MEMORANDUM OPINION AND ORDER

Adopted: May 5, 2020
Released: May 5, 2020

By the Chief, Consumer and Governmental Affairs Bureau:

I. INTRODUCTION

1. The Consumer and Governmental Affairs Bureau (Bureau) of the Federal Communications Commission (Commission) grants conditional certification to MachineGenius, Inc. (MachineGenius), to provide Internet Protocol Captioned Telephone Service (IP CTS) using only automatic speech recognition (ASR). Conditional certification permits MachineGenius to receive TRS Fund compensation for its service pending verification that its actual provision of ASR-only IP CTS to registered users meets or exceeds the Commission’s minimum TRS standards. The Commission also finds good cause to grant, in part, MachineGenius’s request for waiver of certain TRS Rules.

1 See Internet-based TRS Certification Application of MachineGenius, CG Docket No. 03-123 (filed Oct. 13, 2017), https://ecfsapi.fcc.gov/file/1014215719459/IPCTS%20Application_-_PUBLIC%20CONFIDENTIAL.pdf (MachineGenius Application). IP CTS is a form of Internet-based telecommunications relay service (TRS) that allows individuals with hearing loss to both read captions and use their residual hearing to understand a telephone conversation. See 47 CFR § 64.601(a)(19) (defining IP CTS). Captions may be displayed on a specialized IP CTS device or an off-the-shelf computer, tablet, or smartphone. Internet-based TRS providers obtain certification from the Commission in order to be eligible to receive compensation from the TRS Fund. Id. § 64.606.


3 While the Bureau ordinarily announces certification decisions by a document formally captioned as a Public Notice, we elect to caption this decision as a Memorandum Opinion and Order because we also are addressing the applicant’s associated waiver requests. We deem this Memorandum Opinion and Order to constitute conditional (continued….)
II. BACKGROUND

2. On October 13, 2017, MachineGenius filed an application for certification to provide ASR-only IP CTS (i.e., without any reliance on communications assistants, or CAs), and separately filed a request for waiver of certain mandatory minimum TRS standards.\(^4\) MachineGenius’s proposed ASR-only IP CTS will be delivered via a software-only, over-the-top (OTT) softphone application—branded Olelo—that can be installed on existing mobile devices, including smartphones and tablets that are Wi-Fi or mobile-data enabled.\(^5\) According to the application, Olelo will include mobile telephony features, such as call history, captioned voicemail, and speakerphone, and assistive devices and accessories may be used on devices running Olelo.\(^6\) MachineGenius will assign users a geographically appropriate North American Numbering Plan (NANP) telephone number to send and receive IP CTS calls.\(^7\) MachineGenius contends that its ASR-only approach improves upon traditional TRS solutions by providing the service with greater privacy, and with much faster speed of answer and transcription speed.\(^8\) In addition, by providing a software-only application running on physical devices already owned by consumers, MachineGenius contends it is able to reduce the cost of delivery of IP CTS and reduce incentives for fraudulent use of IP CTS.\(^9\) According to the application, captions will be produced and delivered via Session Initiation Protocol (SIP) servers and trunking, with ASR technology licensed from a third party vendor, and will achieve a degree of accuracy comparable to captioning provided by CAs.\(^10\) According to MachineGenius, the service also enables users to view captions of both parties’ voices.\(^11\)

3. In June 2018, the Commission determined that the provision of IP CTS using ASR to generate captions without a CA is eligible for compensation from the TRS Fund if provided in compliance with applicable TRS mandatory minimum standards.\(^12\) On August 26, 2019, the Bureau

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certification that MachineGenius is eligible for compensation from the Interstate TRS Fund in accordance with section 64.606(b)(2) of the Commission’s rules. 47 CFR § 64.606(b)(2).


\(^5\) MachineGenius Application at 5; MachineGenius Amendment at 3. MachineGenius states that it has the ability to make the Olelo application available on personal computers and laptops and may do so in the future. MachineGenius Application at 5 n.5.


\(^7\) MachineGenius Application at 6. We note that unlike numbers assigned to users of video relay service (VRS) and Internet Protocol Relay Service, NANP telephone numbers assigned to IP CTS users do not need to be submitted to the TRS Numbering Directory. See 47 CFR §§ 64.601(a)(34), 64.611, 64.613(a).

\(^8\) MachineGenius Application at 7-9.

\(^9\) Id. at 5.

\(^10\) Id. at 5-7.

\(^11\) Id. at 8.

\(^12\) See 2018 ASR Declaratory Ruling, 33 FCC Rcd at 5827, para. 48.
released a Public Notice seeking comment on MachineGenius’s application and waiver request. Six parties filed comments and three parties filed reply comments.

III. CERTIFICATION

4. We find that the MachineGenius application facially meets the certification requirements, and we conditionally grant the application to verify—based on actual operating experience—that MachineGenius’s provision of ASR-only IP CTS will meet or exceed the minimum TRS standards. In granting conditional certification, we reduce unnecessary delay in offering relay services using improved technologies.

5. Sufficiency of the Application.—MachineGenius’s application is facially sufficient to satisfy the Commission’s certification requirements. The application provides a detailed explanation with documentary and other evidence as to how the applicant will meet all non-waived mandatory minimum standards applicable to IP CTS. Among other things, MachineGenius has sufficiently supported its claims regarding its use of ASR and the efficacy of such use in meeting the Commission’s minimum TRS standards relating to speed of answer, caption delay, accuracy, readability, verbatim transcription, privacy, and emergency call handling.

6. Speed of answer and caption delay. MachineGenius has established that with its chosen ASR technology, it will substantially exceed the minimum TRS standards relating to speed of answer and caption delay. According to the application, communications for the provision of captioning will be provided via SIP trunking by a firm that MachineGenius selected for its “proven reliability, emergency calling capabilities, and overall standing as an industry leader.” MachineGenius similarly selected a

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14 All comments and reply comments were filed in CG Docket No. 03-123. See CaptionCall, LLC (CaptionCall) Comments (rec. Sept. 25, 2019); Clear2Connect Coalition Comments (rec. Sept. 25, 2019); Hamilton Relay, Inc. (Hamilton) Comments (rec. Sept. 25, 2019); Hearing Loss Association of America (HLAA), Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI), National Association of the Deaf (NAD), Association of Late-Deafened Adults (ALDA), Cerebral Palsy and Deaf Organization (CPADO), American Association of the Deaf-Blind (AADB), Deaf Seniors of America (DSA), Deaf/Hard of Hearing Technology Rehabilitation Engineering Center (DHH-RERC), Rehabilitation Engineering Research Center on Universal Interface & Information Technology Access (IT-RERC), and National Technical Institute for the Deaf (NTID) Comments (rec. Sept. 25, 2019) (Consumer Groups and Accessibility Researchers Comments); Sprint Corporation (Sprint) Comments (rec. Sept. 25, 2019); Ultratec, Inc. (Ultratec) Comments (rec. Sept. 25, 2019); Hamilton Reply Comments (rec. Oct. 10, 2019); MachineGenius Reply Comments (rec. Oct. 10, 2019); Ultratec Reply Comments (rec. Oct. 10, 2019).

15 47 CFR § 64.606(b)(2)(i).

16 47 U.S.C. § 225(d)(2) (requiring the Commission to ensure that its regulations do not discourage or impair the development of improved technologies); see also 2018 ASR Declaratory Ruling, 33 FCC Rcd at 5807, para. 13 (noting that, due to recent advances, ASR “holds great promise for a telephone communication experience that may be superior to and more efficient than existing IP CTS”); id. at 5829-30, para. 52 (allowing the introduction of ASR without delay will enable the Commission to “gather data that can inform our adoption of further measures to improve its utility”).

17 See MachineGenius Application at 11-26; id., Exh. B (confidential version); MachineGenius Mar. 24 Ex Parte; 47 CFR § 64.606(a)(2)(ii).

18 See 2018 ASR Declaratory Ruling, 33 FCC Rcd at 5834, para. 63 (noting that applicants to provide ASR-based IP CTS must support all claims regarding their use of ASR and its efficacy).

leading industry firm as its captioning vendor. Based on these selections, the applicant’s explanation of its service architecture and the scalability and other capabilities of ASR technology, and the results of recent performance testing, we conclude that MachineGenius has sufficiently supported its claims that (1) speed of answer for 99.9% of connected calls will be less than one second, exceeding the current IP CTS standard, and (2) captions will be delivered with an average latency, or caption delay, of less than two seconds. In performance testing of CA-assisted and ASR-based IP CTS technologies by the Commission’s TRS research contractor, MITRE Corporation, MachineGenius’s average caption delays for various call scenarios ranged from 1.1 to 1.4 seconds, while CA-assisted providers’ average caption delays were significantly longer, ranging from 4.8 to 6.8 seconds.

7. **Accuracy and readability.** Although the TRS rules do not currently provide metrics for accuracy and readability, the typing, grammar, and spelling of captions must be “competent,” and conversations must be transcribed “verbatim,” with no intentional alteration of content unless a user specifically requests summarization. According to its application, MachineGenius selected its ASR vendor after evaluating the performance of leading vendors based on, among other things, accuracy; transcription formatting including punctuation and capitalization; user-friendly handling of acronyms, prices, dates, and numerics. MachineGenius adds that it “architected its solution in a modular fashion,

20 MachineGenius Application at 7.
21 See Id., Exh. A (confidential version); MachineGenius May 1 Ex Parte at 2.
23 MachineGenius Application, Exh. B at 5; MachineGenius May 1 Ex Parte at 1.
24 The speed-of-answer-standard for IP CTS requires providers to answer 85% of calls within 10 seconds, measured daily. 47 CFR § 64.604(b)(2)(ii).
25 MachineGenius Application, Exh. B at 5; MachineGenius May 1 Ex Parte at 1. Latency, or caption delay, is the elapsed time between when a party speaks and when the corresponding caption is delivered to the IP CTS user.
26 MITRE April 2020 Test Report at 4. Currently, there is no quantitative standard for IP CTS captioning delay. However, the Commission has stated that captions must be delivered “fast enough so that they keep up with the speed of the other party’s speech,” and “if captions are not keeping up with the speech (although a short delay is inevitable), at some point the provider is no longer offering relay service and the call is not compensable.” Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities; Internet-based Captioned Telephone Service, CG Docket No. 03-123, 22 FCC Rcd 379, 388-89, para. 22 & n.69 (2007) (2007 IP CTS Declaratory Ruling). In the absence of a specific quantitative standard for caption delay, the typing speed standard for text-based TRS is applicable. See id. at 388, para. 22 n.69; 47 CFR § 64.604(a)(1)(iii) (requiring TRS CAs to have a minimum typing speed of 60 words per minute). In the 2007 IP CTS Declaratory Ruling, the Commission stated that “when the captions are generated by voice recognition technology, the captions are generated at a speed well above the 60 wpm standard.” 2007 IP CTS Declaratory Ruling, 22 FCC Rcd at 388, para. 22 n.69. Based on the test results and other evidence discussed above, MachineGenius has shown not only that it will meet this standard but also that it will “keep up with the speed of the other party’s speech.” Id. at 388, para. 22.
28 MachineGenius Application at 7; MachineGenius May 1 Ex Parte at 2.
such that integration with new or different ASR providers is a straightforward task. If for any reason [the current vendor’s] speech recognition is determined to be unfavorable for use with IP CTS, or if a superior solution becomes available, MachineGenius can incorporate the new technology without service interruption.”

We conclude that MachineGenius’s process for selecting its ASR vendor and its documentation of the accuracy and other capabilities of ASR technology, as well as the results of recent performance testing, sufficiently support MachineGenius’s claims that its captioning will be “highly accurate” and will meet or exceed the Commission’s competence and verbatim transcription requirements. In the recent MITRE testing, MachineGenius’s average word error rates for various call scenarios ranged from 2.7% to 8.2%, while CA-assisted providers’ average word error rates were significantly higher, ranging from 8.9% to 19.5%.  

8. **Privacy.** Providers of ASR-only IP CTS are subject to the same confidentiality requirements as other TRS providers. Therefore, no IP CTS provider may allow its ASR service to retain IP CTS user call content for any purpose, either locally or in the cloud. MachineGenius’s application sufficiently describes the measures it will take to ensure compliance with the Commission’s call confidentiality rules, as well as the TRS Customer Proprietary Network Information (CPNI) rules. Noting that ASR-only IP CTS enhances call privacy by eliminating the need for a human to listen to a call, MachineGenius also shows that its ASR service is secure (highlighting its compliance with Payment Card Industry (PCI) security standards and Health Insurance Portability and Accountability Act (HIPAA) privacy standards), that it will not retain call content after the completion of a call for any purpose, and that neither MachineGenius nor its ASR vendor will store any audio or transcription data from IP CTS calls on its servers. We note that an IP CTS provider is responsible for ensuring that data is handled by its contractors in accordance with the Commission’s TRS rules.

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29 Id. at 7-8; see also id., Exh. A at 1-2 (confidential version) (discussing the accuracy of commercially available ASR technology in general); id., Exh. B at 5 (Compliance Plan commitment that “[t]ranscription accuracy shall be consistent with the best available commercial speech recognition technology”); MachineGenius May 1 Ex Parte at 2.

30 MITRE April 2020 Test Report at 3. Although there is currently no quantitative TRS standard against which MachineGenius’s test results can be evaluated, they provide additional support for MachineGenius’s claims that it will meet or exceed the Commission’s competence and verbatim transcription requirements.

31 2018 ASR Declaratory Ruling, 33 FCC Rcd at 5832, para. 60 (clarifying that the rules prohibiting TRS providers from disclosing the content of a relayed conversation or keeping records of content beyond the duration of a call apply to ASR-based IP CTS).

32 See MachineGenius Application at 9, 13; id., Exh. B (confidential version); MachineGenius Reply Comments at 8-9; MachineGenius Amendment at 8-9.

33 MachineGenius Application at 9.


35 MachineGenius Reply Comments at 8-9; MachineGenius Amendment at 8-9; see also 2018 ASR Declaratory Ruling, 33 FCC Rcd at 5834, para. 63 (asking applicants for ASR-based IP CTS certification to provide information about measures they will take to ensure the confidentiality of call content). MachineGenius also states that its agreement with its current ASR vendor specifically prohibits the use of MachineGenius user data or conversations to “train” the ASR system or otherwise improve or advance the vendor’s ASR product. MachineGenius Amendment at 9 n.13 (confidential version); MachineGenius May 1 Ex Parte at 2.
9. **Emergency Call Handling.** MachineGenius establishes that its ASR-only IP CTS product will be capable of handling emergency calls in accordance with applicable Commission rules. To ensure correct routing of 911 calls, MachineGenius states it has designed its Olelo product to be capable of accessing the location information provided by geolocation service available on mobile devices. Further, MachineGenius has contractually arranged for the routing of 911 calls to the appropriate PSAP based on such location data. MachineGenius also affirms that a Registered Location will be maintained for each user, to enable the routing of 911 calls if geolocation data is unavailable. In addition to detailing its compliance with currently applicable emergency calling requirements, MachineGenius also commits to comply with applicable rules governing location determination, as determined in the *MLTS 911 and Dispatchable Location R&O.*

10. MachineGenius also provides a description of its complaint procedures, confirmation that it will file annual compliance reports demonstrating continued compliance with the TRS rules, and a verification statement from an appropriate executive as to the accuracy and completeness of the information provided.

11. In sum, the documents and information provided in its application facially establish that MachineGenius will meet or exceed the non-waived operational, technical, and functional mandatory minimum standards and has developed sufficient procedures and remedies for ensuring compliance with the applicable TRS rules.

12. **Conditional Certification.**—Although MachineGenius’s application is facially sufficient, we grant certification on a conditional basis, pending further verification of MachineGenius’s compliance with the Commission’s minimum TRS standards. Because ASR-only IP CTS is a new method for the provision of this service, we believe the best course is to collect additional information through observing MachineGenius’s product in actual operation to confirm that this service will meet or exceed the minimum TRS standards.

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36 MachineGenius Application at 16-17; *id.*, Exh B. (confidential version); MachineGenius Reply Comments at 9-10; MachineGenius Amendment at 10-11.

37 MachineGenius Amendment at 11 n.23.

38 *See also* MachineGenius Application at 16 (confidential version); MachineGenius Application Amendment at 11; MachineGenius May 1 *Ex Parte* at 1.

39 *Id.* at 16-17; MachineGenius Amendment at 11. “Registered Location” is “[t]he most recent information obtained by a provider of . . . telecommunications relay services (TRS) . . . that identifies the physical location of an end user.” 47 CFR § 9.3.

40 See *Implementing Kari’s Law and Section 506 of RAY BAUM’S Act; Inquiry Concerning 911 Access, Routing, and Location in Enterprise Communications Systems; Amending the Definition of Interconnected VoIP Service in Section 9.3 of the Commission’s Rules, PS Docket Nos. 18-261 and 17-239, GN Docket No. 11-117, Report and Order, 34 FCC Rcd 6607, 6687-90, paras. 207-16 (2019) (MLTS 911 and Dispatchable Location R&O); see also 47 CFR § 9.14(e) (establishing E911 service requirements for IP CTS on or after January 6, 2021, for fixed services, and on or after January 6, 2022, for non-fixed services).

41 See 47 CFR § 64.606(a)(2); MachineGenius Application at 10-27 (detailing how MachineGenius will meet the applicable TRS requirements); MachineGenius Amendment at 4-11 (updating application to clarify how requirements will be met and to include recently adopted requirements).

42 See 47 CFR § 64.606(b)(2).

43 *See 2011 Internet-based TRS Certification Order, 26 FCC Rcd at 10914-15, para. 37 (reserving the right to grant conditional certification “where the Commission, upon initial review of the application, determines that the application facially meets the certification requirements, but that the Commission needs to verify some of the information contained in the application”); 2018 ASR Declaratory Ruling, 33 FCC Rcd at 5834-35, para. 63 (stating (continued…))
13. To assist the Bureau in its final determination of MachineGenius’s eligibility, we require quarterly reports of consumer complaints during the initial year of service, to be filed with the Commission in the same format and with the same degree of detail required in the log of consumer complaints that providers must file annually with the Commission.\textsuperscript{44} The first report shall be due July 1, 2020, and shall cover the period from the commencement of service through May 31.\textsuperscript{45} Each subsequent report shall be filed on the first day of each calendar quarter and shall cover the 3-month period that begins after the preceding 3-month period. For example, the second report shall be due October 1, 2020, and shall cover the period from June 1 through August 31. MachineGenius shall continue to file reports on a quarterly schedule until it has submitted four reports, or until a Bureau or Commission action granting or denying full certification, whichever occurs earlier.\textsuperscript{46}

14. Pending a decision on full certification, the Bureau may request additional information in order to complete our review of MachineGenius’s application,\textsuperscript{47} such as the results and protocols for performance tests conducted by MachineGenius or independent third parties.\textsuperscript{48} We also require MachineGenius to report promptly any changes in the information previously provided to the Commission in its application and supplemental filings, including, for example, any changes in service agreements and suppliers, procedures for registering and screening prospective users, or the manner in which MachineGenius provides service.\textsuperscript{49}

15. Pursuant to this grant of conditional certification, MachineGenius may provide Fund-supported IP CTS in the manner described in its application, for a period not to exceed five years, pending a final determination of MachineGenius’s qualifications. This conditional certification is issued without prejudice to such final determination, which is dependent on verification of the information provided in MachineGenius’s application and supplemental filings, as well as the additional information provided

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that “no application to provide ASR will be approved unless the applicant demonstrates that the specific ASR technology described in the application meets applicable FCC requirements”); \textit{id.} at 5835, para. 64 (noting that certification of an ASR-only provider may be granted on a conditional basis to enable assessment of an applicant’s actual performance); CaptionCall Comments at 5 (“An ASR-only service that performs well during a single demonstration under perfect conditions may not perform well when handling thousands of calls, and hundreds of thousands of minutes, week after week.”); Consumer Groups and Academic Researchers Comments at 8 (asserting that ASR-only providers need to provide additional substantive evidence and data about the operations of their services to demonstrate functional equivalency).

\textsuperscript{44} See 47 CFR § 64.604(c)(1); see also 2018 ASR Declaratory Ruling, 33 FCC Rcd at 5835, para. 64 (noting that to the extent deemed necessary certification of a provider may be conditioned on the submission of periodic data to help confirm whether ASR-only IP CTS is providing functionally equivalent service).

\textsuperscript{45} MachineGenius’s first report shall specify the date of commencement of service. In the event that MachineGenius does not initiate service by May 31, the filed report shall so state.

\textsuperscript{46} After such time, MachineGenius shall file an annual consumer complaint log in accordance with the rule. 47 CFR § 64.604(c)(1).

\textsuperscript{47} See, e.g., \textit{InnoCaption Conditional Certification Notice}, 29 FCC Rcd at 5110 (conditioning a provider’s certification on submission of additional information).

\textsuperscript{48} See 2018 ASR Declaratory Ruling, 33 FCC Rcd at 5834-35, para. 63 (citing test results as an example of supporting information an ASR applicant might provide); \textit{InnoCaption Conditional Certification Notice}, 29 FCC Rcd at 5106 (requiring quarterly testing and reports). With some exceptions, such as speed of answer, the Commission’s minimum TRS standards do not currently include quantitative metrics. However, testing with respect to various performance criteria, such as latency and accuracy of captions, may be helpful in the overall evaluation of this application for the purpose of deciding whether to grant full certification.

\textsuperscript{49} See \textit{InnoCaption Conditional Certification Notice}, 29 FCC Rcd at 5110 (requiring the provider to promptly update the information in its application, pending final certification).
pursuant to this order, and on the veracity of the applicant’s representations that it will provide service in compliance with all pertinent Commission requirements. To assist in reaching a final determination, the Bureau may conduct one or more unannounced site visits of MachineGenius’s premises and request additional documentation relating to MachineGenius’s provision of IP CTS. Conversion to full certification will be granted if, based on a review of the applicant’s documentation and other relevant information, the Commission finds that MachineGenius is in compliance with applicable Commission rules and orders and is qualified to receive compensation from the Fund for the provision of IP CTS. If, at any time during the period in which MachineGenius is operating pursuant to this conditional certification, the Commission determines that MachineGenius has failed to provide sufficient supporting documentation for any of the assertions in its application, determines that any of those assertions cannot be supported, or finds evidence of any apparent rule violation, fraud, waste, or abuse, the Commission will take appropriate action, which may include the denial of MachineGenius’s application. In the event of such denial, MachineGenius’s conditional certification will automatically terminate thirty-five (35) days after such denial.\footnote{See \textit{2011 Internet-based TRS Certification Order}, 26 FCC Red at 10914-15, para. 37.}

16. \textit{Preventing Misuse}.—As MachineGenius explains, its decision to make its service available via software that may be downloaded on a variety of existing user devices may not only reduce unnecessary costs but also limit the potential for certain kinds of misuse of IP CTS, e.g., by consumers who may not need the service for functional equivalency but who may otherwise be motivated to sign up for it in order to obtain a free display telephone.\footnote{MachineGenius Application at 5.} We note, however, that there are other ways in which waste, fraud, or abuse can arise with a TRS Fund-supported service such as IP CTS. We remind MachineGenius and all other TRS providers that IP CTS is intended to provide a service functionally equivalent to voice telephone service, and must not be provided as a substitute for in-person transcription services, such as Communication Access Realtime Translation (CART).\footnote{CART is often used to generate captions for live meetings, speeches, and other in-person situations where the provision of TRS Fund-supported relay services is not permitted. See \textit{InnoCaption Conditional Certification Notice}, 29 FCC Red at 5110; see also \textit{Structure and Practices of the Video Relay Service Program; Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities}, CG Docket Nos. 10-51 and 03-123, Report and Order and Further Notice of Proposed Rulemaking, 28 FCC Red 8618, 8691, para. 180 \& n.465 (2013) (explaining that the use of TRS Fund-supported VRS to substitute for video remote interpreting—a service that is used when an interpreter cannot be physically present to interpret for two or more persons who are in the same location—is not permitted).} Further, although our rules do not prohibit MachineGenius from enabling its registered users to save the captions as they appear on a device,\footnote{See MachineGenius Application at 9 n.10 (noting that Olelo users would be able to store a copy of a call transcript locally on their personal devices).} they do prohibit an IP CTS provider itself from retaining call transcripts or subsequently providing transcripts to IP CTS users beyond the duration of the call.\footnote{See 47 CFR § 64.604(a)(2)(i). There is a limited exception applicable only to speech-to-speech services.} We also remind MachineGenius that its marketing of this service must conform with the Commission’s rules.\footnote{See, e.g., \textit{id.} § 64.604(c)(8), (c)(11), (c)(13). The Commission has noted the ease and convenience of using IP CTS, while facilitating use of the service by people with hearing loss who need it for effective communication, also creates a risk that IP CTS will be used even when it is not needed. See \textit{2018 ASR Declaratory Ruling}, 33 FCC Red at 5805, para. 9.}

17. \textit{Response to Comments}.—We disagree with several arguments in the record that would subject MachineGenius to new obligations not contemplated by our rules. For example, we disagree with the broad assertion of some parties that MachineGenius’s application lacks sufficient evidence to
establish it will meet the mandatory minimum standards. As discussed above, MachineGenius has provided a large amount of detail regarding its proposed service, which is comparable to the degree of detail provided by other TRS certification applicants, and which, as discussed above is sufficient to support a conditional grant of its application. And we reject the suggestion that the 2018 ASR Declaratory Ruling requires ASR applicants themselves to submit certain service-quality test results with their applications, something that no provider of CA-assisted IP CTS has had to do prior to certification. In the 2018 ASR Declaratory Ruling, the Commission cited test results as one example of the documentation an applicant for ASR certification might provide—it did not mandate such a submission. What is more, the independent testing done by the Commission’s contractor MITRE supports MachineGenius’s claim that its IP CTS offering will improve service for IP CTS users—indeed, the testing shows that MachineGenius’s captioning appears more accurate and significantly faster than what is available today.

18. Nor do the Commission’s rules require ASR applicants to show that their service will be “comparable” in some unspecified fashion to currently available CA-assisted IP CTS, as CaptionCall suggests. Notably, the Commission has already found that “improvements in accuracy, coupled with ASR’s advantages in speed and privacy, have made ASR a viable alternative to the use of human relay intermediaries for [Captioned Telephone Service (CTS)] and IP CTS”—in other words, the Commission has already found that the capabilities of ASR are sufficient to warrant its recognition as a TRS Fund-supported alternative to CA-assisted IP CTS offerings, and indeed may be more desirable for some IP CTS users given its speed and privacy advantages. And notably, the Commission has never required an IP CTS provider to demonstrate “comparability” with preexisting CTS offerings (either traditional or IP-based). Instead, an applicant must show that it will “meet or exceed” all applicable minimum standards—which MachineGenius has done here. In any event, as discussed above, performance test results for MachineGenius compare favorably with those for CA-assisted providers generally.

19. Further, we reject CaptionCall’s argument that we cannot grant MachineGenius’s application because, as a general matter, ASR technologies sometimes “may generate inaccurate captions” and “do not work equally well for all individuals” or call environments. As a preliminary matter, we note that the Commission’s minimum TRS standards do not mandate perfect service quality in

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56 See CaptionCall Comments at 14-17; Consumer Groups and Accessibility Researchers Comments at 11-12.

57 Supra paras. 5-9.

58 2018 ASR Declaratory Ruling, 33 FCC Rcd at 5834-35, para. 63. CaptionCall incorrectly infers that the Commission “directed applicants” to submit such information. CaptionCall Comments at 4. If the Commission had intended to require the submission of test results, it would have so stated.

59 See CaptionCall Comments at 4 (claiming that “[g]iven the current state of ASR, . . . it is unclear if ASR-only providers are able to generate captions that are “at least comparable to currently available CA-assisted IP CTS”).

60 2018 ASR Declaratory Ruling, 33 FCC Rcd at 5828, para. 51.

61 Id. at 5827-28, paras. 49-50.

62 See 47 CFR § 64.606(b)(2)(i).

63 See CaptionCall Comments at 8-9; see also id., Appx. A at 9-17. We note that the “types of calls” requirement cited by CaptionCall, CaptionCall Comments at 8-9, was adopted to ensure that the same calling and billing options that carriers commonly make available to voice telephone users are also available to TRS users; it does not refer to variations in call environments, individual callers, or call content. See 47 CFR § 64.604(a)(3); Telecommunications Services for Individuals with Hearing and Speech Disabilities, and the Americans with Disabilities Act of 1990, CC Docket No. 90-571, Report and Order and Request for Comments, 6 FCC Rcd 4657, 4660-61, paras. 17-19 (1991).
any material respect. More specifically, the Commission has never ruled that IP CTS providers must achieve 100% captioning accuracy on every call, and no applicant for certification has claimed to be able to attain that level consistently. In fact, most applicants for CA-assisted IP CTS certification have made no quantitative claims regarding captioning accuracy. Indeed, if we were to apply to all IP CTS providers a criterion of 100% accuracy, or require a provider to ensure the same level of accuracy on all calls, it could mean that none is qualified to provide service, since performance test results show significant variation in the accuracy of captions provided by CA-assisted IP CTS providers for different calls.66

20. We similarly reject arguments that MachineGenius has failed to provide sufficient information regarding confidentiality and emergency call handling. The Commission’s confidentiality rule requires MachineGenius to ensure that records of the content of call conversations are not retained by either MachineGenius or a third party for any purpose beyond the duration of a call—an obligation that MachineGenius’s application and clarifying amendment show that MachineGenius can and will meet by preventing any retention of call content by its own servers or by its ASR vendor.68 Similarly, MachineGenius has provided detailed information on how it will determine callers’ locations, route 911 calls to the appropriate PSAP, and otherwise comply with emergency call handling obligations.69 Further, we disagree with incumbent providers that ASR-only applicants bear a higher burden than other

64 For example, the Commission’s speed-of-answer standards allow call-answering delays of up to 10 seconds for IP CTS and most other forms of TRS, and up to 120 seconds for VRS. See 47 CFR § 64.604(b)(3). As the Commission has noted, the statutory goal of making functionally equivalent TRS available, which is qualified by the criteria “to the extent possible” and “in the most efficient manner” (47 U.S.C. § 225(b)(1)) requires “periodic reassessment” of service and performance standards in light of “[t]he ever-increasing availability of new services and the development of new technologies.” Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities, CC Docket No. 98-67, Report and Order and Further Notice of Proposed Rulemaking, 15 FCC Rcd 5140, 5144, para. 4 (2000) (2000 TRS Order). We also note that, with IP CTS, as with VRS, the Commission has relied on competition among providers to help ensure high quality service. See 2007 IP CTS Declaratory Ruling, 22 FCC Rcd at 390, para. 25; see also Sorenson Comms’, LLC v. FCC, 897 F.3d 214, 227 (D.C. Cir. 2018) (noting that the Commission has used competition among VRS providers as “a technique that can help ensure compliance with some of the service-quality requirements outlined in the mandatory minimum standards,” as well as a competitive incentive to improve VRS offerings).

65 See, e.g., Sorenson Communications, Inc., Internet-Based TRS Certification Application, CG Docket No. 10-51, at 3, 4 (filed Dec. 2, 2011), https://ecfsapi.fcc.gov/file/7021749097.pdf (claiming only that its CAs are “sufficiently skilled” in required competencies and are generally prohibited from intentionally altering the content of conversations). Although one prior applicant did claim to be able to achieve a 95% accuracy level, the Bureau’s conditional grant of that application did not state or imply that even a 95% accuracy level—or any specific metric—is currently required by the Commission’s minimum TRS standards. See InnoCaption Conditional Certification Notice, 29 FCC Rcd at 5107. In the absence of a quantitative standard of accuracy, among other metrics, the Commission has launched an inquiry into appropriate metrics for IP CTS. See 2018 ASR Declaratory Ruling, 33 FCC Rcd at 5871, para. 165-66; see also Recommendation of the FCC Disability Advisory Committee, Relay and Equipment Distribution Subcommittee, Internet Protocol Captioned Telephone Relay Service Metrics (adopted Oct. 3, 2018), https://ecfsapi.fcc.gov/file/10122598307482/DOC-354522A1.pdf (stating that metrics are “needed” to ensure functional equivalence and that a “high level of accuracy” is necessary).

66 See, e.g., MITRE April 2020 Test Report at 3.

67 CaptionCall Comments at 17-20; Consumer Groups and Accessibility Researchers Comments at 13-15.

68 Supra para. 8. We note that a different representation in MachineGenius’s application, MachineGenius Application at 13 (confidential version), cited by CaptionCall, CaptionCall Comments at 17-18 (confidential version), was later amended by a categorical statement that the ASR vendor “does not store any IP CTS call audio or transcription data on its servers, and does not utilize MachineGenius user conversations to train its ASR.” MachineGenius Amendment at 8-9.

69 Supra para. 9.
applicants in this regard—nothing in our rules or the 2018 ASR Declaratory Ruling suggests as much.\textsuperscript{70}

21. We reject some commenters’ requests that action on ASR applications be deferred until after the Commission adopts more specific or quantifiable performance standards.\textsuperscript{71} The 2018 ASR Declaratory Ruling authorized the Bureau to approve ASR applications and provided specific guidance on how the Bureau should evaluate certification applications. In the same document, the Commission launched a notice of inquiry on how to establish objective, quantifiable, and measurable performance goals and service quality metrics for the IP CTS program.\textsuperscript{72} Accordingly, it is clear that the Commission did not intend the Bureau to postpone action on ASR applications until the completion of both the initial inquiry and any subsequent rulemaking proceeding on IP CTS performance measures.

22. We also decline to adopt a special framework for evaluating applications to provide ASR-only IP CTS.\textsuperscript{73} In approving new forms of TRS or applications to provide a relay service using a new technology or method, the Commission has consistently declined to delay implementation until it has built a specific regulatory framework for that technology,\textsuperscript{74} and it expressly declined to delay the introduction of ASR pending the adoption of such a framework.\textsuperscript{75}

23. Finally, we are unpersuaded that it is necessary to set an ASR-specific compensation rate before authorizing MachineGenius to provide service.\textsuperscript{76} In an ongoing rulemaking proceeding, the Commission is considering the appropriate compensation methodology and whether to set an ASR-only rate.\textsuperscript{77} Until the expiration of the current, generally applicable interim rate of $1.58 per minute, MachineGenius is eligible to receive compensation at that rate.

\textsuperscript{70} See, e.g., CaptionCall Comments at 11 (advocating that, “given the untested nature of this technology,” the Commission “require each [ASR] applicant to allow Commission staff to test its ability to handle and route 911 calls as part of the certification process” and “to identify and describe their failover plans for 911 calls”); Ultratec Reply Comments at 13.

\textsuperscript{71} See Clear2Connect Coalition Comments at 4-5; CaptionCall Comments at 7, Appx. A at 24-27; Hamilton Comments at 8-9; Hamilton Reply Comments at 2-3; Sprint Comments at 3-7; Ultratec Comments at 11-12; see also Letter from Sandy McNally et al., Telecommunications Equipment Distribution Program Association (TEDPA), to Marlene H. Dortch, FCC, CG Docket No. 03-123, at 2 (filed Oct. 4, 2019) (TEDPA Oct. 4 Ex Parte); Letter from Sherri Collins, Arizona Commission for the Deaf and Hard of Hearing (ACDHH), to Marlene H. Dortch, FCC, CG Docket Nos. 03-123 and 05-231, at 1-2 (filed Oct. 9, 2019) (ACDHH Oct. 9 Ex Parte).

\textsuperscript{72} See 2018 ASR Declaratory Ruling, 33 FCC Rcd at 5868-75, paras. 155-81.

\textsuperscript{73} See CaptionCall Comments at 5-13. Hamilton Comments at 5; Sprint Comments at 7-9; Ultratec Comments at 11; Ultratec Reply Comments at 5-8; Clear2Connect Comments at 6; Consumer Groups and Accessibility Researchers Comments at 2-7.

\textsuperscript{74} See, e.g., 2007 IP CTS Declaratory Ruling, 22 FCC Rcd at 391-93, paras. 29-31 (waiving or finding inapplicable various mandatory minimum standards given the nature of the service); InnoCaption Conditional Certification Notice, 29 FCC Rcd at 5107 (granting conditional certification, subject to conditions to evaluate InnoCaption’s novel form of IP CTS service through actual operating experience).

\textsuperscript{75} 2018 ASR Declaratory Ruling, 33 FCC Rcd at 5834, para. 63 (“Furthermore, while we are seeking more information about ASR technology in the FNPRM portion of this item, we do not agree that an ASR provider cannot be certified until we conduct ‘further study’ of such data.”).

\textsuperscript{76} See Ultratec Comments at 12-13; Sprint Comments at 9-10; Hamilton Comments at 7-8; CaptionCall Comments at 5 n.18.

\textsuperscript{77} 2018 ASR Declaratory Ruling, 33 FCC Rcd at 5846-47, paras. 96-100 (seeking comment on establishing compensation rate(s) for ASR-only IP CTS).
IV. REQUESTS FOR WAIVER

24. The Bureau grants in part and otherwise dismisses as moot the requests of MachineGenius for partial waiver of various rules relating to CAs.78

25. Waiver standard. A Commission rule may be waived for “good cause shown.”79 In particular, a waiver is appropriate where the particular facts make strict compliance inconsistent with the public interest.80 In addition, we may take into account considerations of hardship, equity, or more effective implementation of overall policy on an individual basis.81 Such a waiver is appropriate if special circumstances warrant a deviation from the general rule and such deviation will serve the public interest.82

26. Discussion. For all but one of the rules identified in MachineGenius’s request, we conclude that MachineGenius does not need a waiver, because it is possible to comply with these rules without CAs, and MachineGenius has shown that its ASR-based service will comply with these rules.83 Specifically, regarding CA qualification requirements, the Commission has ruled that compliance can be achieved using ASR technology,84 and MachineGenius states that its ASR service will meet or exceed these requirements.85 Similarly, as stated in the 2018 ASR Declaratory Ruling, the TRS rules’ prohibitions on disclosing the content of a relayed conversation, keeping records of content beyond the duration of a call, and intentionally altering a relay conversation are applicable to ASR-based services,86 and MachineGenius states it will comply with these rules.87

27. We also conclude that no waiver is needed for the requirements that CAs “alert the TRS user to the presence of a recorded message and interactive menu through a hot key on the CA’s terminal” to “send text from the CA to the consumer’s TTY indicating that a recording or interactive menu has been encountered,” and that “[r]elay providers electronically capture recorded messages and retain them for the length of the call.”88 This provision of the Commission’s rules, adopted in 2000 when the only form of

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78 MachineGenius Waiver Request. MachineGenius filed a supplement to its initial waiver request in its application amendment. MachineGenius Amendment at 11-12. We disagree with Hamilton that it was necessary for the Commission to waive or change the relevant rules through the declaratory ruling authorizing ASR-only IP CTS and that the request for waivers are too numerous and the justification too vague. Hamilton Comments at 3-5. The Bureau may address waiver requests as a part of considering a provider’s application for certification to provide IP CTS, and, as discussed below, MachineGenius has sufficiently justified those waivers that are actually needed for this service.

79 47 CFR § 1.3.


81 WAIT Radio v. FCC, 418 F.2d 1153, 1159 (D.C. Cir. 1969), cert. denied, 409 U.S. 1027 (1972); Northeast Cellular, 897 F.2d at 1166.

82 Northeast Cellular, 897 F.2d at 1166.

83 See supra paras. 5-9.


85 MachineGenius Waiver Request at 2. To meet these minimum standards, as applied to ASR-based IP CTS, MachineGenius’s service must be designed to effectively meet the needs of its users, must achieve the same level of competence in caption production, grammar, and spelling that is required for CA-assisted IP CTS under section 64.604(a)(1) of the Commission’s rules, and must produce captions at a rate of at least 60 words per minute. See 47 CFR § 64.604 (a)(1)(i)-(ii); 2003 Captioned Telephone Declaratory Ruling, 18 FCC Rcd at 16134-35, paras. 37-39.

86 2018 ASR Declaratory Ruling, 33 FCC Rcd at 5832, para. 60; 47 CFR § 64.604 (a)(2)(i)-(ii).

87 MachineGenius Waiver Request at 2.

TRS was TTY-based TRS, was adopted in order to address the communications barrier that interactive menus pose for users of TTY-based TRS “because the speed at which information is provided is too fast to allow the TRS user to respond within the system response time.” The Commission has not previously addressed to what extent this rule is applicable outside the context of TTY-based TRS. Because the rule specifically refers to CAs and TTYs, however, we conclude that it is inapplicable to ASR-based IP CTS, which does not involve the use of either CAs or TTYs, and therefore does not need to be waived.

28. Regarding the requirement for MachineGenius to provide a CA identification number in its reports to the TRS Fund administrator for compensation of call minutes, we clarify that, when captions are provided via ASR, an IP CTS provider can comply with this requirement by providing an identification number for its ASR system in the CA identification number field, or by providing other ASR-identifying information as the administrator directs. Accordingly, no waiver is needed.

29. We also find that MachineGenius does not require an individualized waiver of the emergency call-handling rules on disclosure of CA identification numbers and call reestablishment when connecting emergency calls to the PSAP. As stated by MachineGenius in its application amendment, the Commission has granted a temporary partial waiver of these rules to any IP CTS provider that provides IP CTS in a configuration where a user can initiate an IP CTS call by connecting to the IP CTS provider via the Internet, provided the user is assigned a NANP telephone number that the IP CTS provider can transmit with a 911 call and that enables a PSAP to call the user back via IP CTS. MachineGenius asserts that this previously granted, generally applicable waiver applies to its service and states it will comply with the waiver condition.

30. To the extent necessary, we grant MachineGenius’s supplemental request for waiver of the requirement for a consumer’s written self-certification to state that “[t]he consumer understands that the captioning on captioned telephone service is provided by a live communications assistant who listens to the other party on the line and provides the text on the captioned phone.” This statement, which is simply incorrect as applied to MachineGenius, would provide misinformation to consumers. As the Commission has observed in the context of potential analogous professional attestations, that “portion of

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89 2000 TRS Order, 15 FCC Rcd at 5180, para. 92. As a result, the Commission explained, “TRS users are either unable to make calls that encounter interactive menus or other recorded messages or must frequently place a succession of calls to leave a message with, or access the information provided by, such systems.” Id.

90 In light of the near-simultaneous captioning that the record indicates MachineGenius’s ASR will achieve, we do not believe that interactive menus are likely to pose special communications barriers for users of that service. See supra para. 6.

91 47 CFR § 64.604(c)(5)(iii)(D)(2)(ii).

92 See 47 CFR § 64.604(c)(5)(iii)(D)(1) (“TRS providers seeking compensation from the TRS Fund shall provide the administrator with . . . information reasonably requested to determine the TRS Fund revenue requirements and payments.”).

93 See 47 CFR § 9.14(b)(2)(iv)-(v). Prior to January 6, 2020, these rules were codified at 47 CFR § 64.605(a)(2)(iv)-(v).


95 MachineGenius Amendment at 11.

96 MachineGenius Amendment at 11-12 (citing 47 CFR § 64.611(j)(1)(v)).
the attestation is only required to the extent that captions are produced in [that] manner and not exclusively through a non-CA assisted automatic speech recognition engine.”

V. PROCEDURAL MATTERS

31. People with Disabilities: To request materials in accessible formats for people with disabilities (Braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice) or 202-418-0432 (TTY).

32. Additional Information. For further information regarding this item, please contact Michael Scott, Disability Rights Office, Consumer and Governmental Affairs Bureau, at 202-418-1264 or by e-mail to Michael.Scott@fcc.gov.

VI. ORDERING CLAUSES

33. Accordingly, IT IS ORDERED that, pursuant to sections 1, 2, 4(i), 4(j) and 225 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 152, 154(i), 154(j), 225, sections 0.141, 0.361, 1.3, and 64.606(b)(2) of the Commission’s rules, 47 CFR §§ 0.141, 0.361, 1.3, 64.606(b)(2), and the authority delegated by paragraph 60 of the Commission’s 2018 ASR Declaratory Ruling, the application of MachineGenius, Inc. for certification to provide IP CTS is GRANTED as conditioned in this Memorandum Opinion and Order.

34. IT IS FURTHERED ORDERED, that MachineGenius, Inc. is conditionally certified to provide IP CTS, as conditioned in this Memorandum Opinion and Order.

35. IT IS FURTHER ORDERED, that the MachineGenius, Inc. Request for Waiver is GRANTED IN PART and DISMISSED IN PART, subject to the conditions herein.

36. IT IS FURTHER ORDERED that, pursuant to section 1.102(b)(1) of the Commission rules, 47 CFR § 1.102(b)(1), this Memorandum Opinion and Order SHALL BE EFFECTIVE upon release.

FEDERAL COMMUNICATIONS COMMISSION

Patrick Webre, Chief
Consumer and Governmental Affairs Bureau