

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

In the Matter of)
)
Telecommunications Relay Services and)
Speech-to-Speech Services for)
Individuals with Hearing and Speech)
Disabilities)

CG Docket No. 03-123

REPLY COMMENTS OF SORENSON COMMUNICATIONS, INC.

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Sorenson Communications, Inc. (“Sorenson”) submits these Reply Comments in response to the Public Notice released in the above-captioned proceeding on March 19, 2008.¹

I. INTRODUCTION AND SUMMARY

The record demonstrates widespread support among users, vendors and providers for the recommendations of the ATIS Report,² with respect to a numbering system for Internet-based relay services. Sorenson supports an approach that includes both provisioning numbers in a manner that is consistent with the ATIS Report and using a national directory linking numbers to uniform resource identifiers (“URIs”). This approach best achieves security and confidentiality, while being consistent with all of the ATIS Report recommendations and advancing the

¹ *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, CG Docket No. 03-123, Public Notice, “Consumer & Governmental Affairs Bureau Seeks to Refresh Record on Assigning Internet Protocol (IP)-Based Telecommunications Relay Service (TRS) Users Ten-Digit Telephone Numbers Linked to North American Numbering Plan (NANP) and Related Issues,” DA 08-607 (rel. March 19, 2008).

² See Alliance for Telecommunication Industry Solutions (“ATIS”), ATIS-0300093, “Numbering for Internet-Based Relay Services Report,” at 5-6 (Dec. 19, 2007) (“ATIS Report”), *available at*: <<http://www.atis.org/INC/Docs/finaldocs/Numbering-for-Internet-Based-Relay-Services-12-19-07.doc>>.

principles espoused by the Consumer Groups. While Sorenson supports adoption and implementation of a new numbering solution based on North American Numbering Plan (“NANP”) numbers, it cannot support an unrealistic artificial deadline that risks compromising network reliability and security. Sorenson expects to make integrated 911 services available for video relay service (“VRS”) by the end of 2008. Demonstrated progress toward integrated 911 is essential, but it is also important for the Commission to recognize that an implementation schedule that extends beyond December 31, 2008 may be needed to enable the numbering system that best serves the public interest by being the most secure, user-friendly, reliable, confidential and cost-effective.

II. NUMBERING FOR INTERNET-BASED RELAY SERVICES

A. The ATIS Report

The record reflects near-unanimous support for the recommendations of the report issued by the Industry Numbering Committee (“INC”) of ATIS after the North American Numbering Council (“NANC”) – a Federal Advisory Committee created to advise the Federal Communications Commission (“FCC” or “Commission”) on numbering issues – referred the issue of numbering for Internet-based relay services to the ATIS INC. The ATIS Report includes specific recommendations for number assignment. In addition, after evaluating several options, ATIS chose two possible approaches to a national directory for inclusion in its report. The ATIS Report explains the types of calls that must be supported,³ as well as the criteria for ensuring that the third-party database administrator is truly neutral, and other actions necessary to ensure confidentiality and security. The comments received from providers, vendors and consumers demonstrate widespread support for the recommendations contained in the ATIS

³ See, e.g., ATIS Report at 6 (discussing hearing-to-deaf, deaf-to-hearing, and point-to-point calls).

Report.⁴ The Commission should build on this broad consensus and ensure that any numbering system it adopts adheres to the ATIS recommendations.

B. The Implementation Process

1. Industry Consensus Approach

Sorenson supports GoAmerica's proposal to give providers 60 days to meet and seek consensus on a numbering approach.⁵ As mentioned in Sorenson's initial comments, a NANC Issues Management Group ("IMG") would be an excellent forum for these discussions, since the IMG would be open to all parties interested in numbering issues related to Internet-based relay services. Should the FCC adopt a providers-only consensus-building mechanism, it still would be useful to ask the NANC to establish an IMG to ensure that all interested parties have a chance to offer input regarding implementation issues. As suggested in Sorenson's comments, the IMG could be given a 60-day deadline, similar to the one GoAmerica proposes for a provider-only group.

2. Implementation Timing

Consumers have stressed the importance of rapid implementation of a numbering system. It is critical that the numbering system adopted by the Commission is the one best suited to users' needs, however, and the Commission should not sacrifice quality in order to meet an artificial deadline. All implementation issues must be resolved before the new numbering system is rolled out and any bugs must be worked out before numbers are assigned to users in order to avoid potential outages and other system disruptions. Relay services, like telephone

⁴ The lone exception appears to be CSDVRS, which departs significantly from the ATIS Report, particularly with respect to numbering assignment and the options for a central database.

⁵ Comments of GoAmerica, Inc., GoAmerica Relay Services Corp., and Hands On Video Relay Services, Inc., at 4 ("GoAmerica Comments"). (Unless otherwise indicated, all comments cited herein were filed in CG Docket No. 03-123 on April 8, 2008.)

services for the hearing, must be highly reliable, as evidenced by the FCC's rule requiring VRS to be available 24 hours a day, 7 days a week.⁶ In addition, the new numbering system raises a host of security and confidentiality issues that must be addressed in order to avoid exposing users to breaches in confidentiality. These issues could lead to irreparable problems because once confidentiality is compromised, it cannot easily be restored.

It is not clear that any of the proposals currently before the Commission can be implemented in the six-month timeframe contemplated by some parties. For example, the FCC must allow time for issuing a request for proposals ("RFP") for a database administrator and for evaluating the bids it receives in response to the RFP.⁷ This process may take some months,⁸ but skipping this vital step and awarding a no-bid contract to a favored vendor would undermine the public's interest in ensuring that this important contract is awarded in a fair manner that results in the most cost-effective solution.⁹ A transparent and fair RFP process is particularly important in

⁶ See 47 C.F.R. § 64.604(b)(4).

⁷ At least one vendor – Dash – has already expressed an interest in acting as the database administrator. See Comments of Dash Carrier Services at 11-12 ("Dash Comments"). Sorenson would welcome the participation of Dash, and other vendors, in the RFP process.

⁸ See Comments of NeuStar, Inc. at 14 (noting that it often takes as long as 18 months to design and conduct procurement, evaluate bids, select a vendor, and test and implement a service) ("NeuStar Comments"). NeuStar's estimate appears to present a worst-case scenario, but even if the RFP process took six months, it would not be possible to meet the December 31, 2008 date mentioned by the Commission, even if the FCC were to adopt an order by June 30, 2008. See *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities; E911 Requirements for IP-Enabled Service Providers*, CG Docket No. 03-123 and WC Docket No. 05-196, Report and Order, FCC 08-78, ¶ 1 (rel. March 19, 2008).

⁹ A new RFP process would not be required if the Commission were to adopt the NeuStar proposal, which contemplates using the Number Portability Administration Center ("NPAC") as the national directory. NeuStar was selected as the NPAC administrator through an RFP process. See NPAC, "Local Number Portability Overview," available at: <<http://www.npac.com/home/lnpoverview.shtml>> (explaining that an RFP was released inviting prospective vendors to submit a total solution and associated firm pricing proposal to provide a Number Portability Administration Center and Service Management System).

a situation where the costs will be reimbursed, either directly or indirectly, from the Interstate Telecommunications Relay Services (“TRS”) Fund.

Providers also will need time to roll out a new numbering system to serve tens of thousands of existing users of VRS and IP Relay. Sorenson is in a unique position to comment on the steps and timeframes involved in rolling out new solutions to such a large base of relay users. Before Sorenson entered the VRS business, callers had to obtain a VRS user’s IP address in order to place a call. This process was complicated by the fact that the majority of VRS users, like most residential Internet users, have dynamic IP addresses that change fairly frequently. One of Sorenson’s innovations was to introduce “Sorenson numbers” – ten-digit numbers assigned to Sorenson videophones. Although the numbers are not actual NANP numbers,¹⁰ they are static, and users of Sorenson videophones can give these Sorenson numbers to hearing callers, as well as other deaf VRS users. This makes it much easier for users to receive both VRS and point-to-point calls.¹¹

Sorenson has substantial experience with implementing changes for tens of thousands of users, including the deployment of new customer premises equipment (“CPE”), such as videophones, as well as software and firmware upgrades designed to improve users’ experiences. When Sorenson had relatively few users it could provide software and firmware updates fairly

¹⁰ Sorenson, like other VRS and IP Relay providers, lacks the authority or the ability to assign NANP numbers. Sorenson, however, has been involved in the effort to obtain NANP numbers for VRS and IP Relay users from the beginning, and was present from the very start of the ATIS INC process that resulted in the ATIS Report that forms the foundation of so many of the recommendations proposed by parties to this proceeding.

¹¹ Sorenson plans to allow users who are interested in retaining their Sorenson numbers to do so, even after NANP numbers become available. Many users have been relying on these numbers for years and withdrawing them would impose an unreasonable burden on these users. Sorenson plans to support calls to its “FAST VRS” number using existing Sorenson 10-digit numbers or NANP numbers, and will support the use of both types of numbers for point-to-point dialing.

quickly. Today, given the size of the existing base of users with Sorenson videophones and quality demands required for highly reliable communications equipment, it takes many months to develop, test and roll out updates. Extensive testing is required to ensure that the new software or firmware interacts correctly with existing systems, that all regulatory requirements are met, and that there are no service disruptions.

The driving concern behind establishing a numbering system for Internet-based relay services as quickly as possible appears to be the desire to have pre-provisioned location information for Internet-based relay calls to be used in routing the calls to the appropriate public safety answering point (“PSAP”), as well as speeding response time.¹² As Sorenson has previously stated, it is in the process of implementing an integrated 911 solution that will provide automatic location information, and is on track to have an integrated 911 solution for VRS available by the end of 2008.¹³ Although the availability of NANP numbers will enhance the provision of integrated 911, the added complexity and engineering demands required to implement a numbering system by the end of 2008 would seriously jeopardize Sorenson’s ability to roll out an integrated 911 solution within that timeframe.

¹² Comments of Telecommunications for the Deaf and Hard of Hearing, Inc., *et al.*, at 2 (“Consumer Group Comments”) (the need to have Internet-based TRS calls routed to the correct PSAP is “unequivocally the most important aspect” of functional equivalency).

¹³ Today, as a general matter, automatic location information is not required for mobile data services, nor is it required for portable VoIP services, because the technical issues have not been resolved. *See, e.g., IP-Enabled Services; E911 Requirements for IP-Enabled Service Providers*, WC Docket Nos. 04-36 and 05-196, Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd 10245, ¶ 57 (2005). Any solution for mobile users of Internet-based relay services will likely have to wait until the Commission resolves broader issues related to location information for all mobile data services.

C. Advantages of the URI-based Approach

The URI-based approach to numbering supported by Sorenson and NeuStar¹⁴ is superior to the other proposals on the record. The URI-based approach comports with all of the ATIS Report recommendations, provides the greatest security, works for all Internet-based relay systems, and advances the principles put forward by the Consumer Groups.¹⁵

A URI-based numbering approach is consistent with all of the recommendations in the ATIS Report. The solution supported by Sorenson and NeuStar: (1) allows users to obtain numbers from their providers in the same way hearing users obtain numbers from their service providers; (2) allows providers to obtain numbering resources directly from the NANP Administrator or Pooling Administrator, or from wholesale providers; (3) employs a centralized database, or national directory, managed by a neutral third party, linking NANP numbers to network addresses; (4) supports all types of hearing-to-deaf, deaf-to-hearing, and point-to-point calls regardless of service provider; and (5) ensures confidentiality and protects security.¹⁶

As explained in more detail below, both the URI- and DNS-based approaches provide much greater security than the ONS proposal put forth by CSDVRS.¹⁷ A URI-based approach also provides greater security than the DNS solution supported by AT&T and GoAmerica. As NeuStar explained, a single database listing all the telephone numbers of users of Internet-based

¹⁴ NeuStar Comments at ii, 3-4. NeuStar's proposal calls for the implementation of the URI approach through the NPAC. Sorenson has not taken a position on whether the NPAC or another neutral third-party administrator would be preferable.

¹⁵ Consumer Group Comments at 3-6. The architecture proposed by Sorenson can also support more than one URI per number. *Cf.* Dash Comments at 10 (expressing concern that users will want a single number to support multiple protocols or devices). There are a number of technical issues that would need to be addressed to make sure that calls are routed correctly, however, and this would take additional development time.

¹⁶ *See* ATIS Report at 6, 11, 26, 29.

¹⁷ *See infra* at 9-11.

relay services and associating them with IP addresses is likely to perpetuate, and even exacerbate, existing security problems facing VRS users.¹⁸ A URI-based solution, by contrast, will work with existing firewall protections, by allowing users to permit only authenticated communications.¹⁹ Unlike the AT&T/GoAmerica proposal, the URI-based approach has the added benefit of working with all forms of Internet-based TRS and does not require separate solutions for VRS and IP Relay.²⁰ Another reason that a URI-based approach is preferable to solutions based only on IP addresses is that a URI-based approach is better able to support multiple devices in the home, adapt to new technologies, and support all forms of relay.²¹

D. Consumer Group Principles

The Consumer Groups invited proponents of specific proposals to show how those proposals comport with the principles enumerated by the Consumer Groups. The URI-based approach favored by Sorenson advances those principles, as demonstrated by the following table:

<u>Consumer Principles</u> ²²	<u>URI-Based Approach</u>
Third-party Number Administration	Neutral third party administers national directory.
Ease of Obtaining Numbers	Users obtain numbers from TRS provider, voice provider or port from TTY or voice line.
Privacy of Call Data	FCC should adopt protections analogous to CPNI rules used for voice services.

¹⁸ NeuStar Comments at 10.

¹⁹ *Id.* at 10-11.

²⁰ It is possible that the DNS proposal could be modified to work with all forms of TRS. *See* GoAmerica Comments at 28 n.8 (indicating that the DNS proposal might be able to accommodate URIs).

²¹ *See* Sorenson Comments at 8-9.

²² Consumer Groups Comments at 3-6.

Network Security	<ul style="list-style-type: none"> • Most secure, because only authenticated calls are allowed. • Only relay providers can access national directory. • Requires secure connections between providers and national directory. • FCC should adopt protections analogous to slamming rules used for voice services.
Network Interoperability	<ul style="list-style-type: none"> • Any user can call any other user. • Capable of adapting to future technology and services.
Equipment Interoperability	Supports point-to-point calls from any form of CPE.
Backward Compatibility	Adaptable to support future technologies, as well as existing ones, and to make sure they interoperate.
Number Portability	Users can port numbers from one relay provider to another.
Location and Number Registration	Location information database selected by relay provider; Sorenson has a contract with Intrado.
Prioritization of 911 Calls	Sorenson prioritizes VRS and IP Relay calls today.
Consumer Outreach and Education	Sorenson supports consumer outreach and education. Sorenson engages in hundreds of outreach events each year.

E. Critique of CSDVRS Proposal

Sorenson agrees with other parties, such as GoAmerica and NeuStar, that the CSDVRS ONS proposal is riddled with flaws that make it untenable as a possible numbering solution. Among the most glaring problems, the ONS proposal: (1) creates unnecessary and dangerous security risks; (2) mandates the deployment of software or equipment to all users; and (3) requires regulatory micromanagement. In addition, CSDVRS's proposal is not consistent with the recommendations in the ATIS Report and does not work for IP Relay because the networks used for IP Relay rely on more than just IP addresses to route calls. Moreover, it would be very difficult to distribute new hardware, or even software, that would work for IP Relay because the

supporting networks for IP Relay are more complex and less standardized than the networks for VRS. It is also unclear how ONS would work for either VRS or IP Relay in mobile environments.

Security. Sorenson agrees with other commenters that the CSDVRS proposal has serious security deficiencies.²³ Under the ONS proposal, consumer information would be hosted on the open Internet, where it would be subject to hacking attacks. Not only would consumer data be vulnerable to theft, but attacks on the central database could lead to the disruption of service.²⁴ In addition, the ONS proposal would require users to leave their firewalls open to accept incoming traffic, thereby reducing the security of their own equipment and data.

As Dash and other commenters noted, the CSDVRS proposal also requires providers to deploy new CPE to relay users.²⁵ This would significantly delay implementation of a new numbering solution as this new equipment has yet to be developed.²⁶ Even after the devices are developed and manufactured, providers would have to roll trucks to users' premises to install the new equipment – a process which could take a significant amount of time – before these users could begin to enjoy the full benefits of the new numbering system.²⁷ Even if CSDVRS is correct in its estimate that only about 20% of users would need hardware, rather than software,²⁸ that would require 20,000 or more truck rolls just to serve the existing user base for VRS, as well as thousands of additional truck rolls as new users are added.

²³ See GoAmerica Comments at 32-33; NeuStar Comments at 10-11.

²⁴ GoAmerica Comments at 32-33.

²⁵ Dash Comments at 11; Comments of CSDVRS, LLC and Communications Service for the Deaf at 19-22 (Apr. 9, 2008) (“CSDVRS Comments”) (discussing the need to deploy software and/or hardware to users).

²⁶ GoAmerica Comments at 30-31.

²⁷ See *id.* at 31.

²⁸ CSDVRS Comments at 20.

The ONS proposal is also hyper-regulatory. Under the CSDVRS proposal, the ONS would assign 10-digit numbers to relay users.²⁹ This is a departure from the ATIS Report, which recommends that users obtain numbers from relay providers.³⁰ Unlike the URI approach supported by Sorenson and NeuStar, or the DNS approach supported by AT&T and GoAmerica, the ONS proposal does not take advantage of competition between providers to allow the marketplace to drive innovation and ensure excellent service. Instead, because the ONS, and not providers, would be responsible for obtaining, distributing, managing and porting numbers, the FCC would have to oversee the ONS and mandate all of the ONS's activities through regulation.

Finally, the advantages that CSDVRS touts are not unique to its ONS proposal. For example, the URI-based approach supported by NeuStar and Sorenson, as well as the DNS approach supported by AT&T and GoAmerica, allow for full and open access between users, regardless of the relay provider they use.³¹ A URI-based approach would also allow for a transition to SIP, or other technologies, by taking advantage of the flexibility afforded by using URIs – rather than IP addresses – in the national directory.³²

F. Location Identification for E911

The comments filed in response to the Public Notice, while focused on numbering, also include some discussion of location identification for E911. Commenters make different assumptions about the manner in which location information will be provisioned, and these assumptions affect their policy recommendations. Much of the discussion of numbering and E911 has been keyed to building on the existing systems developed for voice over Internet

²⁹ *Id.* at 5.

³⁰ ATIS Report at 29.

³¹ *Cf.* CSDVRS Comments at iii.

³² *See* Comments of Sorenson Communications, Inc. at 9 (“Sorenson Comments”).

protocol (“VoIP”) services.³³ Location information for VoIP works in the following way: VoIP users register their addresses with their VoIP providers. That address information is then associated with the user’s telephone number in a location database maintained by a specialized provider (the VoIP Positioning Center or “VPC”) that can be queried to identify the PSAP serving the user’s location. Before the user ever makes a 911 call, his or her location information is pre-provisioned in the VPC location database. When the user makes a 911 call, the VPC identifies the location of the user and routes the call through an Emergency Services Gateway (“ESGW”) network operator, which has gateways connected to the 911 selective routers.³⁴ The ESGW operator may be, but need not be, the same entity as the VPC. Multiple companies compete today to act as both VPCs and ESGWs for providers that require those services. The numbering directories used for VoIP are separate from the VPCs.

As is the case with VoIP, the location database for Internet-based relay services should be separate from the numbering database. One advantage of this approach is that multiple providers compete to offer database services, improving the quality and cost-effectiveness of the service. The need to gain a better understanding of possible location solutions, however, is one of the critical reasons the FCC needs to update the record in the 911 proceeding.³⁵ As noted above, Sorenson is not waiting to provide its users access to E911 services. Rather, Sorenson is moving

³³ See, e.g., Consumer Group Comments at 5-6; NeuStar Comments at 7-8. As noted above, significant technical obstacles still exist with respect to automatic location identification for portable VoIP and mobile data services, and these issues will affect mobile Internet-based relay services as well. See *supra* note 13.

³⁴ See NeuStar Comments at 7-8; “Telephone Numbers for Relay Users” (White Paper), attached to NeuStar Comments as Appendix A, at 15.

³⁵ See Sorenson Comments at 22.

ahead with its integrated 911 solution for VRS, and has contracted with Intrado to pre-provision the location information for Sorenson users in an Intrado database.³⁶

Because the E911 system depends on having accurate location information, the FCC should not rely on users to update the database voluntarily. Instead, providers should proactively gather location information from users of Internet-based relay services as part of the number-assignment process – yet another advantage of having users obtain numbers from providers, as recommended in the ATIS Report.³⁷ Even with providers actively gathering location information, however, it likely will take months to obtain the relevant information from all existing users of VRS and IP Relay.

G. Consumer Protection

As Sorenson noted in its initial comments, it supports the adoption of consumer protection regulations for relay services, similar to those currently in place for users of voice services.³⁸ Sorenson also agrees with GoAmerica that there should be stiff penalties for violations of slamming or other consumer protection rules.³⁹ One additional way to protect consumers is to require all video interpreters and communications assistants to identify themselves, and the provider for which they work, at the beginning of every call. This will help users and the FCC to hold providers accountable for the quality of service they provide by letting users know where to direct any complaints they might have about the service they receive.

³⁶ *Id.* at 21-22.

³⁷ Another benefit of user registration is that it will help avoid number exhaustion by facilitating number reclamation.

³⁸ Sorenson Comments at 15-16.

³⁹ GoAmerica Comments at 34.

III. CONCLUSION

The Commission should adopt a URI-based approach to numbering in order to allow users of Internet-based relay services to have access to NANP numbers in the most reliable, confidential and secure manner feasible.

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