



1200 G Street, NW  
Suite 500  
Washington, DC 20005

P: +1 202-628-6380  
W: [www.atis.org](http://www.atis.org)

July 24, 2023

## VIA ELECTRONIC FILING

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
45 L Street NE  
Washington, DC 20554

**Re: *Ex Parte Notice – Improvements to Benchmarks and Related Requirements Governing Hearing Aid-Compatible Mobile Handsets, WT Docket No. 15-285; Amendment of the Commission’s Rules Governing Standards for Hearing Aid-Compatible Handsets, WT Docket No. 20-3.***

Dear Ms. Dortch,

On July 20, 2023, representatives from the ATIS Hearing Aid Compatibility Task Force (“HAC Task Force”) spoke with representatives from the Federal Communications Commission’s (“Commission”) Consumer and Governmental Affairs Bureau, Wireless Telecommunications Bureau, and Office of Engineering and Technology via video conference regarding the pending Waiver Request in the above-captioned dockets.<sup>1</sup> A list of meeting attendees is attached to this letter.

During the meeting, the HAC Task Force representatives highlighted the unanimous record support for the Waiver Request and discussed various technical details related to the consensus interim testing standard.<sup>2</sup> The HAC Task Force representatives reiterated their strong commitment to Chairwoman Rosenworcel’s vision of achieving 100% hearing aid compatibility (“HAC”) for wireless handsets. They also explained that the Waiver Request – which would authorize an interim approach to testing volume control while the current standard is revised – is a critical component of achieving this goal so that consumers with hearing loss can have the same access to the newest and most advanced handset models, similar to those consumers without hearing loss. Grant of the Waiver Request by Labor Day will keep the industry on the path to achieving 100% HAC for wireless handsets.

As the HAC Task Force has previously explained, the Waiver Request is necessitated by a disconnect between the current volume control standard and the continually improving

---

<sup>1</sup> See *Wireless Telecommunications Bureau Seeks Comment on ATIS Waiver Request on Behalf of the Covered Entities of the Hearing Aid Compatibility Task Force*, Public Notice, WT Docket No. 20-3, DA 23-250 (WTB rel. Mar. 23, 2023); see also *Petition of ATIS on Behalf of the Covered Entities of the Hearing Aid Compatibility Task Force for Limited, Interim Waiver*, WT Docket Nos. 15-285 & 20-3 (Dec. 16, 2022) (“Waiver Request”).

<sup>2</sup> See *Hearing Aid Compatibility Task Force Final Report and Recommendation*, WT Docket No. 15-285 (Dec. 16, 2022) (“HAC Report”).

performance of wireless devices.<sup>3</sup> Today's HAC-designed phones have a functioning volume control component and provide a better T-coil experience. Nevertheless, the TIA-5050-2018 approach to testing volume control results in every current HAC-certified handset failing to pass the 2019 ANSI Standard. This appears to be due at least in part to the TIA 5050 testing methodology that was developed using pulsed noise signals, which were found to be insufficiently voice-like to be compatible with many modern codecs.<sup>4</sup>

After investigation, Working Group 3 of the HAC Task Force identified three areas of the TIA 5050 standard that need further consideration: (i) receive distortion and noise performance; (ii) acoustic frequency response; and (iii) consideration of codecs with speech bandwidth exceeding 50-7000 Hz.<sup>5</sup> As noted in the record, addressing the issues in the TIA 5050 standard will take some time, and TIA is already working to address these issues.<sup>6</sup>

The HAC Task Force representatives noted in the meeting that, if the 2019 ANSI Standard goes into effect without an interim waiver to address the flaws in the TIA 5050 standard, phones will soon enter the marketplace that are not labeled as HAC-certified even though they have better accessibility features than those released before 2021. This could lead to consumer confusion and may result in consumers purchasing older and less effective accessible technology.

To avoid these results, in December 2022, the HAC Task Force presented a consensus, interim approach that will enable new handsets to become HAC-certified while the TIA 5050 standard is further investigated and revised. The solution will meet the Commission's goals of providing an objective test to verify the newer, better devices in the marketplace and keeping up the progress of moving towards 100% HAC. Record support for the HAC Task Force's recommendation was unanimous.<sup>7</sup>

In the meeting, the HAC Task Force representatives discussed various technical details related to the consensus interim testing standard with Commission staff. Members explained that the current TIA 5050 standard does not reflect the technical difficulty of developing a test signal with speech-like characteristics that could pass substantially unchanged through all possible

---

<sup>3</sup> See *Amendment of the Commission's Rules Governing Standards for Hearing Aid-Compatible Handsets*, Order, at para. 11, WT Docket No. 20-3, DA 23-327 (Apr. 14, 2023) (explaining that a previously granted interim extension would "ensure that the handset marketplace will not be disrupted by certification issues and will continue to operate as it had during the existing two-year transition period.").

<sup>4</sup> Waiver Request at 3-4.

<sup>5</sup> HAC Report 21-22.

<sup>6</sup> See Reply Comments of the Telecommunications Industry Association at 1-2 (filed May 12, 2023) (TIA Reply Comments).

<sup>7</sup> See, e.g., Comments of Samsung Electronics America (filed April 24, 2023); Mobile & Wireless Forum Comments (filed May 3, 2023); TIA Reply Comments; Reply Comments of the Consumer Technology Association (filed May 18, 2023); Reply Comments of the Competitive Carriers Association (filed May 18, 2023).

speech codecs.<sup>8</sup> Testing for TIA 5050's distortion and frequency response requirements falls short in demonstrating that the handset has an amplifier/speaker combination that can produce a loud enough speech signal without unacceptable distortion and frequency response deviation.<sup>9</sup> The HAC Task Force representatives explained that if the acoustic output distortion and frequency response requirements are met with the specified test signal for at least one codec/air interface combination, then the test device's audio amplifier/speaker combination should have similar output capability for all codec/air interface pairings and show that the amplifier/speaker does not cause unacceptable distortion and frequency response deviation.<sup>10</sup>

Additionally, the HAC Task Force representatives explained that difficulties with testing distortion and frequency response do not appear to be present for conversational gain testing, and thus, testing for all combinations of codecs and air interfaces under the scope of TIA 5050 should not be problematic.<sup>11</sup> To align with TIA 5050's intent and the Commission's goal of an objective test for volume control, the consensus approach to interim testing presented in the HAC Report and Waiver Request is to preserve the conversational gain measurements on all codecs and air interfaces at the 2N application force, which showed a high pass rate (as compared to testing at the 8N application force).

The HAC Task Force representatives advised that investigation and analysis of these issues is best suited to the standards process<sup>12</sup> and TIA TR-41, the standards engineering committee, is working to revise the TIA 5050 standard to address the issues found in meeting the volume control requirements.<sup>13</sup> The work is ongoing with regular meetings attended by a diverse group of stakeholders. Under the consensus interim-waiver solution, while the TIA 5050 standard is being evaluated, volume control testing at only the 2N force for all air-interfaces and those codecs under the scope of TIA 5050 (i.e., codec with speech bandwidth within 50-7000 Hz) would objectively measure speech amplification and ensure that handsets must offer quality volume control capability for consumers in order to be HAC.<sup>14</sup> The HAC Task Force representatives also discussed the possibility of a waiver requirement to test conversational gain for all available codecs and air interface combinations at the 8N level.

---

<sup>8</sup> Waiver Request at 10.

<sup>9</sup> HAC Report at 88.

<sup>10</sup> Report at 89. Research has shown the significant benefit wideband audio can confer over narrowband audio in telecommunications, both in terms of speech quality and accessibility for people with hearing loss. Because this work examined a limited set of audio codecs, other codecs widely deployed in cellular telecommunication could be explored. See HAC Report at 56 n.129, citing Linda Kozma-Spytek and Christian Vogler, *Factors Affecting the Accessibility of Voice Telephony for People with Hearing Loss: Audio Encoding, Network Impairments, Video and Environmental Noise*, ACM Trans. Access. Comput. 14, 4, Article 21 (Dec. 2021), <https://doi.org/10.1145/3479160>.

<sup>11</sup> HAC Report at 89.

<sup>12</sup> *Id.*; see also Mobile & Wireless Forum Comments at 4-5.

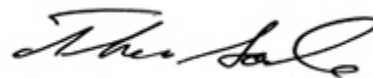
<sup>13</sup> TIA Reply Comments at 2.

<sup>14</sup> See Waiver Request at 10-11.

The HAC Task Force representatives continued to urge the Commission to adopt their recommended proposed interim approach. Adoption of the proposal would offer a path to HAC-certified devices and ensure that consumers can make informed decisions about phones manufactured after 2021 with an objective testing standard for volume control capability. Consistent with the unanimous support in the record, the HAC Task Force representatives urged the Commission to grant the Waiver Request to allow sufficient time for handset testing—no later than two months in advance of the updated December 5, 2023 compliance deadline, or by Labor Day 2023.<sup>15</sup>

Pursuant to Section 1.1206(b) of the Commission's rules, a copy of this letter is being electronically submitted into the record of this proceeding.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas Goode", written in a cursive style.

Thomas Goode  
General Counsel

cc: FCC meeting attendees

---

<sup>15</sup> See Letter from Thomas Goode, ATIS, to Marlene H. Dortch, FCC, WT Docket Nos. 15-285, 20-3 (filed July 18, 2023).

## **Attachment: FCC Meeting Attendees**

### **Commission Staff**

Barbara Esbin, WTB  
Susannah Larson, WTB  
John Lockwood, WTB  
Eli Johnson, WTB  
Saurbh Chhabra, WTB  
Garnet Hanly, WTB  
Dana Shaffer, WTB  
Justin Rison, OET  
Darryl Cooper, CGB

### **HAC Task Force Representatives**

Linda Kozma-Spytek, HAC Task Force Executive Committee, DHH Tech RERC at Gallaudet University  
Rob Kubik, HAC Task Force Executive Committee, Samsung  
Shellie Blakeney, HAC Task Force Executive Committee, T-Mobile  
Megan Stull, Apple  
Helen Zhao, Google  
Christiaan Segura, CTIA  
Erin Griffith, Wilkinson Barker Knauer, LLP, and counsel to CTIA  
Thomas Goode, General Counsel, ATIS  
Michelle Kelley, ATIS