

# **NENA Video Relay Service & IP Relay Service PSAP Interaction Operations Information Document (OID)**



NENA Video Relay Service & IP Relay Service PSAP Interaction OID  
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## 1 Executive Overview

This NENA Video Relay Service (VRS) and Internet Protocol Relay Service (IP Relay) PSAP Interaction OID is intended to provide guidelines for PSAPs and recommendations to the FCC for:

- Emergency calling to 9-1-1 using Video Relay and IP Relay services
- Relay of such calls to the appropriate Public Safety Answering Point (PSAP)
- Interaction between the caller, the video relay interpreter (VI) or communications assistant (CA) and telecommunicator

With today's expanding technology, people have options for communication methods. People who are deaf, deaf-blind, hard of hearing, and individuals with a speech disability are following along with these trends and are rapidly migrating from traditional TTY to more advanced telecommunications methods, both for peer-to-peer communications, and for relay services. This newer Internet-based equipment includes, but is not limited to, wireless devices, videophones/videocams, computers, and instant messaging technologies<sup>1</sup>.

The range of options makes it possible for people who are deaf, deaf-blind, hard of hearing, or have a speech disability to choose the modality that, for the individual and given the circumstances and resources at hand, is most responsive to his or her communication preferences. In this way, these users are able to come closer to telephone communication that is functionally equivalent to that enjoyed by people who can hear and speak.

The new modalities face the same Internet-based challenges as Voice over Internet Protocol (VoIP) for the emergency services industry, and the issues are further complicated by the nature of relayed calls. These challenges are compounded by current federally mandated rules that require relay Communication Assistants and Video Interpreters to be transparent when processing a telephone conversation.

Since these newer Internet-based telecommunications relay services have proven themselves to be effective, it is only natural that people who are deaf, deaf-blind, hard of hearing, or have a speech disability will want to have the option to turn to them for emergency calling as well, in addition to (or instead of) the use of a TTY. Consequently, there is a need to develop proven, uniform operational guidelines for PSAPs and recommendations to the FCC for calling through the relay services such as caller-to-relay service interaction, relay-service-to PSAP interaction, and caller-to-relay service-to-PSAP interaction.

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<sup>1</sup> The focus of this OID is on Internet-based modalities and therefore does not include a discussion of PSTN-based captioned telephone.

The roles of a VI and CA are to provide effective communication<sup>2</sup> by relaying a conversation between two parties. The information passed between two parties is kept confidential. Relay services do not keep records (audio, video or written) of caller conversations<sup>3</sup>. However, the relayed calls received by PSAPs will be routinely electronically recorded as any other 9-1-1 call. The VI and CA are not participants and are to remain transparent.

In order to provide effective communication during emergency calls, the VI is allowed to temporarily record caller location, contact information and any other pertinent details provided by the caller that will assist telecommunicators in providing timely and appropriate services. This temporary record will be erased after the call is terminated.

While this document focuses initially on interim operational guidelines and recommendations, technical issues require further attention. Following completion of this document, work needs to begin on migratory and long-term operational guidelines and recommendations.

This document's recommendations may demonstrate the need to change existing federal (particularly FCC) regulations.

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<sup>2</sup> Effective communication. The ability of two or more parties to participate fully and equally in a telephone conversation, each using their preferred language and/or modality, and each able to communicate in real time both expressively and receptively, clearly, and accurately, either with or without a Communication Assistant. (Submitted to the FCC by the TRS Work Group of the FCC's Consumer Advisory Committee, 2006)

<sup>3</sup> VIs and CAs are prohibited from keeping records (written, typed and visual) of conversations due to FCC's 47 C.F.R. 64.604 Mandatory Minimum Standards (a) Operation Standards: 2. Confidentiality and conversation content ([www.fcc.gov/cgb/dro/4regs.html](http://www.fcc.gov/cgb/dro/4regs.html) page 4) and FCC's 47 U.S.C 225(d)(1)(F)-(G).

## 2 Introduction

People who are deaf, deaf-blind, hard of hearing, or have a speech disability, have diverse communication requirements and are rapidly migrating from traditional TTY to more advanced Internet-based telecommunications methods, both for peer-to-peer communications, and for relay services that provide access to all telephone users in the nation.

Once limited to the use of TTYs or amplified handsets, these additional and newer modalities include wireless devices, videophones/videocams, computers, and instant messaging technologies. This range of options makes it possible for each user to choose the equipment that, for the individual and the circumstances and resources at hand, is most responsive to his or her communication preferences. By utilizing these devices and connecting with IP Relay, Wireless Relay, Instant Messaging (IM) Relay Service and Video Relay Service (VRS), the individual is able to experience telephone communication that is more functionally equivalent to that enjoyed by people who can hear and speak.

Since these newer wireless and Internet-based telecommunication devices have proven themselves to be effective for day-to-day relayed telephone conversations, it is only natural that people who are deaf or hard of hearing will want to have the option to turn to them for emergency calling, while maintaining TTY access as an option. Consequently, there is a need to develop proven, uniform operational guidelines and recommendations for:

- Caller to relay service interaction
- Relay service to PSAP interaction
- Caller to relay service to PSAP interaction.

While this document focuses initially on interim operational guidelines for PSAPs, Relay Service Providers and recommendations to the FCC, there remain technical issues requiring further attention and, following completion of this document, work needs to begin quickly on migratory and long-term operational and technical guidelines and recommendations.

### 2.1 Background

According to the Department of Justice (DOJ), there are more than 50 million individuals with disabilities in the United States <sup>4</sup>. This includes 28 million Americans who are deaf, hard of hearing, deaf-blind, or have a speech disability. Communication is important to all individuals with these disabilities, both via the telephone, other technology, and in face-to-face communications. These individuals are entitled to communications that are functionally equivalent to that benefited by individuals who can hear and speak.

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<sup>4</sup> Reaching out to Customers with Disabilities under Americans With Disabilities Act Home Page <http://www.ada.gov/reachingout/introl.htm>, July 31, 2007



People who are deaf, deaf-blind, hard of hearing, and/or have a speech disability have different methods for communicating by telephone. Options include TTY/TDD, a TTY with a large visual display (if they are also partially sighted), a TTY with a braille known as telebraille (if deaf-blind), an amplified phone (if hard of hearing), or captioned telephone (if the person prefers to use their own voice).

Many of these people also use their special equipment to contact telecommunication relay services (TRS). A specially trained TRS VI or CA relays telephone conversations via voice and typed text or American Sign Language (ASL) and spoken English back and forth between people who are deaf, deaf-blind, hard of hearing, or have a speech disability and anyone in the U.S. they wish to communicate with by telephone.

According to Title IV of the Americans with Disabilities Act of 1990 (ADA)<sup>5</sup>, the term "telecommunications relay services" means

“...telephone transmission services that provide the ability for an individual who has a hearing impairment or speech impairment to engage in communication by wire or radio with a hearing individual in a manner that is functionally equivalent to the ability of an individual who does not have a hearing impairment or speech impairment to communicate using voice communication services by wire or radio. Such term includes services that enable two-way communication between an individual who uses a TDD or other non-voice terminal device and an individual who does not use such a device.”<sup>6</sup>

TRS call centers have special equipment and are staffed by trained Video Interpreters (VIs)/ Communications Assistants (CAs) who relay conversations between persons who use text telephones (TTYs) or similar devices and voice telephone users. TRS call centers receive calls from all over the country - such calls are not necessarily routed to a center in the same state or vicinity as the caller. TRS is divided into two general types: Traditional (TTY) and Internet-based.

1. A traditional relay service is reached via the landline public switched telephone network (PSTN), generally while using a TTY/TDD or in some cases, computers with TTY modems that dial the relay service or another party directly. When a call is received by a relay service requesting emergency service the relay service contacts the appropriate public safety agency serving the caller's area on their 10 digit administrative line, or alternate emergency access number (AEAN).
2. Internet-based relay calls (the focus of this OID) are performed via an Internet connection to dedicated websites (via dial-up, wireless, or broadband) while using a videophone, webcam, text pager, or computer. The following describes the types of Internet-based relay calls:

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<sup>5</sup> Telecommunications Services for Hearing-Impaired and Speech-Impaired Individuals codified at 47 U.S.C. § 225

<sup>6</sup> FCC website, <http://www.fcc.gov/cgb/dro/title4.html> - November 2, 2006

- a. Internet Protocol (IP) Relay: The caller uses a computer to access a relay provider's website. Communication Assistants relay conversations back and forth between the computer user and the hearing individuals. Voice Carry Over (VCO) may also be requested with IP Relay. The caller provides the CA with the phone number of a nearby telephone which is conferenced into the call. In this case, the caller's phone number becomes available to the CA who can then pass it on to the PSAP.
- b. Wireless IP Relay: The caller uses a handheld wireless device such as a text pager (i.e. BlackBerry, Sidekick, etc.) with web browser to connect to a relay provider. [VCO is possible with wireless IP Relay if a landline phone with conference call capability is nearby, making location information available to the CA who can pass it along verbally to the telecommunicator. When VCO is used, the telecommunicator will hear the caller's voice and not the voice of the CA.]
- c. Video Relay: The caller uses a videophone or webcam with a computer and a broadband connection to access a video relay service call center staffed with sign language and/or oral interpreters and transliterators. Since typing on a keyboard is not necessary, video relay enables the hearing and deaf parties to communicate and naturally using sign language and/or speech reading. Video users who choose to do so may also request VCO, using a nearby landline or wireless phone with conference call capability, and speak directly to the other party. Such a request makes the telephone number available to the CA who can then pass it on to the PSAP. With VCO in use, the telecommunicator will hear the caller's voice and not the voice of the Video Interpreter (VI). Depending on the VRS provider, and the equipment the caller is using, the caller may be able to type to the VI.

The FCC ordered traditional TRS providers to begin to relay landline TTY calls to 9-1-1 to the appropriate PSAP.<sup>7</sup> This required the TRS providers to have access to a database of the 10-digit emergency telephone numbers of all PSAPs in the U.S. since the TRS providers operate nationwide call centers. The CA uses the database to quickly identify the appropriate PSAP from the caller's phone number and dials it using the 10-digit phone number. The telephone number (TN) of the caller may be communicated to the PSAP manually or verbally. Utilizing the caller's telephone number, some PSAPs can retrieve the caller's address information electronically.

Unlike the traditional PSTN, since IP Relay and VRS are Internet based services (like VoIP), there is no ANI associated with the incoming call so the location (ALI) cannot be automatically detected. This also applies to TRS providers. Therefore, it becomes critical for the VI/CA to interact with the caller to obtain information such as location of emergency and type of assistance needed. Unfortunately, there has been no concerted effort to train IP Relay and VRS staff to clarify location information or to train IP Relay and VRS users to understand why the heretofore VI/CA has requested this information. The amount of training given to any VI/CA about the information and process necessary during a 9-1-1 call varies depending upon the relay service provider.

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<sup>7</sup> [47 C.F.R. § 64.604\(a\)\(4\)](#)

When necessary, telecommunicators are able to call back those who make contact via traditional relay services since such calls may provide the TN to the CA who in turn may provide it to the telecommunicator. Conversely, calls connected to a PSAP via IP Relay or VRS present a challenge if a call back is desired because callers are connected through the Internet via a dynamic (changing), random IP address.

A chart explaining types of relay services along with receiving and handling calls can be found in Appendix A.

## 2.2 Purpose and Scope of Document

This NENA Video Relay Service and IP Relay Service PSAP Interaction OID is intended to provide guidelines for PSAPs and recommendations to the FCC for:

- User emergency calling through Video Relay and IP Relay services
- Relay of such calls to the appropriate Public Safety Answering Points
- Interaction between the caller, the VI/CA and the telecommunicator.

## 2.3 Reason to Implement

There are a rapidly growing number of consumers who are deaf, deaf-blind, hard of hearing, or have a speech disability that have discontinued landline telephone service entirely and who rely exclusively on Video Relay and/or IP Relay services for emergency communications.

Due to technical limitations, the Internet forms of relay addressed in this paper are currently waived by the FCC from the mandate to relay calls to PSAPs. Nevertheless, progress is being made in addressing the technical limitations and consumers do contact these relay services for assistance in calling 9-1-1.

Emergency calls from people who are deaf, deaf-blind, hard of hearing, or have a speech disability will inevitably be relayed to PSAPs around the country. Consequently, there is a need for standardized operational guidelines, awareness and training of consumers, training of VIs/CAs, training of telecommunicators, and recommendations for uniform procedures for effective two-way communication between the caller and the telecommunicator through the relay provider's CA or VI.

## 2.4 Reason to Reissue

NENA reserves the right to modify this document. Whenever it is reissued, the reason(s) will be provided in this paragraph.

Version	Date	Reason For Changes
Version 1	02/12/2008	Initial Document

## 2.5 Recommendation for Standards Development Work

There is a need for further technical and operational work, including standards, regarding this topic. In addition to the *immediate goal* of enabling users of VRS and IP Relay Services to access the appropriate PSAP, the *long-term goal* is to provide a Next Generation 9-1-1 (NG9-1-1) environment

where the users of videophones, wireless devices, and/or the Internet are able to access 9-1-1 PSAPs directly without requiring a relay service as an intermediary.

A *migratory goal* is to develop technical and operational guidelines/recommendations (pre-NG9-1-1) that significantly shorten the connection time of caller-to-relay service component and the connection time of relay service-to-PSAP component so that the call processing time comes closer to being functionally equivalent to emergency calls from the general population. Universal adoption of these guidelines will achieve that migratory goal.

## 2.6 Cost Factors

The cost of implementing the protocols recommended herein would be borne by each entity adopting these protocols. Initially these costs will be largely related to the associated training of personnel. However, as other migratory and long term technological solutions are introduced aimed at achieving wireline equivalence there will be costs associated with these solutions.

## 2.7 Acronyms/Abbreviations

Some acronyms/abbreviations used in this document have not yet been included in the master glossary. After initial approval of this document, they will be included. Link to the master glossary is located at <http://www.nena.org/>.

<b>The following Acronyms are used in this document:</b>	
AEAN	Alternate Emergency Access Number
ASL	American Sign Language
CA	Communications Assistant
HCO	Hearing Carry Over
IP Relay	Internet Protocol Relay
TRS	Telecommunications Relay Service
VCO	Voice Carry Over
VI	Video Interpreter
VRI	Video Remote Interpreting
VRS	Video Relay Service

## 3 Video and Internet Protocol Relay Services Operational Description

### 3.1 Overview of Video Relay Service (VRS)

Video Relay Service (VRS) enables a person who is deaf or hard of hearing to use sign language and/or speech reading to communicate with anyone else who has a telephone through a third party VI. The user has a videophone or webcam connected to a video relay service call center via broadband Internet. Conversations are relayed by qualified VIs and transliterators. VRS relays conversations between both parties at a natural flow.

Users of VRS are diverse: Some people request American Sign Language (ASL) interpretation, other users prefer signed English or oral transliteration which follows English word order. The Video Interpreter/transliterator is responsive to the communication requirements of each user and

will interpret or transliterate with the deaf or hard of hearing user and by voice with the hearing party on the call. Although the majority of VRS calls are initiated by the person who is deaf or hard of hearing, such calls may also be initiated by a hearing person by dialing a toll-free access number (see Appendix B for the listing of relay service providers).

The VRS user has the option of requesting VCO with VRS so that he or she can use his or her own voice and be heard by the other party. (The CA dials the user's telephone number and conferences it through to the other party. In this case the CA will have the telephone number of the caller and can share it with the telecommunicator.)

### **3.2 Overview of Internet Protocol (IP) Relay Service**

IP Relay is a text-based communication service that allows people who are deaf or hard of hearing to communicate with any telephone user through an Internet connection with a relay service call center. IP Relay is accessed using a computer or wireless handheld device and the Internet, rather than a TTY and a telephone.

One leg of an IP Relay call goes from a text-based message through a web page to a CA at a relay call center. The other leg of the call, as with traditional TRS, is from the CA to the other party via voice telephone through the public switched telephone network. No telephone number is available for the caller.

The IP Relay user has the option of requesting VCO with IP Relay. This enables the text user to speak directly to and be heard by the other party through the relay service. The IP Relay user provides his or her local phone number to the CA. The CA dials this phone number on one line and conferences it with the phone number of the party to be called. In this case, the CA may provide the telecommunicator with the call-back number of the caller and the relay service provider.

Relay calls to text users can be initiated by telephone users – if the IP address or IP phone number is known - by dialing an IP Relay Service via a dedicated toll-free number. Knowing the caller's IP address is important in the event a call back to an IP Relay user is necessary.

### **3.3 9-1-1 Call Handling – CA/VI Role and Procedures**

NENA recognizes that the following procedures could be adopted in one of two ways: 1) that each VRS and IP Relay provider would use its own CAs, dedicated and specially trained in handling 9-1-1 calls or 2) all providers would be jointly served by shared regional/centralized systems. This OID takes no position on which approach to recommend.

In either case, it will be necessary for the FCC to adopt uniform call handling procedures and minimum training and education of VI's and CA's by all providers of VRS and IP Relay.

**NOTE:** Asterisks will be used to (\*) identify system and procedures, which will require FCC approval prior to implementation. These recommendations can be found in Section 8, Policy Impact Statement.

It is anticipated that the same CA or VI will remain with the caller and/or the telecommunicator for the duration of the call. These procedures are designed to:

- Allow the VI/CA to connect the caller with the appropriate PSAP as soon as possible.
- Make it unnecessary for the caller to provide information more than once.

To initiate an emergency call to 9-1-1 using IP Relay or VRS, the user would be utilizing an Internet capable wireless device<sup>8</sup>, computer or videophone, and entering 9-1-1 as the number to be dialed after connection to the relay service is established. It is recommended that VRS and IP Relay providers be required to incorporate a 9-1-1 link on their main menu/ home page.\* This will distinguish emergency calls from routine calls, prioritize all 9-1-1 calls in the queue and automatically route the call to a specially trained and equipped CA/VI.

Such calls then become more functionally equivalent to general 9-1-1 service as the inbound call to the relay call center is identified as a 9-1-1 call before it is answered and prioritized in the queue.

The following procedures are recommended for telecommunicator/CA-VI interaction.

- a. Once received by the relay provider the connection must be automatically routed in a priority manner and answered by a dedicated, trained, and qualified CA or VI prepared to immediately process the call through to the appropriate PSAP.\* We recommend that there be dedicated 9-1-1 emergency trained and qualified interpreters to process these types of calls.\*

According to DOJ's American with Disabilities Act 1990, a qualified interpreter is "able to interpret effectively, accurately, and impartially, both receptively and expressively, using any necessary specialized vocabulary".

It is recommended by the VRS/IP Relay Service/PSAP Interaction working group that a "qualified 9-1-1" VI should hold valid NAD Level 4 or 5, RID CSC, MCSC, CI/CT, NIC, NIC Advanced or NIC Master certification; community interpreting (not educational) for a minimum of 5 years; have been interpreting for VRS a minimum of 1 year and over 1000 hours; and trained in 9-1-1 emergency call handling protocols, procedures and situations.\*

- b. The work station of the dedicated VI/CA must have the means to record caller location, nature of the emergency, call back details, and be equipped with the ability to access an up-to-date automated PSAP location database. This information should be retained throughout the duration of the call.\*

1. Currently technology does not permit direct pass through of ANI/ALI information, the VI/CA must ask the caller for his or her address (location) in real-time and have the means to keep it displayed until the entire call management process has been successfully completed.

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<sup>8</sup> Not a typical wireless phone but rather an Internet capable wireless device with a web browser (i.e. Blackberry, Sidekick, etc.).



2. Work stations of CAs and VIs processing 9-1-1 calls should be required to automatically record the length of time to reach the PSAP.

### 3.4 Call Processing

1. All calls will be prioritized and answered by a qualified 9-1-1 VI/CA.
2. The VI/CA will obtain and enter location/address of emergency for automated routing to the appropriate PSAP. While waiting for the routing to take effect, the VI/CA should ask the caller about the nature of the emergency.
3. When the call is first connected to the telecommunicator, the VI/CA must:
  - a. immediately identify the call as an IP relay or VRS relay call.  
(Telecommunicators must be trained to understand the significance of this alert related to call handling procedures and the role of a VI/CA in a call).
  - b. immediately transmit location and the nature of the emergency (if known) to the telecommunicator.
4. The telecommunicator must ask and note:
  - a. the location and nature of emergency;
  - b. the caller's IP address for call back purposes if necessary;
  - c. if there is a land-line voice telephone on the premises and the phone number if known. (This phone number would not be used to reconnect but would provide a number useful for confirming location);
  - d. name and number of VRS/IP Relay Providers. Note: Relay personnel with the exception of STS services are currently not allowed to retain details from phone calls they relay. (Some state TRS rules forbid writing instruments in the work area. Both the FCC and most state TRS rules will need to be amended to allow for retention of information related to location, nature of the emergency, and call back for the purposes of 9-1-1.\*)

This OID strongly endorses mandatory IP address and VP number registration by users and a consumer education program to create awareness of this advantage.\* The call taking system would then automatically display the user's registered address. The OID endorses mandatory registration for Internet service users. Also the database should only be made available to VRS and IP Relay Services during emergency calls.

- a. The CA/VI must have immediate access to a database that will automatically match the caller's registered number/location to the appropriate PSAP and initiate a call to that PSAP's Alternate Emergency Access Number. (In the future, it is likely that the calls will be routed natively.)\*
- b. It is not the responsibility of the VI/CA to route the call to a specific police, fire, or medic agency.
- c. Telecommunicators must assess the call to determine the type of services needed.

## 4 Challenges of VRS and IP Relay Services in Handling 9-1-1 Calls

The NENA Standard for answering ordinary voice calls to 9-1-1 is that ninety percent (90%) of all 9-1-1 calls arriving at the Public Safety Answering Point (PSAP) shall be answered within ten (10) seconds during the busy hour (the hour each day with the greatest call volume, as defined in the

NENA Master Glossary 00-001) and ninety-five (95%) of all 9-1-1 calls should be answered within twenty (20) seconds.<sup>9</sup>

#### **4.1 Recommendations to VRS Providers for Emergency Calling Priority Routing\***

There is an extremely compelling risk of delay for emergency calls accessing 9-1-1 that are initiated by a caller to a VRS provider that does not have an internal system for giving such calls priority routing to an “qualified” 9-1-1 VI.\*

Currently, the FCC regulation [47 C.F.R. § 64.604(b)(2)(iii)] requires that a VRS provider is to respond to 80% of all calls in 120 seconds or (less speed-of-answer). This is not functionally equivalent to the NENA Standard. Accordingly, it is recommended that:

1. VRS Relay providers should be required to incorporate a 9-1-1 call identification mechanism in their equipment/software. This mechanism should distinguish emergency calls from routine calls, and prioritize 9-1-1 calls in the queue.
2. 9-1-1 calls received at VRS Relay call centers should be automatically routed to a qualified CA/VI. Such calls then become more functionally equivalent to general 9-1-1 service as the inbound call to the relay call center becomes identified as a 9-1-1 call before it is answered.
  - a. Prioritized access might be provided through the interface of the customer premise equipment, software, through a specific URL for 9-1-1 calls, or through any other method a provider of VRS makes known (There are more than eleven known VRS providers with a combined total of approximately 90 to 100 call centers throughout the United States.)
  - b. If the relay center receives a call through the prioritized access method set up for 9-1-1 calls that is not an emergency, the telecommunicator must disconnect the call. Only 9-1-1 calls are to be processed through the prioritized access method. A uniform Standard Operating Procedure must be developed for all VRS providers.

Furthermore, with VRS, a VP user initiating the call to a VRS relay service center must wait for the relay center to answer and place the call to the appropriate PSAP. Currently, there are no FCC regulations on the speed-of-answer for the Video relay services to reach 9-1-1.\*

#### **4.2 Recommendations to IP Relay Providers for Emergency Calling Priority Routing**

There is an extremely compelling risk of delay for emergency calls to 9-1-1 that are initiated by a caller to an IP Relay provider that does not have an internal system for giving such calls priority routing to a “qualified 9-1-1” CA.

Currently the FCC regulation [47 C.F.R. § 64.604(b)(2)(ii)] requires that 85% of IP Relay calls be answered in 10 seconds or less. However, there is considerable concern by consumers that there is

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<sup>9</sup> NENA 56-005, Section 3.1, Standard for Answering 9-1-1 Calls.



currently no monitoring, auditing, or penalties in place for failure to comply and long wait times for an answer are not uncommon. Furthermore, this percentage represents an average, and begins when the call is delivered to the IP relay call center's network and is measured daily. For these reasons, it is recommended that IP Relay providers have a system that allows the user to indicate the call is an emergency, and prioritize and route inbound calls to a "qualified" 9-1-1 CA. The following considerations should be met:

1. IP Relay providers should be required to incorporate a 9-1-1 call identification mechanism in their call answering equipment/software. This mechanism should distinguish emergency calls from routine calls, and prioritize 9-1-1 calls in the queue.
2. 9-1-1 calls received at IP Relay call centers should be automatically routed to a qualified CA. Such calls then become more functionally equivalent to general 9-1-1 service as the inbound call to the relay call center becomes identified as a 9-1-1 call before it is answered.
  - a. Prioritized access might be provided through the interface of the customer premise equipment, software, a specific URL for 9-1-1 calls, or through any other method a provider of IP Relay makes known. However, it is strongly recommended that the FCC adopt one method to be adhered to by all IP Relay providers.\* (There are more than seven known IP Relay providers with multiple call centers available in the U.S.)
  - b. If the relay center receives a call, through the prioritized access method set up for 9-1-1 calls, that is not an emergency the CA disconnect the call must disconnect the call. Only 9-1-1 calls are to be processed through the prioritized access method. A uniform Standard Operating Procedure is needed to be developed for all IP Relay Centers.

#### **4.3 Recommendations to PSAPs for Emergency Calling Priority Routing**

All PSAPs must be required to provide 24/7 10-digit numbers (AEAN) to the VRS and IP Relay Providers until technology is developed to route calls natively.\* According to NENA 56-005 document (NENA Call Answering Standard/Model Recommendation): "Out of area PSAP contact information may be found in the NENA PSAP Registry or via the NLETS system. Comment: Only those PSAPs in the U.S. that are hosted by a law enforcement agency have access to the NLETS system. The county in which the destination PSAP is located must be known in order to use the PSAP Registry. This information is available through the National Association of Counties website (<http://www.naco.org/>)"

#### **4.4 Pre-Arrival Instructions Protocol for Telecommunicators**

Telecommunicators are to follow the pre-arrival instructions according to their agency's protocol. The VI and CA will act as a third party and relay the information between the caller and the 9-1-1 telecommunicator. The conversation is controlled by the 9-1-1 telecommunicator who asks questions, provides answers and gives instructions.

For traditional 9-1-1 calls, by dialing the digits "9-1-1" the caller gives their implied consent to providing automatic number identification and location information, even for confidential (unlisted) numbers – to the PSAP.

By seeking emergency assistance from the 9-1-1 system (through TRS), the caller also waives their traditional confidentiality expectation.\*

#### **4.5 Challenges for VIs**

The main goal of this section is to shed light on the role of the VI, and specifically to recommend that current FCC regulations be amended to provide exemptions for “qualified 9-1-1” VIs when handling an emergency call so that they may provide the necessary information to the telecommunicator to best expedite the emergency call response. A secondary goal is to ensure the quality of relayed communication by requiring specialized training to prepare Video Interpreters when handling emergency calls.

VRS relay call centers provide services for individuals all over the country. Although a phone conversation that is being relayed between two people within geographic area, the VI facilitating the conversation may be physically located at a call center anywhere in the country. The national membership organization for sign language interpreters is the National Registry of Interpreters for Deaf (RID). RID has played a leading role in establishing the national standard of quality for interpreters and transliterators in the United States. RID has established a Code of Professional Conduct (CPC) and administers/oversees the Ethical Practices System and Complaint Process. The CPC can be found in <http://www.rid.org/UserFiles/File/pdfs/codeofethics.pdf>.

The following issues are challenges currently being faced by VIs while complying with FCC regulations and Service Providers policies.

1. In a situation, where the VI is unable to connect the caller to the PSAP, (such as an observing an incident of domestic violence, or violence/abuse, a medical emergency or where the person has passed out, the call freezes, etc) FCC regulations should create an affirmative duty for the VI to take immediate action to notify the appropriate PSAP of the incident, its location, and any known information as soon as possible.
2. Typically, telecommunicators can hear and assess the environmental background of hearing callers and follow their established procedures for sending assistance. There is a need for clarification to be provided to VIs as to whether or not to provide visual information they observe on the screen. It is recommended that the FCC include a regulation requiring VI’s to provide visual information to a 9-1-1 telecommunicator, especially to protect the life of the first responders as well as the caller.\*
3. Some VIs may be sensitive to certain situation such as domestic violence, rape/sexual assault, blood, or physical threats where there is a weapon involved, etc.
  - a. Specialized training for VIs who meet minimum skill qualifications, psychologically able, and willing to process 9-1-1 calls. (See page 25, Section 8 #4).
  - b. The FCC should permit VIs to follow-up with PSAP’s in exigent circumstances.\*

#### **4.6 Challenges of CAs**

The main goal of this section is to shed light on the role of the CA, and specifically to recommend that current FCC regulations be amended to provide exemptions for “qualified 9-1-1” CAs when handling an emergency call so that they may provide the necessary information to the PSAP to best

expedite the emergency call response. A secondary goal is to ensure the quality of relayed communication by requiring specialized training to prepare CAs when handling emergency calls.

IP relay services provide relay calls for individuals all over the country. Although a phone conversation that is being relayed may be in same geographic area, the CA facilitating the conversation may be physically located at a call center anywhere in the country.

The main challenge the CA faces is the ability to translate from written ASL to spoken English or spoken English to written ASL. Many people who are deaf, deaf-blind, hard of hearing, or have a speech disability may be in a stage of panic, pain or fear and their ability to articulate thoughts may be incoherent.

## **5 PSAP with Video and Internet Based Relay Services Interaction**

### **5.1 9-1-1 Calls via Video or Internet Relay: Procedures**

This section describes the interaction between the telecommunicator, the IP Relay CA or VI and consumer with an emergency.

The VI/CA will first ask the caller for the location of the emergency and connect to the appropriate PSAP;

1. When the call is answered by the telecommunicator, the VI/CA will identify it as an emergency relay call;
  - a. Telecommunicators must be trained to understand the significance and implication of this alert and that they will be talking to the caller through a third party;
  - b. Due to technical difficulties of reconnecting with any caller using an Internet-based relay service, it is recommended that the telecommunicator obtain the relay service provider phone number, caller's VP number or IP address, or screen name;
  - c. If the call with telecommunicator disconnects without completing the conversation, the VI/CA will redial the PSAP;
  - d. If the call from the caller disconnects, the VI or CA will make every effort to regain connection.
2. The VI/CA will then immediately convey the location information obtained so far from the caller;
3. The telecommunicator will follow their protocols, and the VI/CA will facilitate communication by relaying the conversation between the caller and the telecommunicator.

### **5.2 If the PSAP does not serve the location of the caller**

1. If the incorrect PSAP is reached,
  - a. the VI/CA will ask the telecommunicator to transfer the call to the appropriate PSAP, if possible.
  - b. If a transfer is not feasible, the CA /VI should hang up and reprocess the call to a different PSAP.

- c. If there is no answer, the CA /VI should hang up and reprocess the call.

### **5.3 Re-contact/call back methods for emergency calls to VRS and IP Relay**

It has been demonstrated repeatedly in 9-1-1 calls across the US and Canada that a call back or lack thereof during an emergency call can be the difference between life and death. Therefore, it is imperative that the telecommunicator, after getting location and type of emergency, get re-contact information for the caller and the VRS and IP Service Providers.

The telecommunicator must also understand that it will be extremely difficult, if not impossible, to reconnect with the same VI/CA when attempting to reconnect with the caller, unless the Service Provider gives the telecommunicator their specific call center telephone number. Inbound calls are randomly routed within each VRS and IP Relay Service Providers call centers across the country.

There are also major concerns that there is no priority access for telecommunicators to VRS and IP Relay calling call center for call-back, emergency situations.\*

1. If connection between the CA/VI and the caller is lost, an attempt by the VI/CA should be made to re-contact with the caller, using the noted IP address or VP number.
2. If the location of the emergency has already been provided to the CA/VI by the caller before the connection is lost, the CA/VI should proceed to attempt to reconnect with the caller as well as contact the appropriate PSAP and report the incident and the information collected.\*
3. If the caller connection is lost during the call with the appropriate telecommunicator, the VI/CA should ask the telecommunicator if they would like to attempt reconnection with the caller.
4. If the VI/CA connection to the telecommunicator is lost during the call, the CA/VI should attempt to re-dial the PSAP.

## **6 Recommended Training**

### **6.1 PSAP**

Telecommunicators are familiar with TTY, but not necessarily familiar with video or IP relay services. Telecommunicators should be provided training on:

1. Video Relay Services
  - a. Process
  - b. Video Interpreter Role
  - c. Link to Video Relay Service Provider Telephone numbers
  - d. An understanding of the differences between the modalities and the procedures that the VI is following.

- e. Responsibility and procedures for controlling calls such as to ask for address of emergency, nature of emergency and how to call back [see NENA Call Answering Standard/Model Recommendation Document 56-005, <http://www.nena.org/media/files/NENAopsSOPcallansweringstandardfinal061006.pdf>]
2. Internet Protocol Relay Services
    - a. Process
    - b. Communication Assistant Role
    - c. Link to IP Relay Service Provider Telephone numbers
    - d. An understanding of the procedures that the CA is following.
    - e. Responsibility and procedures for controlling calls such as to ask for address of emergency, nature of emergency and how to call back [see NENA Call Answering Standard/Model Recommendation Document 56-005, <http://www.nena.org/media/files/NENAopsSOPcallansweringstandardfinal061006.pdf>]
  3. Speech-to-speech relay services (STS)
  4. Captioned telephone relay services (both traditional and IP)
  5. Traditional TTY relay calls
  6. Characteristics of Callers [see NENA E9-1-1 TTY Training Operational Standard Document 52-001, <http://www.nena.org/media/files/NENAopsAccessibilityTTYTrainingStandard020105final.pdf>]

## **6.2 Video Interpreter and Communication Assistant Training**

1. It is recommended that VIs and CAs receive training on appropriate processing of emergency calls. Suggested topics may include, but are not limited to: Overview of policies and procedures.
2. Procedure for directing calls to appropriate PSAP
3. Role and responsibility of the VI/CA
4. Role and responsibility of the telecommunicator
5. Critical Incident Stress Management
6. Special Situations

## **6.3 Consumer Education**

Consumer education needs to include information about the risks associated with wireless connections in the event of an emergency such as the possibility of a weak or absent signal and the absence of location information.

Consumer education should include the limitations of current technology and VI and CA capabilities during emergency calls.

## **7 Outstanding Issues still to be addressed**

Cell phones can be connected to a TTY and users of a cell phone/TTY combination who are deaf or hard of hearing may call 9-1-1 directly or through an IP Relay service. Ideally, all wireless pagers and PDAs should have a built-in TTY/TDD device or software application. Such calls are routed via the data network. As with VoIP, at the present time it is necessary for the telecommunicator to immediately request location information.

Determining automatic location from wireless devices which may be used to access VRS or IP Relay for emergency calls needs to focus on the extent that GPS (Global Positioning Systems) might help the PSAP to determine the caller's location. This is necessary for all users of wireless devices and not just those who are deaf or hard of hearing.

## **8 Policy Impact Statement**

The operational guidelines/recommendations in this OID identify policy issues (potential barriers) which need further attention and possible changes in federal regulations, particularly those of the FCC and U.S. Department of Justice (DOJ). They include:

1. Priority call processing required by all relay providers for emergency calls.
2. Clarify what VI and CA can and cannot report independently of the caller before, during and after call transfer to the PSAP.
3. Clarify the term "functional equivalency" to determine whether VIs are permitted to provide the visual background information they are observing to the telecommunicators.
4. Establish requirements for Video Interpreters who process 9-1-1 emergency calls to meet a minimum national standard of performance. It is strongly recommended that a qualified 9-1-1 Video Interpreter must:
  - a. hold a valid NAD Level 4 or 5, RID CSC, MCSC, CI/CT, NIC Advanced or NIC Master certification;
  - b. have been interpreting in the community (not educational) a minimum of 5 years;
  - c. have been interpreting for VRS a minimum of 1 year and over 1000 hours; and
  - d. trained in 9-1-1 emergency call handling protocols,
5. Establish procedures and circumstances for callback/re-contact process, and under what circumstances, once a call has been identified as an emergency call, regardless of whether the call has been connected to the PSAP.
6. Establishment of a voluntary caller pre-registration as is currently required for VoIP access to E9-1-1.
7. Establish mandatory IP address registration for VRS and IP Relay users to provide location information associated with the IP address and facilitate contacting the user by the PSAP.
8. Establish regulations for VI and CA to automatically pass on the caller's information to the PSAP.



9. Establish regulations for mandating Video and IP Relay Services implement technology to allow them to automatically pass on the caller's information from Relay Service Provider to the PSAP.
10. Require warning labels or stickers on customer-premise equipment as is currently required for VoIP equipment, reminding consumers of limitations, loss of power, service issues with moving/change of address.
11. Establish an accurate national database of 24/7 10-digit phone numbers of all PSAPs required for all VRS and IP Relay services providers.
12. Establish a minimum standard for (speed-of-connect) for the VRS or IP Relay Service Providers to reach PSAP.
13. Establish standard operating policies and procedures for training all telecommunicators nationwide in handling relay calls.
14. Establish a uniform standard operating procedure for VRS and IP Relay Service Providers in handling the misuse of priority 9-1-1 calls.
15. Once the implementation and conversion to NG technology has begun, video conferencing equipment should be required and installed in all PSAPs to allow three-way video conference calls between the caller, telecommunicator and a VRI service provider.
16. All wireless pagers and PDAs should be required to include a built-in TTY/TDD device or software application to allow direct connection to the PSAP. Using TTY to call 9-1-1 directly will save valuable time, instead of the delays incurred by using Internet based relay service.
17. The FCC regulations should be amended to provide exemptions for VIs/CAs who process 9-1-1 calls so that they may provide necessary information to the telecommunicator to best expedite the emergency call process.

## 9 References

- American With Disabilities Page – Information and Technical Assistance <http://www.ada.gov/>, August 15, 2007
- **FCC on Telecommunication Relay Services Rules 47 C.F.R. § 64.601 - 64.605**; FCC Regulations for the Provision of Telecommunications Relay Services (TRS) pursuant to Title IV of the Americans with Disabilities Act (ADA), Pub. L. No. 101-336, § 401, 104 Stat.327, 366-69 (adding Section 225 to the Communications Act of 1934, as amended, 47 U.S.C. § 225. <http://www.fcc.gov/cgb/dro/4regs.html>, August 15, 2007
- Federal Communications Commission (2000). Telecommunications Services and Speech-to-Speech Services for Individuals with Disabilities, Report and Order and Further Notice of Proposed Rulemaking, CC Dkt. No. 98-67, FCC 00-56, 15 FCC Rcd 5140 (March 6, 2000), ¶100.
- Title IV of the Americans with Disabilities Act of 1990 (ADA) (Telecommunications services for hearing-impaired and speech-impaired individuals codified at 47 U.S.C. § 225)
- NENA Call Answering Standard/Model Recommendation Document 52-003, <http://www.nena.org/media/files/NENAopsSOPcallansweringstandardfinal061006.pdf> ...

- NENA E9-1-1 TTY Training Operational Standard Document 52-001, 52-002, <http://www.nena.org/media/files/NENAopsAccessibilityTTYTrainingStandard020105final.pdf>
- NENA IP-Capable PSAP Minimum Operational Requirements Standard Document 58-001, Issue 2, <http://www.nena.org/media/files/NENA58-001OpsIP-PSAPStd-final06092007.pdf>
- Registry of Interpreters of the Deaf (RID) Code of Professional Conduct



## 10 Appendix

### 10.1 Appendix A: Matrix on Operations of TRS and Internet Based Relay Service

All relay service calls from people who are deaf, deaf-blind, hard of hearing, or have a speech disability are received as voice calls into the PSAP. Sometimes the person speaking will be a hearing person who is interpreting or speaking for a caller who is deaf, deaf-blind, hard of hearing, or who has a speech-disability. In some cases the person who is deaf, deaf-blind or hard of hearing prefers to speak directly to the PSAP using VCO or a similar service. A person who has a speech disability may use HCO directly with PSAP. It is important to note that there will be a brief pause between taking turns as the VI or CA will be relaying a conversation between the two parties.

The implications of the various types of relay services for receiving and handling calls are summarized in the table below:

Type of relay service → Characteristics	Traditional TTY Relay Service	Speech to Speech Relay Service (STS)	Video Relay Service (VRS)	IP Text Relay Service	Captioned Telephone Relay Service
Equipment caller is using	TTY	Phone	(1) Videophone (stand alone) or similar device (2) Webcam with computer	Computer or wireless handheld	Captioned Telephone
Network caller is using	Public switched telephone network	Public switched telephone network	Internet or wireless Internet	Internet or Wireless Internet	Public switched telephone network; user will have either one or two lines; if user has one line using a captioned phone, the call will be processed as a standard VCO call directly to the 9-1-1 center. If user has two lines using a captioned phone, one line is connected to the 9-1-1 center and the second line is connected to the captioned relay service.

Type of relay service →	Traditional TTY Relay Service	Speech to Speech Relay Service (STS)	Video Relay Service (VRS)	IP Text Relay Service	Captioned Telephone Relay Service
<b>Characteristics</b>					
<b>Routing to PSAP from relay service</b>	10-digit number PSAPs need to provide 24/7 access to call-takers through a 10-digit number. (AEAN preferred)	10-digit number PSAPs need to provide 24/7 access to call-takers through a 10-digit number. (AEAN preferred)	Although the FCC does not at present require VRS and IP Relay service providers to handle or process 9-1-1 calls, consumers do frequently asking them to do so. When emergency calls are relayed, the 10-digit number for the nearest PSAP is used. PSAPs need to provide 24/7 access to call-takers through a 10-digit number. (AEAN preferred)		9-1-1 network alone 9-1-1 network and 10-digit number
<b>Intermediary personnel on call</b>	CA typing/speaking Or caller speaking and CA typing only	Caller speaking and CA speaking for person who has a speech disability when needed.	VI signing/speaking or caller speaking and VI signing only.	CA typing/speaking Or caller speaking and CA typing only	CA typing and caller speaking.  Captioned telephone operator uses voice-to-text software to transcribe calls for captioned telephone users. PSAPs will hear caller's voice.
<b>Call-backs supported?</b>	Yes, call 7-1-1, give caller's telephone number	Yes, call 7-1-1, give caller's telephone number	1) Stay on line and have VI to reconnect to the caller.  2) Manual process; get 1) relay service phone number and 2) caller's Internet address or number at beginning of call	1) Stay on line and have CA to reconnect to the caller.  2) Manual process; get 1) relay service phone number and 2) caller's Internet address or number at beginning of call	Yes. Direct call to 9-1-1 provides ANI

Type of relay service →  Characteristics	Traditional TTY Relay Service	Speech to Speech Relay Service (STS)	Video Relay Service (VRS)	IP Text Relay Service	Captioned Telephone Relay Service
<b>What will the relay service say while connecting to PSAP?</b>	This is (State) Relay with an emergency call for you. I will be relaying information from a person who is (deaf, deaf-blind, hard of hearing, or has a speech disability) so there may be a delay. GA	This is (State) Relay with an emergency call for you. I will be relaying information from a person who is (deaf, deaf-blind, hard of hearing or has a speech disability) so there may be a delay. GA	Hello, this is __ VRS with an emergency call or will be relaying information through a 3 <sup>rd</sup> party, there may be a brief delay in response...	Relay Service Provider will announce themselves with an emergency call.	N/A – Caller speaks directly to PSAP telecommunicator

**10.2 APPENDIX B: List of toll-free numbers for hearing callers to VRS and IP Relay Services**

Please note that when you call one of the relay service providers, you are to provide the IP address, or videophone number, screen name or other contact information of the person that you wish to contact. Some providers assign personal 10-digit or toll-free phone numbers to individuals who register with them so that these numbers can be passed to hearing people. The information below is subject to change.

**DISCLAIMER:** This list is not intended to be all inclusive, is subject to change and is not to be considered as an endorsement by NENA for any providers listed.

SERVICE PROVIDERS	WEBSITE	PHONE # FOR VRS	PHONE # FOR IP
AT & T	<a href="http://www.consumer.att.com/relay">www.consumer.att.com/relay</a>	1-888-VRS-9998	None
Communication Access Center	<a href="http://www.cacvrs.org">www.cacvrs.org</a>	1- 866-500-9662	None
Communication Service for the Deaf	<a href="http://www.csdvrs.com">www.csdvrs.com</a>	1-866-926-8877 or personal assigned phone number	N/A
Hamilton Relay	<a href="http://www.hamiltonrelay.com">www.hamiltonrelay.com</a>	1-866-498-4777	1-888-889-9872 get caller's screen name
Hawk Relay	<a href="http://www.hawkrelay.com">www.hawkrelay.com</a>	None	None
Hands On	<a href="http://www.hovrs.com">www.hovrs.com</a>	1-877-467-4877	1-877-467-4877
i711	<a href="http://www.i711.com">www.i711.com</a>	Personal assigned phone number	Personal assigned phone number
LifeLinks	<a href="http://www.lifelinksvrs.com">www.lifelinksvrs.com</a>	1-888-744-6526	N/A
MyRelay	<a href="http://www.myrelay.com">www.myrelay.com</a>	None	Refer to i711
NextTalk	<a href="http://www.nexttalk.net">www.nexttalk.net</a>	Personal assigned phone number	Personal assigned phone number
Sorenson Communications	<a href="http://www.sorenson.com">www.sorenson.com</a>	1-866-327-8877	None
Sprint	<a href="http://www.nextel.com/en/solutions/relay_services">http://www.nextel.com/en/solutions/relay_services</a>	1-877-709-5776 or 1-866-410-5787 with extension number	1-877-866-8057 (English) 1-877-866-8059
Snap Telecommunications	<a href="http://www.snapvrs.com">www.snapvrs.com</a>	1-877-711-7627	N/A
URRelay	<a href="http://www.urrelay.com">www.urrelay.com</a>	None	None

Verizon	<a href="http://www.ip-vrs.com">www.ip-vrs.com</a> <a href="http://www.ip-relay.com">www.ip-relay.com</a>	Personal assigned phone number	Personal assigned phone number
Viable, Inc	<a href="http://www.viablevrs.tv">www.viablevrs.tv</a>	None	N/A