Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matters of	)	
	)	
Misuse of Internet Protocol	)	CG Docket No. 13-24
Captioned Telephone Service	)	
Telecommunications Relay Services	)	CG Docket No. 03-123
and Speech-to-Speech Services for	)	
Individuals with Hearing and	)	
Speech Disabilities	)	

COMMENTS OF VTCSECURE, LLC

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IP CTS and Functional Equivalency

When it comes to IP CTS, VTCSecure agrees with the Consumer Groups Reply Comments that Functional Equivalency should outweigh efficiency to ensure that all Deaf and Hard of Hearing users are able to receive the best service available to meet their communication needs. A lot of comments have been focused on accuracy equaling functional equivalency, however we can all agree that the current system is not 100% accurate. We would like to add to this discussion and also discuss other aspects that are major factors of making sure IP CTS is as functionally equivalent as possible to everyday PSTN calls between two hearing users. We plan to point out these other factors and how they are also important pieces to true equivalency. We will also discuss how the ASR technology is currently being used in IP CTS and how using the same technology in a different way not only provides better functional equivalency to its users but also makes consumer choice and freedom to the Deaf and Hard of Hearing community the number one priority.

Definition of Functional Equivalence

The real goal of any phone conversation is not just to speak back and forth but to convey information between two parties in an accurate, effective and timely manner. The goal of the telephone itself and of IP CTS is to ensure that two individuals can communicate effectively and both sides comprehend what the other person is trying to convey.   Effective communication is defined as communication between two or more persons wherein the intended message is

successfully delivered, received and understood. For this to be successful it requires far more than just conveying words accurately. Other aspects of successful communication include:

- Ability to have the spoken information comprehended in real-time

- Ability to convey overall tone

- Ability for both parties to know exactly what is being conveyed to the other party

- Ability to quickly fix wrongly conveyed information

- Ability to have private conversation without 3rd party involvement

One of the biggest gaps of functional equivalency we see in today's IP CTS is speed of the text showing up to the user. When two hearing people communicate over the telephone, it takes on average less than ¼ of a second for the sound to travel out of one person's mouth, over the telephone network and into the other person's ears where it can be comprehended. For current CA-reviewed IP CTS calls, the hearing person must speak, it must be heard by the CA, re-voiced, reviewed, edited, THEN sent as text and read by the Hard of Hearing user before it can be comprehended. The average speed of current IP CTS technologies is between 4-10 second delay from the spoken words untill they show up to the IP CTS user. That is significantly slower than that of a hearing phone call. This has a profound effect on the overall effectiveness of communication and is a huge reason why we believe current IP CTS lacks many factors of true functional equivalency. Due to the current delay, users are behind in the conversation and may not respond to a question in time which can cause confusion on both sides on the call. We also must note here that IP CTS is not the same for everyone. The degree of hearing loss and

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reliance on text vs. the spoken word are different for each user. Many users only rely on IP CTS to help with random missed words but not relied on for the entire conversation. In these cases, many users have to follow along with the conversation and then have to wait to see the word they were not sure of as the conversation goes on. If they had misunderstood, the conversation has already progressed and to pause to get clarification stops the natural flow of the conversation. In addition, you have lost all conveyed information following the misunderstanding. This makes consumer choice and real-time communication more relevant in terms of functional equivalence for these users. These users would much prefer speed over accuracy as the average time of non-reviewed IP CTS takes less than 1 second to show up to the user. For many IP CTS users, this ability to stay up in conversation real-time would be what makes their communication using IP CTS the most functionally equivalent.

Another important factor for Functional Equivalence is the concept of each speaker knowing exactly what each of them has said.   When two hearing people are talking over the telephone, they each know what they are saying, and can hear themselves speaking such that each party knows exactly what they are communicating to the other party. This is one of the core foundations of telephone communication. However, with IP CTS this is not always the case. With current IP CTS, what the CA ultimately sends and what the hearing person said are not always EXACTLY the same. When a mistake is made by the CA or the CA doesn't understand something the hearing person said that CA is not able to ask for them to repeat what was said or to ask for clarification. More importantly, most of the time the hearing speaker has no idea that there is even the possibility that what they said not being correctly conveyed. Again, this is

a major breakdown of one of the core aspects of telephone communication enjoyed by hearing individuals. If one party says something and it isn't conveyed correctly by the CA, the hearing user has no idea and can become frustrated as to why the other person doesn't understand what they are saying. Imagine if in an important conversation and in calls with friends and family the consumers had the **choice** to inform the hearing caller that what they are saying is being converted to text **plus** give the hearing caller the choice to see what text is being transmitted; you would then have 100% accurate communication. The informed hearing users could now also add tone and emotion using their choice of words instead of pitch and tone of voice.

Another important aspect of functional equivalency that IP CTS currently lacks is the fact that IP CTS users do not have the OPTION to not have a CA listening into the conversation. We believe it's worth noting that having a private conversation is a huge part of being equal to hearing calls today and an important missing component in today's services.

When it comes to functional equivalency we believe accuracy is just one piece. We believe speed such that the user can keep up with a conversation, ability for both sides to know exactly what is being conveyed, privacy and consumer choice also play an integral part to providing functional equivalency to today's IP CTS Services. We believe new technology can provide all those pieces and meet the consumer groups needs for true Functional Equivalency. Depending on a user's degree of hearing loss and given the choices of what services they want we can

provide the exact same service that is being provided today but also add on these additional

pieces for consumers to decide what provides them the best Functional Equivalency.

ASR is Currently Being Used Today

We think it is also important that a distinction be made between automated speech recognition

(ASR) used by a Communication Assistant (CA) and automated speech recognition that does not

involve a CA. Today almost all IP CTS calls use ASR. Most providers have a communication

assistant listening to the remote hearing party and repeating what they say into an automated

speech recognition application where they can then make edits if necessary before the text is

sent to the hard of hearing users' device. Therefore, we need to stop looking at this as an issue

of whether or not we should allow automated speech recognition as a technology because it's

already being fully used today. The real question is whether or not ASR should be allowed

without first being reviewed or edited by CA. This is a very important distinction that hasn't

been clearly addressed.

There are several ways in which ASR is and can be utilized on an IP CTS call. The first is how it's

mainly used today which is that the words are re-spoken by a CA into ASR software, reviewed

and edited and then sent to the user. Another way to use ASR would be to apply an ASR

technology directly to the voice of the hearing caller and have a CA review and edit the text in

real time before it goes to the Hard of Hearing user. It some cases, this can still be faster than

having to re-voice by the CA. The third option would be to use ASR from the hearing callers

voice with no review or editing by a CA. This has the quickest speed averaging around 1 second

from being voiced to showing to the IP CTS user. To make this even better there is the option to

instantly make the text being sent available to the hearing party so the hearing party can see

the exact same text the hard of hearing user is seeing.   It is these four potential versions of IP

CTS that must be considered in their entirety as well as their ability to provide the most

functional equivalent service. The fact that all these options can be interchanged and used in

every call makes IP CTS a truly enabling consumer choice.

Conclusion

VTCSecure has the capability today to provide a variety of options to each customer to meet

their needs. We believe the consumer should have the choice to pick their default way IP CTS

should work and/or the consumer should have the option to switch to any forms of IP CTS while

on a call. Our solution gives the consumer 100% choice, true real-time communication, ability

for both parties to confirm 100% accuracy, plus our speech to text technology has been used

and shown to be far more accurate. We believe giving the consumers ALL of the above is what

really brings IP CTS into the future and provides true Functional Equivalency to the Hard of

Hearing Community by giving the same options that are available today and then adding other

abilities on top. We also can add additional services that go beyond functional equivalency such

as having an IP CTS call with video so things like tone can be conveyed through body language

in addition to custom features like language translation.

Due to all the reasons above we are requesting the FCC complete the review our IP CTS

certification application and provide us with at minimum a temporary certification. This will

allow us to show that we can provide the same exact service that others are providing today

but also allow the customer to choose which forms of IP CTS are more functionally equivalent

for their level of hearing loss. Not only do we believe that the customers will use and want to

continue to use our services, but this will also allow the FCC to provide an IP CTS option that not

only better meets the consumers' needs for functional equivalence but in many situations at a

lower cost. This makes sure IP CTS continues to be available for all users who need it now and in

the future. Why should we keep these technologies that are available today out of the

consumers hands when we can offer the exact same services currently being provided, in

addition to all the other added choices. Shouldn't we give IP CTS users the technology that is

available now and let the consumer choose what best meets their needs?