



Marybeth M. Banks  
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April 14, 2005

Ms. Marlene Dortch  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, D.C. 20554

Re: Annual Internet Relay and Video Relay Service Progress Report  
CC Docket No. 98-67

Dear Ms. Dortch:

Sprint Corporation hereby files its Annual Internet Relay and Video Relay Service Project Report, as required by the Commission.<sup>1</sup>

If you have any questions concerning this report, please contact me.

Very truly yours,

A handwritten signature in cursive script that reads "Marybeth Banks".

Attachments

cc: Thomas Chandler  
Gregory Hlibok

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<sup>1</sup> *In the Matter of Telecommunication Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities and Americans with Disabilities Act of 1990*, Second Report and Order, Order on Reconsideration, and Notice of Proposed Rulemaking (Second Report and Order), CC Docket No. 98-67 and CG Docket No. 03-123 (FCC 03-112), released June 17, 2005.

**FCC Internet and Video Relay Service Annual Progress Report  
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	Current waived items by FCC	Current TRS Rule Applied	Current Technology Issues/Limitations	Progress and steps taken to meet the requirement
1.	<b>Speech to Speech (STS)</b>	"Speech-to-speech relay service and interstate Spanish language relay service shall be provided by March 1, 2001."	<p><b>Internet Relay Services</b> It is not possible over the internet for Internet Relay Services. That is one reason why earlier attempts of carrying voice traffic over the internet failed. VoIP <b>**REQUIRES**</b> Quality of Service. QoS means that all the associated data packets arrive in one contiguous stream and in order.</p> <p>In the "internet" world, there are many segments owned by multiple providers using dis-similar routers. Some support QoS, some do not. The internet cannot be controlled by any single user. There is, at this time, no universal, cooperative methodology to address the internet deficiencies.</p>	<p><b>Internet Relay Services</b> In research and development stage. Sprint is investigating and evaluating several VoIP to determine acceptable QoS levels to support STS calls. Sprint is also investigating LAN/WAN systems where QoS can be controlled internally.</p>
2.	<b>Spanish Relay (waived)</b>			
3.	<b>Types of Calls (VCO, HCO, VCO-to-TTY, HCO-to-TTY, VCO-to-VCO, HCO-to-HCO)</b>	"TRS providers are required to provide the following types of TRS calls: Text-to-voice and voice-to-text; (2) VCO, two-line VCO, VCO-to-TTY, and VCO-to-VCO; (3) HCO, two-line HCO, HCO-to-TTY, HCO-to-HCO	<p><b>Internet Relay Services</b> It is not possible over the internet. That is one reason why earlier attempts of carrying voice traffic over the internet failed. VoIP <b>**REQUIRES**</b> Quality of Service. QoS means that all the associated data packets arrive in one contiguous stream and in order.</p> <p>In the "internet" world, there are many segments owned by multiple providers using dis-similar routers. Some support QoS, some do not. The internet cannot be controlled by any single user. There is, at this time, no universal, cooperative methodology to address the internet deficiencies.</p>	<p><b>Internet Relay Services</b> In research and development stage. Sprint is investigating and evaluating several VoIP to determine acceptable QoS levels to support Voice and Hearing carry-over calls. Sprint is also investigating LAN/WAN systems where QoS can be controlled internally.</p>

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3.	<b>Types of Calls (VCO, HCO, VCO-to-TTY, HCO-to-TTY, VCO-to-VCO, HCO-to-HCO)</b>	"TRS providers are required to provide the following types of TRS calls: Text-to-voice and voice-to-text; (2) VCO, two-line VCO, VCO-to-TTY, and VCO-to-VCO; (3) HCO, two-line HCO, HCO-to-TTY, HCO-to-HCO	<b>Video Relay Services</b> It is not possible over the internet. VoIP Quality of Service (QoS) issues (see SRO notes.) However, Sprint offers alternatives VCO and HCO solution by using second line (analog line) where the Video Interpreter asks for a second number to call back using three-way call feature. The procedure is similar to two-line VCO or HCO call.	<b>Video Relay Services</b> We are currently providing two-line VCO and HCO controlled at the agent position using IP or ISDN inbound from Video user and outbound POTS to Video User and outbound POTS to Voice user. One line VCO and HCO scheduled for beta release in early March of 2005 and platform wide release to be determined based on outcome of beta release. This will be limited to certain types of end user appliances that allow voice access through the broadband connection at end user equipment.
4.	<b>Emergency Call Handling</b>	"Provider must use a system for incoming emergency calls that, at a minimum, automatically and immediately transfers the caller to the nearest PSAP."	Internet Protocol network (IP network) does not support the Automated Number Identification information for Internet or Video Relay Services. Without automated knowledge of the originated location of the call, Sprint is not in position to transfer 911 calls to the nearest PSAP.	<b>Internet Relay Services</b> Sprint implemented a "manual" (directory assistance lookup) process for 911 calls through Internet Relay. The technical challenge remains of tying an exact location to an IP address. No additional development has been made that would allow Internet Relay users to place 911 calls through Internet Relay.  <b>Video Relay Services</b> No additional information to submit beyond our recent submission to the FCC. CSD composed a white paper elaborating on options that all require additional development. Current options may restrict interoperability. An Emergency database is still in use today for subscribers who choose to register a profile; however, agents must verify the location of the caller, as the caller may not be at the same physical location as the profile indicates. (See attached White Paper).

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5.	<b>Speed of Answer</b>	"85% of all calls answered within 10 seconds daily. Abandoned calls included in the speed of answer calculation. Daily P.01 standard."	<b>Video Relay Services</b> Commission did not want to take action that would keep potential competitors from entering the VRS market. In addition, the FCC waived this requirement because of its interest in stimulating VRS growth.	<b>Video Relay Services</b> Currently, Sprint provides a consistent 20 second Average Speed of Answer (ASA) or less when averaged over a period of 30 days (monthly). Prior to the interim rate taking effect, occupancy rates and corresponding ASA were at more attractive levels approaching 10 second ASA when averaged over a period of 30 days (monthly). Our service level, while good, has deteriorated since July 1, 2003, and the percentage of time VRS agents are working (occupancy) has increased significantly, sometimes to levels that are unacceptable. We feel that should the FCC remove the waiver, Sprint and CSD could meet an 85/30 service level within 6 mos.
6.	<b>Equal Access to Interexchange Carrier</b>	"TRS users shall have access to their chosen interexchange carrier through the TRS, and to all other operator services, to the same extent that such access is provided to voice users".	<b>Video Relay Services</b> The IP network for Video Relay Services does not support ANI and end-user billing mechanisms. Without automated knowledge of ANI location, and without an ANI to charge back for tolls calls, Sprint cannot support equal access to interexchange carrier features for Video Relay Services.	<b>Video Relay Services</b> The technical challenge remains of tying an exact location to an IP address for VRS users. However, the very nature of the internet makes billing for toll calls obsolete for VRS.
7.	<b>Pay-per-call (900) service</b>	"Relay services shall be capable of handling pay-per-calls".	IP network does not support ANI and end-user billing mechanisms. Without automated knowledge of ANI location, and no ANI to charge back for a pay-per-service call, Sprint is not processing 900 calls.	<b>Internet Relay Services</b> The technical challenge remains of tying an exact location and billing of pay-per-call. No additional development has been made that would allow Internet Relay end users to be billed for pay-per-call services.  <b>Video Relay Services</b> The technical challenge remains of tying an exact location to an IP address. Given the de minimis number of 900 service calls placed through VRS, Sprint has not devoted resources to this issue.

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8-13	VCO, HCO, VCO-to-TTY, HCO-to-TTY, VCO-to-VCO, HCO-to-HCO	See response for Call Types (#3).		
14.	<b>Call Release</b>	"TRS providers are required to provide call release functionality. Call release is defined as a "TRS feature that allows the CA to sign-off or be 'released' from the telephone line after the CA has set up a telephone call between the originating TTY caller and a called TTY party, such as when a TTY user must go through a TRS facility to contact another TTY user because the called TTY party can only be reached through a voice-only interface, such as a switchboard."	<p><b>Internet Relay Services</b> An Internet Relay caller utilizes IP data to place an inbound call. The Call operator connects the outbound dialing voice call utilizing Signaling System 7 (SS7). Since these two types of calls are not compatible, the call release feature is not technically feasible.</p> <p><b>Video Relay Services</b> A VRS customer utilizes a video connection to make an inbound call. The VRS operator utilizes a voice channel (SS7) to make an outbound dial. Because the two types of calls are not compatible, the call release feature is not technically feasible. Also, in the VRS environment, we are currently unable to remove the Video Interpreter agent from the middle of the call when the inbound video caller reaches an outbound customer who also has video capability. With regards to VRS, Sprint's Video Relay Service is not designed to connect an inbound video caller with the called party with uses voice, TTY user, VCO, HCO or anything other than video because the videoconferencing via internet or ISDN protocols are not compatible.</p>	It is not technically feasible at this time to provide call release features with Internet and Video Relay calls. However, Sprint will continue to investigate new developments to allow Internet and Video Relay customers to use this feature.

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15.	<b>Three-way Calling</b>	<p>TRS providers are required to provide three-way calling functionality. Three-way calling is defined as a “TRS feature that allows more than two parties to be on the telephone line at the same time with the CA.”</p>	<p><b>Internet Relay Services</b> The current Internet Relay call environment does not support the capability to perform three-way calling initiated call from agent via SRO.</p> <p><b>Video Relay Services</b> At this time, it is not technically feasible to provide a 3-way Video Relay call. Customers using VRS do not have the web-enabled ability to initiate 3-way video calls because of the limitations of end user equipment. Features of customer premise equipment are not under the control of the VRS provider, and therefore the VRS provider cannot control the establishment of a three-way call.</p>	<p><b>Internet Relay Services</b> It is possible for the customer to initiate a three-way call if he/she has conference calling capability. In this case, the operator is not needed to perform the three-way calling function. However, the limitation is that Sprint’s Internet Relay Service will handle only one TTY user (and unlimited number of voice users) when using three-way calling via relay service. It is possible to have 2-Line VCO via SRO using user-initiated three-way calling.</p> <p><b>Video Relay Services</b> The voice end customer is currently able to use the LEC-provided three-way calling feature without problem on the Sprint VRS. One or two of the three legs of the call can be engaged as they would without VRS being a part of the call. VRS is transparent to this process. The VRS agent who receives an inbound video connection has the ability to out dial to multiple voice parties to create a three-way call of which two parts are voice and one part is video. This feature is often used to support VCO and HCO callers through VRS today. The VRS agent platform is however, unable to support a three way call between two video customers and one voice user at this time.</p>

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<b>16.</b>	<b>Speed Dialing</b>	TRS providers are required to provide speed dialing. Speed dialing is defined as a "TRS feature that allows a TRS user to place a call using a stored number maintained by the TRS facility. In the context of TRS, speed dialing allows a TRS user to give the CA a short-hand name or number for the user's most frequently called telephone numbers."	<p><b>Internet Relay Services</b> There are no limitations today. Sprint currently offers this feature.</p> <p><b>Video Relay Services</b> This service is currently available for VRS customers who choose to use our webcam based product. They can create a speed dial list online and greatly improve the efficiency and connect time with the outbound party through the Video Interpreter. Individuals using TV-based videophones do not have this web enabled ability to speed dial through VRS because of the limitations of this type of end user equipment. Features of customer premise equipment are beyond the control of the VRS provider and determine how the customer can interact with Sprint's platform.</p>	<p><b>Internet Relay Services</b> The customer can use the speed dialing feature via SRO. Customers can enter the phone number on the web prior to the call. The phone number will be pre-populated to agent's dialing window for efficient call processing.</p> <p><b>Video Relay Services</b> Individuals using TV-based videophones do not have this web-enabled ability to speed dial through VRS because of the limitations of this type of end user equipment. Features of customer premise equipment are beyond the control of the VRS provider and determine how the customer can interact with Sprint's platform.</p>
<b>17.</b>	<b>Providing Service 24/7</b>	Not Required		

**Emergency 911 Service for VRS**  
**April 14, 2005**

Emergency 911 service for VRS is not technically feasible at this time and CSD/SprintVRS does not expect it to become technically feasible by the January 1, 2006 deadline.

Some proposed solutions, obstacles, and estimated costs to providing VRS agent “one keystroke” emergency access include:

1. Possible Solution - Limiting the type of end user equipment that can be used to access VRS to equipment that includes a GPS receiver. The GPS receiver would automatically forward the user’s location for every call to the VRS provider . The VRS provider (relay agent with a keystroke) would then need to be able to access a database that would allow the location to be mapped to a corresponding PSAP and automatically out dial the call to that PSAP and complete the emergency relay connection. Obstacle – Currently users access VRS through a variety of end user equipment (webcam, TV based appliance, other), none of which includes GPS receivers. Requiring users to replace legacy equipment would involve finding equipment vendors willing to manufacture higher priced special end user GPS enabled video equipment and either retrofitting or replacing an estimated 25,000+ pieces of end user equipment currently in use today for VRS access.
  
2. Possible Solution – Employing a solution whereby the provider is aware of the fixed equipment location through the registration of equipment with a universal database managed by a third party. The independent third party would gain control of end user equipment for fixed location users only and automatically forward the user’s location for every call to the VRS provider. The VRS provider (relay agent with a keystroke) would then need to be able to access a database that would allow the location to be mapped to a corresponding PSAP and automatically out dial the call to that PSAP and complete the emergency relay connection. The third party should not be a VRS provider using proprietary or closed networks to ensure universal interoperability among all VRS providers. Obstacle – In order for the above solution to work, the database of the full universe of all VRS users must be available to all VRS providers. Additionally, future migration of VRS to wireless IP applications with the advent of 3G and VoIP over WI-FI, currently available in Sweden and other international markets, present similar concerns beyond fixed location that would require additional GPS technology once a fixed location is no longer available through a universal database.

Both of the proposed options would require significant research and development, changes, and costs to the VRS system as a whole. Currently, while databases and companies may claim capabilities to VoIP based 911 technologies, none of them are able to guarantee accurate location for 100% of the callers. Therefore, these solutions are not viable for the goals of true emergency access. CSD anticipates that as the VoIP providers continue to explore similar emergency access issues, VRS may directly benefit from solutions brought forward by the VoIP industry.