



July 26, 2018

*via ECFS and e-mail*

Marlene H. Dortch  
Secretary, Office of the Secretary  
Federal Communications Commission  
445 12th Street, SW, Room TW-A325  
Washington, DC 20554

**Re: Telecommunications Relay Services and Speech-to-Speech Services for  
Individuals with Hearing and Speech Disabilities • CG Docket No. 03-123  
Misuse of Internet Protocol (IP) Captioned Telephone Service  
CG Docket No. 13-24  
Sprint Petition for Clarification or, in the Alternative, Reconsideration  
Pending Applications of MachineGenius and VTCSecure**

Dear Ms. Dortch,

The Hearing Loss Association of America (HLAA), Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI), and the National Association of the Deaf (NAD) (“Consumer Groups”) and the Deaf/Hard of Hearing Technology Rehabilitation Engineering Research Center (DHH-RERC) respectfully urge the Commission to reconsider and take a more measured approach to the certification of applicants to provide Internet Protocol Captioned Telephone Service (IP CTS) laid out under its June 8 *ReO*, *Declaratory Ruling*, *FNPRM*, and *NOI*.<sup>1</sup> We urge the Commission to grant in significant part Sprint’s July 9, 2018 petition for clarification or reconsideration, but also lay out below the contours of a framework that the Commission should use as a baseline for evaluating pending applications and others that are submitted in advance of resolving the NOI, should the Commission choose not to grant Sprint’s petition.

We largely concur with and support Sprint’s request for the Commission to clarify or reconsider its approach to allowing and evaluating IP CTS applications using automatic

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<sup>1</sup> See Misuse of Internet Protocol (IP) Captioned Telephone Service and Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities, Report and Order, Declaratory Ruling, Further Notice of Proposed Rulemaking, and Notice of Inquiry, CG Docket Nos. 03-123 and 13-24 (June 8, 2018) (“*ReO*,” “*Declaratory Ruling*,” “*FNPRM*,” and “*NOI*”), <https://docs.fcc.gov/public/attachments/FCC-18-79A1.pdf>

speech recognition (ASR) technology.<sup>2</sup> The Commission is putting the cart before the horse by allowing ASR-based IP CTS services without developing standards and metrics for the provision of IP CTS to ensure that consumers receive robust service from all providers, regardless of the underlying technologies used to provide the service. Inaccurate and unreliable IP CTS service stand to substantially harm consumers who rely on them for communications with family, friends, employers, and commercial transactions and lack the means to qualitatively compare services in advance.

### Reconsideration

Accordingly, we strongly support Sprint's in-the-alternative request for reconsideration of the *Declaratory Ruling*.<sup>3</sup> Of course, as Sprint explains, the *Declaratory Ruling* arguably violates the APA by changing a substantive rule without affording commenters the chance to provide input on its substance.<sup>4</sup> But even more importantly, it leaves unclear how the Commission will *apply* the changed rule in evaluating ASR applicants, deferring the development of performance goals and measures—which should be critical components of evaluating *all* types of IP CTS providers—not even to the *FNPRM*, but to an *NOI* whose resolution may be years away.<sup>5</sup> The Commission should accept Sprint's invitation to reset the sequence of events set in motion by the June 8 item and reprioritize its efforts toward developing goals and measures to be applied to all IP CTS providers before opening the floodgates on new and unproven technology with no means for evaluating it or exposing consumers to potentially subpar services in violation of their civil rights under Section 225.

### Clarification

Should the Commission leave the *Declaratory Ruling* in place, however, we also support the majority of Sprint's request for clarification. More specifically, we strongly agree, as we noted prior to the adoption of the June 8 item, that the Commission should solicit comments on *all* applications for certification, regardless of the underlying technology used, as a matter of course.<sup>6</sup> We concur with Sprint that gathering a specific record on the ability of each

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<sup>2</sup> See generally Petition for Clarification or, in the Alternative, Reconsideration of Sprint, CG Docket Nos. 13-24 and 03-123 (July 9, 2018) (“*Sprint PFCR*”). We take no position on Sprint's arguments on the appropriate approach to setting rates. See *Sprint PCFR* at 13-14.

<sup>3</sup> See *Sprint PFCR* at 14-21.

<sup>4</sup> See *id.* at 15-19.

<sup>5</sup> See *NOI* at ¶¶ 155-181.

<sup>6</sup> *Sprint PFCR* at 4-6 (citing Ex Parte of HLAA, TDI, and TAP (May 25, 2018) (“*Consumer Groups Ex Parte*”) (pincites and other citations omitted)).

applicant to provide functionally equivalent services that meet the explicitly high bar imposed by Section 225, including input from consumers, is critical to preventing failures.<sup>7</sup>

### Temporary Application Framework

We likewise agree with Sprint's request that the Commission should use a temporary, multipart framework for evaluating all applications for functional equivalence in advance of imposing the performance goals and measures teed up in the NOI.<sup>8</sup> On a substantive basis, we agree with Sprint that accuracy—as well as speed, synchronicity, and other overall dimensions of quality—privacy, emergency capability, and resilience are important components of any evaluation framework.<sup>9</sup> We also encourage the Commission to evaluate carefully applicants' capability to handle all types of calls.

**Quality.** Unfortunately, the June 8 item places the Commission in the position of advancing new services using untested technology to the market with no framework to evaluate the extent to which they satisfy Section 225's functional equivalence standard for accuracy and quality. The item exacerbates the urgency of developing metrics that can only result from careful, neutral, high-quality research that will take time to perform. The Commission should nevertheless make every effort to expedite the development of the performance goals and measures in the NOI and proceed as quickly as possible to final rules, as it cannot afford to wait multiple years and multiple comment cycles to put a workable framework in place.

In the meantime, the Commission should require all applicants to demonstrate with substantial evidence that their offerings meet or exceed the usability of existing market offerings, considering transcription delays, accuracy, speed, and readability, including through the results of rigorous, scientifically valid product testing whose methodology and results are transparent, reproducible, publicly available, and based on uniform guidance from the Commission that can be applied in the same way to all platforms so that consumers can meaningfully conduct apples-to-apples comparisons of quality. As we have previously noted, there are at least two pending applications before the Commission that are vague and conclusory in documenting the quality of the applicants' proposed services.<sup>10</sup> The Commission should avoid drawing general conclusions about the quality of any particular technology, reject vague and conclusory declarations from applicants and the use of proprietary, self-serving metrics, and endeavor to verify with specificity that all offerings will meet consumers' needs.

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<sup>7</sup> See 47 C.F.R. § 225(a)(3).

<sup>8</sup> See *Sprint PFCR* at 8.

<sup>9</sup> See *id.*

<sup>10</sup> *Consumer Groups Ex Parte* at 2-3.

One possible approach would be for the Commission to require applicants to demonstrate sufficient accuracy, speed, and synchronicity in handling a library of pre-recorded calls representative of an exhaustive array of calling scenarios. This is consistent with the Declaratory Ruling, which suggests that new ASR applicants provide “trials and quantitative test results demonstrating that the applicant’s service will afford a level of quality that is at least comparable to currently available CA-assisted IP CTS with respect to captioning transcription delays, accuracy, speed, and readability.”<sup>11</sup>

In addition to the quality measures raised in the NOI, the Commission could also draw from its rules for video closed captioning quality, which require captions to:

- Correctly reflect different languages;
- Keep words in the order spoken;
- Avoid substituting words for proper names and places;
- Avoid paraphrasing;
- Be properly spelled;
- Contain appropriate punctuation and capitalization, tense, and plural forms;
- Accurately represent numbers with appropriate symbols or words;
- Reflect the use of slang or grammatical errors by a speaker;
- Provide nonverbal information, such as the identity of speakers, the existence of music and environmental sounds;
- Be legible and appropriately spaced; and
- Coincide with the corresponding spoken words and sounds to the greatest extent possible by beginning at the time that corresponding audio begins and ending approximately when audio ends.<sup>12</sup>

The process for assessing quality should be set and carried out by an independent Commission designee, such as MITRE (along with its academic partners), and implemented with full cooperation by service providers including the provision of any end-user equipment necessary to carry out the assessment process. This process should remain in place until the resolution of the NOI.

We also note that one applicant sought to clarify the quality of its offerings by a reference to a confidential exhibit filed under seal that elaborated with no further substance than its original application.<sup>13</sup> Whatever the substance of this exhibit and others like it, it is unknown to us and effectively all consumers who might seek to review it. We strongly urge the

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<sup>11</sup> See *Declaratory Ruling* at ¶ 63.

<sup>12</sup> See 47 C.F.R. § 79.1(j)(2).

<sup>13</sup> See *Ex Parte of MachineGenius*, CG Dockets No. 13-24 and 03-123 at 4-5 (May 30, 2018).

Commission to decline to approve applications on the basis of evidence of quality contained in confidential exhibits. Dimensions of quality are objectively verifiable, non-proprietary measures of any service; if applicants cannot disclose them publicly, there is little likelihood they will be meaningfully verifiable.

**Privacy.** As we have noted, pending applications raise serious concerns about the privacy of consumers' phone conversations.<sup>14</sup> One ASR-based applicant's response to these concerns raises little more than vague, non-substantive contentions about "battle tested" data centers" and encryption algorithms while providing limited information about the actual data collection, storage, usage, retention, sharing, and other relevant practices and policies of the applicant's third-party partners and raising the prospect that human CA-based services may also be vulnerable to privacy problems, which, if true, calls for more oversight of those services, not less of ASR-based services.<sup>15</sup>

The Commission must demand specific information about how records of phone calls will be collected, stored, used, retained, and shared by third-party providers of all IP CTS applicants to ensure that the sensitive conversations of hard-of-hearing consumers are not vulnerable to data breaches or used without consumers' consent for purposes unrelated to assisting consumers in completing calls, such as the improvement of machine-learning algorithms in speech-to-text engines.

**Emergency Capability.** We have likewise noted that it is critical that all applicants be capable of providing robust performance in case of emergency.<sup>16</sup> The Commission must insist that applicants demonstrate conclusively that consumers who utilize their services in emergency situations will be able to rely on the transcription of a 911 call-taker's questions and instructions to make life-and-death decisions—and promptly intervene with an alternate approach if a human CA or ASR-based engine is not successfully conveying conversational content—and that calls will be routed to the appropriate Public Safety Answering Point (PSAP) without delay.

**Resilience.** We concur with Sprint that applicants must demonstrate that they will be able to satisfactorily handle increased demand in exigent circumstances.<sup>17</sup> In addition to high demand under emergencies and other times of high demand, applicants should be required to demonstrate that their service performs effectively across different types of equipment, wiring, and network conditions, including calls from international telephone systems with varying technical specifications, VoIP calls, and calls from atypical sources. The Commission should also require applicants to demonstrate the capacity for error correction.

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<sup>14</sup> *Consumer Groups Ex Parte* 3-4.

<sup>15</sup> *MachineGenius Ex Parte* at 5-7.

<sup>16</sup> *Consumer Groups Ex Parte* at 4.

<sup>17</sup> *Sprint PFCR* at 12.

**All Types of Calls.** The Commission should carefully implement the *Declaratory Ruling's* requirement that providers demonstrate they can handle “all types of calls”<sup>18</sup> by requiring demonstrated proof from all applicants of the ability to handle calls involving male and female speakers, children, speakers who heavily use industry-specific jargon, speakers with thick accents, and speakers who speak different rates, volumes, and with varying reliance on colloquial and idiomatic language. Applicants should likewise demonstrate approaches to dealing with bias, both among human CAs and in algorithms used in ASR solutions.<sup>19</sup> The Commission should also require applicants to demonstrate their ability to deal with complex call scenarios, including callers who speak over each other, multiple callers and conference calls, calls involving speakers with speech disabilities or impediments, calls involving volume amplification, and calls made with significant background noise.

In addition to the substantive requirements outlined in Sprint’s petition and elsewhere in the record, the Commission should also take specific procedural requirements to ensure that new applicants are capable of serving consumers. In particular, we urge the Commission to adopt conditional certifications, ongoing monitoring, and independent audits.

**Conditional Certifications.** In the Declaratory Ruling, the Commission noted that “certifications for the provision of IP CTS using ASR may be granted on a conditional basis, to enable the Commission’s assessment . . . of an applicant’s actual performance in meeting or exceeding the mandatory minimum standards.”<sup>20</sup> We urge the Commission to grant any new certifications *only* on a conditional basis based on quarterly audits, conducted either by Commission staff or certified third-party designees. Moreover, conditional certifications should not become full certifications until the Commission has fleshed out the performance goals and measures raised in the NOI and ensured that conditionally certified applicants comply with them. While *ex ante* demonstration of the capacity for functional equivalence is critical, it is even more important the Commission verify that these demonstrations bear out in actual deployment.

**Ongoing Monitoring.** In conjunction with conditional certifications, the Commission should monitor all applicants on an ongoing basis. The Commission should require that applicants be routinely audited by a Commission designee with the requisite expertise to apply the framework laid out above. If audits demonstrate that applicants do not satisfy the framework, the Commission should suspend or terminate conditional certifications

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<sup>18</sup> *Declaratory Ruling* at ¶ 60.

<sup>19</sup> See, e.g., Will Knight, *AI Programs Are Learning to Exclude Some African-American Voices* (Aug. 16, 2017), <https://www.technologyreview.com/s/608619/ai-programs-are-learning-to-exclude-some-african-american-voices/>. See generally Kate Crawford, *The Trouble with Bias* (posted Dec. 10, 2017), [https://www.youtube.com/watch?v=fMym\\_BKWQzk](https://www.youtube.com/watch?v=fMym_BKWQzk)

<sup>20</sup> *Declaratory Ruling* at ¶ 64.

accordingly.<sup>21</sup> The Commission should also require that applicants regularly report complaints, report churn, and report aggregated, anonymized data concerning the demographics of their users, the length of calls captioned, and other information about types of calls completed to allow the Commission to evaluate the aggregate performance, consistency, and reliability of the services.

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Please don't hesitate to contact me if you have any questions.

Respectfully submitted,

/s/

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<sup>21</sup> See 47 C.F.R. § 64.604(c)(5)(iii)(L).

CC:

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