

Before the
Federal Communications Commission
Washington DC 20554

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

COMMENTS OF THE HEARING INDUSTRIES ASSOCIATION

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January 28, 2016

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SUMMARY

The Hearing Industries Association (“HIA”) has long supported a path to 100% compatibility, and supports the Joint Consensus Proposal. However, HIA seeks earlier formation of the proposed Task Force to ensure better inter-industry communication, as HIA has long encouraged.

In terms of new technologies, HIA applauds and fully supports the FCC’s suggestion that hearing aid compatibility (“HAC”) should be a consideration in the development of new technology. However, while HIA supports efforts to ensure that HAC regulations keep pace with new technologies so that people with hearing loss who use hearing aids may continue to participate in society, it is premature to retire HAC requirements for existing technologies.

To that end, HIA suggests that the Commission’s HAC efforts proceed over the next decade on two tracks: (1) adapting HAC compliance showings for new wireless technologies, once technical standards have been set and those technologies become widely available to all hearing aid users, (2) while continuing to require HAC for minimal M and T ratings.

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COMMENTS OF THE HEARING INDUSTRIES ASSOCIATION

The Hearing Industries Association (“HIA”) hereby comments on the Federal Communications Commission’s (“FCC” or “Commission”) Notice of Proposed Rulemaking (“NPRM”) issued in the above-captioned proceedings.¹

BACKGROUND

HIA is the trade association of hearing aid manufacturers and represents manufacturers of some 85% of the hearing aids sold in the United States. HIA members make every effort to design their devices to meet all the needs of people with hearing loss, including ensuring compatibility with as many electronic products as possible. HIA seeks to advance the goal of ensuring that people with hearing loss who wear hearing aids are able to participate to the maximum extent possible in all activities – both at work and at play – that persons with full hearing can enjoy.

¹ *Improvements to Benchmarks and Related Requirements Governing Hearing Aid-Compatible Mobile Handsets; Amendment of the Commission’s Rules Governing Hearing Aid-Compatible Mobile Handsets*, Fourth Report and Order and Notice of Proposed Rulemaking, WT Docket Nos. 15-285 and 07-250 (rel. Nov. 20, 2015) (“NPRM”).

Hearing aids are vital to many Americans as a means of staying connected and involved with the world around them. Nearly twenty-five percent of those aged 65 to 74 and fifty percent of those aged 75 and older have disabling hearing loss.² Both hearing aids and hearing aid accessories are vital to these and other Americans as a means of staying connected and involved. Studies have shown that untreated hearing loss is linked to higher rates of depression and falls, and according to research is correlated with increased rates of dementia.³ Adequately addressing hearing loss can therefore lead to reduced health impairments and health care costs for many Americans.

Comprehensive hearing aid compatibility provides a huge benefit to people with hearing loss, who can engage in phone calls using any type of device or technology, without concern with interoperability or interference with their hearing aids. To that end, HIA lauds the Commission's recent decision to expand the scope of HAC.⁴ Nonetheless, people with hearing loss continue to face difficulty finding HAC-compliant devices that work with their hearing aids, and consumer education as a means to resolve this problem is a difficult solution at best.

Most hearing aids still employ telecoil (or "t-coil," a small copper coil located inside the hearing aid), a technology that transforms the hearing aid into a wireless receiver, allowing a hearing aid user to use hearing-aid compatible phones. Some public facilities, such as large theaters, are built with "hearing loops," which are wires surrounding a room that can pick up

² Blackwell DL, Lucas JW, Clarke TC., *Summary Health Statistics for U.S. Adults: National Health Interview Survey 2012*, National Center for Health Statistics, Vital Health Stat. 10 (260) (2014).

³ Metter J, O'Brien RJ, Resnick SM, Zonderman AB, Ferrucci L., *Hearing Loss and Incident Dementia*, 3 Lin FR, Arch Neurol, 68(2):12-28 (2011).

⁴ *Hearing Aid-Compatible Mobile Handsets*, Fourth Report and Order, WT Docket Nos. 15–285 and 07–250 (rel. Nov. 20, 2015).

electromagnetic waves from sound systems (such as microphones, public address systems, and telephone receivers) and transmit these waves to the telecoil within a hearing aid.

All hearing aids today are digital, and many feature a number of technologies to assist people with hearing loss in various situations. For example, 87 percent of all hearing aids sold in the U.S. in 2015 included at least one wireless feature, such as ear-to-ear transmission, while 100% of all Behind-the-Ear (“BTE”) hearing aid models distributed by the Veterans Administration now include at least one wireless feature.⁵ These wireless features are not all the same, however, and the Commission should not assume that they are adequate substitutes for the current HAC-rated handsets.

Some higher-end hearing aids also use Bluetooth or other low power wireless technologies that can connect wirelessly with smartphones, allowing a person with hearing loss to hear a phone conversation directly through her hearing aid, without needing to hold a phone against her ear. While the telecoil bridges the space between the hearing aid user and the sound source, Bluetooth (and other assistive technologies) connects the hearing aid directly to the sound source. Technically, there are vast differences in these methods. Telecoil is an AM baseband transmission operating in frequencies between 100 Hz to 10 kHz. Bluetooth, by contrast, is a digitally modulated frequency hopping technology, operating in the 2.4 GHz ISM band. Both can be viewed as RF protocols and both have requirements that must be met if hearing instruments are to successfully receive the intended audio transmission.

The hearing aid industry is on the cusp of change. Much research and development is focused on low power wireless technologies, in particular Bluetooth Low Energy and similar

⁵ HIA Statistical Reporting Program, 4th Quarter 2015, *available at* <http://www.hearingreview.com/2016/01/hearing-aid-sales-increase-7-2-2015-strong-q4-private-sector/>.

technologies that operate at 2.4 GHz, which will allow hearing instruments to connect to wireless handsets and other wireless devices (and also receive information from devices developed by other industries). While devices are on the market now, a forthcoming new Bluetooth Low Energy standard will provide a shared RF protocol and reduced battery drain, allowing for more universal adoption of this technology.⁶ At the same time, others are working on proprietary technologies. In short, the hearing aid industry is entering a new era where reliance on Bluetooth and similar technologies could enable Americans with hearing loss to achieve voice communication without holding a phone to their ear. This raises questions as to whether the transition to Bluetooth could justify an end to the current HAC regulatory requirements imposed on wireless handset manufacturers and providers.

We are not there yet. HIA estimates that it will take at least a decade for new technology to be developed, proven, and well-adopted at all price points, and for consumers to discontinue legacy hearing aids. Indeed, as HIA pointed out in a recent FCC filing, this promising wireless solution is threatened by Globalstar's proposed use of the 2473-2483.5 MHz portion of the 2.4 GHz band.⁷ But it is time to consider the future and how the HAC regulatory regime may be shaped in the years to come. The Joint Consensus Proposal should be adopted with these changes in mind.

⁶ Hearing aids are used, or turned "on," full time, making battery life a very important consideration in design.

⁷ *Letter from Laura Stefani, Counsel to the Hearing Industries Association, to Marlene H. Dortch, Secretary Federal Communications Commission, IB Docket No. 13-213 and RM-11685 (filed Dec. 14, 2015).*

DISCUSSION

The Commission seeks comment on a Joint Consensus Proposal (“Proposal”) that would replace the current hearing aid compatibility regime.⁸ In particular, the Commission asks whether the Proposal effectively meets the Congressional intent of ensuring that people with hearing loss have access to telephones, and whether the particular terms of the Proposal are sufficient.⁹

Hearing aids used in conjunction with wireless handsets and other communication devices are useful only to the extent that they are interoperable, are free from interference, and limited from other impairments. The current HAC requirements, though not perfect, make inroads into assuring this result. For this reason, HIA has long sought HAC 100% compatibility for any device “held to the ear,” and supports the current Proposal. HIA suggests that the Commission adopt some additional requirements to tweak the framework, including looking towards the integration of new wireless technologies into the HAC regime.

A. The Task Force and Determination of Achievability.

The Commission seeks comment on the Proposal’s suggestion that a Task Force be created to explore and make recommendations in a Report to the Commission regarding the achievability of 100% HAC compliance.¹⁰ For example, the Commission asks how the Task Force should be established; whether it should be convened before its primary functions will begin; and “how the Commission should determine achievability, including the appropriate substantive definition, standard, or framework to govern the Commission’s determination.”¹¹

⁸ NPRM at ¶¶ 65-68.

⁹ NPRM at ¶ 70.

¹⁰ NPRM at ¶¶ 74-77.

¹¹ *Id.*

HIA agrees that the hearing aid manufacturing community represents a vital piece of the HAC puzzle and offers to provide leadership for such a Task Force. HIA would be pleased to work with the Commission to ensure that such a Task Force enjoys the benefits of balanced and highly capable leadership with co-chairs representing the hearing aid and wireless industries, as was the case when the ANSI C63.19 Committee reviewed HAC issues in the past.

HIA also supports convening the Task Force prior to the four-year mark so that it can begin additional necessary work. Part of the Task Force's role should be to enable a dialog between the handset manufacturing groups and the hearing aid manufacturers regarding the HAC status of handsets that link wirelessly to hearing aids. Information gained from the wireless handset manufacturers allows hearing aid manufacturers to better provide for interference immunity built into hearing aids; wireless connectivity to hearing aids elevates this need for cooperation between industries.

Additionally, the Task Force should be required to include in its Report to the Commission a finding of when there is sufficient agreement that these new technologies may allow the Commission to eliminate compatibility requirements for minimal ratings. This "determination of sufficient agreement" should not occur until wireless solutions have replaced the tele-coil, meaning that standards are well-developed, the technology is proven, and it is available for a wide-range of hearing aids at all price points. Measures must be in place to ensure that Bluetooth devices that would be submitted and used to provide HAC are certified by the Bluetooth SIG as meeting the new Hearing Aid profile. Presently, all Bluetooth devices must meet the core portion of the Bluetooth specification, but they are only required to meet the Bluetooth profiles that the device manufacturers deem applicable when submitting the device for Bluetooth qualification.

If this determination occurs, the Task Force should then consider and recommend a transition period to cover use of the legacy hearing aid technologies. While wireless handsets are generally replaced frequently, hearing aids are typically replaced every five years, but can be used for ten or more years if they are taken care of and if hearing loss does not change dramatically. To retain HAC, consumers should not be forced to replace hearing aids, which cost much more than smart phones. Hearing aids are a critical medical device that represents a significant financial investment by the person with hearing loss.¹² While the timing will depend entirely on the mass adoption of hearing aids using wireless technologies, HIA expects that a reasonable transition period would be a minimum of five years after the wide-spread adoption of these wireless technologies at all price points.

The Task Force, and Commission, should consider that there may be other technological developments by the time the Task Force issues its Report that would allow every hearing aid wearer to have an affordable way of equipping her hearing aid to receive Bluetooth Low Energy or similar technologies, in which case any handset providing those technologies could be considered HAC. Conversely, there may be new wireless handset technologies developed that could require a modified HAC standard.¹³

¹² The price of hearing aids generally includes the hearing evaluation, fitting, and follow-up treatment by a hearing professional.

¹³ For example, the Commission is proposing to allocate frequencies above 24 GHz for mobile (5G) use, but the current standards do not extend up to these frequency ranges. *See Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, Notice of Proposed Rulemaking, GN Docket No. 14-177 et al. (rel. Oct. 23, 2015). During the revision of ANSI C63.19, the committee can examine this forthcoming technology and potentially modify the standard to be ready for 5G deployment. The hearing aid industry will need assistance from the handset industry to do this.

B. Standards and Technologies for Meeting Compatibility.

The Commission seeks comment on whether new compatibility requirement should be based on minimal M and T ratings or whether other methods of achieving compatibility should be allowed, such as Bluetooth.¹⁴ Regulations should not abandon the current technologies but also should not hinder adoption of better technologies.

In this instance, Bluetooth Low Energy and other similar technologies at some point may provide for sufficient phone communications so that they can be recognized as valid methods of achieving HAC. But not all Bluetooth or digital wireless technologies should be considered HAC compliant. All technologies have potential problems, and even among current Bluetooth Low Energy technologies, not all devices are the same. It is reasonable to anticipate that new technologies will bring new requirements. For example, the Bluetooth protocol currently supports 39 profiles. A wireless handset would need to use the same Bluetooth profile as a hearing aid in order for the two to work together.¹⁵ If either lacks the profile, communications cannot occur; any new HAC standard would need to address this concern. Additionally, once the Bluetooth hearing aid profile is set, it must be included in the Bluetooth SIG certification program so that devices are tested to ensure that the standard has been properly implemented.

The Commission should take care in adopting a technical description of an acceptable HAC solution when using digital wireless technologies, ensuring that the handsets provide good quality of service (meaning good, reliable voice quality). We believe the technical work will best be done as part of revising the relevant HAC C63 standards that currently exist, but the Task

¹⁴ NPRM at ¶¶ 82-84.

¹⁵ Bluetooth SIG is currently at work developing this hearing aid Bluetooth profile. For a list of other profiles, see https://en.wikipedia.org/wiki/List_of_Bluetooth_profiles.

Force must look at market conditions such as the availability and wide-spread consumer adoption of new technologies.

Thus, the Commission should proceed on a dual-track, considering a path to establish rules for HAC compliance by new technologies – including Bluetooth LE and other low powered wireless technologies – while maintaining requirements for legacy technologies such as telecoil. Once a description is set and use of the technology has been well established, the Commission can consider accepting the new technologies as substitutes for current compatibility rules. Taking a conservative “wait and see” approach before allowing new wireless technologies to meet HAC requirements is needed because standards and technologies are still being developed and the technology must spread into all classes of hearing aids, not just high-end models. Additionally, there is currently regulatory uncertainty regarding the future of Bluetooth in the 2.4 GHz band,¹⁶ which may impede development and adoption of some of these new technologies.

As for the testing and rating of Bluetooth type devices,¹⁷ in general, engineers should be left to sort out the details, whether through OET publication of guidance, ANSI ASC C63 interpretations of its standard, or working towards revision of that standard, which can be and routinely is done.¹⁸

¹⁶ See Bluetooth SIG, *Further Comments and Detailed Report from TLPS & Bluetooth Demonstrations, FCC Technology Center - March 6, 2015*, IB Docket No. 13-213 and RM-11685 (filed March 20, 2015); Letter from Laura Stefani, Counsel for the Hearing Industries Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, IB Docket No. 13-213 and RM-11685 (filed July 13, 2015).

¹⁷ NPRM at ¶ 83.

¹⁸ HIA understands that the ANSI is now starting on the fifth revision of the C63.19 standard, which will allow engineers to translate the intention of HAC into appropriate tests and specifications for each transport method (*e.g.*, VoLTE, VOIP) used.

Finally, the Commission seeks comment about the standards that should apply.¹⁹ It also seeks comment, as requested by the Joint Proposal, as to “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.”²⁰ We believe the relevant standards address current wireless technologies and are being revised in preparation for future innovations. We do not see a need for alternative compliance.

C. Exemptions.

The Commission seeks comment on whether exemptions should be preserved or phased out during the transitional period, should it adopt the Proposal, or if any other exceptions should apply.²¹ Additionally, the Commission specifically questions whether or how exemptions should apply to GSM/1900 MHz handsets.²²

Exceptions hurt people with hearing loss who use hearing aids, by limiting their access to new or certain technologies. Though necessary on occasion, HIA opposes exceptions as a general rule, and believes that waivers granted under exceptional situations can provide any necessary regulatory relief. With regard to GSM in particular, it is still widely deployed, especially in rural areas, and given the time that it will take to replace these networks and handsets, GSM will remain in use for a long time. The Fourth version of ANSI C63.19 improved its test methodology to more directly measure the interference potential of an RF transmission. This improvement allowed some conservative assumptions to be eliminated, easing HAC compliance for GSM handsets. The FCC Labs has accepted this new test method. Continuing to

¹⁹ NPRM at ¶¶ 82-84.

²⁰ NPRM at ¶ 78.

²¹ NPRM at ¶¶ 86-87.

²² NPRM at ¶ 87.

allow the GSM “power down” option will impede the ability of individuals with hearing loss to achieve an “M3” or better HAC rating and there will be many dropped calls when phones operate in this mode and cannot adjust their power sufficiently to reach the nearest base station.²³

D. The Hearing Aid Industry Need Not Be Required to Take Specific Measures.

The Proposal asks the Commission to seek comment on “how the hearing aid industry . . . should take measures to ensure that consumers have improved access to the HAC ratings of hearing aids.”²⁴ Hearing aid design is not a problem in consumer satisfaction. HIA members have every incentive to market high-quality products that meet consumer needs, and do not ask that the handset industry do any extra work beyond what is necessary.

The idea that consumer dissatisfaction arises from lack of consumer access to HAC ratings is one propagated by the wireless industry without basis in fact. Neither Section 710 of the Communications Act nor the CVAA require hearing aid manufacturers to provide consumer disclosures.²⁵ Hearing aids are designed to meet American National Standards Institute (“ANSI”) technical standard C63.19 and are tested to meet International Electrotechnical Commission (“IEC”) standards before introduction to the market – both of which ensure a high degree of hearing aid immunity. In addition, hearing aids are regulated as either Class I or Class II medical devices by the Food and Drug Administration, which regulates all labeling of hearing aids. Moreover, HIA members have committed to providing a minimum M2/T2 performance, which when paired with widely available M3/T3 handsets provides reasonable assurance of compatibility.

²³ Dropped calls are more than an inconvenience; they can cost lives if the call that is dropped or cannot get through at all is an emergency call to 911.

²⁴ NPRM at ¶ 78.

²⁵ Twenty-First Century Communications and Video Accessibility Act of 2010 (CVAA).

HIA has worked for years with groups representing people with hearing loss, including the Hearing Loss Association of America (“HLAA”), to look for sources of consumer dissatisfaction and has yet to discover any consumer dissatisfaction traced to hearing aid design. However, as noted in several prior filings, HIA stands ready to engage in joint research with the wireless handset industry to examine this issue. There is no need for Commission regulation.²⁶

CONCLUSION

For the foregoing reasons, HIA supports adoption of the Joint Consensus Proposal, but requests that the Task Force be convened earlier; that it assist in enabling a dialog between the handset manufacturing groups and the hearing aid manufacturers; and that it include in its Report a finding as to whether new technologies may allow the Commission to eliminate compatibility requirements for minimal ratings. Additionally, any HAC standard for Bluetooth or related wireless technologies should not be allowed until appropriate standards are set, these technologies are widely adopted at all price points, and a five year transition period has occurred. Finally, the Commission should not require the hearing aid industry to take specific measures.

Respectfully submitted,



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January 28, 2016

²⁶ FCC and the FDA have a long-standing agreement with regard to coordination on RF issues related to medical devices, one that has been effective in protecting the public interest.