 Refresh PN Comments at 5; TIA 2014 Refresh PN Comments at 9.

[236] *See* Apple 2014 Refresh PN Reply Comments at 2.

should such alternative approaches be incorporated into the hearing aid compatibility rules, what customer disclosures should be required for alternative approaches, and what standards should apply to the alternative approaches, particularly with respect to testing and rating alternative devices and technologies? How, if at all, would such alternative approaches impact the efficacy of the Joint Consensus Proposal?

84. What are the costs and benefits of allowing these alternative approaches? For example, Apple proposes that the Commission apply the ANSI standards as a "safe harbor" for hearing aid compatibility but to "reward innovators for finding other, better solutions that result in real accessibility even if they do not meet the ANSI standards."[237] Although Apple proposes this approach as an alternative method of meeting the existing benchmarks, we seek comment on whether to adopt it in conjunction with the Joint Consensus Proposal. We also seek comment on how to determine hearing aid compatibility outside of compliance with the applicable ANSI standard. We invite commenters to consider alternatives of this kind when evaluating the Joint Consensus Proposal.[238]

5. Exceptions.

85. The current *de minimis* exception provides that small manufacturers and service providers that offer two or fewer digital wireless handset models operating over a particular air interface are exempt from the benchmark deployment requirements in connection with that air interface, while larger manufacturers and service providers with two or fewer handset models have a limited obligation.[239] The provision further states that any manufacturer or service provider that offers three digital wireless handset models operating over a particular air interface must offer at least one such handset model that meets the M3 and T3 standards for that air interface.[240] Although the Joint Consensus Proposal recommends retaining this exception for the new two and five year benchmarks (with an added provision for entities offering four or five handsets), it does not expressly address whether and how the exception will continue to apply under a subsequent 100 percent requirement.

86. We seek comment on whether to preserve the *de minimis* exception in whole or in part in the event we adopt a 100 percent requirement. Should we preserve the exception during the transitional periods prior to implementation of a 100 percent compatibility requirement, as proposed in the Joint Consensus Plan? Alternatively, should we phase out the *de minimis* exception over the course of the transitional periods? Should we preserve the exception even in the event of a 100 percent compatibility obligation? How would the *de minimis* exception operate under a 100-percent compatibility requirement? If a qualifying manufacturer were to offer a non-compliant handset, could *any* provider make it available to consumers, or would it only be available to providers that are also eligible for the exception? If such handsets were unavailable to providers that were not eligible for the exception, would preserving the exception effectively limit consumer choice in many cases? If so, are there distinct aspects or features of the exception that we should preserve?

87. We seek comment on whether we should include any other exceptions in the event we adopt a 100 percent compatibility requirement, and how such exceptions are consistent with and

[237] *Id*. at 5.

[238] *See supra* paras. 77-78.

[239] 47 C.F.R. § 20.19(e)(1). Under certain circumstances, manufacturers that offer two or fewer handsets on an air interface are exempt from the hearing aid compatibly requirements except for the annual reporting requirement. This exception applies to manufacturers that have had less than 750 employees for at least two years, and have not been offering handsets over an air interface for at least two years. Manufacturers that have had more than 750 employees for at least two years, and that have been offering handsets over an air interface for at least two years that offer one or two handsets on that air interface must offer at least one handset model compliant with the hearing aid compatibility provisions.

[240] *Id.* § 20.19(e)(2).

warranted under Section 710's requirements. We seek comment on whether there are particular air interfaces, such as GSM operating in the 1900 MHz band, which will face particular difficulties in meeting a 100 percent compatibility requirement and, if so, whether and how such difficulties should be specifically addressed or accommodated under a 100 percent compatibility requirement.[241] Are there new technological solutions that should better enable GSM/1900 handsets to achieve hearing aid compatibility and, if so, what requirements should apply to GSM/1900 handsets given such solutions?

6. Legacy Models.

88. In the event we adopt a 100 percent compatibility requirement, we seek comment on the appropriate treatment of legacy models. Should non-hearing aid-compatible handsets that received equipment authorization prior to the end of any transition period be grandfathered to better ensure that manufacturers are able to recoup their investments in their legacy handsets? We seek comment on this option, on alternative approaches to grandfathering, and on whether, following some additional period after a transition to a 100 percent compatibility regime, we should require hearing aid compatibility for all handset models offered (as opposed to just models released after transitioning to the 100 percent regime).

89. We further seek comment on how best to ensure that people with hearing loss are able to find hearing aid compatible phones that can meet their communication needs during the transition period to a 100 percent compatibility requirement. We note that Section 717(d) of the Communications Act, added by the CVAA, requires the Commission to maintain a clearinghouse of information about accessible products and services required under Sections 255, 716, and 718 of the Act.[242] The Commission launched its Accessibility Clearinghouse in October 2011. Among other things, this database allows consumers to search for wireless handsets with accessibility features that meet the needs of various disabilities,[243] including hearing aid compatible handsets.[244] Does this Accessibility Clearinghouse, or the websites upon which it relies, effectively provide the information needed by consumers to locate hearing aid compatible phones? In other words, does it enable a consumer to determine without difficulty whether any particular handset model is hearing aid compliant? If not, we seek comment on the format and type of information that we should include in the Accessibility Clearinghouse in order to empower consumers to make educated decisions about their handset purchases. We note, for example, that currently, manufacturers are required to electronically file annual compliance reports with the Commission on FCC Form 655 in July of each year and service providers must electronically file this form with the Commission in January of each year.[245] These reports include, among other information, the M and T ratings for each handset.[246] Is there a way that such information can be used to automatically supplement the information now provided in the Accessibility Clearinghouse database? In addition, in the event we adopt a 100 percent compatibility requirement, will it be necessary to continue providing information on hearing aid compatible phones in the Accessibility Clearinghouse? It is not our intention to create additional reporting burdens on manufacturers and service providers,

[241] *See* Letter from Michael Milligan, Mobile Manufacturers Forum, to Marlene H. Dortch, WT Docket Nos. 07-250, 10-254, filed Nov. 2, 2015, at 2 (asserting technical challenges "would make meeting a 100% compliance requirement difficult particularly in relation to the GSM 1900 MHz band").

[242] 47 U.S.C. § 618(d).

[243] The Accessibility Clearinghouse can be accessed at http://fcc.gov/AccessibilityClearinghouse. The Accessibility Clearinghouse uses information contained on CTIA's accessibility web site, AccessWireless.org, which in turn, has been largely derived from the Global Accessibility Reporting Initiative (GARI) of the Mobile Manufacturers Forum. *See* www.accesswireless.org.

[244] *See* http://www.accesswireless.org/Find.aspx. From this link, visitors can search for handsets sold by particular manufacturers and service providers.

[245] *See* 47 C.F.R. § 20.19(i).

[246] *See id*. at § 20.19(i)(2).

therefore, we seek comment on approaches to ensuring that the improvements contemplated above do not impose such burdens.

90. We also seek comment on whether service providers should be able to rely on information in the Accessibility Clearinghouse and on Form 655 to the extent that it reflects compliance information submitted by manufacturers. Are there any reasons service providers should not be able to rely on the Accessibility Clearinghouse or Form 655? For example, how should we treat a service provider if it offers a handset that a manufacturer has included in the Accessibility Clearinghouse and indicated to be compliant in the manufacturer's annual FCC Form 655, even if it is later determined that the handset does not in fact meet the hearing aid compatibility requirements? Should such information create a presumption that the service provider is not in breach of our hearing aid compatibility rules?

7. Burden Reduction.

91. In the event we ultimately transition to a 100-percent compatibility regime, we propose to ease or eliminate the reporting, disclosure, labeling, and other requirements imposed under the current rules. We seek comment on the extent to which these requirements are unnecessary or unwarranted in the event we move to a 100 percent regime, and on the costs and benefits of easing such requirements as they relate to consumers, manufacturers, and service providers.

92. Currently, manufacturers are required to electronically file annual compliance reports with the Commission on FCC Form 655 in July of each year and service providers must electronically file this form with the Commission in January of each year.[247] We seek comment on whether to end the reporting requirements for manufacturers and service providers in the event we move to a 100 percent regime or at some point thereafter. We note that numerous parties, especially rural and small service providers, have asserted that preparing these annual reports is burdensome.[248] While these reports help the Commission monitor compliance with the hearing aid compatibility benchmarks, will such monitoring still be necessary, and will the benefits of these reports still outweigh the burdens, in the event we move to a 100 percent compatibility regime? Alternatively, should we eliminate the reporting requirement only for service providers, on the grounds that manufacturers' reports will be sufficient under a 100 percent regime to ensure all models available to consumers are compliant? Should we maintain the reporting requirement for other groups for a certain period of time while non-compliant legacy models remain in inventory? Should we maintain reporting requirements for manufacturers and service providers who offer handsets that are exempt from hearing aid compatibility requirements or can be used for services that are exempt from these rules? We note that the Joint Consensus Plan would establish two new benchmarks, at year two and year five. Should we modify the content or applicability of the reporting requirements that apply during the period following either the two or five year benchmark but prior to the implementation of a 100 percent compatibility requirement?

93. The existing hearing aid compatibility rules also require manufacturers and service providers to label their hearing aid-compatible handsets with the appropriate M and T ratings and provide information on the rating system, and to meet certain disclosure requirements for hearing aid-compatible handsets that are not compatible over all their operations.[249] The rules also require manufacturers and service providers to provide information on their websites, such as a list of all hearing aid-compatible models currently offered, the associated rating information for those handsets, and an explanation of the rating system.[250] We seek comment on whether, in the event we move to a 100 percent compatibility regime, the current labeling and disclosure requirements should be eliminated, simplified, or amended.

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[247] *See id*. at § 20.19(i).

[248] ARC 2014 Refresh PN Comments at 2; ATA 2014 Refresh PN Comments at 3; CCA 2014 Refresh PN Comments at 2; RWA 2014 Refresh PN Comments at 6.

[249] *See* 47 C.F.R. § 20.19(f)(1).

[250] *See id*. at § 20.19(h).

Alternatively, should we continue to require disclosure of rating information in packaging and on websites for hearing aid-compatible handset models so that consumers can distinguish between M3 and M4 ratings, between T3 and T4 ratings, and between hearing aid-compatible handsets and grandfathered non-compatible models?

94. We also seek comment on whether to eliminate the product refresh rule applicable to manufacturers and the differing levels of functionality rule applicable to service providers if the Commission moves to a 100 percent compatibility regime or adopts other modifications to the benchmarks.[251] The product refresh rule requires manufacturers that offer new handset models in a year to ensure that a certain number of the new models are hearing aid-compatible.[252] The differing levels of functionality rule requires service providers to offer a range of hearing aid-compatible models with differing levels of functionality in terms of capabilities, features, and price.[253] In the context of benchmarks that do not require 100 percent of handsets to be hearing aid-compatible, these additional requirements help to ensure that people with hearing loss have access to handsets with the latest features and functions and at different price points. We tentatively conclude that a refresh rule would serve no purpose after a 100 percent requirement takes effect, given that it merely imposes a fractional obligation on new models, which would be entirely subsumed by the new requirement. We seek comment on this conclusion. We further seek comment on whether a 100 percent requirement on manufacturers would also be sufficient to ensure that service providers offer a range of hearing aid-compatible models with differing levels of functionality. Will maintaining the differing levels of functionality requirement help to ensure that low-income Americans with hearing loss have access to affordable hearing aid-compatible handsets?

95. Finally, to the extent we move to a 100 percent compatibility regime, we seek comment on whether we should eliminate or otherwise ease the deployment benchmarks applicable to the overall handset portfolios of manufacturers and service providers. Will benchmarks remain necessary, even after a transition to a 100 percent requirement, to ensure that manufacturers and service providers do not weight their portfolios toward non-compliant grandfathered handsets? If so, for how long? Would an additional two-year period be an appropriate time-frame to sunset these service provider requirements? Alternatively, should we eliminate deployment benchmarks for Tier III service providers immediately upon moving to a 100 percent regime, but preserve it for Tier I and II service providers for an additional two or three years? What are the costs and benefits of eliminating the benchmarks on service providers if all or nearly all new models offered by manufacturers will be compliant?

8. Alternative to the Joint Consensus Proposal.

96. We seek comment on whether and how to revise the current benchmark system in the event that, based on the record we receive, we determine not to adopt the Joint Consensus Proposal. Should we pursue another approach to transition to a 100 percent compatibility requirement, consistent with the factors identified in Section 710? What would be an appropriate transition period? Should we consider exceptions, waivers, burden reductions, legacy handset rules, and alternative approaches to measuring compliance, as discussed above in connection with the Joint Consensus Proposal?

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[251] *Id*. at §§ 20.19(c)(1)(ii), 20.19(d)(4)(ii).

[252] *Id*. § 20.19(c)(1)(ii). Specifically, if a manufacturer offers three models per air interface, at least one new model rated M3 or higher must be introduced every calendar year. For manufacturers that offer four or more models operating over a particular air interface, the number of models rated M3 or higher that must be new models introduced during the calendar year is equal to one-half of the minimum number of models rated M3 or higher required for that air interface. For manufacturers that have had more than 750 employees for at least two years and that offer two models over an air interface for which they have been offering handsets for at least two years, at least one new model rated M3 or higher must be introduced every calendar year.

[253] *Id.* § 20.19(d)(4)(ii).

V. PROCEDURAL MATTERS

A. Final Regulatory Flexibility Analysis

97. As required by the Regulatory Flexibility Act of 1980 ("RFA"),[254] the Commission has prepared a Final Regulatory Flexibility Analysis ("FRFA") relating to this Fourth Report and Order. The FRFA is set forth in Appendix D.

B. Final Paperwork Reduction Act Analysis

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

C. Initial Regulatory Flexibility Analysis

99. As required by the Regulatory Flexibility Act, *see* 5 U.S.C. § 603, 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 the Notice of Proposed Rulemaking. The IRFA is set forth in Appendix E. Written public comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines as comments filed in response to the Notice of Proposed Rulemaking and must have a separate and distinct heading designating them as responses to the IRFA. The Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, will send a copy of the Notice of Proposed Rulemaking, including the IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.

D. Initial Paperwork Reduction Act Analysis

100. The Notice of Proposed Rulemaking contains proposed modified information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public and the Office of Management and Budget (OMB) to comment on the information collection requirements contained in this document, as required by the Paperwork Reduction Act of 1995, Public Law 104-13. In addition, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, *see* 44 U.S.C. 3506(c)(4), we seek specific comment on how we might further reduce the information collection burden for small business concerns with fewer than 25 employees.

E. Congressional Review Act

101. The Commission will include a copy of this Fourth Report and Order and Notice of Proposed Rulemaking in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act, *see* 5 U.S.C. § 801(a)(1)(A).

F. Other Procedural Matters

1. *Ex Parte* Rules – Permit-But-Disclose

102. The proceeding that the Notice of Proposed Rulemaking initiates shall be treated as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules.[255] Persons making

[254] *See* 5 U.S.C. § 604. The RFA, *see* 5 U.S.C. §§ 601-612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 ("SBREFA"), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996). The SBREFA was enacted as Title II of the Contract With America Advancement Act of 1996 (CWAAA).

[255] 47 C.F.R. §§ 1.1200 *et seq.*

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

2. Comment Filing Procedures

103. Pursuant to Sections 1.415 and 1.419 of the Commission's rules, 47 CFR §§ 1.415, 1.419, interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS). *See Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121 (1998).

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: http://fjallfoss.fcc.gov/ecfs2/.
- Paper Filers: Parties 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.

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

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

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

106. For further information regarding the Fourth Report and Order contact Michael Rowan, Wireless Telecommunications Bureau, (202) 418-1883, e-mail Michael.Rowan@fcc.gov, and for further information regarding the Notice of Proposed Rulemaking contact Eli Johnson, Wireless Telecommunications Bureau (202) 418-1395, e-mail Eli.Johnson@fcc.gov.

VI. ORDERING CLAUSES

107. Accordingly, IT IS ORDERED, pursuant to Sections 4(i), 303(r), and 710 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(r), and 610, this Fourth Report and Order IS HEREBY ADOPTED.

108. IT IS FURTHER ORDERED that the rule amendments set forth in Appendix B WILL BECOME EFFECTIVE 30 days after their publication in the Federal Register.

109. IT IS FURTHER ORDERED pursuant to Sections 4(i), 303(r), and 710 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(r), and 610, this Notice of Proposed Rulemaking IS HEREBY ADOPTED.

110. 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 30 days after publication of the Notice of Proposed Rulemaking in the Federal Register and reply comments on or before 45 days after publication in the Federal Register.

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

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

APPENDIX A

List of Commenters

2010 Further NPRM

Comments

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

American National Standards Institute Accredited Standards Committee C63® (ANSI ASCC63®)
Blooston
CERC
CTIA
Globalstar, Inc. (Globalstar)
Inmarsat, Inc. (Inmarsat)
Iridium Satellite LLC (Iridium)
TIA
T-Mobile USA, Inc. (T-Mobile)

2010 Review PN

Comments

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 PN

Comments

ANSI ASCC63®
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)

2014 Refresh PN

Comments

Alaska Rural Coalition (ARC)
Alaska Telephone Association (ATA)
American Speech-Language-Hearing Association (ASHA)
Competitive Carriers Association (CCA)
Hearing Loss Association of America (Consumer Groups)
CTIA–The Wireless Association® (CTIA)
Hearing Industries Association (HIA)
Inmarsat, Inc. (Inmarsat)
Iridium Satellite LLC (Iridium)
Janice Schacter Lintz (Lintz)
Mobile Manufacturers Forum (MMF)
Motorola Solutions, Inc. (Motorola Solutions)
RERC on Technology for Individuals who are Deaf or Hard of Hearing (DHH-RERC)
Rural Wireless Association, Inc. (RWA)
Telecommunications Industry Association (TIA)
Wireless RERC

Reply Comments

Apple Inc.
AT&T Services, Inc. (AT&T)
Consumer Groups
Cordova Wireless Communications, LLC (Cordova)
CTIA
HIA
Land Mobile Communications Council (LMCC)
TIA

APPENDIX B

Final Rules

Part 20 of Title 47 of the Code of Federal Regulations is amended as follows:

1. The authority citation for Part 20 is amended as follows:

AUTHORITY: 47 U.S.C. 151, 152(a) 154(i), 157, 160, 201, 214, 222, 251(e), 301, 302, 303, 303(b), 303(r), 307, 307(a), 309, 309(j)(3), 316, 316(a), 332, 610, 615, 615a, 615b, 615c, unless otherwise noted.

2. Section 20.19 is amended by revising paragraphs (a)(1)-(2), (a)(3)(iv), and (b)(3)(i) to read as follows:

§ 20.19 Hearing aid-compatible mobile handsets.

(a) * * *

(1) *Service Providers*.

(i) On or after January 1, 2018 for Tier I carriers and April 1, 2018 for service providers other than Tier I carriers, the hearing aid compatibility requirements of this section apply to providers of digital mobile service in the United States to the extent that they offer terrestrial mobile service that enables two-way real-time voice communications among members of the public or a substantial portion of the public, including both interconnected and non-interconnected VoIP services, and such service is provided over frequencies in the 698 MHz to 6 GHz bands.

(ii) Prior to January 1, 2018 for Tier I carriers and April 1, 2018 for service providers other than Tier I carriers, the hearing aid compatibility requirements of this section apply to providers of digital CMRS in the United States to the extent that they offer real-time, two-way switched voice or data service that is interconnected with the public switched network and utilizes an in-network switching facility that enables the provider to reuse frequencies and accomplish seamless hand-offs of subscriber calls, and such service is provided over frequencies in the 698 MHz to 6 GHz bands.

(2) *Manufacturers*. On or after January 1, 2018, the requirements of this section also apply to the manufacturers of the wireless handsets that are used in delivery of the services specified in paragraph (a)(1)(i) of this section. Prior to January 1, 2018, the requirements of this section also apply to the manufacturers of the wireless handsets that are used in delivery of the services specified in paragraph (a)(1)(ii) of this section.

(3) * * *

(iv) *Service provider* refers to a provider of digital mobile service to which the requirements of this section apply.

* * * * *

(b) * * *

* * * * *

(3) * * *

(i) Except as provided in paragraph (b)(3)(ii) of this section, a wireless handset used for digital mobile service only over the 698 MHz to 6 GHz frequency bands is hearing aid-compatible with regard to radio frequency interference or inductive coupling if it meets the applicable technical standard set forth in paragraph (b)(1) or (b)(2) of this section for all frequency bands and air interfaces over which it operates, and the handset has been certified as compliant with the test requirements for the applicable standard pursuant to § 2.1033(d) of this chapter. A wireless handset that incorporates operations outside the 698 MHz to 6 GHz frequency bands is hearing aid-compatible if the handset otherwise satisfies the requirements of this paragraph.

* * * * *

APPENDIX C

Proposed Rules

The Federal Communications Commission proposes to amend Part 20 of Title 47 of the Code of Federal Regulations as follows:

1. The authority citation for Part 20 reads as follows:

AUTHORITY: 47 U.S.C. 151, 152(a) 154(i), 157, 160, 201, 214, 222, 251(e), 301, 302, 303, 303(b), 303(r), 307, 307(a), 309, 309(j)(3), 316, 316(a), 332, 610, 615, 615a, 615b, 615c, unless otherwise noted.

2. The Federal Communications Commission proposes to amend Section 20.19 by revising the introductory language to paragraph (c), adding paragraph (c)(1)(i)(C), revising paragraph (c)(1)(ii), adding paragraphs (c)(2)(iii) and (c)(3)(iii), revising paragraph (c)(4)(ii) and the introductory language to paragraph (d), adding paragraphs (d)(1)(iii), (d)(2)(iii), and (d)(3)(iii), revising paragraph (d)(4)(ii), adding paragraphs (e)(3) and (e)(4), revising paragraph (i), and adding paragraph (m), to read as follows:

§ 20.19 Hearing aid-compatible mobile handsets.

* * * * *

(c) Phase-in of requirements relating to radio frequency interference. Until [eight years after the effective date of the rules], the following applies to each manufacturer and service provider that offers wireless handsets used in the delivery of the services specified in paragraph (a) of this section and that does not fall within the *de minimis* exception set forth in paragraph (e) of this section.

* * * * *

(c)(1)(i)(C) [Beginning two years after the effective date of the rules], each manufacturer of wireless handsets models must ensure that 66 percent of the wireless handset offered to consumers shall comply with the requirements set forth in paragraph (b)(1) of this section. [Beginning five years after the effective date of the rules], each manufacturer of wireless handsets must ensure that 85 percent of the wireless handset models offered to consumers shall comply with the requirements set forth in paragraph (b)(1) of this section.

* * * * *

(c)(1)(ii) *Refresh requirement*. Until [eight years after the effective date of the rules], for each year a manufacturer elects to produce a new model, each manufacturer that offers any new model for a particular air interface during the calendar year must "refresh" its offerings of hearing aid-compatible handset models by offering a mix of new and existing models that comply with paragraph (b)(1) of this section according to the following requirements:

* * * * *

(c)(2)(iii) [Beginning two and half years after the effective date of the rules], ensure that 66 percent of the wireless handset models offered to consumers shall comply with the requirements set forth in paragraph (b)(1) of this section. [Beginning five and half years after the effective date of the rules], ensure that 85 percent of the wireless handset models offered to consumers shall comply with the requirements set forth in paragraph (b)(1) of this section.

* * * * *

(c)(3)(iii) [Beginning three and half years after the effective date of the rules], ensure that 66 percent of the wireless handset models offered to consumers shall comply with the requirements set forth in paragraph (b)(1) of this section. [Beginning six and half years after the effective date of the rules], ensure that 85 percent of the wireless handset models offered to consumers shall comply with the requirements set forth in paragraph (b)(1) of this section.

* * * * *

(c)(4)(ii) *Offering models with differing levels of functionality*. Until [eight years after the effective date of the rules], each service provider must offer its customers a range of hearing aid-compatible models with differing levels of functionality (*e.g*., operating capabilities, features offered, prices). Each provider may determine the criteria for determining these differing levels of functionality, and must disclose its methodology to the Commission pursuant to paragraph (i)(3)(vii) of this section.

* * * * *

(d) Phase-in of requirements relating to inductive coupling capability. Until [eight years after the effective date of the rules], the following applies to each manufacturer and service provider that offers wireless handsets used in the delivery of the services specified in paragraph (a) of this section and that does not fall within the *de minimis* exception set forth in paragraph (e) of this section.

* * * * *

(d)(1)(iii) [Beginning two years after the effective date of the rules], each manufacturer of wireless handsets models must ensure that 66 percent of the wireless handset offered to consumers shall comply with the requirements set forth in paragraph (b)(2) of this section. [Beginning five years after the effective date of the rules], each manufacturer of wireless handsets must ensure that 85 percent of the wireless handset models offered to consumers shall comply with the requirements set forth in paragraph (b)(2) of this section.

* * * * *

(d)(2)(iii) [Beginning two and half years after the effective date of the rules], ensure that 66 percent of the wireless handset models offered to consumers shall comply with the requirements set forth in paragraph (b)(2) of this section. [Beginning five and half years after the effective date of the rules], ensure that 85 percent of the wireless handset models offered to consumers shall comply with the requirements set forth in paragraph (b)(2) of this section.

* * * * *

(d)(3)(iii) [Beginning three and half years after the effective date of the rules], ensure that 66 percent of the wireless handset models offered to consumers shall comply with the requirements set forth in paragraph (b)(2) of this section. [Beginning six and half years after the effective date of the rules], ensure that 85 percent of the wireless handset models offered to consumers shall comply with the requirements set forth in paragraph (b)(2) of this section.

* * * * *

(d)(4)(ii) *Offering models with differing levels of functionality*. Until [eight years after the effective date of the rules], each service provider must offer its customers a range of hearing aid-compatible models with differing levels of functionality (*e.g*., operating capabilities, features offered, prices). Each provider

may determine the criteria for determining these differing levels of functionality, and must disclose its methodology to the Commission pursuant to paragraph (i)(3)(vii) of this section.

* * * * *

(e)(3) Beginning [two years after the effective date of the rules], manufacturers that offer four or five digital wireless handset models in an air interface must offer at least two handset models compliant with paragraphs (b)(1) and (b)(2) of this section in that air interface.

(e)(4) Beginning [two and a half years after the effective date of the rules] for Tier I carriers and [three and half years after the effective date of the rules] for other service providers, service providers that offer four or five digital wireless handset models in an air interface must offer at least two handset models compliant with paragraphs (b)(1) and (b)(2) of this section in that air interface.

* * * * *

(i) *Reporting requirements* -- (1) *Reporting dates*. Until [eight years after the effective date of the rules], manufacturers shall submit reports on efforts toward compliance with the requirements of this section on July 15, 2009, and annually thereafter. Until [eight years after the effective date of the rules], service providers shall submit reports on efforts toward compliance with the requirements of this section on January 15, 2009, and annually thereafter. Information in the reports must be up-to-date as of the last day of the calendar month preceding the due date of the report.

* * * * *

(m) *Compatibility requirements for all new models*. To the extent the Commission has determined it achievable, beginning [eight years after the effective date of the rules], all wireless handset models that a manufacturer offers in the United States and that are within the scope of this section must be certified as hearing aid-compatible under the standards of paragraph (b) of this section.

APPENDIX D

Final Regulatory Flexibility Analysis

1. As required by the Regulatory Flexibility Act of 1980, as amended (RFA),[1] the Federal Communications Commission (Commission) included an Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on a substantial number of small entities of the rules considered in the *Further Notice* in WT Docket 07-250.[2] The Commission sought written public comments on the *Further Notice* in this docket, including comment on the IRFA. Because we amend our rules in the Fourth Report and Order, we have included this Final Regulatory Flexibility Analysis (FRFA) which conforms to the RFA.[3] To the extent that any statement contained in this FRFA is perceived as creating ambiguity with respect to our rules, or statements made in preceding sections of this Fourth Report and Order, the rules and statements set forth in those preceding sections shall be controlling.

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

2. Until now, the hearing aid compatibility rules have generally been limited only to handsets used with two-way switched voice or data services classified as Commercial Mobile Radio Service (CMRS), and only to the extent they are provided over networks meeting certain architectural requirements that enable frequency reuse and seamless handoff. In the Fourth Report and Order, we expand the scope of these rules to cover the emerging wireless technologies of today and tomorrow. The rules we adopt today eliminate uncertainty about the scope of our hearing aid compatibility requirements and ensure that emerging voice services will be covered regardless of their classification for other regulatory purposes and without restriction to a particular network architecture. Specifically, the rules now extend to handsets (those mobile device that contain a built-in speaker and are typically held to the ear in any of their ordinary uses) used with any terrestrial mobile service that enables two-way real-time voice communications among members of the public or a substantial portion of the public, including through the use of pre-installed software applications. We also adopt a transition period that ensures industry stakeholders will be able to comply with these rules while continuing to innovate and invest. By expanding the scope of our rules to those consumer mobile devices that are typically held to the ear, are heavily relied on for voice communications, and operate in bands covered by approved standards—and only where compliance is technically feasible—we target our efforts to those situations where Commission action can make a significant impact and best serve the public interest. In this regard, we have been mindful of our obligations to expand hearing aid compatibility requirements only in those instances where the record supports the necessary statutory findings mandated by the Hearing Aid Compatibility Act. In addition, the action we take today will require that future technologies comply with our hearing aid compatibility rules, ensuring that consumers with hearing loss are not always trying to catch up to technology and providing industry with additional regulatory certainty.

B. Legal Basis

3. The potential actions about which comment is sought in this Notice would be authorized pursuant to the authority contained in Sections 4(i), 303(r), and 710 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(r), and 610.

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

[2]

[3] *See* 5 U.S.C. § 604.

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

4. The RFA directs agencies to provide a description of, and where feasible, an estimate of the number of small entities that may be affected by proposed rules.[4] The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."[5] In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.[6] A "small business concern" is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration ("SBA").[7] To assist the Commission in analyzing the total number of potentially affected small entities, the Commission requests commenters to estimate the number of small entities that may be affected by any rule changes that might result from this Further Notice.

5. *Small Businesses, Small Organizations, and Small Governmental Jurisdictions*. Our action may, over time, affect small entities that are not easily categorized at present. We therefore describe here, at the outset, three comprehensive, statutory small entity size standards.[8] First, nationwide, there are a total of approximately 27.5 million small businesses, according to the SBA.[9] In addition, a "small organization" is generally "any not-for-profit enterprise which is independently owned and operated and is not dominant in its field."[10] Nationwide, as of 2007, there were approximately 1,621,315 small organizations.[11] 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."[12] Census Bureau data for 2011 indicate that there were 89,476 local governmental jurisdictions in the United States.[13] We estimate that, of this total, as many as 88,506 entities may qualify as "small governmental jurisdictions."[14] Thus, we estimate that most governmental jurisdictions are small.

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[4] 5 U.S.C. § 604(a)(3).

[5] 5 U.S.C. § 601(6).

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

[7] 15 U.S.C. § 632.

[8] *See* 5 U.S.C. §§ 601(3)–(6).

[9] *See* SBA, Office of Advocacy, "Frequently Asked Questions," web.sba.gov/faqs (last visited May 6, 2011; figures are from 2009).

[10] 5 U.S.C. § 601(4).

[11] INDEPENDENT Sector, THE NEW NONPROFIT ALMANAC & DESK REFERENCE (2010).

[12] 5 U.S.C. § 601(5).

[13] U.S. CENSUS Bureau, STATISTICAL ABSTRACT OF THE UNITED STATES: 2011, Table 427 (2007)

[14] The 2007 U.S Census data for small governmental organizations are not presented based on the size of the population in each such organization. There were 89,476 small governmental organizations in 2007. If we assume that county, municipal, township and school district organizations are more likely than larger governmental organizations to have populations of 50,000 or less, the total of these organizations is 52,125. If we make the same assumption about special districts, and also assume that special districts are different from county, municipal, township, and school districts, in 2007 there were 37,381 special districts. Therefore, of the 89,476 small governmental organizations documented in 2007, as many as 89,506 may be considered small under the applicable standard. This data may overestimate the number of such organizations that has a population of 50,000 or less. U.S.

(continued….)

6. *Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing*. The Census Bureau defines this category as follows: "This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. Examples of products made by these establishments are: transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment." The SBA has developed a small business size standard for Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing, which is: all such firms having 750 or fewer employees.[15] According to Census Bureau data for 2007, there were a total of 939 establishments in this category that operated for part or all of the entire year. Of this total, 912 had less than 500 employees.[16] Thus, under this size standard, the majority of firms can be considered small.

7. *Part 15 Handset Manufacturers*. The Commission has not developed a definition of small entities applicable to unlicensed communications handset manufacturers. Therefore, we will utilize the SBA definition applicable to Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing. The Census Bureau defines this category as follows: "This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. Examples of products made by these establishments are: transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment."[17] The SBA has developed a small business size standard for Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing, which is: all such firms having 750 or fewer employees.[18] According to Census Bureau data for 2007, there were a total of 939 establishments in this category that operated for part or all of the entire year. Of this total, 912 had less than 500 employees.[19] Thus, under this size standard, the majority of firms can be considered small.

8. *Wireless Telecommunications Carriers (except satellite)*. The Census Bureau defines this category as follows: "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."[20] The appropriate size standard under SBA rules is for the category Wireless Telecommunications Carriers (except Satellite). In this category, a business is small if it has 1,500 or fewer employees.[21] For this category, census data for 2007

(Continued from previous page)
CENSUS BUREAU, STATISTICAL ABSTRACT OF THE UNITED STATES 2011, Tables 427, 426 (Data cited therein are from 2007).

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

[16] The NAICS Code for this service 334220. *See* 13 C.F.R §121/201, http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.

[17] U.S. Census Bureau, 2002 NAICS Definitions, 334220 Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing, http://www.census.gov/epcd/naics02/def/NDEF334.HTM#N3342.

[18] 13 C.F.R. § 121.201, NAICS code 334220.

[19] The NAICS Code for this service is 334220. *See* 13 C.F.R 121/201. *See also* http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=&-fds_name=EC0700A1&-_skip=500&-ds_name=EC0744SSSZ1&-_lang=en.

[20] U.S. Census Bureau, *2012 NAICS Definitions: 517210 Wireless Telecommunications Carriers (except Satellite)*, http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517210&search=2012.

[21] 13 C.F.R. § 121.201 (NAICS code 517210).

show that there were 1,383 firms that operated for the entire year.[22] Of this total, 1,368 firms had employment of 999 or fewer employees and 15 had employment of 1000 employees or more.[23] According to Commission data, 413 carriers reported that they were engaged in the provision of wireless telephony, including cellular service, PCS, and Specialized Mobile Radio (SMR) telephony services.[24] Of these, an estimated 261 have 1,500 or fewer employees and 152 have more than 1,500 employees.[25] Consequently, the Commission estimates that approximately half or more of these firms can be considered small. Thus, using available data, we estimate that the majority of wireless firms can be considered small.

9. *Internet Service Providers*. The 2007 Economic Census places these firms, whose services might include voice over Internet protocol (VoIP), in one of three categories. The first refers to whether he service is provided over the provider's own telecommunications facilities (e.g., cable and DSL ISPs), or over client-supplied telecommunications connections (e.g., dial-up ISPs). This type of ISP is classified by the FCC in the category of Wired Telecommunications Carriers. Wired Telecommunications Carriers comprise establishments primarily engaged in operating or providing access to transmission facilities or infrastructure that they own and/or lease for the transmission of voice, data, sound, and video using wired telecommunications networks Transmission facilities may be based on a single technology or on a combination of technologies, Establishments in this industry use the wired telecommunications network facilities to provide a variety of services, such as wired telephony services, including VoIP services; and such as wired cable audio and video programming distribution, and wired broadband internet services. By exception, establishments providing satellite distribution services using facilities and infrastructure that they operate are included in this industry.[26] Wired Telecommunications Carriers have a an SBA small business size standard under which an establishment having 1,500 or fewer employees is small.[27] The second type of ISP is classified in the category of 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 service have spectrum licenses and provide services using that spectrum, such as cellular phone services, wireless internet access, and wireless video services.[28] The size standard for Wireless Telecommunications Carriers (except satellite) is the same as for Wired Telecommunications Carriers. The third type of ISP is classified under All Other Telecommunications. This 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 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

[22] U.S. Census Bureau, Table No. EC0751SSSZ5, *Information: Subject Series - Establishment and Firm Size: Employment Size of Firms for the United States: 2007* (NAICS code 517210), http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_51SSSZ5.

[23] *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 1000 employees or more.

[24] *See* Federal Communications Commission, *Trends in Telephone Service* (Sep. 2010) at Table 5.3, *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-301823A1.pdf (*Trends in Telephone Service*).

[25] *See id*.

[26] U.S. Census Bureau, 2007 NAICS Definitions, "517110 Wired Telecommunications Carriers", https://www.census.gov/cgi-bin/sssd/naics/naicsrch

[27] 13 C.F.R. § 121.201, NAICS code 517110

[28] https: www.census.gov/cgi-bin/sssd/naics/naicsrch?code-517210&search=2007 NAICS Search

included in this industry. [29] The SBA size standard for this industry states that all establishments in this category whose annual receipts are $32.5 million or less are small.[30]

10. For purpose of this rulemaking, we are concerned only with those ISPs that are classified either in the category of Wireless Communications Carriers (except satellite) or are classified in the category of All Other Telecommunications. The type of handsets which are the subject of the proposed rulemaking herein is primarily, if not exclusively, concerned with wireless handsets. Accordingly ISPS which are classified under Wired Telecommunications are not relevant in the context of this particular rulemaking.

11. United States census data for 2007 show that there were 1,383 Wireless Telecommunications Carriers (except satellite) firms that operated for the entire year. Of this total, 1,368 firms had employment of 999 or fewer employees. According to Commission data, 413 carriers reported that they were engaged in the provision of wireless telephony, including cellular service, PCS, and Specialized Mobile Radio (SMR) telephony services. Of these, an estimated 261 have 1,500 or fewer employees and 152 have more than 1,500 employees. Consequently, the Commission estimates that approximately half or more of these firms can be considered small. Thus, using available data, we estimate that the majority of wireless telecommunications carriers can be considered small.

12. With regard to the category of All Other Telecommunications, U.S. Census data for 2007 state that 2,383 firms were operational during that year. Of that number, 2,346 had annual receipts of less than $25 million.[31] Consequently, we estimate that the majority of ISP firms in this category are small entities.

13. *All Other Information Services*. The Census Bureau defines this industry as including "establishments primarily engaged in providing other information services (except news syndicates, libraries, archives, Internet publishing and broadcasting, and Web search portals)."[32] VoIP services over wireless technologies could be provided by entities that provide other services such as email, online gaming, web browsing, video conferencing, instant messaging, and other, similar IP-enabled services. The SBA has developed a small business size standard for this category; that size standard is $27.5 million or less in average annual receipts.[33] According to Census Bureau data for 2007, there were 367 firms in this category that operated for the entire year.[34] Of these, 354 had annual receipts of under $25 million.[35] Consequently, we estimate that the majority of these firms are small entities that may be affected by our action.

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[29] https://www.census.gov/cgi-bin/sssd/naics/naicsrch

[30] 13 C.F.R. 121.201, NAICS Code 517919

[31] http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_51SSSZ4&prodType=table

[32] U.S. Census Bureau, *2007 NAICS Definitions: 519190 All Other Information Services*, http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=519190&search=2007%20NAICS%20Search (last visited Mar. 18, 2015).

[33] *See* 13 C.F.R. § 121.201, NAICS code 519190.

[34] U.S. Census Bureau, 2007 Economic Census, Information: Subject Series – Establishment and Firm Size: Table 5, "Employment Size of Firms for the United States: 2007, NAICS Code 519190" http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_51SSSZ4&prodType=table

[35] *See id*.

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

14. The current hearing aid compatibility regulations impose a number of obligations on covered CMRS providers and the manufacturers of handsets used with those services, including: (1) requirements to deploy a certain number or percentage of handset models that meet hearing aid compatibility standards, (2) "refresh" requirements on manufacturers to meet their hearing aid-compatible handset deployment benchmarks in part using new models, (3) a requirement that service providers offer hearing aid-compatible handsets with varying levels of functionality, (4) a requirement that service providers make their hearing aid-compatible models available to consumers for testing at their owned or operated stores, (5) point of sale disclosure requirements, (6) requirements to make consumer information available on the manufacturer's or service provider's website, and (7) annual reporting requirements.

15. As discussed, the Fourth Report and Order expands the scope of the hearing aid compatibility rules to cover handsets used with any terrestrial mobile service that enables two-way real-time voice communications among members of the public or a substantial portion of the public, including through the use of pre-installed software applications and other Internet Protocol (IP)-based technologies. After the transition period, the rules we adopt will extend to providers of wireless voice communications among members of the public or a substantial portion of the public using equipment that contains a built-in speaker and is typically held to the ear, and to the manufacturers of such equipment, the same hearing aid compatibility rules that currently apply to a defined category of CMRS. We also clarify that testing a handset for hearing aid compatibility does not require testing software voice functions except to the extent that such functionality is installed by the manufacturer or service provider or at their direction, for use by a consumer over a given interface. We provide that the existing deployment benchmarks and related requirements will apply to newly covered handsets and air interfaces beginning January 1, 2018, with an additional three months allowed for handsets offered by non-Tier I service providers. We further provide that, during this transition period, manufacturers may continue to obtain a hearing aid compatibility rating for a handset's operation on a given interface without testing software-enabled voice functions provided they meet applicable disclosure requirements.

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

16. The RFA requires an agency to describe any significant, specifically small business alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): "(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) exemption from coverage of the rule, or any part thereof, for small entities."[36]

17. In adopting the Fourth Report and Order, the Commission expands the scope of the wireless hearing aid compatibility rules to cover handsets used with any terrestrial mobile service that enables two-way real-time voice communications among members of the public or a substantial portion of the public, including through the use of pre-installed software applications. The change in scope ensures that handsets with emerging voice technologies are subject to hearing aid compatibility requirements. At the same time, the new scope eases burdens on manufacturers and service providers, including small entities, by permitting handsets already certified to continue to be treated as hearing aid-compatible without any need for recertification after the expanded scope of the hearing aid compatibility rules goes into effect. The new scope also eases burdens for small entities by applying the same *de minimis* exception rules when the existing M- and T-rating deployment benchmarks begin to apply to all handsets, including newly covered operations, that a manufacturer or a service provider offers.

[36] 5 U.S.C. §§ 603(c)(1)-(c)(4).

18. The Commission adopts a transition period in order to reduce burdens on small entities and others. Specifically, the Commission finds it in the public interest to adopt a January 1, 2018 transition date (for manufacturers and Tier I carriers) and an April 1, 2018 transition date (for other service providers) for applying Section 20.19's deployment benchmarks and related requirements to newly covered operations. Some commenters support longer time frames of up to an additional 12 months for small, rural, and/or Tier III service providers who, these commenters contend, do not have the same access to new handsets as Tier I providers.[37] The Commission considered this alternative proposal and decided to afford an additional three months for non-Tier I service providers to meet the deployment benchmarks and related requirements for handsets newly subject to the hearing aid compatibility rules. In allowing additional time until the April 1, 2018 transition date, the Commission recognizes that non-Tier I service providers often have difficulty obtaining the newest handset models. However, the Commission determined that the record does not demonstrate a need for a longer transition period for non-Tier I service providers (including small entities) nor provide any reason to depart from prior hearing aid compatibility transitions in which the Commission afforded non-Tier I providers an additional three months beyond the transition period provided to Tier I service providers because, in part, a shorter period would better meet the needs of consumers with hearing loss.

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

19. None.

[37] RWA 2014 Refresh PN Comments at 4; Blooston 2010 Further NPRM Comments at 5-6 and 2010 Further NPRM Reply Comments at 3; RTG 2010 Further NPRM Comments at 3-4.

APPENDIX E

Initial Regulatory Flexibility Analysis

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

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

2. To ensure that a wide 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 offering hearing aid-compatible wireless phones. Specifically, manufacturers and service providers are required to offer minimum numbers or percentages of handset models that meet specified technical standards for compatibility with hearing aids operating in both acoustic coupling and inductive coupling modes. These benchmarks apply separately to each air interface for which the manufacturer or service provider offers handsets.

3. The wireless hearing aid compatibility rules have incorporated this fractional benchmark approach since the provision was first established in 2003, but the Commission has on occasion revised the specific benchmarks that manufacturers and service providers are required to meet. The current benchmarks were established in 2008 when the Commission adopted the Joint Consensus Plan submitted by an Alliance for Telecommunications Industry Solutions (ATIS) working group that included Tier I carriers, handset manufacturers, and several organizations representing the interests of people with hearing loss. That plan provided for benchmarks to increase over time, up to a final set of benchmarks that became effective in 2010 and remain in place today.

4. The current deployment benchmarks require that, subject to a *de minimis* exception described below, a handset manufacturer must meet, for each air interface over which its models operate, (1) at least an M3 rating for RF interference reduction for at least one-third of its models using that air interface (rounded down), with a minimum of two models, and (2) a T3 rating for inductive coupling for at least one-third of its models using that interface (rounded down), with a minimum of two models. Similarly, for each of the air interfaces their handsets use, service providers also must meet an M3 rating for at least 50 percent of their models or ten models, and must meet a T3 rating for at least one-third of their models or ten models. In general, under the *de minimis* exception, manufacturers and service providers that offer two or fewer wireless handset models for any given covered air interface are exempt from these benchmarks for those models.

5. In the Notice, the Commission seeks comment on a historic agreement (hereinafter, the "Joint Consensus Proposal") among key consumer and industry stakeholders that would revise the current benchmarks. In brief, the Joint Consensus Proposal provides that within two years of the effective date of new rules adopted, 66 percent of wireless handsets offered to consumers should be compliant with our acoustic coupling radio frequency interference (M rating) and inductive coupling (T rating) requirements.

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

[2] *See* 5 U.S.C. § 603(a).

[3] *See* 5 U.S.C. § 603(a).

The proposal provides that within five years of the effective date of new rules adopted, 85 percent of wireless handsets offered to consumers should be compliant with our M and T ratings. The proposal provides that this benchmark should apply directly to manufacturers and carriers that offer six or more digital wireless handset models in an air interface, with additional compliance periods for Tier I and Non-Tier I carriers of six months and eighteen months, respectively, to account for limits on handset availability and inventory turn-over rates. In addition to these two-year and five-year benchmarks, the proposal provides that the Commission should commit to pursue that 100 percent of wireless handsets offered to consumers should be compliant within eight years. The Joint Consensus Proposal conditions the transition to 100 percent, however, on a Commission determination within seven years of the rules' effective date that reaching the 100 percent goal is achievable, based in part on review of a report by a task force to be established for this purpose.

6. While we find that the existing fractional benchmarks have been successful in making a broad variety of hearing aid-compatible handsets available to consumers with hearing loss, we recognize our statutory obligation to periodically reassess any exemptions from the hearing aid compatibility requirements. We propose to adopt the Joint Consensus Proposal, finding that it provides an effective approach to replacing the fractional system with one that will give consumers with hearing loss the same selection of wireless handsets that is available to the general public.

B. Legal Basis

7. The potential actions about which comment is sought in this Notice would be authorized pursuant to the authority contained in Sections 4(i), 303(r), and 710 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(r), and 610.

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

8. The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the proposed rules, if adopted.[4] The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."[5] In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.[6] A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the SBA.[7] To assist the Commission in analyzing the total number of potentially affected small entities, the Commission requests commenters to estimate the number of small entities that may be affected by any rule changes that might result from this Notice.

9. As discussed above, in the Notice, the Commission seeks comment on a revision to the deployment benchmarks. While these changes would affect the specific obligations of covered entities under the rules, it would not alter the scope of entities subject to the rules, and accordingly, we find that the analysis of the categories and number of small entities that may be affected by the proposed rules is the same as for the Final Regulatory Flexibility Analysis we provide in connection with the revision to those rules adopted in the Fourth Report and Order. Accordingly, we incorporate by reference the

[4] 5 U.S.C. § 603(b)(3).

[5] 5 U.S.C. § 601(6).

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

[7] Small Business Act, 15 U.S.C. § 632 (1996).

analysis in Section C of the Final Regulatory Flexibility Analysis accompanying the Fourth Report and Order and Notice of Proposed Rulemaking, as the description and estimate of the number of small entities to which the proposed rules would apply.

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

10. The Commission is not proposing to impose any additional reporting or record keeping requirements. Rather, as discussed in the next section, the Commission is seeking comment on whether, if it adopts a 100 percent requirement, it can reduce regulatory burden on all wireless handset manufacturers and wireless service providers regardless of size by eliminating and streamlining the related hearing aid compatibility requirements. Presently, these requirements include annual reporting, disclosure, labeling, and other regulatory requirements. As part of its decision to eliminate or reduce regulatory burden, the Commission will consider whether it can reduce regulatory burden for small service providers and manufactures, if it cannot be done for all service providers and manufacturers.

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

11. The RFA requires an agency to describe any significant, specifically small business alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): "(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) exemption from coverage of the rule, or any part thereof, for small entities."[8]

12. In the Notice, the Commission proposes to adopt the terms of the Joint Consensus Proposal, including provisions that will help to minimize impact on small entities. Specifically, the Joint Consensus Proposal recommends, and we propose, that while increasing the benchmarks at year two and year five, we keep in place the existing *de minimis* exception for manufacturers and service providers offering three handsets or less. The current *de minimis* exception provides that small manufacturers and service providers that offer two or fewer digital wireless handsets operating over a particular air interface are exempt from the benchmark deployment requirements in connection with that air interface, while larger manufacturers with two or fewer handsets have a limited obligation.[9] The provision further states that any manufacturer or service provider that offers three digital wireless handset models operating over a particular air interface must offer at least one such handset model with at least an M3 and T3 rating for that air interface.[10] In addition to retaining this exception to the benchmarks, we propose to adopt the Joint Consensus Proposal's recommendation that manufacturers and service providers offering either four or five handsets in an air interface be required to ensure that at least two of those handset models comply with the Commission's M and T rating requirements, rather than be required to meet the new 66 percent and 85 percent benchmarks. Finally, the Joint Consensus Proposal also provides additional time to small carriers to meet the benchmarks. Specifically, it provides that, while manufacturers must meet the new 66 percent and 85 percent benchmarks after two and five years, respectively, following the effective date of

[8] 5 U.S.C. §§ 603(c)(1)-(c)(4).

[9] 47 C.F.R § 27.19(e)(1). Under certain circumstances, manufacturers that offer two or fewer handsets in an air interface are exempt from the hearing aid compatibility requirements except for the annual reporting requirement. This exception applies to manufacturers that have had less than 750 employees for at least two years, and have not been offering handsets over an air interface for at least two years. Manufacturers that have had more than 750 employees for at least two years, and that have been offering handsets over an air interface for at least two years that offer one or two handsets in that air interface must offer at least one handset model compliant with the hearing aid compatibility provisions.

[10] *Id.* § 27.19(e)(2).

the rules, all non-nationwide carriers will have eighteen additional months to reach each benchmark (*i.e.*, eighteen months after the two and five year deadlines applicable to manufacturers).

13. With respect to adoption of a 100 percent requirement, the Joint Consensus Proposal conditions the transition to 100 percent hearing aid compatibility on a Commission determination, after the receipt and review of a report from a newly established task force, that reaching the 100 percent goal is "achievable." The Notice seeks comment on how the Commission should determine achievability and what criteria should be utilized in making this determination. The Notice also seeks comment on whether the current *de minimis* exception or the expanded *de minimis* exception, as proposed by the Joint Consensus Proposal, should be preserved in whole or in part if the Commission determines that adopting a 100 percent benchmark is achievable. In making the determination of achievable and whether to keep or expand the *de minimis* exception, the Commission will be considering, in part, whether small handset manufacturers and service providers have the resources to meet a 100 percent obligation or whether some accommodation, such as an exception, needs to be made for these entities.

14. In addition to the *de minimis* exception, the Commission seeks comment on other possible exceptions to the 100 percent requirement. These exceptions could apply to all manufacturers of wireless handsets or to some subset of wireless handset manufacturers, such as small entities generally (*i.e.*, including those that do not fall within the *de minimis* exception). Further, the Commission seeks comment on which compliance process, such as waivers, should be modified to accommodate innovation and carriers', especially rural and regional carriers', handset inventories and turn-over rates, within a compliance regime with the enhanced benchmarks. These modifications would benefit all wireless handset manufacturers, including small entities, with their compliance obligations.

15. In the event the Commission adopts a 100 percent requirement, the Notice seeks comment on grandfathering legacy handsets that are not hearing aid-compatible. The Notice ask whether the Commission should allow manufacturers, including small manufacturers, of wireless handsets the ability to recoup their investment in non-hearing aid-compatible legacy handsets. Under this proposal, the Commission would allow wireless handset manufacturers to continue to offer handset models that have not been certified as hearing aid-compatible after the transition period to 100 percent ends if the manufacturer received equipment authorization for the handset prior to the end of that period.[11] This proposal should help to minimize the economic impact of a 100 percent requirement on small entities.

16. The Notice also seeks comment on whether transitioning to a 100 percent requirement would justify easing or eliminating several requirements associated with the hearing aid compatibility rules, which would further reduce the net economic impact of the adopted changes on these manufacturers and providers, including small entities. First, under the current rules, manufacturers are required to electronically file annual compliance reports with the Commission on FCC Form 655 in July of each year and service providers must electronically file this form with the Commission in January of each year.[12] While these reports help the Commission to monitor compliance with the hearing aid compatibility benchmarks, numerous parties, especially rural and small entities, have asserted that having to file these annual reports is burdensome. The Commission seeks comment on whether to end or modify the reporting requirements for manufacturers and service providers at some point as the benchmarks increase. These changes to the reporting requirements would benefit all service providers and manufacturers, including small providers and manufacturers.

17. The existing hearing aid compatibility rules also require that manufacturers and service providers meet certain labeling and disclosure requirements for hearing aid-compatible handsets, and provide information on their websites, such as making available on their publicly-accessible websites a list of all hearing aid-compatible models currently offered, the associated rating information for those

[11] *Id.* § 2.1033(d).

[12] *See id*. § 20.19(i).

handsets, and an explanation of the rating system.[13] The Commission seeks comment on whether, upon implementation of the 100 percent requirement, the current labeling and disclosure requirements should be eliminated or amended.

18. The Commission also seeks comment on whether, if it adopts a 100 percent requirement or other modifications to the benchmarks, it should eliminate the product refresh rule applicable to manufacturers, which provides that each manufacturer that offers any new model for a particular air interface during the calendar year must "refresh" its offering of hearing aid-compatible handset models by offering a mix of new and existing models that comply with the hearing aid compatibility technical standards.[14] It further seeks comment on eliminating the differing levels of functionality rule applicable to service providers.[15] Finally, if the Commission adopts a 100 percent requirement, the Notice seeks comment on whether to eliminate or otherwise ease the deployment benchmarks applicable to the overall handset portfolios of manufacturers and service providers. Elimination of these rules would benefit small entities as well as larger manufacturers and service providers.

19. The Commission seeks comment generally on the effect, economic impact, or burden of the rule changes considered in the Notice on small entities. It further seeks comment on any alternatives that would reduce the economic impact on small entities. It also seeks comment on whether there are any alternatives the Commission could implement that could achieve the Commission's goals while at the same time minimizing or further reducing the burdens on small entities, and on what effect such alternative rules would have on those entities. The Commission invites comment on ways in which it can achieve its goals while minimizing the burden on small wireless handset manufacturers and service providers. For the duration of this docketed proceeding, the Commission will continue to examine alternatives with the objectives of eliminating unnecessary regulations and minimizing any significant economic impact on small entities.

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

20. None.

[13] *See id.* §§ 20.19(f), (h).

[14] *See id*. § 20.19(c)(1)(ii). Specifically, if a manufacturer offers three models per air interface, at least one new model rated M3 or higher must be introduced every calendar year. For manufacturers that offer four or more models operating over a particular air interface, the number of models rated M3 or higher that must be new models introduced during the calendar year is equal to one-half of the minimum number of models rated M3 or higher required for that air interface. For manufacturers that have had more than 750 employees for at least two years and that offer two models over an air interface for which they have been offering handsets for at least two years, at least one new model rated M3 or higher must be introduced every calendar year.

[15] *Id.* § 20.19(d)(4)(ii). The different levels of functionality rule provides that each service provider must offer its customers a range of hearing aid-compatible models with differing levels of functionality (e.g., operating capabilities, features offered, prices). Each provider may determine the criteria for determining these differing levels of functionality, and must disclose its methodology to the Commission as part of its annual compliance report.

STATEMENT OF
CHAIRMAN TOM WHEELER

Re: *Amendment of the Commission's Rules Governing Hearing Aid-Compatible Mobile Handsets,* WT Docket No. 07-250*; Improvements to Benchmarks and Related Requirements Governing Hearing Aid-Compatible Mobile Handsets,* WT Docket No. 15-285

Since 2003, the Commission's wireless hearing aid compatibility rules have sought to ensure that Americans with hearing loss have access to telephone service through a wide array of wireless handsets and other devices used for voice communications. Today, we take a significant step toward modernizing our hearing aid compatibility rules to keep pace with past and future advances in the wireless handset marketplace.

The Twenty-First Century Communications and Video Accessibility Act of 2010 (CVAA) requires that a wide array of mobile devices are accessible for people with hearing loss. At the same time, the law dictates that we expand hearing aid compatibility requirements only where technologically feasible and where the new obligations would not increase costs to such a point that the devices are not marketable. Today's rules are both pro-accessibility and pro-innovation.

Until now, the hearing aid compatibility rules have been focused on handsets used with traditional cellular networks and have only required accessibility for a fractional subset of devices. For example, the rules did not apply to IP-based voice services such as voice over LTE (VoLTE) or Wi-Fi calling. Individuals with hearing loss should not be relegated to specific services based on the often technologically distinct but practically indistinguishable particulars of *how* such services are provided and deserve to have the same mobile communications options as other consumers.

Most consumers who use hearing aids don't care about the underlying technology specs. They just want their devices to be accessible and fully functional. That's why the rules we adopt today eliminate uncertainty about the scope of compliance requirements. As a result, the rules now extend, with limited exceptions, to handsets used with any terrestrial mobile service that enables two-way real-time voice communications among members of the public.

The Report and Order updates our rules to cover modes of voice communications that are increasingly available to, and relied upon by, the public, as well as those that may develop in the future. We expand the scope of these rules beyond handsets that use traditional cellular networks to cover the emerging wireless technologies of today and tomorrow. The action we take in the Report and Order will require that future technologies comply with our hearing aid compatibility rules, ensuring that consumers with hearing loss are not always trying to catch up to technology and providing industry with additional regulatory certainty.

However, consistent with our statutory obligation to expand hearing aid compatibility requirements without unnecessarily hampering innovation and investment, the new rules do not cover certain narrow types of service, and they continue to allow manufacturers and service providers to obtain waivers for new technologies if certain conditions are met.

In addition, today's Notice of Proposed Rulemaking seeks comment on a groundbreaking consensus plan developed through collaborative discussions among consumer and industry representatives. Their plan would, for the first time, establish a goal of achieving hearing aid compatibility for one hundred percent of new handsets, and it would also set out a staged roadmap, fixed timeline, and benchmarks to get to that important point. We seek comment on this approach, but we also note that we presumptively support it, and we highlight it in the NPRM as the core proposal.

Together, these two actions – expanding the scope to cover new technologies and enlisting

stakeholders to make all devices compatible – will result in greater access to wireless technologies for the tens of millions of Americans with hearing loss. This approach reflects a vote of confidence in the American innovation economy. We are not forced to choose between innovative technologies on the one hand and devices accessible to people with hearing loss on the other. American innovation can enable – not limit— accessibility for all devices and technologies by those with hearing loss.

Thank you to the Wireless Bureau and the Consumer and Governmental Affairs Bureau for their work on this item.

STATEMENT OF
COMMISSIONER MIGNON L. CLYBURN

Re: *Amendment of the Commission's Rules Governing Hearing Aid-Compatible Mobile Handsets,* WT Docket No. 07-250*; Improvements to Benchmarks and Related Requirements Governing Hearing Aid-Compatible Mobile Handsets,* WT Docket No. 15-285

Five years and one month ago, I had the privilege of watching President Barack Obama, with the legendary Stevie Wonder by his side, sign into law the Twenty-First Century Communications and Video Accessibility Act or CVAA. This moment was one of the highlights of my tenure as an FCC Commissioner for it codified this agency's role in advancing the key goals of CVAA: individuals with disabilities should have the same access to emerging Internet Protocol-based communication and video programming technologies in the 21st century as other Americans.

This Order goes farther than any other item, I have considered to date, to ensure that the tens of million Americans, who suffer from hearing loss, have access to the most advanced communications technologies as they develop. Our current rules cover only handsets used with two-way voice or data services classified as Commercial Mobile Radio Service, or CMRS, and only to the extent those networks meet certain technical requirements. In this Order, however, these rules will now cover the emerging wireless technologies of the future. No longer is the scope just limited to CMRS networks. The rules now extend to handsets used with any commercial terrestrial mobile service that enables two-way real-time voice communications among a substantial portion of the public. They also cover those services that use pre-installed software applications.

I am also overjoyed by the Notice because the lead proposal is based on a historic agreement that the commercial mobile industry, equipment manufacturers, and accessibility advocates reached just last week and it will dramatically change our approach to measuring hearing aid compatibility. Our current rules require service providers and handset manufacturers to ensure that a specified fraction or number of their offered handsets meet applicable standards for hearing aid compatibility. These standards are known as acoustic coupling, or M-rating, and inductive coupling, or T rating. The percentage for these models varies based on several factors, but they generally range from one-third to one-half of the covered models.

We should move to an approach that replaces the current fractional benchmark method with a 100 percent regime. In other words, every handset should comply with both standards. The parties agreed that, within two years of the effective date of these new benchmark rules, 66 percent of wireless handset models must comply with both standards and, within eight years, if the Commission determines it is technically feasible, 100 percent of wireless handsets must meet both standards. Finding a path to have the industry agree on a goal of 100 percent compliance, should greatly encourage manufacturers to consider hearing aid compatibility at the earliest stages of the product design process. This represents substantial progress and all parties who signed the agreement are to be commended.

I want to thank Roger Sherman and his staff in the Wireless Bureau for their presentations and excellent work on this item. I also want to recognize Karen Peltz Strauss for her tireless efforts on behalf of people living with disabilities. Karen was instrumental to the CVAA being passed and we are grateful for her service.

STATEMENT OF
COMMISSIONER JESSICA ROSENWORCEL

Re: *Amendment of the Commission's Rules Governing Hearing Aid-Compatible Mobile Handsets,* WT Docket No. 07-250*; Improvements to Benchmarks and Related Requirements Governing Hearing Aid-Compatible Mobile Handsets,* WT Docket No. 15-285

Five years ago last month the Twenty-First Century Communications and Video Accessibility Act was signed into law. Five years is a long time. A lot changes—and as the parent of a five-year old I can say that with some authority. Five years ago, tablets were new, 4G service was just beginning, and mobile payments were in their infancy. Five years ago, the Twenty-First Century Communications and Video Accessibility Act charged us with extending our hearing aid compatibility rules to a broader range of modern wireless devices. To continue to give meaning to this law, we need to update our approach to reflect the advances of technology. That is what we do today.

So I am pleased to support this Order. We expand the scope of our rules and apply them to emerging voice services. This is the right thing to do. After all, consumers with hearing loss do not distinguish between calls delivered over a wireless carrier's network or Wi-Fi—they simply want the call to go through. They just want to hear a voice on the other side. I also am happy to support this rulemaking. We seek comment on a proposal that will put us on the path to making 100 percent of mobile handsets hearing aid compatible, while continuing to clear the way for more innovation and investment. Kudos to the consumer advocates, wireless carriers, and manufacturers who have put this proposal before us. Your cooperative efforts will help us help millions more with hearing loss gain rightful access to modern wireless services.

STATEMENT OF
COMMISSIONER AJIT PAI

Re: *Amendment of the Commission's Rules Governing Hearing Aid-Compatible Mobile Handsets,* WT Docket No. 07-250*; Improvements to Benchmarks and Related Requirements Governing Hearing Aid-Compatible Mobile Handsets,* WT Docket No. 15-285

In 1939, when filming the movie *Secret Service of the Air*, a young actor suffered permanent hearing loss when another cast member fired a .38 caliber pistol just six inches from his right ear. Over 40 years later, that actor became the first U.S. President to wear a hearing aid while in office. President Ronald Reagan was a powerful advocate for hard-of-hearing individuals. Indeed, in 1988, he signed the Hearing Aid Compatibility Act into law. That statute, its subsequent amendments, and our rules implementing its provisions are all designed to ensure that the tens of millions of Americans with hearing loss have access to innovative devices and technologies.

So I am pleased to support today's action, which seeks to ensure that our hearing aid compatibility rules keep pace with changes in technology while promoting the development of new innovations for consumers. We do that in the *Order* by applying our rules to a broader range of voice services. And we do that in the *Notice of Proposed Rulemaking* by seeking comment on ways we can increase the percentage of devices that comply with our rules. On this score, I commend the efforts of the hearing loss community, including Telecommunications for the Deaf and Hard of Hearing, the Hearing Loss Association of America, and the National Association of the Deaf, as well as CTIA, CCA, and TIA for reaching a consensus path forward. And I am glad that the *Notice* seeks comment on implementing that approach.

I am also pleased because the *Notice* does not focus solely on ensuring compliance with a particular technical standard. Instead, it seeks comment on a variety of novel ways that providers could ensure that their phones function for those with hearing loss, whether that's through the use of Bluetooth or another creative solution. In this case, what matters most is the end, not the means.

I am also glad that the *Notice* now seeks comment on whether we should adopt a time limit or shot clock for acting on requests for waivers of our hearing aid compatibility rules. Putting ourselves on the clock is a good way to ensure that we stay on time. If a new, innovative technology simply cannot comply with our rules, it is important to give its creator a definitive timeframe for FCC action and thus certainty about whether it can be brought to market.

In a 1983 letter to the director of the National Technical Institute for the Deaf, President Reagan wrote that he was "pleased to learn that my wearing a hearing aid may help remove the stigma which some feel is attached to their use." By modernizing our approach to the legislation he signed, we are doing our part to help remove barriers that might otherwise prevent those with hearing loss from full participation in American life. I suspect the Gipper would be proud.

STATEMENT OF
COMMISSIONER MICHAEL O'RIELLY

Re: *Amendment of the Commission's Rules Governing Hearing Aid-Compatible Mobile Handsets,* WT Docket No. 07-250*; Improvements to Benchmarks and Related Requirements Governing Hearing Aid-Compatible Mobile Handsets,* WT Docket No. 15-285

Today's order updates the Commission's rules to ensure that more Americans with hearing impairments will be able to access innovative wireless handsets offering the latest voice communication technologies. Generally, expanding the scope to new wireless bands seems to make sense and is consistent with our obligations under the law. However, certain assumptions and conclusions, particularly about future technologies, give me some pause, but I am willing to let it proceed with the fair notice that these may need to be revisited as more information becomes available.

The accompanying notice, which I am willing to support, seeks comment on a consensus proposal that would increase the number of hearing aid compatible handsets over time, while permitting innovation and investment in new wireless technologies. The timeframes and procedures in the proposal are properly structured to enable wireless providers and manufacturers the needed flexibility to experiment with handset design, materials, antenna placement and batteries as they develop 5G networks and devices.

Nevertheless, I must ask whether further regulation and burdens are absolutely necessary here. For instance, the Commission is already looking at volume control issues in another proceeding, which may address some of the difficulties encountered by hearing-impaired consumers. Further, some assert that much of the discontent, to the extent it exists, may stem from a lack of information about hearing aids, making it difficult to select the best handset for a specific model.

On a side note, the fact that some wireless providers are unaware of which handsets are actually compliant with FCC rules has come up in my meetings as the wireless providers have faced unnecessary enforcement actions. The Commission has an obligation to improve this by presenting reliable and comprehensible information to consumers and providers, and I intend to fix this issue. To be clear, this effort can and will be done without further burdens or filing requirements on wireless providers or handset manufacturers.

I thank the Chairman and Commission staff for incorporating this edit and others into the item and look forward to engaging with all interested parties as we proceed to an order. Lastly, let me thank the tireless work of the industry participants and hearing loss community for their good work on the particulars of this item.