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

In the Matters of IP-Enabled Services	)	
	)	
Implementation of Sections 255 and 251(a)(2)	)	WC Docket No. 04-36
of The Communications Act of 1934, as Enacted by The Telecommunications Act of 1996: Access to Telecommunications Service, Telecommunications Equipment and Customer Premises Equipment by Persons with Disabilities	)	WT Docket No. 96-198
	)	CG Docket No. 03-123
	)	
Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities	)	CC Docket No. 92-105
The Use of N11 Codes and Other Abbreviated Dialing Arrangements		

**REPLY COMMENTS OF
THE COALITION OF ORGANIZATIONS
FOR ACCESSIBLE TECHNOLOGY (COAT)
IN RESPONSE TO THE REQUEST FOR
A LIMITED WAIVER TO COMPLY WITH
THE TRS PROVIDER OBLIGATIONS**

I. Introduction

The Coalition of Organizations for Accessible Technology (COAT)[1] offers these comments in response to the request for a limited waiver raised

[1] The Coalition of Organizations for Accessible Technology, or "COAT," consists of over 160 national, regional, and community-based organizations dedicated to making sure that as our

by the Wireless Communications Association International (WCA) and supported by the Voice on the Net ("VON") Coalition in the instant proceeding.[2]

COAT's overarching position is that any waiver, including limited waivers, of regulations that provide now, or that will provide, greater accessibility and usability for persons with disabilities, can be detrimental to persons with disabilities. In particular, COAT has concerns about limited waivers that would postpone the ability of persons with speech and hearing disabilities to reach 9-1-1 or E9-1-1-services, or any public safety answering points (PSAPs), either directly or when using telecommunications relay services (TRS). Nearly all persons without disabilities in the United States have access via telephone to PSAPs. Persons with disabilities must have the same access to emergency services as any person without disabilities, whether they call PSAPs directly, or opt to use one of the many forms of relay services that the Commission has approved. This principle must be at the forefront of any action the Commission takes in this and future proceedings concerning IP-based communication services.

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nation migrates from legacy telecommunications to more versatile and innovative IP-based and other communication technologies, people with disabilities will not be left behind. The guiding principle of COAT is to ensure the full inclusion of people with disabilities in all aspects of daily living through accessible, affordable and usable communication technologies as these continue to evolve.

[2] The proceeding in which WCA and the VON Coalition have sought a waiver is *In the Matters of IP-Enabled Services, Implementation of Sections 255 and 251(a)(2) of the Communications Act of 1934, as Enacted by the Telecommunications Act of 1996: Access to Telecommunications Service, Telecommunications Equipment and Customer Premises Equipment by Persons with Disabilities; Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities; The Use of N11 Codes and Other Abbreviated Dialing Arrangements*, Report and Order, WC Dkt No. 04-36, WT Dkt No. 96-198, CG Dkt No. 03-123, CC Dkt. No. 92-105 (June 15, 2007) (R&O).

II. The Problem

The instant proceeding extended the TRS obligations under Section 225 of the Communications Act to interconnected VoIP services because these "services are increasingly used to replace analog voice service and because consumers reasonably perceive them as substitutes for analog voice service."[3] Insofar as one form of TRS continues to be based on TTY communications, the requirement to meet these obligations has been interpreted to require the transport of TTY conversations by VoIP providers.

WCA has sought additional time to comply with the above directive because it is concerned about the degradation of TRS services that will occur as a result of latency and packet loss over packet-based IP networks that were designed for data. The VON Coalition has joined this request, noting that while voice conversations can survive some packet delay and loss, even small amounts of latency and packet loss can cause a TTY conversation to become garbled and incoherent. WCA claims that this is especially so in the wireless context, "where ordinary packet loss and latency may be exacerbated by signal propagation difficulties and other challenges unique to wireless technology."[4] And both Petitioner and the Coalition agree that the problem is exacerbated by the fact that TTY users are seeking real-time transmissions, which do not offer a way to insert late packets or recover lost packets.

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[3] R&O at ¶33.
[4] Comments of WCA at 2 (submitted October 1, 2007).

In its supporting comments, the VON Coalition tries to suggest that the problem at hand is not a major one. It claims that in the vast majority of cases, a high-speed, low-latency broadband connection will be enough to support the availability of TTY over interconnected VoIP services. But it agrees with WCA that there is a limited subset of broadband networks – "those that have high latency, packet loss, or that are bursty" – that still have difficulty supporting TTY access over VoIP.[5] In particular, both entities appear concerned about "over the top" VoIP providers, specifically, providers offering services over a wireless network, that do not have control over the type of underlying broadband service and connection a user chooses. Network capabilities and the resulting packet loss and latency, they explain, "can vary significantly depending on provider, type of Internet access (DSL, cable, T1, wireless, satellite, etc), the amount of traffic on the network at any moment in time, and whether the broadband network utilizes available quality of service (QoS) technologies."[6]

III. COAT Position and Recommendations

The problems raised by WCA and the VON Coalition are real, and present challenges to individuals seeking to use TTY services over IP technologies. Indeed, COAT is aware of consumers who continue to have difficulties using their TTYs over both wireline and wireless VoIP services, notwithstanding the suggestion by the VON Coalition that this problem is

[5] Comments of the VON Coalition at 8.
[6] *Id.* at 3.

confined to a "limited subset of broadband networks."[7] Nor are we as confident as the VON Coalition appears to be that this problem is going away, or affecting only a small minority of TTY users. In fact, we fear that TTY users will have even greater problems at times that broadband networks are overloaded, such as in emergency situations, or when high speed TV programming becomes more popular.

There is little question that there is a need to provide a means of supporting users who still rely on TTY services as their primary mode of telephone communication (either directly or via TRS). But it would be counterproductive to have the IP industry travel down a path that perpetuates the antiquated TTY in IP environments and does not offer a pure IP-based form of conversational text to the large population using IP networks as their main communication network. Shipping TTY tones over the Internet, as acknowledged by WCA and the VON Coalition, has significant drawbacks, often leaving users with conversations that are garbled or missing information.[8]

Both Sections 225 and 255 of the Communications Act are designed to ensure that people with communication disabilities are not left behind as our nation's communication technologies evolve. But TTYs rely on legacy

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[7] *Id.* at 8.

[8] TTYs carry communications over tones that are converted into electrically represented sound, and converted back again into tones at the receiving end. By contrast, the native form of transmission via the Internet is digital. This means that in order to send TTY signals over the Internet, TTY tones must be converted to electrically represented sound, then into digital form that is communicated. Then the digital form is converted back into electrical representation of sound, and then back into tones.

technologies; not only are these devices rapidly declining in use, but the technologies upon which they are based have been preventing deaf and hard of hearing people from benefiting from many of the IP technologies of the twenty-first century. COAT is concerned about perpetuating these legacy communications because doing so will fail to ensure users full real-time text access to IP networks. For this reason, COAT is coming forward to ask that the FCC take this opportunity to explore and investigate whether a different communication standard – one that both transports conversational text natively as *data* (rather than tones) over IP networks, and one that provides gateways at the edges of those networks to allow for continued connection by TTY users (until such time as TTYs are phased out entirely) – would be better suited to provide reliable and interoperable communication for people with hearing and speech disabilities in the twenty-first century.

Over the last decade, our country has been taking a bold leap from analog to digital technologies, as well as from PSTN-based to IP-enabled technologies. We are sure that the FCC would agree that it would be inconsistent with the trends of this nationwide migration toward advanced technologies to continue to force antiquated technologies upon the disability community. Indeed, demanding that TTY users continue using legacy devices as their only source of real-time text would be the equivalent of expecting people who rely on closed captions to continue using analog television sets, were that the only way of receiving captions. Of course, the

FCC has made no such suggestion in the context of television viewing, and has instead required digital television programmers and equipment manufacturers to offer the same benefits of advanced digital technologies to caption viewers as are being offered to the mainstream public. The same should be the case for telephone communications. Individuals with communication disabilities should not have to continue using TTYs in order to communicate in real-time text when technical solutions are readily available for them to have real-time text conversations over IP networks using modern technologies.

In order to enable text users to make this migration and achieve solutions for the many complex technological issues raised herein, COAT requests the Commission to host a technical summit during the spring of 2008, to be attended by VoIP and broadband providers, engineers (including the FCC's Office of Engineering Technology), consumers and other interested stakeholders. COAT further asks that the Commission proceed with extreme caution in regard to this and other requests for limited waivers, pending a full investigation of these technological issues.

IV. Conclusion

COAT urges the Commission to proceed carefully in evaluating the requested waiver, and to take such action that will ensure that individuals with hearing and speech disabilities have equal, reliable, and interoperable access to modern text communications as emerging IP technologies are

developed and marketed. We also urge the Commission to conduct a technical summit for the purpose of developing a roadmap that will achieve these objectives.

Respectfully submitted,

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On behalf of the Coalition of Organizations for Accessible Technology

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