

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of)
Section 68.4(a) of the Commission's rules) WT Docket No. 06-203
Governing Hearing Aid Compatible Telephones)

Comments of the Technology Access Program of Gallaudet University

January 12, 2007

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I. Introduction

The Wireless Telecommunications Bureau announced on November 8, 2006 that it seeks comment on implementation of its rules regarding the compatibility of wireless devices (WD) with hearing aids. The Technology Access Program (TAP) of Gallaudet University submits these comments in response to the notice. We appreciate the Commission's commitment to assess the impact of its rules in achieving compatibility, the availability of new technologies that might achieve better accessibility, and the impact of the rules specifically on cochlear implant and middle-ear implant users.

TAP is an academic research program that has, for more than 20 years, collaborated with consumers, government and industry regarding the accessibility of technology to people who are deaf and hard of hearing. Staff of the program have been conducting research studies, education, and technical assistance on the issue of wireless phone hearing aid compatibility (HAC) for more than ten years. Through our major grant, the Rehabilitation Engineering Research Center (RERC) on Telecommunications Access, TAP has conducted several studies aimed at illuminating the complex issues surrounding wireless phone compatibility with hearing aids. The most recent of these has been in collaboration with scientists in the wireless telephone and hearing aid industries. Our outreach activities about wireless device hearing aid compatibility is also extensive. Working with our colleagues in the RERC on Hearing Enhancement, we

sponsored the first research conference on the topic in 1997. More recently, we have provided training and educational materials to audiologists and consumers nationwide. Staff of our program have been active and consistent participants in the ATIS Wireless HAC Incubator since its inception, and have contributed as outside experts to the work of ANSI C63.19. TAP has also assisted the cordless industry in assessing hearing aid compatibility in newer digital cordless technologies, by collaborating with the Telecommunications Industry Association and standards committee TR41.3. We have also previously filed comments with the Commission in this proceeding and numerous others having to do with accessibility of telecommunications to people with disabilities.

II. Impact of the Rules in Achieving HAC Compatibility with Digital Wireless Phones

The Commission issued rules in August, 2003 requiring hearing aid compatibility with some digital wireless phones, phased in over a three-year period with provision for review of the requirements in three years.¹

The key impact of the Commission's rules to date has been to help hearing aid wearers to identify a number of cellular telephone handsets that are less likely than others to result in bothersome interference in their hearing aids. Prior to the FCC requirements, although some handsets (based on our laboratory testing) did provide compatibility to some hearing aids, consumers had no way to find the compatible handsets among the growing selection of models available from each digital wireless carrier. Now hearing aid wearers have a logical starting point for their search and can try out a number of devices in the carriers' stores. According to the Hearing Loss Association of America, many are finding usable devices by identifying compliant phones.

¹ *In the Matter of Section 68.4(a) of the Commissions Rules Governing Hearing Aid Compatible Telephones*, Report and Order, WT Dkt. No. 01-309, FCC 03-168, 18 FCC Rcd 16753 (August 14, 2003), erratum, 188 FCC Rcd 18047 (2003) (*Hearing Aid Compatibility Order*), codified at 47 C.F.R. §20.19.

In its rules, the Commission urged the hearing aid industry to test and label hearing aids, so that consumers could have full knowledge of the predicted performance of the aid with a WD². This, to date, has not happened. The industry asked the Food and Drug Administration (FDA) for clarification of its rules and to allow labeling of devices without fear of repercussions due to a possible charge of false claim by a WD purchaser. In recent weeks the FDA has responded and the industry's requests were declined. This problem creates a situation where hearing aid wearers cannot fully assess, independently, the predicted compatibility between the two devices; they must try to consult a hearing health professional (who may not have access to information about immunity either) for a non-medical problem. Without information about their hearing aid's immunity, they can find the best-rated phone, through WD labeling, but they cannot know for sure that the two devices are compatible. Further, if their hearing aid is very immune, they will not know that they may find compatible phones among those that are not compliant (unlabeled) per the FCC rules.

The availability of compliant phones varies by air interface and, therefore, by carrier. The two dominant air interfaces in the U.S. today are CDMA and GSM. Of the four largest carriers, two utilize GSM.

At this time, the availability of compliant handsets for CDMA far exceeds the minimum number per carrier and manufacturer specified in the order on reconsideration³. The November 2006 industry status report to the FCC indicates 68 M3 or M4 compliant CDMA handsets offered by manufacturers, of a total of 78 handsets reportedly offered by manufacturers, or 87%.

² *Id.*, ¶89.

³ *In the Matter of Section 68.4(a) of the Commission's Rules Governing Hearing Aid-Compatible Telephones*, Order on Reconsideration and Further Notice of Proposed Rulemaking, WT Dkt. No. 01-309, FCC 05-122, 18 FCC Rcd 11208 (June 21, 2005).

In contrast, the number of M3 compliant handsets for GSM is at the current regulatory minimum. In the November 2006 industry status report indicates that 25 of 99 GSM handsets (25%) reportedly offered by manufacturers attained M3 or better. According to industry reports, some of these passing GSM handsets perform only partially on networks – in a single band of a dual band network for example – and so industry solutions for GSM, in the long term, are of concern. (Although GSM networks will evolve to Wideband CDMA, we are told by industry that large portions of the network will continue to be GSM for some time to come.)

It is too soon to know the impact of the rules in achieving HAC for people who couple their hearing aids to phones through the telecoil (telecoil users). The benchmark for telecoil has only been in place for few months and some of the technical requirements for telecoil compatibility set forth in ANSI C63.19 have recently undergone revision. The RERC on Telecommunications Access in collaboration with Etymotic Research and Motorola completed a study and provided the findings to the C63.19 working group to inform these revisions to the standard. A summary of this study, *Magnetic Performance Requirements for Wireless Device/Hearing Aid Telecoil Mode Compatibility*, was recently submitted to the FCC's record under WT Docket No. 06-203.

The current regulatory minimums for HAC handsets were designed to be a starting point, and as noted by the HLAA and other consumer groups in their comments, set a “low bar”⁴ (HLAA) for industry to achieve at the early stages of implementation. We are hopeful that, with continuing attention to this rule by the Commission, the number of handsets available from all carriers will grow significantly in the next several years. During the nearly 12 years since

⁴ WT Docket 06-203, *Comments of the Hearing Loss Association of America, Alexander Graham Bell Association for the Deaf and Hard of Hearing, American Academy of Audiology, American Association of People with Disabilities, Deaf and Hard of Hearing Consumer Advocacy Network, National Association of the Deaf, and Telecommunications for the Deaf and Hard of Hearing, Inc.*, submitted to the Commission January 12, 2007.

consumers first petitioned the FCC about wireless phone compatibility with hearing aids, wireless telephones have become a necessity of modern life. For a technology to be considered accessible, the user must have a choice of models with a variety of features and price points. Since carriers compete on price and features as well, it is necessary for consumers to have a full choice of carriers. The present situation is clearly only a beginning and more work from industry will be necessary. We strongly urge the Commission to provide motivation for industry to achieve eventual 100% hearing aid compatibility.

III. The Development of New Technologies that Could Achieve Greater or More Efficient Access

Telecoil coupling remains the industry standard for wireless non-acoustic coupling to a hearing aid. While other wireless technologies, in particular Bluetooth, have become widely available in cell phones, hearing aid technology is not as well suited to this form of wireless coupling.

Although Bluetooth technology has reduced in size and improved in battery efficiency, these advances have not been to a degree that would permit Bluetooth to be implemented as a built-in hearing aid feature. Bluetooth is currently available only as an accessory to hearing aids which either have a direct audio input interface or a telecoil. In addition, the offerings for such add-ons are currently available from only two companies. It is likely that if Bluetooth or a similar technology can overcome the current size and efficiency problems prohibiting its use within hearing aids, it might, in the long-term, replace the telecoil. However, there is no way to predict when such advances might take place. Given these limitations, telecoil coupling will likely continue to be the standard for non-acoustic wireless coupling in hearing aids for some time to come.

Millions of Americans supplement their voice telecommunications with visual communication tools such as wireless e-mail, instant messaging, short messaging, web access, and other services. A number of telecommunications relay services are also available through wireless internet services. These forms of communication by no means replace voice telecommunications for people who use hearing aids or cochlear implants, but they are important supplements, especially when the consumer is struggling to deal with difficult listening environments, recordings, and unfamiliar speakers. Compliant phone/PDA combination devices (“smart phones”) will clearly help hearing aid wearers achieve greater and more efficient access to telecommunications. One of the issues surrounding access by such devices is the electromagnetic energy that is emitted by the display. The ANSI C63.19 standard permits turning off the display when measures are taken, as long as the display is capable of being off during regular use. A telecoil HAC compliant phone may still present display “noise” to the telecoil user. Advice to consumers often includes the caveat that they should seek a cell phone that allows them to turn off their screen, so as to avoid interference from that source. Since screens are becoming ever more important in wireless telephone technology, we believe that addressing displays as a source of interference will be even more important in the years ahead. Further, the great increase in accessibility afforded by phone/PDA WDs merits benchmarking consideration in looking ahead to the future timetable. As many as possible of these devices need to be hearing aid compatible.

IV. The Order’s Impact on Cochlear Implant and Middle-Ear Implant Users

Cochlear implants (CI) have increasingly incorporated telecoil as a means of telephone coupling, whereas when the issue of hearing aid/WD incompatibility first arose, CI users were limited to direct microphone input or direct audio patch. Thus with regard to telephone

interface, CIs have become more similar to hearing aids in that they may have both microphone and telecoil coupling options.

In terms of interference from wireless devices, we are unaware of disproportionate problems among CI users compared to HA users in WD use. Even so there may still be unknown issues related to cochlear implants that RF emissions from WDs may affect. For example, it is generally unknown how signal processing strategies might impact the perception of interference.

There has been recent research on the development of Bluetooth technology for cochlear implants. However, the implementation of this technology will also be as an accessory or add-on to the cochlear implant rather than built-in to the device.

V. Actions for the Future

The Commission has asked for comment on the following: 1) whether increase or decrease the 2008 requirement for 50% of phone models to comply with a U3 (M3) rating; (2) adopt additional HAC implementation benchmarks after 2008; and (3) modify other HAC requirements.

Since early November, our center has been engaged in numerous meetings with the wireless industry, along with consumer representatives, in which industry is proposing alternative plans for setting minimums for compliant handsets in the coming years. We have been participating in good faith, contributing analysis of the proposals and technical assistance to the consumer groups. At this time, we have agreed not to suggest to the Commission specific recommendations regarding a growth curve or benchmarks for the availability of both RF and Telecoil compatible handsets, pending possible consensus on a series of recommendations. Within the next week, we expect that our discussions will end, and we will address these issues,

along with comments about technical developments based on industry information, in our reply comments.

VI. Support for Consumer Comments

We have reviewed and support the comments⁵ submitted by the Hearing Loss Association of America, Alexander Graham Bell Association for the Deaf, American Academy of Audiology, National Association of the Deaf, Telecommunications for the Deaf, Inc., and the Deaf and Hard of Hearing Consumer Action Network.

VII. Conclusions

The initial implementation of the FCC rules is helpful for consumers seeking WD that are most likely to work with their hearing aids. The availability of handsets is quite variable by air interface and since GSM is still an important technology, we express concerns that more work needs to be done by industry on GSM HAC, as well as on HAC for emerging air interfaces that have yet to be addressed. The rules have not had their desired effect on the labeling of hearing aids.

Telecoil remains the default wireless coupling technology for hearing aids; technology changes in hearing aid coupling have not overtaken the relevance of the rules. More research on cochlear implants and middle-ear implants is warranted, but to date we do not have knowledge of disproportionate problems for users of these technologies. Special attention is needed to phone/PDA combinations that afford even higher levels of accessibility because visual modes of communication are valuable supplements to hearing. These devices may have unique compatibility challenges due to display technology.

⁵ *Id.*

We request that the Commission act to greatly increase the number of compliant and labeled handsets on the market, but at this time do not suggest a specific timetable, as discussions with industry on this point are ongoing.

Respectfully submitted,

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