

Before the
Federal Communications Commission
Washington D.C. 20554

In the Matter of)
)
Telecommunications Relay Services and)
Speech-to-Speech Services for) CG Docket No. 03-123
Individuals with Hearing and Speech)
Disabilities)
_____)

REPLY COMMENTS OF CSDVRS, LLC
AND COMMUNICATIONS SERVICE FOR THE DEAF
ON ASSIGNING INTERNET PROTOCOL-BASED
TELECOMMUNICATIONS RELAY SERVICE USERS
TEN-DIGIT TELEPHONE NUMBERS LINKED TO THE
NORTH AMERICAN NUMBERING PLAN

Ben Soukup, CEO
Communication Service for the Deaf
Network
102 North Krohn Place
Sioux Falls, SD 57103
605-367-5760

Sean Belanger, CEO
William Cobb, VP,

Engineering and Operations
CSDVRS, LLC
600 Cleveland Street
Suite 1000
Clearwater, FL 33755

Of Counsel:

Karen Peltz Strauss
KPS Consulting
3508 Albemarle Street, NW
Washington, D.C. 20008
202-363-1263
kpsconsulting@starpower.net

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SUMMARY

In these reply comments, CSDVRS and CSD (CSDVRS et.al.) reiterate that the One Numbering VoIP System (ONS) will utilize a central, neutral third party that is not tied in any way to a relay provider to operate, manage and maintain the numbering database. The ONS remains the only numbering plan proposed to the Federal Communications Commission that will provide equal telecommunications access by allowing ten-digit calling from any person, to any person, regardless of the equipment or software used – either directly or through relay services. The other proposed plans will segregate people who are deaf and hard of hearing or have a speech disability into separate silos, creating a set of closed interconnected relay networks rather than an open system that is accessible to anyone, independent of the TRS/VRS compatible equipment or relay network used by that individual. Similarly, the ONS is the only system proposed that will allow the distribution of ten-digit numbers by any IP-based provider, regardless of whether the provider supplies video devices to consumers. And finally, this system is the only one that will ensure – without burdensome audits – that providers are not tracking point-to-point calls or relay calls that are not handled by their communication assistants and video interpreters.

Linking telephone numbers to provider equipment, as the other numbering proposals do, is not only bad for consumers who are deaf and hard of hearing or have speech disabilities – because these individuals will not be

able to freely communicate point-to-point with hearing people who acquire devices from retail stores – it is also anti-competitive. Because providers that are able to give out equipment will be the only ones able to provide numbers, only these providers will succeed in having all of their customers' incoming calls (and likely the vast majority of their outgoing calls) routed through their networks. The FCC has already once allowed a dominant provider to achieve near-monopoly status in the video relay service (VRS) market by not stepping in to separate relay service from equipment distribution; it should not make this error a second time. Not acting to prevent this will result in even further consolidation of the VRS market and will ultimately hurt the ability of consumers who are deaf, hard of hearing, and speech disabled to take advantage of new technologies. This is because under the other proposals, VRS providers will be the only ones who make all of the decisions about what new technologies are implemented in the VRS marketplace. By contrast, the ONS is pioneering the trend of open access (unbundling equipment and service) for people who are deaf, hard of hearing and have speech disabilities, by enabling these individuals to move down the same path that wireline service took after the 1982 divestiture and Computer II orders, and the same route that many wireless carriers will now have to travel as a result of the open access provisions of the C block auction. Open access provides a competitive environment where the acquisition and retention of a user is based on services and feature innovations, not locking consumers into relay

(or other) providers, through the equipment made available only by those providers.

The ONS has other advantages as well. It is the only plan that will permit full number portability, i.e., the ability of consumers to switch providers for both the handling of their calls and the underlying routing of those calls. In addition, because the system is relay provider agnostic and designed to support both Dynamic Domain Name Service (DDNS) and SIP technologies, it has the added benefit of fostering relay innovation and facilitating the migration to more enhanced communication protocols – most importantly, not only equipment and technologies that can be used by relay users, but technologies and devices that may become available to any person seeking Internet communications access. Finally, because the ONS is built on DNS, which is the system that has provided address resolution for the Internet for the past twenty years, it is time-tested to withstand serious attacks in a manner that the other numbering proposals are not.

In order to ensure that all relay users are fully informed about their numbering options, both the FCC and providers should conduct comprehensive outreach and education – using materials in accessible formats – that target all IP-based relay consumer populations. Such outreach should include, but not be limited to, easy-to-understand information on how to obtain a telephone number, register name and location data, and select a designated relay provider for incoming calls. Consumers

should also receive information on their rights to interoperability, privacy, emergency call handling, and protections against fraud, abuse and slamming.

These reply comments reiterate that under the ONS proposal, telephone numbers will allow user mobility; that consumers will be able to obtain telephone numbers through either the ONS or their designated provider; and that the ONS system will have back-up and redundancy capabilities with uninterruptible power to always operate 24x7. We also re-confirm that the DNS software or hardware equipment needed to update the central database will be readily available, inexpensive, and easy to install.

The FCC has established an expedited time frame for the deployment of the universal numbering system. Because the ONS is built on off-the-shelf and commercially available infrastructure and technologies already used by major corporations, VoIP carriers and service providers on the Internet, it will be fully capable of meeting the FCC's end of the year deadline. This is critical to provide individuals who are deaf, hard of hearing, or have a speech disability with functional equivalency and comprehensive and equal access to emergency services.

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REPLY COMMENTS OF CSDVRS, LLC
AND COMMUNICATION SERVICE FOR THE DEAF

I. Introduction

CSDVRS, LLC and Communication Service for the Deaf (CSDVRS et. al.) submit these reply comments on submissions filed in response to the Federal Communication Commission’s (FCC) request for additional information to develop a universal ten-digit numbering system for relay users of Internet-based text and video communications. In these comments, CSDVRS et. al. reiterate the need for a central and third party neutral organization that is independent of relay providers (or any entity having an interest or relationship with such providers) to operate, manage and maintain the numbering database. We emphasize the urgency of ensuring that any numbering system adopted by the FCC have the following essential features:

- Provide for the ability of deaf, hard of hearing and hearing callers to use ten-digit numbers to make IP-based relay and point-to-point calls to and from any other individuals who use IP-based forms of communications, regardless of the equipment used by either party to the call;

- Enable the distribution of numbers in a fair and competitive manner, by not limiting such distribution to only IP-based providers that supply end user video devices that can be linked to those numbers;
- Provide for full and functionally equivalent numbering portability; and
- Not enable tracking of any point-to-point calls or tracking of relay calls not handled by the providers of those calls.

We reiterate that the ONS is the only proposed numbering system that can achieve all of the above, and seek to dispel concerns that have been raised by other commenters concerning the ability of the One Numbering VoIP System (ONS) to provide the highest level of security to protect caller data, and to readily distribute software and hardware needed to regularly update the central ONS database. Finally, we reiterate ways that the ONS can best facilitate the migration to more enhanced communication protocols, including SIP technologies, so that relay users can stay abreast of the newest communications innovations.

Under the ONS, both point-to-point calls and calls to another provider go directly to the ONS Domain Name Service (DNS) for address resolution and routing. When a relay consumer needs to call someone that uses another relay network, a query with the user's ten-digit number goes to the ONS, which returns the IP address of the device and allows the call to be routed directly to the device, not through the other provider's network. In the case of point-to-point calls, the calls are routed *directly* between videophones by the ONS DNS without going through any provider. The essential difference between the ONS and the other two numbering proposals is that although all use a central

administrator, the other proposals must first direct the call to the provider that gave out the caller's equipment. As we will show below, in doing so, these plans compromise the ability of consumers to receive and make calls to anyone, using any devices.

II. The ONS Will be Able to Meet all of the Principles Enumerated by the Consumer Groups in their Comments

The Consumer Groups enumerate a number of principles in their comments that should guide the adoption of a universal numbering system.¹ We address each of these in turn below, and explore some of these issues in greater detail later on:

Third Party Number Administration. CSDVRS et. al. agree that the ONS administrator should not be affiliated with any relay service provider, nor “subject to undue influence by parties with a vested interest in the outcome of Internet-based relay service.”²

Ease of Obtaining Numbers. The ONS can serve as an easy, one-stop shopping location for any IP-based relay user, located anywhere in the country, to obtain a ten-digit telephone number directly, from an independent entity that is not connected with a relay provider.³ This would insulate the distribution of these numbers from the sometimes aggressive marketing tactics that have characterized the VRS industry over the past several years. For example, consumers would not feel pressure to obtain a number from a

¹ Comments of Consumer Groups at 3-6.

² Comments of Sorenson at Attachment 1, page 2

³ In response to concerns about long lines and delays that might result when consumers seek to obtain numbers from a single source, CSDVRS et. al. would like to clarify that although the ONS will be serve as a centralized numbering database, it will likely have multiple physical locations across the country to handle user needs. Also, as noted in our initial comments, telephone numbers may be requested in a variety of ways, including Internet application, TRS, TTY, voice, etc. The abundance of sites and methods of acquiring numbers will provide more than enough outlets to prevent delays in their distribution.

particular company just to acquire a video device from that company. Indeed, the distribution of numbers as a function of relay *service* – which is regulated by the FCC under Section 225 of the Communications Act⁴ – should be kept separate from the distribution of *equipment*, which has never been regulated by that statute.

Some consumers who use IP relay or VRS perceive their relay provider to be the equivalent of a telephone company that distributes telephone numbers to voice users. For these consumers, relay providers would be able to perform the administrative function of acquiring numbers from the ONS on an as needed basis and passing those numbers along to consumers, so long as those numbers are not linked to the providers' equipment.

Privacy of Call Data. CSDVRS et. al. support application of the FCC's customer proprietary network information (CPNI) rules to the universal numbering system. However, even with these rules in place, only under the ONS can consumers be assured that their point-to-point calls and relay calls placed with other providers will not be tracked by the company that provided their video device. At present, there is no governmental oversight to audit relay provider internal information systems, nor any requirement for a provider to deliver to the FCC (or the National Exchange Carriers Association [NECA]) its internal system information used to generate call detail records. While NECA audits the call detail system for integrity and billing accuracy, it

⁴ Section 225 codified Title IV of the Americans with Disabilities Act, creating the relay obligations. 47 U.S.C. §225.

is not equipped to determine whether a relay provider is tracking calls from other networks. Therefore, if a caller uses resources on a relay provider's network – as they will do for every call made under the Neustar and HOVRS proposals – it is possible that their calls will be tracked. Indeed, it is reasonable to believe, given the highly competitive nature of the relay business, that all calls will be tracked for network engineering and planning reasons.⁵

Network Security and Back Up. CSDVRS et. al. agree that protecting consumer privacy and the integrity of the network is paramount for any numbering solution. Because it is built on DNS, i.e., the same system that provides address resolution for the Internet, the ONS is built to withstand network attacks.⁶ Indeed, as a core function of the Internet, DNS is a proven, carrier grade and reliable technology that has been in use for twenty years. The security features built into this system have been improved over the years to provide the highest level of protection against abuses, fraud and even repeated and large scale attacks.

Moreover, CSDVRS et. al. would like to reiterate that the ONS DNS (which is accessible to all callers) will *only* contain information to enable

⁵ Even were the FCC to direct audits for this purpose, the costs associated with having to conduct such audits should be carefully considered. No such costs are needed under the ONS because under that plan, providers are not able to track calls that they do not handle.

⁶ It needs to be noted that no telephony-capable network is entirely free from abuse, because end users can be reached through their phone numbers. Users of telephony systems worldwide accept this risk of potential abuse in return for the benefits achieved from a numbering system that allows people to easily contact each other.

number and IP address correlation. User location information will be contained in a separate database system that will only be able to be accessed and updated by relay providers. That system will log and control all system access to prevent information harvesting and system abuse. Finally, because the ONS will employ only one set of databases operated by a single entity, slamming will be minimized substantially.

The ONS will also have back-up and redundancy capabilities with uninterruptible power to ensure continuous operation in the event that any part of this system is temporarily down, and to prevent any single event from impacting the system.

Network Interoperability. The ONS will not only allow “calls to freely flow between users and devices over an open, interconnected network,” as required by the FCC’s rules on interoperability,⁷ it is also the only system that will be able to swiftly accommodate new technologies to achieve interoperability as these technologies evolve. This is because it will be far easier for a centralized, neutral entity that is overseen by a governing board with consumer, industry and governmental representation, to modify and integrate new methods of communication into the numbering system, than it will be to achieve agreement among ten to fifteen providers who each have their own numbering infrastructures and their own competitive and business agendas.

⁷ Comments of Consumer Groups at 4.

Equipment Interoperability. In addition to allowing for full network interoperability (the ability to access any relay provider with any video device or software), the ONS is the only proposed numbering plan that will accommodate ten-digit calling from any person, to any other person regardless of the TRS/VRS compatible equipment or software used – either directly or through relay. Interoperability will be compromised by the other proposals because they will link numbers with equipment. Otherwise stated in the words of the Consumer Groups, “users of one form of TRS customer premises equipment must be able to directly call any other user of customer premises equipment designed for use with that form of TRS by dialing a 10-digit number, regardless of where either user’s equipment was purchased or obtained.”⁸ Only the ONS can achieve this consumer objective.

Backward Compatibility. The ONS will be fully backwards compatible with existing VRS and IP technologies.

Number Portability. Full number portability can only be achieved with the ONS VoIP system. While the other proposed systems will allow users to keep their numbers if they change providers, their original provider, i.e., the one that supplied their video device, will remain the provider that routes their calls. This would not be equivalent to number porting that takes place over the public switched telephone network, where a change in telephone number changes the underlying provider that routes the incoming and outgoing calls of

⁸ *Id.* at 5.

the caller. In order to fully port numbers under the Neustar or HOVRS proposals, a relay user would have to give up his or her video device, in addition to switching the provider designated to handle incoming voice calls.

Under the ONS VoIP system, consumers will have two ways to request number porting: they may make the request to (1) the ONS administrator or (2) directly to the company that would become their designated provider.

Location and Number Registration. The ONS supports user registration of numbers and location information to allow 9-1-1 calls to be transferred to emergency authorities. As noted above, the ONS database will be operated by an independent entity that will devise methodologies and certification standards to allow strictly controlled, authorized access and queries to this information only by IP-based relay providers. The ONS system will provide an E9-1-1 positioning accessible by all relay providers, enabling relay users to call any relay provider and have their calls automatically routed to the correct public safety access point (PSAP). By contrast, the other proposals will require the providers to individually procure E9-1-1 positioning systems, and do not explain if and how each provider's address database information would be shared with other providers in real-time to support E9-1-1 situations .

Prioritization of 9-1-1 Calls. The prioritization of 9-1-1 calls for relay providers will be achieved by each individual provider's network, not through the universal numbering system. The ONS will be fully compatible with this network feature.

Consumer Outreach and Education. CSDVRS et. al. agree on the need for comprehensive and accessible outreach and education, targeted to all IP-based relay consumer populations, about the availability of ten-digit numbers, including clear directions on how to acquire those numbers, how to register or change a designated relay provider for incoming calls, the need to provide address and location information, and consumer rights to interoperability, privacy, emergency call handling, and protections against fraud, abuse and slamming. We also agree that such outreach should be conducted both by the FCC and directly by providers to relay users.

III. The Distribution of Telephone Numbers Should not be Tied to Equipment

A. The Neustar and HOVRS Plans Will Limit Communications Access

Comments submitted by the consumers note that one of the major benefits of a universal numbering system is to “enable[e] people who are deaf or hard of hearing or have a speech disability to directly call each other using NANP linked 10-digit numbers.”⁹ Indeed in the voice telephone network, people with telephone numbers are able to call each other no matter what device they use, and no matter what carrier to which they subscribe. Other commenters also seem to recognize the importance of having an open numbering system that allows full interoperability. For example, HOVRS states that there should be “no closed

⁹ Comments of Consumer Groups at 2.

networks and no blocking of access to devices or users” and that “[u]sers should be able to dial without worrying about the specific compatible customer premises equipment or device being used by the called party — nor what preferred provider the called party has chosen.”¹⁰

But a closer look at HOVRS’ proposal, as well as the submission by Neustar, reveals that both proposals are predicated on providers having closed networks with devices that connect to a gatekeeper (i.e., the mechanism used to know the IP address). As a consequence, these systems prevent any user that does not have a device from a provider from using 10 digit numbers to connect with other parties. As noted in our earlier comments, this means that two relatives, one of whom is deaf and the other of whom is hearing (and fluent in ASL), will not be able to use 10 digit dialing to communicate point-to-point over the Internet if the hearing sibling has a device not supplied by a provider (e.g. Xmeeting – a free H.323 software video client). This is because the hearing relative will not be able to gain access to the central database. The only way the hearing relative could reach the deaf person would be by making a VRS or TRS call through the PSTN. This will unnecessarily drive up TRS/VRS minutes and force the two relatives to use a less adequate communication method to talk to each other.

Although suggestions have been made that the ONS creates a separate system – with unique equipment that will contribute to the isolation of the deaf and hard of hearing community,¹¹ in fact, the reverse is true. As noted above, the ONS utilizes VoIP infrastructures, processes, and equipment that

¹⁰ Comments of HOVRS at 13.

¹¹ Comments of HOVRS at 32.

are already in place and have been widely used throughout the Internet. In this regard, the ONS is analogous to a VoIP service provider for the processing of a voice call to or from the PSTN. The ONS uses the DNS and the Internet to route the video portion of the VRS call, making it independent of any relay provider and available to all compatible videophones. This system also supports relay providers by allowing relay providers to call and be called by any compatible device. Relay providers are also free to innovate and add provider specific features to their networks and videophones.

In fact, it is the other proposed numbering plans that will truly effect the segregation of relay users into separate silos, creating a set of closed interconnected relay networks rather than an open system that is accessible to anyone, independent of the equipment used by that individual. Even though members of the different provider networks will be able to call each other, they will be housed in a segregated relay world, cut-off from access by the hearing world because numbering for point-to-point calls will only function within the closed networks. If only certified TRS providers are allowed access to the database in a closed and separate system for relay users, this will limit the ability for new technologies to access the system and wall off the deaf and hard of hearing community into an area controlled by relay providers – entities with whom relay users have no actual financial relationship. Under this structure, only new technologies introduced by a relay provider are likely to be adopted and used by the deaf community. For example, currently several soft videophone clients are available in the market, such as Xmeeting, and ooVoo. Under the Neustar and HOVRS proposals, ten digit numbers could not be used with these devices to make

calls to users on the closed network system created under those proposals, effectively cutting off the deaf community from technology advances made in video communication in the hearing world. The ONS is predicated on being an open architecture that allows new technologies to be quickly adopted in a way that continually enhances relay communication, while allowing service providers to innovate service features and capabilities. The concern with the Neustar and HOVRS proposals is that numbering is being tied to a device that is in turn tied to a provider's network. In closed systems such as these, technology and feature advances are determined by the service provider and move only at a speed that is proportional to the competitive threat.

B. The Neustar and HOVRS Proposals are Anti-Competitive.

Because both the Neustar and HOVRS numbering plans link numbers to equipment, in effect, these plans only enable providers that supply video devices to consumers to distribute telephone numbers. This is not only bad public policy; it is plainly anti-competitive. When a provider distributes a number, it is getting a customer in return, mostly likely for outbound calls,¹² and definitely for all inbound calls, because this provider becomes the designated entity for receiving calls from hearing people to that customer.

¹² While individuals who receive numbers from one provider are free (under the FCC's interoperability ruling) to make outgoing calls on any provider's network by entering another provider's url or VRS address on their video device, in fact, in all likelihood, the VRS company that supplied the equipment will make itself the default provider for the equipment that it supplied. So in point of fact, the bulk of that individual's outgoing calls are more than likely to be directed through that provider.

At present, the percent of incoming calls to VRS users remains considerably low – approximately ten percent. However, after the numbering plan is put into place, calls placed by hearing people to users of all forms of Internet-based relay will significantly increase. This is borne out by past experience. When inbound calling to TRS users became easier through the use of 711 dialing several years ago, the number of calls placed by hearing people to deaf and hard of hearing individuals via relay services went up dramatically.¹³ Similarly, after CSDVRS began giving out 800 numbers, calls from hearing people increased by as much as 50%, most definitely a function of easier dialing access. Clearly, then, if only some providers but not others are able to give out numbers, those providers who can make these distributions will enjoy a substantial competitive advantage.¹⁴

This is not the first time that the Commission has been presented with an opportunity to make critical decisions that will affect the concentration of VRS market shares. The petition for interoperability, submitted by the California Coalition of Agencies Serving the Deaf and Hard of Hearing back in February 2005, alerted the FCC of restrictive industry practices that allowed one provider to acquire a “dominant share of the business by way of a highly

¹³ For example, during the spring of 1999, call volumes for the Maryland Relay Service increased by more than 12 percent in the first month that its relay operations used 711. After only two months, voice calls increased by 23 percent and over 41 percent of all of the state’s relay calls were routed through 711. “7-1-1 Takes Off,” MDAD News, 39 (Spring/Summer 1999): 17.

¹⁴ While users will always be able to port their numbers to providers who do not distribute video devices, it will be far more difficult to get users to change their providers once they have settled into using their first provider.

effective marketing scheme” that facilitated communication only between and among its own customers.”¹⁵ In that petition, consumers warned that the bundling of equipment and service by the dominant provider – both in terms of blocking relay calls to other providers from the provider’s equipment and in terms of limiting use of the provider’s closed numbering system – would produce severely anti-competitive effects. Consumers wrote:

The marketing practices that are perpetuating a closed VRS network are rapidly contributing to the creation of a VRS monopoly. By allowing a provider to impose exclusive service agreements on customers who receive its equipment, while the provider receives government-administered subsidies for those services from the TRS fund, the FCC is both condoning and supporting these restrictive practices, and contributing to the creation of this monopoly.¹⁶

Unfortunately, this prediction was borne out; the failure of the FCC to immediately direct interoperability and require the dominant provider to open its closed numbering system has proven to be highly successful in allowing the leading provider to gain near-monopoly status.

Once again, the FCC is presented with business proposals in the form of restrictive numbering plans that will likely end up benefiting only the largest providers who are able to distribute equipment, and once again these are likely to result in a radical consolidation of the VRS market. CSDVRS et. al. urge

¹⁵ California Coalition of Agencies Serving the Deaf and Hard of Hearing, Petition for Declaratory Ruling on Interoperability in Dkt. Nos. CC 98-67; CG 03-123 (February 15, 2005) (Petition) at 3.

¹⁶ Petition at 22. The closed numbering scheme exists to this day through use of a closed “lightweight directory access protocol” (LDAP), that permits access only to authorized users of the provider.

the FCC not to make a mistake by “condoning and supporting these restrictive practices” a second time. The Communications Act is predicated on open competition in the telecommunications and Internet marketplace, and it would be a gross error to hinder these objectives by adopting a numbering plan that favors some providers over others.

IV. The Universal Numbering Plan Should Utilize Existing Infrastructures, Policies, and Procedures

HOVRS states that the implementation of an IP-based relay numbering system should “not force new requirements upon the existing telecommunications systems, but rather should integrate within these current systems and processes, similarly to how the VoIP industry has evolved.”¹⁷ We agree, and further agree with HOVRS that the Neustar proposal will require the unlikely cooperation of all local exchange carriers, as well as the development of supporting systems that are likely to delay the implementation of a universal numbering plan far beyond the FCC’s end of year deadline.¹⁸

But the closed network of provider database systems proposed by HOVRS also suffers from this flaw. Specifically, neither of the other proposed systems has yet been clearly defined and both will require a galaxy of relay providers to design and scope – only after the vendor for the central database has been chosen. In contrast, the Dynamic DNS system proposed by CSDVRS et. al. has been in operation for several years and is used extensively by major corporations and service providers throughout the world for IP address correlation. The consumer

¹⁷ Comments of HOVRS at 15.

¹⁸ *Id.* at 27-28.

software and hardware platforms used in this system are already deployed in millions of consumer PC and routers worldwide today, making deployment of this plan the most feasible in the time allotted.

V. The ONS Will Foster the Development of New Innovations and Technologies

Rather than stifle the innovation of new relay features (as alleged by some commenters), the ONS VoIP system will do the exact opposite: it will encourage the rapid development of new relay technologies for relay users, both because it is relay provider agnostic and because it is designed to support both Dynamic DNS and SIP location technologies. As providers innovate, these characteristics of the ONS will allow it to evolve to support their numbering requirements. Specifically, by standardizing how numbering is accomplished, new products and services will be able to be quickly built, tested and deployed. This is in contrast to the other proposals, that will require each provider to build unique systems that update the central database with a variety of non-essential information.

Numbering should be just that: a system for resolving phone numbers to IP addresses, call routing and termination, period. This will allow this system to stay simple, easy to maintain, secure and manageable. Numbering should not provide information about other end point capabilities as proposed in the other plans, because these could impact the reliability and availability of the system, as well as make the system more difficult to implement, test and deploy by unnecessarily complicating the database and impairing the ability to maintain user account accuracy. The universal numbering database, like its counterpart in the telephony

network, needs to have one function – to reliably and accurately provide routing information to correctly complete calls. The only time additional call handling functionality information should be added into the numbering system is when it is deemed required by all of the relay providers and the community of deaf, hard of hearing and speech disabled users.

At the same time that CSDVRS et. al. does not believe that the numbering system should be complicated by the addition of call handling features, the ONS VoIP network will fully support feature and service enhancements made available by individual relay providers. For example, because the ONS has a ENUM gateway that faces the PSTN, it will be able to take AIN (advanced intelligent network) features such as caller ID, and put these across its VoIP network. These features could then be routed to consumer providers of choice so users can receive them. Similarly, the ability to receive and then direct incoming calls to either TTYs or video devices, a feature noted in the HOVRS comments, could be provided by individual providers without interfering with the ONS system. The knowledge of where to route the call based on what communication device a user has available at the time of the call must be based on a system capability of the provider, not the numbering system.

VI. The Software or Hardware Needed to Update the ONS Database is Developed, Mass Produced, and Readily Available

Some commenters have raised concerns about the availability of equipment to update the central database under the ONS VoIP plan. But claims that this equipment is undeveloped, unavailable, or unduly expensive

are unfounded. The software that CSDVRS et. al. propose to use for this purpose is readily available from a leading Dynamic DNS provider, and it is virtually free because the cost of this software is included in the monthly costs for the DDNS service. This software works on both Windows and MAC platforms and is already in deployment. CSDVRS' operational experience with its 800 numbers service reveals that 80-85 percent of users need only load the DDNS software into their home personal computer or laptop. It does not even matter whether the computer is the device used to make IP relay or VRS calls; the purpose of such installation is merely to establish the user's geographic location.

The hardware mentioned in our initial comments will be one of many existing routers, and is sold in major retail stores throughout the United States. The hub configuration (the third option) is a specific configuration of the router that operates in hub mode. Because either version of the hardware is widely distributed and produced in high volume, the 10-20,000 units that would be needed for the ONS VoIP system can be procured quickly. The bottom line is that all of these software and hardware applications are commercially available today and can be purchased in bulk for rapid deployment. In any event, the need for additional software or hardware is only meant to provide a reliable address resolution in the near term, to bridge the gap until VRS providers can develop end points with built-in capability to update the DNS.

VII. The ONS Can be Deployed Within the Time Frame Established by the FCC

CSDVRS et. al. agree with commenters who have noted the critical importance of complying with the FCC schedule to implement the universal numbering plan by the end of this year. In particular, we agree with the Consumer Groups on the importance of this plan for the fulfillment of an integrated E9-1-1 system that can swiftly and automatically deliver IP-based relay calls through the front door of PSAPs, i.e., through selective routing. As these groups have noted, “the ability to contact and receive emergency services when life or property are endangered must be as readily available to individuals who are deaf or hard of hearing or who have a speech disability as such services are available to the rest of the population.”¹⁹ As they go on to note, because the current interim solution does not achieve this goal, the FCC’s end of the year deadline becomes even more urgent.

The expedited time frame for the deployment of a uniform and universal numbering system demands a plan that can benefit from technologies and processes that already exist. As noted above, a significant benefit of the ONS VoIP system is that it is designed using the same infrastructure and technologies already in use by VoIP carriers today. Put simply, dynamic DNS is an off-the-shelf technology. It is for this reason that it only took a matter of months for CSDVRS to be able to roll out a smaller version

¹⁹ Comments of Consumer Groups at 2-3. It should be noted that the ONS has all the capabilities to provide reverse 9-1-1 functionality because the database will know the physical locations of its registered users.

of this system using 800 numbers. To achieve this, CSDVRS contracted with major companies that already have deployed this system, who were able to readily adapt these technologies to meet the needs of VRS users.

By contrast, the other proposals presented to the FCC require new databases to be specified, built, tested, and managed. Any system that is so dependent on a brand new infrastructure – and needs to have as many as ten to fifteen IP relay and VRS vendors certified to use that infrastructure within six months – is assured to have problems when launched. Additionally, under the other proposals, each provider will be required to individually setup its own E9-1-1 system that is linked to the numbering system, and linked to a relay user address system that either accesses other provider address databases or a central database system within the same time frame. The development, testing and launching of two major systems in six months will be challenging at best, and next to impossible at worst.

VIII. The ONS Will Allow for User Mobility

The ONS will permit users of the ONS to have IP-based communications while mobile. First, when installed on a laptop with a video client, the ONS software solution allows for full mobility: wherever the user travels, the software in his or her laptop will update the central database. In the case of specialized hardware customer premises equipment (CPE), the ONS will work with relay providers to imbed the DNS client into the unit's operating system. Additionally, each relay user could initially provide IP

address updates to the ONS, until this client could be integrated into the specialized CPE. Once this system is adopted, it is expected that the next generation of CPE will have the ONS DNS client built-in, which will allow for universal functionality.

IX. Conclusion

The ONS is the only universal numbering proposal that will allow full and open access between and among video communication users, regardless of relay provider and end user video equipment. Through use of an independent third party to administer the centralized numbering database and utilization of the existing VoIP infrastructure, this numbering plan will best provide consumers with the functionality they want and need to be equal participants in the nation's Internet-based communications networks. A single numbering database will also achieve consistency in methodology and service quality on an up-to-date basis, significantly improve safety and emergency communications for people who are deaf, hard of hearing or have a speech disability by having a single E9-1-1 positioning system that is capable of handling calls in large scale disasters, produce economies of scale, facilitate relay innovation, and ensure a competitively equal playing field for all relay providers.

Respectfully submitted,

/s/

Ben Soukup, CEO

/s/

Sean Belanger, CEO

Communication Service for the Deaf
Network
102 North Krohn Place
Sioux Falls, SD 57103
605-367-5760

William Cobb, VP,
Engineering and Operations
CSDVRS, LLC
600 Cleveland Street
Suite 1000
Clearwater, FL 33755

Of Counsel:



Karen Peltz Strauss
KPS Consulting
3508 Albemarle Street, NW
Washington, D.C. 20008
202-363-1263
kpsconsulting@starpower.net

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