Before the ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD Washington, DC 20004

In the Matter of)	
Request For Updated Information And Comment on Wireless Hearing Aid)	Docket No. ATBCB-2015-0002
Compatibility Regulations)	RIN 3014-AA37
)	
)	

COMMENTS OF THE TELECOMMUNICATIONS INDUSTRY ASSOCIATION

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I. INTRODUCTION AND SUMMARY

The Telecommunications Industry Association ("TIA")¹ hereby submits these comments in response to the Architectural and Transportation Barriers and Compliance Board ("Access Board or Board") Notice of Proposed Rulemaking ("NPRM").² The NPRM proposes revisions to the Board's standards for electronic and information technology developed, procured, maintained, or used by federal agencies in accordance with Section 508 of the Rehabilitation Act of 1973³ ("508 Standards") and guidelines for equipment covered by Section 255 of the Communications Act of 1934⁴ ("255 Guidelines").

TIA's membership consists of hundreds of companies that manufacture and supply ICT equipment and services, including to the Federal government. TIA itself serves as a standards development organization for the ICT industry, and develops and maintains voluntary standards for the performance and accessibility of communications products, specifically wireline

⁴ 47 U.S.C. § 255.

¹ TIA is the leading trade association for the information and communications technology ("ICT") industry, representing companies that manufacture or supply the products and services used in global communications across all technology platforms. TIA represents its members on the full range of policy issues affecting the ICT industry and forges consensus on industry standards. Among their numerous lines of business, TIA member companies design, produce, and deploy a wide variety of devices with the goal of making technology accessible to all Americans. TIA's standards committees, which operate under an American National Standards Institute-accredited process, create consensus-based voluntary standards for numerous facets of the ICT industry.

² Information and Communication Technology ("ICT") Standards and Guidelines, Notice of Proposed Rulemaking, Docket No. ATBCB-2015-0002, RIN No. 3014-AA37, 80 Fed. Reg. 10880 (Feb. 27, 2015) ("NPRM").

³ 29 U.S.C. § 794d.

telephones with handsets, headsets, and speakerphones, communications gateways, and other products that are typically installed at the user's premises.⁵

TIA and its members recognize that the marketplace for ICT products has undergone significant change since the Board's original standards and guidelines were adopted. We appreciate the critical nature of the work that the Board is engaged in and fully support its efforts to achieve the goal of ensuring that people with disabilities continue to have access to the most advanced and innovative ICT. TIA was a member of the Telecommunications and Electronics and Information Technology Advisory Committee (TEITAC), which advised the Board on updating these standards⁶, and has been actively engaged in the telecommunications activities of the Access Board going back to the development of the 508 standards and 255 guidelines.⁷

While TIA is generally supportive of the Board's efforts, we have concerns regarding some aspects of the proposed standards and guidelines. The comments below express the need for the Board to ensure its rules clearly recognize the statutory differences in scope between the authority to adopt standards versus those authorizing guidelines. We also convey our strong support for greater alignment with the recently adopted European accessibility standard, ETSI EN 301 549. In addition, we provide

⁶ *See* Telecommunications and Electronic and Information Technology Advisory Committee, Report to the Access Board: Refreshed Accessibility Standards and Guidelines in Telecommunications and Electronic and Information Technology (Apr. 2008), available at <u>http://www.access-</u> board.gov/sec508/refresh/report/.

⁵ See TR-41Standards, <u>http://www.tiaonline.org/all-standards/committees/tr-41.</u>

⁷ See, e.g. TIA's joint comments with CTIA-The Wireless Association to the Board's 2011 ANPRM, available at http://www.tiaonline.org/sites/default/files/pages/TIA%20and%20CTIA%20Joint%20Comments%20on%20Access%20Board%20ANPRM_0.pdf.

suggested improvements to the proposed rules to reduce ambiguity, afford manufacturers needed design flexibility, and appropriately consider technical feasibility factors.

II. THE ACCESS BOARD'S AUTHORITY UNDER SEC. 255 AND ITS REGULATORY SCOPE ARE LIMITED IN COMPARISON TO THOSE UNDER SEC. 508 AND THE DRAFT RULES SHOULD REFLECT THIS DISTINCTION.

Under Section 508 of the Rehabilitation Act of 1973, the Access Board has the authority to issue and publish standards for electronic and information technology and performance criteria needed to implement the requirements for accessibility of federal development, procurement, maintenance or use of these technologies.⁸ Section 255 of the Communications Act simply tasks the Board with developing guidelines "for accessibility of *telecommunications* equipment and customer premises equipment."⁹ These statutes not only differentiate in how they treat the Board and what it is authorized to do but they also cover differing scopes of products. Under the Communications Act, "telecommunications equipment" means equipment used to provide telecommunications services, including software only to the extent that such software is integral to the equipment.¹⁰ TIA and its members are concerned that the Board's proposed rules do not sufficiently recognize and take account of the distinction between these two areas of authority and ultimately, what scope of products can be appropriately addressed under 508 standards versus the 255 guidelines.

In the NPRM, the Access Board proposes that the scope of its section 255 guidelines should encompass any software or content "associated with the use" of covered

⁸ See § 794d (a)(2)

⁹ 47 U.S.C. 255 (e) (emphasis added).

¹⁰ See 47 U.S.C. § 153 (52).

telecommunications equipment.¹¹ The Access Board further proposes that telecommunications equipment manufacturers "shall ensure that ICT [a broader category than telecommunications equipment] is accessible to and usable by individuals with disabilities...."¹² The products covered within the telecommunications category are significantly more limited than those within the category of ICT. Software is a key component of modern mobile devices and it would be overly burdensome and beyond the agency's scope of authority for all software "associated with" modern ICT to be brought under the umbrella of the guidelines. TIA strongly urges the Board to revise the language in its proposed guidelines to ensure that they are consistent with the appropriate regulatory scope and only address software that is integral to the telecommunications equipment.

III. TIA SUPPORTS GREATER HARMONIZATION BETWEEN THE ACCESS BOARD'S PROPOSED STANDARDS AND THE EXISTING EUROPEAN ACCESSIBILITY STANDARD.

Industry stakeholders, including TIA members, have consistently stressed the importance of harmonization of proposed standards with established global accessibility requirements to enable manufacturers to contain their design and manufacturing costs and also increase the range of accessible ICT devices that are available for sale in the U.S. marketplace. Indeed, in the NPRM, the Access Board acknowledges the validity and need for the adoption of globally harmonized standards. The Board takes significant effort to lay out the history of its efforts to consider ongoing European activities to develop accessibility standards leading up to this NPRM and discusses how the NPRM compares with similar provisions in ETSI EN 301 549 V1.1.1

¹¹ See NPRM at 175, available at 80 Fed. Reg. at 10944 (discussing the scoping requirements for the 255 Guidelines).

¹² *Id*.

(2014-02), "Accessibility requirements suitable for public procurement of ICT products and services in Europe."¹³

While TIA appreciates the Board's recognition of the need for harmonization and the importance of consistent standards across the globe, we believe there are still a number of areas where the Board chose to diverge from the established standard in a way that presents significant challenges to industry and could ultimately have a negative impact on the availability of diverse, off-the-shelf accessible ICT solutions. On some of these topics, the European approach affords industry the design flexibility necessary to use various solutions to achieve the desired functional outcome. The NPRM states the Board's approach is similar to Europe's EN 301 549 because both use functional performance criteria, however the Board's proposals are much more prescriptive than those adopted by Europe for certain criteria. Unlike the European approach, which simply outlines the desired functional outcome, the NPRM takes a more restrictive approach by identifying the mechanism or solution by which this outcome must be achieved.

This issue is crucial as the marketplace for ICT goods is not cordoned off by geographic or country borders. As a result, the Board's approach may result in an outcome contrary to what it said it wanted to do which is to enable manufacturers to design accessible products for sale on the global marketplace that can be used in both the United States and Europe. Therefore, TIA believes that this limited harmonization approach sets a precedent for other countries to impose unique requirements, creating an unreasonable and unsustainable environment for industry by potentially requiring manufacturers to build devices specific to each region and market. These kinds of variations may ultimately limit any benefits that the Board intended to be gained from

¹³ See ETSI EN 301 549, available at

http://www.etsi.org/deliver/etsi_en/301500_301599/301549/01.01.01_60/en_301549v010101p.pdf.

harmonized standards, resulting in added costs for governments, consumers and industry alike. We encourage the Board to adopt rules that more closely support the concept of "build one, sell everywhere," which will benefit the marketplace for accessible goods.

IV. MANY OF THE BOARD'S PROPOSED PROVISIONS REQUIRE GREATER FLEXIBILITY AND CLARITY TO ENSURE THAT CONSUMERS WITH DISABILITIES CAN CONTINUE TO TAKE ADVANTAGE OF THE VARIETY OF INNOVATIVE ICT SOLUTIONS IN THE MARKETPLACE.

As we have expressed above, TIA and its members strongly believe the best approach is for the Board to make its standards consistent with those already adopted in Europe. However, we also provide comment on specific provisions in the NPRM and recommend revised language that will help the Board achieve its ultimate goal of ensuring "accessibility for people with disabilities keeps pace with advances in electronic and information technology."¹⁴

TIA believes that it is critical that the Access Board afford manufacturers maximum flexibility in any updates to the 508 standards and 255 guidelines as this will further the interests of all stakeholders, people with disabilities, government, and industry alike, by allowing for customer needs to be met in the most technically and economically feasible manner. Furthermore, the Board should ensure that its proposed standards are clear and unambiguous as uncertainty may negatively impact innovation and investment for accessible ICT goods. The following specific comments and recommended revisions are provided to help improve the Board's proposed rules consistent with guiding principles on flexibility, feasibility, and clarity:

• 402.2 Speech-Output Enabled

• *Board's proposal:* ICT with a display screen shall be speech-output enabled. Operating instructions and orientation, visible transaction prompts, user input

¹⁴ See NPRM at 9, available at 80 Fed. Reg. at 10880.

verification, error messages, and all displayed information for full use shall be accessible to, and independently usable by, individuals with vision impairments. Speech output shall be delivered through a mechanism that is readily available to all users, including, but not limited to, an industry standard connector or a telephone handset. Speech shall be recorded or digitized human, or synthesized. Speech output shall be coordinated with information displayed on the screen. **EXCEPTIONS**: 1. Audible tones shall be permitted instead of speech where the content of user input is not displayed as entered for security purposes, including, but not limited to, asterisks representing personal identification numbers. 2. Advertisements and other similar information shall not be required to be audible unless conveying information necessary for the transaction being conducted.¹⁵

• *TIA Recommendation:* TIA is concerned about the expansive nature of this proposal, as written, which has the ability to bring a number of ICT products within scope that do not have the capability to meet the requirements. For example, there are some wireline phone products that may have a display screen but lack the capability for speech output. It is recommended that the language in the first sentence be modified, to appropriately restrict the scope of products, to state, "*Stationary and wireless ICT* with a display screen shall be speech-output enabled." Additionally, we suggest adding the following sentence to explain what stationary ICT means for the purposes of this provision: *Stationary ICT products are those which have a fixed position and are not movable*.

• 402.3.2 Non-private listening

- Board's proposal: Where ICT provides non-private listening, incremental volume control shall be provided with output amplification up to a level of at least 65 dB Where the ambient noise level of the environment is above 45 dB, a volume gain of at least 20 dB above the ambient level shall be user selectable. A function shall be provided to automatically reset the volume to the default level after every use.¹⁶
- TIA Recommendation: As written, the Board's proposal is ambiguous and the provision requiring users to be able to select "a volume gain of at least 20 dB above the ambient level" would be impractical in very noisy environments like sporting events and concerts. TIA recommends deleting this sentence so the provision reads as follows: "Where ICT provides non-private listening, incremental volume control shall be provided with output amplification up to a level of at least 65 dB. A function shall be provided to automatically reset the volume to the default level after every use."
- 407.3.1 Identification

¹⁵ *Id.* at 181, 80 Fed. Reg. at 10945.

- *Board's proposal:* Input controls shall be tactilely discernible without activation and operable by touch. Where provided, key surfaces outside active areas of the display screen shall be raised above surrounding surfaces.¹⁷
- TIA Recommendation: The requirement that "key surfaces outside active areas of the display screen shall be raised above surrounding surfaces" is overly prescriptive and restrictive in terms of interface design. As an example, it would restrict design options for smartphones and interfere with holster use, potentially causing false dialing scenarios (E911 pocket dials, etc.). Likewise, the requirements would preclude use of concave buttons, which are equally effective in providing tactile discernibility. TIA recommends the second sentence ("Where provided, key surfaces outside active areas of the display screen shall be raised above surrounding surfaces.") be removed and the provision read as follows: "Input controls shall be discernible without activation and operable by touch. "

• 407.3.2 Alphabetic Keys

- *Board's proposal:* Where provided, individual alphabetic keys shall be arranged in a QWERTY keyboard layout and the "F" and "J" keys shall be tactilely distinct from the other keys. Where the ICT provides an alphabetic overlay on numeric keys, the relationships between letters and digits shall conform to ITU-T Recommendation E.161 (incorporated by reference in Chapter 1).¹⁸
- *TIA's Recommendation:* For certain classes of products, such as smartphones, it is not practical to have both the "F" and "J" keys as well as the "5" key tactilely distinct from the other keys given the extremely small size of the keys and the fact that the "5" key is typically positioned beside the "F" key. Thus, to avoid confusion with the standard nib on the "5" key, it is recommended that the language be modified as follows:

407.3.2 Alphabetic Keys. Where provided, individual alphabetic keys shall be arranged in a QWERTY keyboard layout and the "F" and "J" keys *should* be tactilely distinct from the other keys *where practical to do so.* Where the ICT provides an alphabetic overlay on numeric keys, the relationships between letters and digits shall conform to ITU-T Recommendation E.161 (incorporated by reference in Chapter 1).

• 410.2 Volume Gain

Board's proposal: Volume gain shall be provided and shall conform to 47 CFR 68.317.¹⁹

¹⁸ Id.

¹⁷ *Id.* at 184, 80 Fed. Reg. at 10945

¹⁹ Id. at 193, 80 Fed. Reg. at 10946.

TIA Recommendation: The encoded regulation, 47 CFR 68.317, referenced by the Board is a section of the Federal Communication Commission's part 68 rules that govern the connection of terminal equipment to the telephone network. Wireline terminal equipment is significantly different from wireless and other types of ICT equipment. Wireline is currently covered by the hearing aid compatibility ("HAC") requirements under the Commission's Part 68 rules. TIA is concerned that this proposal does not appropriately maintain this distinction and thus, we recommend the language of the proposal be modified to ensure it is limited to products that are covered by the part 68 rules. The proposal should be modified as follows: Volume gain on analog or digital wireline telephones shall be provided and shall conform to 47 CFR 68.317.

• 410.5 Digital Encoding of Speech

- Board's proposal: ICT shall transmit and receive speech that is digitally encoded in the manner specified by ITU-T Recommendation G.722 (incorporated by reference in Chapter 1) for encoding and storing audio information. EXCEPTION: Where ICT is a closed system, conformance to standards other than ITU-T Recommendation G.722 shall be permitted where equivalent or better acoustic performance is provided and where conversion to ITU-T Recommendation G.722 at the borders of the closed system is supported.²⁰
- TIA Recommendation: ITU-T G.722 is a legacy wideband audio codec standard approved in 1988 and is not applicable for all product categories covered by the Access Board's proposed rule. Other significantly more efficient wideband codecs with superior audio quality have been developed more recently that are widely deployed for product categories such as mobile phones and real-time Internet communications. AMR-WB (standardized as ITU-T G.722.2) is the required codec in GSM and WCDMA cellular networks for wideband speech and for multimedia services when wideband speech (with 16 kHz sampling frequency) is supported. ²¹ AMR-WB is widely deployed for mobile phones given that its use is also recommended by the 3GPP 26.114 standard. Industry also expects AMR or AMR-WB to be the mandatory codec for Mission Critical Push to Talk ("MCPTT") services, which will be deployed by public services moving forward.

For interactive real-time communications over the Internet, the Opus codec, a proposed IETF standard, is the industry consensus solution and is widely deployed. Opus produces dramatically better audio quality for the same bandwidth as G.722. Thus, mandating G.722 for all ICT providing two-way voice communication would result in a degraded user experience by precluding the use of newer technologies with proven superior audio quality. It would also preclude the use of widely deployed industry consensus standards that were developed to

 $^{^{20}}$ *Id*.

²¹ This includes Multimedia Messaging Service (MMS), IMS Messaging and Presence services, Packet-Switched Streaming (PSS), Multimedia Broadcast/Multicast Service (MBMS) and Push-to-talk over Cellular (PoC).

meet the unique needs of specific product categories and for which industry agrees G.722 is not an appropriate standard.

TIA recommends the following changes to the proposed standard: Adopt with EN 301. 549, clause 6.1 (Audio bandwidth for speech) as stated below to address concerns raised herein for different product categories, and allow for codec negotiation facilitating the evolution toward better codecs in the future.

"Where ICT provides two-way voice communication, in order to provide good audio quality, that ICT should be able to encode and decode twoway voice communication with a frequency range with an upper limit of at least 7 000 Hz. ADVISORY NOTE 1: For the purposes of interoperability, support of Recommendation ITU-T G.722 [i.21] is widely used. ADVISORY NOTE 2: Where codec negotiation is implemented, other standardized codecs such as Recommendation ITU-T G.722.2 [i.22] are sometimes used so as to avoid transcoding."

• 410.6 Real-Time Text ("RTT") Functionality

- *Board's proposal:* Where ICT provides real-time voice communication, ICT shall support real-time text functionality and shall conform to 410.6.²²
- *TIA Recommendation:* TIA has a number of concerns with the currently proposed text for 410.6 and its sub-parts.

TIA is concerned about the Board's proposal to have all ICT that provides realtime voice communication support RTT functionality. The Access Board's rationale for this proposal is unclear as there is little information provided to justify a need. The need for this feature is not backed up by market research, which establishes specific consumer use cases to be satisfied by RTT and which cannot be adequately addressed by the "multiple text-based means of communication available in the marketplace"²³. Likewise, the Access Board does not explain why it is proposing to mandate RTT while stating "[e]mployees who do not need to communicate using RTT would otherwise be able *to disable or ignore this feature*."²⁴ This seems to indicate that requiring RTT would result in added cost for a feature that would not be used by most federal employees or the general public.

²² Id. at 193, 80 Fed. Reg. at 10946.

²³ *Id.* at 55, 80 Fed. Reg. at 10900.

²⁴ *Id.* at 27, 80 Fed. Reg. at 10888 (emphasis added).

The seemingly expansive scope of the proposed requirement is problematic as it makes several underlying assumptions concerning the state of the technological ecosystem. For example, in the wireless context, RTT functionality involves a co-dependency between mobile handsets and the network. There must be support for the feature both on the handset and in the network. Even if handset manufacturers add support for RTT, consumers cannot expect to have access to this feature unless carriers make significant upgrades to their wireless networks; decisions that are outside the control of manufacturers.

Likewise, in proposing a single standard in 410.6.3.2 for interoperability for VoIP products, the Access Board assumes that the technical requirements for interoperability are common across all ICT product sectors or categories (*e.g.*, wireless, wireline, VoIP). This is simply not the case; for example, in the case of real-time web-based applications, industry has come to consensus that RFC 4103 is not a suitable standard and instead is implementing and deploying the XEP-0301 standard.

TIA disagrees with the Access Board's statement "that RTT is sufficiently mature as a technology (and has sufficiently proliferated in the current ICT marketplace)." As noted in the NPRM, several standards are currently in development and the Access Board points out in its discussion of RTT that different technical approaches are emerging for real-time web-based applications providing two-way voice communications. In addition, TIA members are not aware of any commercial implementation in the US market today.

Given the nascent nature of RTT, TIA recommends the Access Board follow the approach taken in EN 301 549, allowing RTT to be either built-in or "added later" giving needed flexibility to both federal agencies and industry. Given that telecommunications equipment manufacturers generally develop common products for sale globally, it is extremely beneficial to minimizing development costs to have harmonization of technical requirements with national and international consensus standards. Maximizing alignment with EN 301 549 will help to eliminate potential fragmentation of accessibility standards that may preclude certain products for being made available within the US marketplace. It will also reduce costs for federal agencies and taxpayers who do not need this feature.

TIA also recommends that for provision 410.6.3.2 the Access Board adopt its original language from the 2010 ANPRM: "When ICT interoperates with Voice over Internet Protocol (VoIP) products or systems using Session Initiation

Protocol (SIP), they shall support transmission of RTT that conforms to a commonly used cross-manufacturer non-proprietary standard." The benefit of this approach is that it does not reference any specific standard for RTT. In this way, as industry comes to consensus around standards for RTT in the wireless, wireline and VoIP contexts, the relevant standards can be deployed. Moreover, RFC 4103, like the other standards mentioned in the NPRM such as XEP-0301, is not a final standard that can be referenced in the Access Board's proposed rule.²⁵

Adopting these recommendations will provide government with flexibility in procuring only the technology it needs, thus controlling costs, and provide industry with flexibility in implementation to ensure appropriate interoperability standards can be utilized within each product classification, and the ability to leverage new technology standards as they emerge. Given that technical standards are constantly changing and evolving, it is imperative that the Access Board does not preclude industry from leveraging technological advancements, nor should it preclude different product sectors or categories from utilizing separate implementation approaches for interoperability that are applicable for that respective product sector or category.

• 412.1 and 503.4.2 Audio Description

- Board's proposals:
 - 412.1 Where ICT displays or processes video with synchronized audio, ICT shall provide a mode of operation that plays associated audio description.
 - 503.4.2 Where user controls are provided for program selection, ICT shall provide user controls for the selection of audio description at the same menu level as the user controls for volume or program selection.
- TIA Recommendation: TIA is concerned about the technical feasibility of these proposals as they set out requirements for which there is currently a lack of established industry standards. Currently, there is a standard (referenced in the Board's proposed rules) that applies to digital television content and tuners. In the case of ICT and video content other than digital television, however, there is no industry standard for audio description and the referenced digital television standard is not an appropriate standard for these product categories. In proposing new regulatory requirements, it is imperative that the Board gives appropriate

²⁵ Per IETF, RFC 4103's official status is "Proposed Standard"; it is not a final "International Standard" and likewise, cannot be referenced by the Access Board in the 508 standards and 255 guidelines. *See <u>http://www.rfc-editor.org/search/rfc_search_detail.php?rfc=4103&pubstatus%5B%5D=Any&pub_date_type=any.</u>*

consideration to the technical feasibility of its proposals. The lack of industry standards outside the digital television context presents clear technical obstacles to manufacturers' ability to meet these proposed requirements.

V. CONCLUSION

In conclusion, TIA strongly urges the Access Board to adopt rules that are flexible and clear that are founded on considerations of technical and economic flexibility. In addition, TIA encourages the Board to more closely align with rules already approved by their European counterparts to help facilitate the ability of ICT products to more effectively and efficiently meet the needs of people with disabilities in the global marketplace for these goods. Finally, TIA requests that the Board adopt the recommended revisions we have outlined above, consistent with these principles.

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