

August 29, 2010

Federal Communications Commission  
445 Twelfth St., S.W.,  
Washington, DC. 20554

In the Matter of Structure and Practices of the Video Relay Service Program – Docket No. 10-51

Re: NOTICE OF INQUIRY – Released on June 28<sup>th</sup>, 2010.

#### REPLY COMMENT TO CONSUMER GROUPS' NOI COMMENT

First of all, a brief introduction; I am Todd Elliott, an ordinary Deaf citizen and VRS consumer, and I wish to reply to Consumer Groups' NOI Comment ("Consumer Groups NOI"). I do not represent any VRS provider, nor anyone else for that matter. I have never worked in the TRS industry. I am participating in the NOI process as a VRS stakeholder, and want to thank the organizations<sup>1</sup> which make up the Consumer Groups for participating in the NOI process as well.

But, before I get into the specifics of the Consumer Groups NOI, I'd like to make a minor correction to my initial NOI comment dated August 17<sup>th</sup>, 2010. I broached the idea of forcing the VRS industry to start charging a flat monthly rate for their VRS consumers. I did so in context of FCC NOI ¶¶ 71-76, so that the incentives and needs of VRS users are **aligned** with the VRS industry from a customer perspective.

After further examination, this idea also addresses ¶ 61 of the FCC NOI.<sup>2</sup> Chalk it up to mental fatigue or not initially understanding the question on my part. However, do keep this 'error' in mind as I explore the specifics of server-based routing in the Consumer Groups' NOI.

#### A. THE BENEFITS OF SERVER-BASED ROUTING

I have no issues with the Consumer Groups NOI Comment, save for their advocacy of Server-Based Routing in lieu of CPE-Based Routing. In a general sense, I agree that server-based routing is the **future**. Server-based routing enables CPE to be installed in a wide range of

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<sup>1</sup> I am a member of the National Association of the Deaf (NAD). However, my views are my own, and may not necessarily reflect the views of the NAD in this NOI process.

<sup>2</sup> Hat tip to Purple Communications in their NOI comment, page 39 under NOI ¶ 61. It made me realize fully what the FCC NOI question 61 meant.

businesses and governmental entities, broadening economic opportunities for Deaf/HH people.<sup>3</sup> Indeed, server-based routing enables VRS consumers to have a whole array of telephony features that were previously unavailable.<sup>4</sup> Lastly, server-based routing would resolve nagging interoperability issues between competing provider's CPE units for P2P/VRS calls.<sup>5</sup>

Moreover, server-based routing is technically feasible and has Neustar's support for it to be provisioned in the iTRS database.<sup>6</sup> Even ip-based text relay calls utilize some form of server routing.<sup>7</sup> Lastly, while server-based routing has its own costs, it is **optional** for VRS Providers in offering it to its consumers.<sup>8</sup> Given the practical applications of server-based routing, *virtually, if not all*, providers are **certain** to use the technology for its consumers.

## B. PROCEDURAL HISTORY

The idea of server-based routing within the VRS industry is not new. Viable, Inc. initiated a petition in favor of server-based routing on December 3<sup>rd</sup>, 2008.<sup>9</sup> Purple Communications ("Purple") then petitioned the Commission to provision the iTRS database with VRS server IP addresses in addition to CPE IP addresses.<sup>10</sup> As far as I know, the Commission has not acted upon the petitions with a waiver and/or NPRM.

Purple's 6/2/10 Petition sparked a flurry of consumer/provider comments in docket 10-51. Since Purple was requesting a clarification or waiver of an existing rule, some industry participants (notably Sorenson<sup>11</sup> and Convo Relay<sup>12</sup>) objected. They are correct in their

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<sup>3</sup> CSDVRS Comment, Page 3, Paragraph 2. "It will also permit more integration of deaf/[HH] people in places of employment, education, and government as the solution will allow more functionality[.]"

<sup>4</sup> Consumer Groups NOI, Page 21, Paragraph 3. "[W]ould allow providers to develop and deploy an extensive range of services, features and protections not currently available with direct device routing."

<sup>5</sup> *Ibid*, Page 22, Paragraph 1. "[A]llow[s] provider platforms to bridge the various CPE without engaging the direct-device routing mechanism that is now in use and which can be unreliable, inefficient, and difficult to use."

<sup>6</sup> Purple's REPLY COMMENT PETITION dated 7/23/10, see footnote 19.

<sup>7</sup> *Ibid*, Page 10, Paragraph 1. "Indeed, IP Relay relies on server routing for call delivery."

<sup>8</sup> *Ibid*, Page 11, Paragraph 1, "If a provider needed server routing [...], it could do so. If it does not, it can continue to operate in the same manner [...] by provisioning direct device address information to the iTRS database."

<sup>9</sup> Viable, Inc.'s Petition For Expedited Modification and Waiver, 12/3/08.

<sup>10</sup> Purple Petition dated 7/21/09, requesting a clarification of requirements for populating the iTRS database.

<sup>11</sup> Sorenson Reply Comment, 7/23/10, Page 2, Paragraph 1, "[Shows] an utter disregard for the procedural safeguards that the FCC and Congress put in place to protect against *ad hoc* changes to established rules."

objections, and even the Consumer Groups came around on this procedural issue, calling for a NPRM in their NOI comment.<sup>13</sup>

I support the Consumer Groups NOI in their stance that the Commission should issue a NPRM. The FCC should open up the issue for public comment on the merits, benefits, implementation, and **pitfalls** of having server-based routing solutions for the VRS industry. Maybe I'm an alarmist, but I can see the potential for misuse and abuse for server-based routing solutions, and a NPRM is the best avenue of addressing such concerns.

### C. CONVO RELAY'S PROPOSED SOLUTION

Let's start with one proposed suggestion, by Convo Relay. They suggested that the iTRS database provision a phone number in the "Destination Field" in lieu of an IP address for the CPE. This phone number can then point to another entry in the iTRS database containing an actual IP address in the destination field.<sup>14</sup> They followed up on it with concrete examples.<sup>15</sup>

There are two issues with Convo's proposed solution; one, this is a call-forwarding feature. A consumer may not realize that by putting in a second phone number in the destination field for his primary phone number in the iTRS database will mean that the calls will **always** be made (forwarded) to the second phone number. There are no *business rules* on the iTRS database to determine if the primary phone number is indeed **available**, and to *disregard* further call-forwarding. This will result in consumer confusion.

Secondly, many VRS consumers have more than one videophone and one ten-digit telephone number. This dynamic may change dramatically, as mobile VRS solutions proliferate in the Deaf/HH community. Let's say that these consumers sign up for call forwarding features

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<sup>12</sup> Convo Relay Reply Comment, 7/16/10, Page 4, Paragraph 1, "Since the rule change should be made available to all, it is only appropriate that the FCC conduct further regulatory and administrative rule-making action[.]"

<sup>13</sup> Consumer Groups NOI, Page 22, Paragraph 2, "The Commission must resolve this conflict immediately, by issuing a [NPRM] to change the VRS CPE based routing requirement to a VRS server based routing requirement[.]"

<sup>14</sup> Convo Reply Comment, dated 7/16/10, Page 3.

<sup>15</sup> Convo Reply Comment, dated 8/2/10, Pages 3-4.

with their VRS providers. Most consumers will do so correctly, inputting the second phone number and the VRS providers dutifully provision the destination fields in the iTRS database.

Remember my admission earlier in this comment about an ‘error’ on my part in replying to the FCC NOI? VRS consumers are no different; some will make mistakes and put in ip-based text relay (“ip-relay”) phone numbers for the call forwarding feature. Or put in wrong numbers. Or put in their hearing grandma’s phone number. Etc.

Now, a consumer makes a P2P call via the videophone, and is redirected to an ip-relay number. It results in a **dropped** call and no explanation is offered. The recipient has no idea that he/she has a **missed** call, and will wonder whether if his/her call forwarding features are working. What if a hearing number was called? Would there be yet another recursive lookup and a VRS call now enters the picture when a P2P call was supposed to take place? Etc.

For V2V calls, this could result in a call that is completed; the VRS provider will note that this is an ip-relay call, and forward the call to their ip-relay calling platform for further handling. Again, this may result in further consumer confusion. A nefarious provider could have the VRS CA facilitate an ip-relay call and claim minutes as VRS minutes. This results in **counterfeit** minutes, whereas VRS minutes are *masquerading* as ip-relay minutes!

Going further, they could accomplish the same thing for P2P calls; the consumer would call a VP number that is redirected to an ip-relay number. A VRS CA could intercept the video call and facilitate the call between two Deaf/HH consumers, in *violation* of FCC’s February 25<sup>th</sup>, 2010 Declaratory Ruling. This would add to further consumer confusion, as the consumer is expecting to reach another Deaf/HH consumer in direct-video communications.

I am grateful for Convo Relay in proposing a solution for the call forwarding feature, and I assume that Purple is not detailing their call forwarding implementation, as it would be considered a trade secret. I just think that a *limited and surgical* approach in provisioning the iTRS database’s destination field with another phone number just won’t work that well.

#### D. THE GOOD, BAD, AND UGLY ABOUT SERVERS

Thus, provisioning the iTRS database's destination field with the IP address of the VRS provider's **server** is a more flexible, cost-effective, and feasible solution. This way, a VRS provider's server can utilize its business logic and redirect calls accordingly. It could flag problematic calls, such as P2P calls to an ip-relay number, and notify users accordingly. VRS provider's servers could also enable a whole host of features other than just call-forwarding.

Provisioning a VRS server carries it with great power and flexibility to do a lot of things and will ultimately benefit VRS consumers in terms of functional equivalency. But, it also can represent possibilities for misuse, abuse, and/or fraud. Let's use an example: Proxy Servers.<sup>16</sup> The destination field in the iTRS database could point to an IP address of a VRS proxy server.

Proxy servers can be very beneficial, as they can bypass corporate firewalls, adhere to corporate IP policies, and to serve as **bridge** connections between inefficient and unreliable CPE devices.<sup>17</sup> But, they can also camouflage the locations, destinations, and origins of VRS/VP calls. Let's list two such examples: camouflaging international calls and employee calls.

By strategically locating their proxy servers in various locations across the U.S. under the guise of redundancy, a nefarious provider could handle **international** VRS calls, in violation of the February 25<sup>th</sup>, 2010 Declaratory Ruling. Deaf/HH consumers in other countries, that are reasonably fluent in ASL, could be given a 10-digit number based on the IP address of their proxy server! The Deaf/HH consumer could initiate a VRS call, and connect to the proxy server. The proxy server will then just **retransmit** the video call to a VRS CA, and **disguise** the location and/or destination of the Deaf/HH caller, and he/she could make international calls, in violation of FCC's February 25<sup>th</sup>, 2010 Declaratory Ruling.

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<sup>16</sup> Definition found in Wikipedia - [http://en.wikipedia.org/wiki/Proxy\\_server](http://en.wikipedia.org/wiki/Proxy_server)

<sup>17</sup> CSDVRS Reply Comment, dated 7/16/10, Page 3, Paragraph 1, "A server routing solution, however, will allow provider platforms to bridge the various CPE without engaging the direct-device routing mechanism that dominates the market and which can be unreliable, inefficient, and difficult to use when communicating with other CPE."

Another example is concealing the **origin** of such VRS calls by using proxy servers. A nefarious provider could give its Deaf/HH employees two 10-digit phone numbers (one for work and home). Then, in the course of usual business, they could call the 10-digit phone number that is allocated as the home phone number of their Deaf/HH employee. Thanks to the wizardry that proxy servers afford, all VRS calls will be **retransmitted** to their 10-digit phone number at their workstation, in violation of FCC's February 25<sup>th</sup>, 2010 Declaratory Ruling.

#### E. CONCLUSION

I'm not trying to paint the entire VRS industry in a seemingly *toxic* brush. Most VRS companies have been highly ethical, handling organic calls, and have truly been providing invaluable services to the Deaf/HH communities they serve. Moreover, the FCC will have auditing and compliance tools to detect and block such shenanigans. I only wanted to illustrate the dangers of providing industry-wide ad hoc waivers in lieu of a rigorous NPRM proceeding, and show possible unintended consequences that flow from such decisions.

There is a reason why IP addresses are in the destination field in the iTRS database. It ensures **integrity** of VRS/VP calls, in which device-based routing is used. Thanks to geolocation tools and other quality controls, providers are ensured of the location and origin of such calls. Going away from that **secure** model requires careful analysis and collaborative efforts to ensure that server-based routing is just as secure, even more so, than CPE-based routing.

In closing, I support the Consumer Group's NOI urging the FCC to grant a NPRM for server-based routing. The numerous benefits accorded to server-based routing outweighs the risks associated with it, and more importantly, outweigh the benefits and drawbacks of CPE-based routing. Thus, the FCC needs to act now.

Sincerely,

Todd Elliott  
9705 Hammocks Blvd., #203  
Miami, FL 33196