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March 31, 2006

Marlene H. Dortch, Secretary
Federal Communications Commission
Office of the Secretary
445 12th Street, SW
Washington, DC 20554

Re: In re Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities; Petition for Declaratory Ruling on Video Relay Service Interoperability, CG Docket No. 03-123

Dear Ms. Dortch:

Snap Telecommunications, Inc. ("Snap") submits this *ex parte* letter to respond to questions posed by the Disability Rights Office regarding the costs and timing of implementing an interoperability solution that would permit Snap - whose network and video phones will be based on the robust and broadly accepted Session Initiation Protocol ("SIP") open standard - to be backward compatible with existing VRS providers and video phones that are based on the older H.323 standard.

Before setting out the requested cost and timing information, Snap wishes to indicate its strong support for the Commission's commendable efforts to achieve greater interoperability, competition, and consumer choice in the VRS arena and state that Snap has no intention of blocking IP addresses or imposing contractual restrictions to prevent its users from calling other VRS providers. Snap also wishes to underscore the following:

- SIP is an open standard developed by the Internet Engineering Task Force ("IETF") that is increasingly being embraced as the standard of choice by numerous **video phone manufacturers** (*e.g.*, Leadtek, Innomedia, D-Link, Grandstream, Packet8, Corinex, ProVu, and Ittiam/Texas Instruments), **VoIP providers** (*e.g.*, Vonage, pulver.com, AT&T, BellSouth, Time Warner Cable, and Comcast Cable), and others (*e.g.,* Google, Skype, Microsoft, Nortel, and Cisco);

- SIP affords significant opportunities for enhanced VRS interoperability going forward because its highly extensible design will make it easy to substitute new applications, modules, and codecs in VRS phones and servers for older ones as innovation continues (*e.g.*, replacing an MPEG-2 (H.263) video codec with a newer MPEG-4 (H.264) codec is very straightforward with SIP); and

- SIP is the focus and foundation of significant efforts by various industry players (including VoIP providers, standards organizations, manufacturers, cable operators, and others) to establish E-911 solutions for VoIP and VRS (*e.g.*, Red Sky Technologies, Convergence, Intrado, Level 3, Verizon, Global Crossing, and various working groups of the IETF are all exploring or implementing SIP-based E-911 solutions).

In short, SIP provides a robust path forward toward greater "functional equivalence" for deaf and hard-of-hearing individuals as required by the ADA.

After extensive research and testing, Snap selected the SIP-based Ojo™ video phone (www.wgate.com) as the device it plans to provide its VRS users upon launch.[1] By embracing SIP and the Ojo, Snap will fulfill several of the key objectives identified by the FCC in its recent VRS Certification Order, including "bring[ing] innovation to the provision of VRS … both with new equipment and service features"[2] and "enhance[ing] competition … advanc[ing] technological development, increase[ing] quality of service, and reduce[ing] costs."[3] Snap's understanding is that other manufacturers and providers in the VRS industry also have plans to implement SIP into their equipment and systems in the near future.

Snap strongly believes that the VRS marketplace will evolve and transition to SIP (as has the rest of the industry), thereby facilitating the significant interoperability and other enhancements described above. At the same time, however, Snap recognizes the existing base of VRS users and VRS providers that are currently using H.323 video phones and that the Commission may wish to ensure that Snap's users can call VRS providers equipped only with H.323 video phones. Even though this would mean that Snap as a new entrant using a more advanced open standard might have to incur unique costs not applicable to existing VRS providers using the legacy H.323 standard, Snap is willing to undertake this expense and burden to assist the Commission in meeting its near-term interoperability goals.

Toward this end, we set out below the requested cost and timing information for an interoperability solution that could be integrated into Snap's VRS network to allow not only Snap users to call other VRS providers that are based on the legacy H.323 standard, but also VRS users with H.323 video phones to call a Snap call center and use a Snap CA.

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[1] *See* Snap Application for VRS Certification, filed in CG Docket No. 03-123 (Jan. 26, 2006), at 6-8.

[2] *See In re Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Report and Order and Order on Reconsideration, 20 FCC Rcd 20577, at ¶ 21 (2005).

[3] *Id*. at ¶ 26. *See also id.* ("In this way, we further fulfill two statutory mandates under Section 225: ensuring that TRS is available 'to the extent possible and in the most efficient manner' to persons with hearing and speech disabilities, and 'encourag[ing] ... the use of existing technology and ... not discourag[ing] or impair[ing] the development of improved technology.'") (footnotes omitted).

The cost and timing information indicated below is based on Snap's discussions with various equipment and service vendors with expertise in providing this solution. Also attached is a diagram and further description of this solution provided by Snap's partner WorldGate, which is the manufacturer of the Ojo. The depicted solution contemplates the use of equipment and services of a leading vendor in this arena - RADVISION Inc. (www.radvision.com).

The anticipated costs for this approach are broken out into three components and are the total expected costs for the Snap network (not for each call center). These costs are predicated on a hypothetical user base of 1,000 Snap VRS customers and a ten percent caller contention rate, *i.e.* the expectation that ten percent (*i.e.*, 100 callers) - representing Snap customers wishing to call other VRS providers and/or H.323 customers wishing to call a Snap CA - may attempt to access Snap's open interoperability solution at any given time.

First, Snap would deploy equipment (called a "Media Gateway") in its network that would serve as the key point of conversion to allow Snap users with Ojo video phones to call other VRS providers using H.323 video phones *and* allow users of other VRS providers to call Snap's VRS call center with their H.323-based phones. Under the above-described hypothetical, the Media Gateway would have to be installed and configured for each of the 100 ports corresponding to the postulated 10% caller contention rate. Since each Media Gateway costs $300 to $400 per port, total equipment costs would run approximately $30,000 to $40,000 (*i.e.*, $300 - $400 x 100). Of course, this fixed cost would correspondingly increase or decrease based on Snap's actual customer base and the actual caller contention rate it ultimately encounters based on experience it gains with call volumes after launch of its VRS service.

Second, one-time fixed costs of approximately $200,000 would be incurred for program development and hardware and software implementation work to fully integrate and test the Media Gateways into Snap's network.

Third, Snap's network would require additional bandwidth, both upstream and downstream, to handle the real-time call translation for every VRS call from Snap's Ojo users going out to other H.323-based VRS providers and for every VRS call coming in to a Snap call center from H.323 video phones. The reason for this expanded bandwidth is as follows: In a situation in which a VRS call is placed by a user with a SIP-based video phone to a CA also using a SIP-based video phone (such as between an Ojo user and a Snap CA using an Ojo), this is a point-to-point call requiring little bandwidth of Snap's network; rather, most of the bandwidth utilized is over the cable modem or DSL network connecting the calling VRS user to the CA. By contrast, implementation of the Media Gateway solution would require Snap's network *itself* to have the additional capacity to *process the real-time translation* of the maximum expected number of simultaneous VRS calls that may require SIP to H.323 (or H.323 to SIP) conversion. Assuming that each VRS call requires 160 kilobits per second (kbps) both ways, under our hypothetical example, Snap would require 16 Megabits per second (Mbps) of available bandwidth at any given time (*i.e.*, 160 kbps x 100 potential simultaneous VRS calls to be translated = 16 Mbps). Since the speed of a full duplex T-1 line connection is 1.544 Mbps, Snap would require approximately ten T-1 lines (*i.e.*, 16 Mbps ÷ 1.544 Mbps = 10.36 T-1 lines).

Assuming a monthly cost of approximately $500 - $700 for each T-1 line, this would result in a *monthly* recurring cost of approximately $5,000 - $7,000 (though prices for T-1 capacity could vary further based on available volume discounts and other factors such as location of the call center). Again, the actual bandwidth needed and the specific costs required would vary based on the actual number of Snap VRS customers and the actual caller contention percentage used. Finally, note that certain H.323 video phones require even higher levels of bandwidth than the 160 kbps specified above (sometimes up to 384 kbps or higher), which could result in even higher costs than projected above. For example, if most or all calls hitting the Snap Media Gateway were from such higher bandwidth video phones, that could double the T-1 requirements and cost estimates set out above.

Based on our discussions with WorldGate and RADVISION, the total time estimated to deploy this Media Gateway solution in Snap's network would be approximately nine to twelve months.

Snap stresses that this solution will not only facilitate backward compatibility with existing H.323 based VRS providers but also forward compatibility allowing H.323-based video phones to call Snap's SIP-based network. Snap also wishes to emphasize that it is not suggesting the imposition of costs on existing VRS providers; rather, the costs and burdens to implement the above Media Gateway solution would be borne by Snap. Again, while Snap believes the ideal future outcome is a VRS marketplace based on SIP, we are willing to undertake these unique costs and burdens during a transition period to assist the Commission in achieving its interoperability goals.

Please do not hesitate to contact the undersigned should you have any further questions.

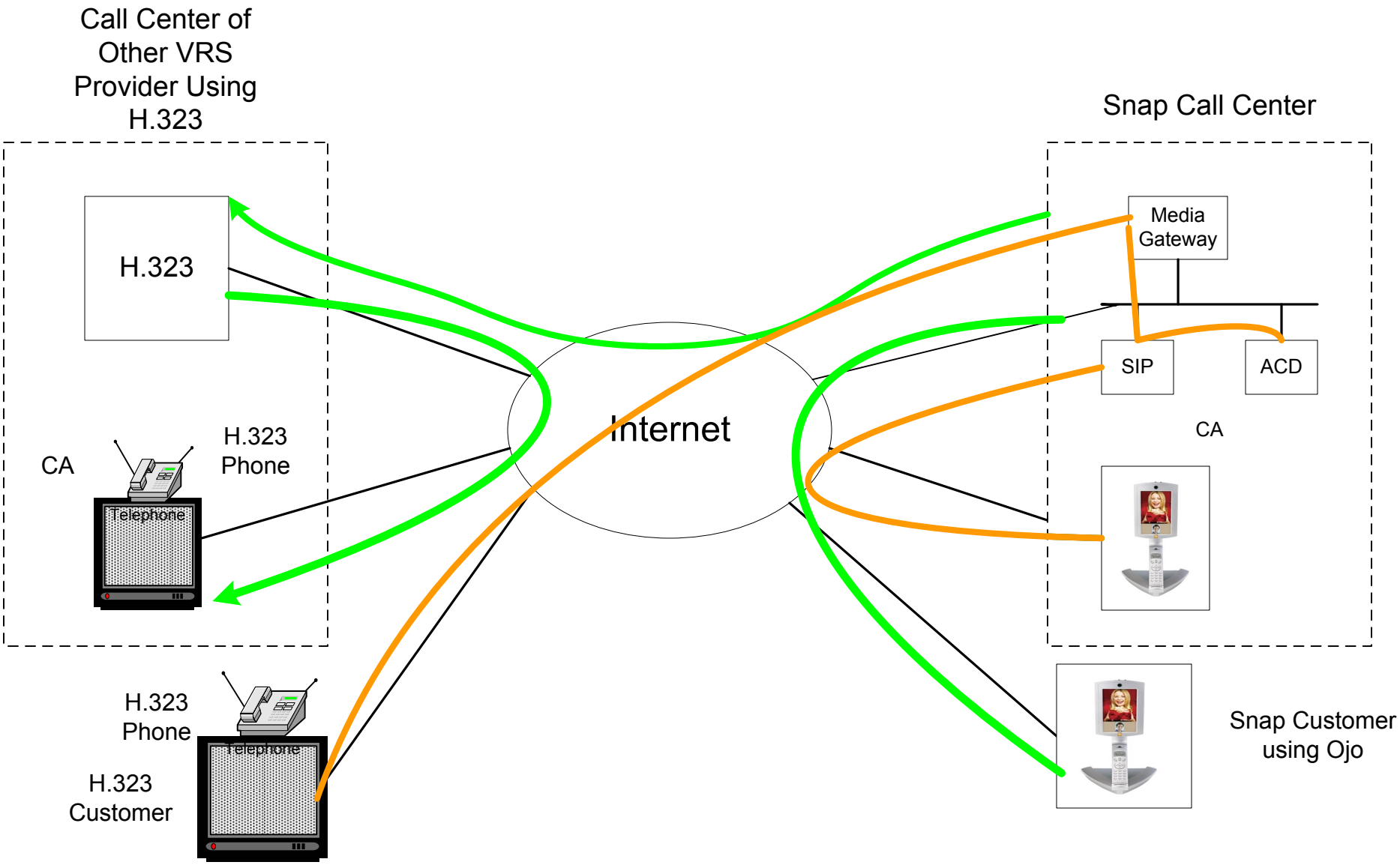
Respectfully submitted,

/s/

Francis M. Buono
Counsel for Snap Telecommunications, Inc.

Attachment

cc: Monica Desai
Thomas Chandler
Jay Keithley
Greg Hlibok



H.323 User Calling Snap CA:

1. H.323 user dials published IP address of Snap's Media Gateway

2. Media Gateway translates call from H.323 to SIP and routes to Snap's automatic call director ("ACD")

3. From this point forward, the processing and call handling is identical to calls from Snap's Ojo customers

Snap VRS Customer Calling Another VRS Provider That Uses H.323:

1. Snap customer calls the other VRS provider's published 800 number

2. Snap SIP server assigns this 800 number to the Snap Media Gateway

3. Customer call is routed to Media Gateway and translated from SIP to H.323

4. Translated call is sent to the VRS provider's call center like any other call originating from an H.323 video phone

5. Processing and call handling after this is identical to the current VRS provider's customers