



Telecom Notice of Consultation CRTC 2013-155

PDF version

Ottawa, 27 March 2013

Notice of hearing

21 October 2013
Gatineau, Quebec

Issues related to the feasibility of establishing a video relay service

Deadline for submission of interventions: 17 May 2013

[Submit an intervention/comment/answer or view related documents]

File numbers: 8665-C12-201303536 and 8665-C12-200807943

*The Commission initiates a proceeding to address issues related to the feasibility of establishing a video relay service (VRS) in Canada. The Commission invites comments, with supporting rationale, as to whether or not VRS should be implemented, and if so, how it should be implemented to address the needs of Canadians while ensuring the efficient use of resources. Comments are to be filed by **17 May 2013**. The proceeding will include a public hearing, which will begin on **21 October 2013** at the **Conference Centre, Phase IV, 140 Promenade du Portage, Gatineau, Quebec**. With advance notice, persons who wish to participate in the public hearing via one of the Commission's regional offices may do so.*

Simultaneous interpretation in American Sign Language (ASL) and Langue des signes québécoise (LSQ) will be provided during the hearing. Other accommodations may also be made if requested sufficiently in advance by those participants who require communications support to participate in the public hearing. This notice is also available in ASL and LSQ on the Commission's YouTube page.

Introduction

1. Video relay service (VRS) is a telecommunications service that enables people with hearing or speech impairments who use sign language to communicate with voice telephone users. A VRS call involves three parties: the caller, the person called, and the relay operator. The sign language user makes or receives a video call via a computer or other Internet-enabled device using video conferencing tools based on Internet protocol (IP) technology. The video call connects the sign language user to an operator who is connected to the other party via a voice telephone call. The operator relays the conversation from sign language to spoken language and vice versa, for example from American Sign Language (ASL) to English, or from Langue des signes québécoise (LSQ) to French.

2. While any telecommunications service provider (TSP) may choose to provide VRS on a regional or national basis, subject to Commission approval of a VRS tariff, no TSP has chosen to offer the service.
3. In this notice, the Commission invites comments on whether or not VRS should be implemented, and if so, how it should be implemented to address the needs of Canadians while ensuring the efficient use of resources.

Background

4. The Commission first required the provision of a text-based relay service in Telecom Decision 85-29, in which it directed British Columbia Telephone Company to provide what is now known as Teletypewriter Relay Service (TTY Relay) to its subscribers. That decision followed a number of years of reports and a trial of the service. In a series of decisions since that time, the obligation to provide relay services has been extended incrementally, first to other incumbent local exchange carriers (ILECs), then to small ILECs and competitive local exchange carriers (CLECs), to wireless CLECs, and finally to voice over IP (VoIP) providers.¹ The development of relay services continued in Broadcasting and Telecom Regulatory Policy 2009-430, in which the Commission required all local exchange carriers (LECs) to provide IP Relay Service (IP Relay).
5. In Broadcasting and Telecom Regulatory Policy 2009-430, the Commission recognized that VRS provides significant benefit to those people with hearing or speech impairments who communicate via sign language. The Commission reviewed the appropriateness of mandating VRS at that time but declined to make a determination on the issue, as it considered that the record of the proceeding was insufficient. In particular, the record did not establish critical information such as the projected size of the individual ASL or LSQ video relay user markets, projected use, and the costs of providing the service.
6. The Commission then determined that it would consider holding a proceeding on VRS when more information became available, including the critical information outlined above that it expected to receive from two TSPs: Bell Canada and TELUS Communications Company (TCC). Bell Canada contracted with Mission Consulting, LLC to conduct a VRS feasibility study (the Bell Canada study) and submitted a report to the Commission on 4 April 2012. TCC conducted an 18-month VRS trial in three cities (the TCC trial) and submitted its report on the trial on 14 March 2012. These two reports are available through the “Other related documents” section of this notice.

¹ In Telecom Decision 85-29, the Commission required a TSP to provide relay service to its customers in its serving territory. The Commission extended this obligation to other ILECs in subsequent decisions. In Telecom Decision 97-8, the Commission required all LECs (ILECs, small ILECs, and CLECs) to provide relay service; it extended this obligation to wireless CLECs in Telecom Order 98-1. In Telecom Decision 2005-28, the Commission required all VoIP providers (fixed and nomadic) to provide relay service. The Commission notes that resellers providing local exchange services are required to meet certain of the service requirements that it imposes on LECs, including providing relay service, by virtue of the underlying LEC’s obligations, as set out in Telecom Decision 97-8.

7. Some of the conclusions derived from the Bell Canada study and the TCC trial are presented below, and the two reports form part of the record of this proceeding. The Commission subsequently issued requests for information to TCC and Bell Canada to help clarify inconsistencies contained in the two reports. These requests and the responses to them, along with responses to requests for information issued to LECs concerning message relay service² (MRS), and two independent reports commissioned by the Commission, also form part of the record of this proceeding. These documents are available through the “Other related documents” section of this notice.

Projected size of user markets

8. Statistics Canada’s Participation and Activity Limitation Survey (PALS) for 2006³ shows that in the 2006 census year, 35,470 adults self-reported as having a hearing or communication limitation and using sign language. An additional 2,620 children with a hearing limitation reported using sign language to communicate.⁴ ASL and LSQ are the two most commonly used forms of sign language in Canada. Adults who reported a hearing limitation, but not necessarily a communication limitation, answered follow-up questions which revealed that approximately half of this group of sign language users (49.8 percent) use ASL, approximately one quarter (23.1 percent) use LSQ, and the remaining 27.1 percent use another type of sign language, such as a language specific to the geographical region of residence, body language and gestures, or a form of sign language of their own invention.
9. The Commission estimates that approximately 15,000 to 20,000 people would likely adopt and use VRS. Of those people, approximately 11,500 to 13,500 would likely use ASL and 3,500 to 6,000 would likely use LSQ.⁵ The methodology used to obtain these estimates and more exact numbers are presented in Appendix B to this notice.

Projected use

10. Usage patterns for VRS would likely be similar to those observed during the TCC trial and comparable to the usage patterns of text-based relay services (i.e. TTY Relay and IP Relay). Approximately 80 percent of video relay traffic occurs during the week and roughly 20 percent over the weekend. Usage peaks

² Message relay services include both TTY Relay and IP Relay. Responses to the requests for information issued on 25 May 2012 and 19 December 2008 are available through the “Other related documents” section of this notice.

³ Statistics Canada, *The 2006 Participation and Activity Limitation Survey: Disability in Canada*, catalogue no. 89-628-XWE

⁴ Statistics Canada *Participation and Activity Limitation Survey of 2006: A Profile of Assistive Technology for People with Disabilities*, catalogue no. 89-628-X – no. 005. ISBN 978-0-62-48688-6.

⁵ The low range is the estimate from the Bell Canada study and the high range was obtained using Statistics Canada’s 2006 census results. Details of the methodology used for Bell Canada’s estimate are available in Phase 9 of the Bell Canada study. Details of the methodology used for deriving the estimate based on Statistics Canada data are available in Appendix B to this notice.

from 6 a.m. to 6 p.m. on weekdays, which accounts for almost 90 percent of weekday traffic. Weekend traffic peaks from 12 p.m. to 6 p.m., which accounts for over 50 percent of weekend traffic, and tapers off from 6 p.m. to 12 a.m., which accounts for an additional 30 percent of weekend traffic. Less than 4 percent of total traffic occurs during the overnight hours of 12 a.m. to 6 a.m.⁶

11. The per-user minutes of VRS use per month varied significantly among the estimates submitted. The Bell Canada study estimated an average of 37 minutes of relayed conversation per user per month, while the TCC trial experienced an average of 109 relayed conversation minutes per user per month.

Cost implications and efficient use of resources

12. Information about the projected individual ASL or LSQ user markets and use of VRS will help the Commission understand the cost and resource implications of a potential VRS. The estimates⁷ on projected user markets and usage, and their cost and resource implications, varied widely. The Commission recognizes the significant benefits of VRS, but is aware of the potentially high-cost nature of the service and its dependence on the availability of sign language interpreters.

Cost implications

13. The Commission's approach to relay services to date has been to require LECs to meet their obligation to offer MRS by either providing relay services directly to their customers or outsourcing the provision of the services to a third party.
14. Presently, to access MRS, Canadians must subscribe to a local or wireless telephone service of one of the LECs. There is no separate charge for MRS usage, as the service is included in the rate that local or wireless telephone service providers charge all customers for telephone service. However, MRS users may incur costs for relay equipment.
15. LECs already recover the costs of providing MRS from the general body of subscribers. Thus, if mandated, VRS may have cost implications for the general body of subscribers.

⁶ These results are obtained from usage information provided in responses to requests for information, and from the final report on the TCC trial.

⁷ Estimates are from the Bell Canada study, the TCC trial, and Appendix B to this notice, which is based on Statistics Canada census results.

Other resource implications

16. VRS is a service that relies heavily on sign language interpreters. Community interpreting⁸ relies on the same pool of interpreters. The pools of both ASL and LSQ interpreters are experiencing shortages,⁹ and there is a demand for Canadian ASL interpreters to staff call centres serving American VRS clients.
17. The Bell Canada study notes that the availability of job opportunities has encouraged many students to leave interpreter training programs prior to graduation to seek employment. This is particularly pronounced in the LSQ market.¹⁰

Efficient use of resources

18. The Commission notes that VRS is already offered in some countries. Where it is offered, various implementation and service delivery models have been adopted, with widely varying costs. International VRS models tend to fall into one of two categories: demand-driven and supply-driven. Both models can be adjusted to accommodate VRS hours of operation or volume of calls.
19. An example of a demand-driven model is compensation per minute of use. Since it can be difficult to predict how many minutes of conversation users will require, this type of model involves unpredictable costs and therefore unpredictable impacts on the general body of subscribers. Compensation of VRS providers on a per-minute basis may create an incentive for providers to seek ways to inflate the number of minutes of use; therefore, this model may be more susceptible to fraud.
20. An example of a supply-driven model is funding a fixed number of interpreter positions. In this case, costs and other resource requirements are more predictable and transparent since they are predetermined. Such a model does not create an incentive for providers to increase minutes for compensation.
21. Developing the appropriate model and implementing measures such as permitting VRS users to book longer calls or to leave a call-back number for non-time-sensitive calls can improve efficiency.

Call for comments

22. The Commission notes that, as a result of this proceeding, it could impose additional obligations on some or all TSPs, whether or not they choose to become parties to this proceeding.

⁸ Community interpreting in the context of this notice refers to all types of in-person sign language interpretation.

⁹ These shortages are discussed in further detail in Phase 6 of the Bell Canada study.

¹⁰ Bell Canada study, Phase 6

23. The Commission notes that VRS is a telecommunications relay service. VRS operators would not provide interpretation from ASL to French or from LSQ to English. VRS is also distinct and separate from video remote interpreting (VRI). VRI is a service whereby the two parties, a sign language user and a person who does not use sign language, are in the same location for an in-person conversation and contact a remote interpreter via video conference. The interpreter then interprets the conversation for the two parties via video. VRI is an interpretation service and not a telecommunications relay service, and is not within scope of this proceeding.
24. The Commission invites comments, including supporting rationale and evidence where appropriate, on whether or not VRS should be implemented, and if so, how it should be implemented to address the needs of Canadians while ensuring the efficient use of resources. To facilitate the formulation of comments, the Commission has included two appendices to this notice. Appendix A presents two potential VRS funding and administration models, which provide examples of some of the key elements to be considered in any approach. The methodology supporting the forecast number of VRS users can be found in Appendix B.
25. The Commission also invites comments, including supporting rationale and evidence where appropriate, on the benefits of VRS and how it should be implemented if it is approved. These main topics are broken down into more specific issues in paragraphs 26 to 36 below. The Commission requests that parties' submissions set out their responses to each issue they choose to address separately, indicating which issue they are addressing at the beginning of each response.

I. Benefits of VRS

26.
 - i) Describe the potential social and economic benefits of VRS.
 - ii) Is VRS the best available means to meet the telecommunications needs of people with hearing or speech impairments who communicate via sign language? Why or why not? What alternatives to VRS exist and how are these alternatives able or not able to meet the needs of people with hearing or speech impairments?
 - iii) Under what circumstances would VRS be used?
 - iv) Explain whether current message relay services sufficiently meet the needs of users with hearing or speech impairments who use sign language.

II. Implementation of VRS, if approved

A. Funding and administration

27.
 - i) Should the Commission extend the current message relay requirement to include VRS? If so, to whom should the requirement apply? Provide total projected costs over a five-year and/or ten-year study period, identifying all major cost components (e.g. operator costs, equipment rental, usage costs) and a cost per network access service (NAS), providing the annual NAS expected to be served.

- ii) Should a new centralized contribution fund be created for the purpose of funding VRS? In your response, identify how such a fund could be set up, what the appropriate contribution formula would be, and to whom the obligation to contribute would apply. Also, in your response, identify how such a fund could be managed, how funds would be awarded, and the necessary reporting requirements.

B. Interpreter challenges

28.
 - i) How should VRS be implemented so as to minimize the impact on community interpreting? Provide detailed time frames for each stage of implementation and explain how targets can be achieved.
 - ii) How can an LSQ VRS offering be implemented in such a way as to ensure suitable quality of service while minimizing the impact on community interpreting?

C. VRS technology

a) Call centre technology

29.
 - i) Taking into consideration Canada's geographic landscape and telecommunications infrastructure, as well as the distinct ASL and LSQ markets, what is the optimal implementation model for VRS technology?

Responses should consider such issues as:

- interoperability between the VRS platform, TSP networks, and consumer end-devices, as well as VRS systems in other countries; and
 - features and call centre capabilities of VRS technologies, such as priority queuing for emergency calls, etc.
- ii) Describe the call routing pattern for both point-to-point (videophone-to-videophone) calls and relayed calls.
 - iii) Describe how emergency calls would be managed and routed. Include in your description how consumer information would be stored and made available to the appropriate authorities.
 - iv) Explain the considerations for implementing a mobile wireless VRS offering (e.g. network reliability or interoperability for point-to-point calls).

b) Consumer end-devices

- i) To what extent should VRS be mobile?
- ii) What types of consumer end-devices should a VRS offering be compatible with?
- iii) What level of technical support for consumer end-devices should be available, and by whom should this be offered?

D. Service delivery

30. Usage patterns for TTY Relay and IP Relay, which are offered 24 hours a day, reveal that the vast majority of calls are processed during an 18-hour window,¹¹ from 6 a.m. to 12 a.m. The TCC trial revealed a similar pattern for video relay. The TCC trial initially offered service from 6 a.m. to 10 p.m., later expanded to a 24-hour service, and subsequently restricted the hours of service to 5 a.m. through 12 a.m. VRS was offered 24 hours a day over a six-month period and during that time, less than one call per day was placed during the overnight hours.¹²
- i) Should VRS be offered for less than 24 hours a day, seven days a week? Why or why not?
 - ii) If in favour of a restricted schedule, specify what hours of operation would be appropriate, taking into account the different time zones in Canada.
 - iii) If in support of an initially restricted schedule, propose a timeline for the expansion of VRS.
 - iv) What, if any, ancillary services (e.g. video mail, call waiting) should be offered with VRS and how should VRS users be billed for these services? Provide cost assumptions where applicable.
 - v) How should long distance calls and other billable calls be processed, managed, and billed?

E. Other consumer considerations

- 31.
- i) What, if any, VRS outreach/education initiatives are needed? Who should be responsible for any such initiatives and how should they be funded?
 - ii) What are the privacy and confidentiality considerations for VRS? How should they be addressed?
 - iii) VRS functions via the transmission of video over the Internet. This requires constant and equal speeds for upstream and downstream traffic. Many Internet packages currently advertise high download speeds and lower upload speeds, based on market demand. Are such Internet packages sufficient for use with VRS? Alternatively, should a “basic VRS Internet package,” which meets the basic minimum speed requirements for reliable VRS quality and offers a sufficient amount of data, be mandated?

¹¹ Using results provided from responses to a request for information issued on 25 May 2012

¹² Final report on the TCC trial, page 11

F. Compensation model for VRS provider(s) in the case of a centralized fund

32. i) If a centralized VRS fund were established, what would be the optimal VRS provider compensation model to prevent fraud and ensure the most efficient use of resources while maintaining an adequate quality of service? Provide supporting evidence, including cost or other assumptions. Provide total projected costs over a five-year and/or ten-year study period, identifying all major cost components (e.g. operator costs, equipment rental, usage costs).

G. Cost of VRS

33. i) Based on the VRS model presented in response to the previous questions, what is the cost of VRS? Provide supporting evidence, including cost assumptions. Provide total projected costs over a five-year and/or ten-year study period, identifying all major cost components (e.g. operator costs, equipment rental, usage costs) and a cost per NAS, providing the annual NAS expected to be served.
- ii) What, if any, mechanisms could be implemented to ensure efficient use of resources while ensuring that consumer needs are being met? For example, what is the optimal operator efficiency rate (i.e. the number of minutes of conversation operators relay per hour worked)? Should a VRS system allow callers to make appointments for time-sensitive calls?

H. VRS providers

34. i) Given Canada's landscape and low population density, what is the optimal number of VRS providers¹³ needed to serve the needs of sign language users while ensuring efficient use of resources? How can this optimal number of providers be achieved? How would VRS providers be selected and based on what criteria? Where applicable, distinguish between the requirements for ASL and LSQ.

I. Feasibility

35. i) In light of the responses offered to the previous questions, should the Commission require the provision of VRS in Canada? If so, under what conditions?

J. Monitoring

36. i) If VRS is implemented, how should its effectiveness be measured? What performance measurements should be monitored?
- ii) If VRS is implemented, when and how should it be reviewed to ensure its ongoing effectiveness?

¹³ A VRS provider refers to any entity that offers VRS to consumers. A VRS provider can be an existing TSP or a specialized VRS entity.

- iii) If VRS is implemented, when and how should its underlying infrastructure be reviewed to ensure that it continues to incorporate the most efficient and effective technology?

Procedure

37. The *Canadian Radio-television and Telecommunications Commission Rules of Practice and Procedure* SOR/2010-277 (the Rules of Procedure) apply to the Commission's proceedings. For help understanding the Rules of Procedure, see the *Guidelines on the CRTC Rules of Practice and Procedure*.¹⁴ The Commission considers it appropriate to issue additional directions on procedure, which shall govern the conduct of the proceeding and prevail over the standard Rules of Procedure.

Procedures for participation

38. The Commission will hold a public hearing, beginning on **21 October 2013**, at the **Conference Centre, Phase IV, 140 Promenade du Portage, Gatineau, Quebec**, to address the matters set out in this notice. Arrangements may be made to accommodate participation in the public hearing from the Commission's regional offices. The addresses of the Commission's regional offices are set out in paragraph 64 of this notice.
39. Concurrent with the publication of this notice, the Commission is issuing requests for information to certain TSPs. The Commission makes these TSPs parties to this proceeding. The deadline for submitting responses to these requests is **15 April 2013**. In addition, these parties may file interventions with the Commission by **17 May 2013**. As set out in paragraph 22 of this notice, the Commission notes that, as a result of this proceeding, it could impose additional obligations on some or all TSPs, whether or not they are parties to this proceeding.
40. Interested persons who wish to become parties to this proceeding must file interventions with the Commission by **17 May 2013**. Interventions should address the issues set out in paragraphs 26 to 36 of this notice. In accordance with section 26 of the Rules of Procedure, interventions must indicate whether the interested person wishes to appear at the public hearing. At the beginning of their interventions, interested persons must also address the following items regarding their appearance at the public hearing, where applicable:
 - (a) note their request to make an oral presentation at the public hearing and provide clear reasons as to why an oral presentation is appropriate;

¹⁴ The Rules of Procedure set out, among other things, the rules for the filing, content, format, and service of interventions and interrogatories; the procedure for filing confidential information and requesting its disclosure; and the conduct of the public hearing. Accordingly, the procedure set out in this notice must be read in conjunction with the Rules of Procedure and their accompanying documents, which can be found on the Commission's website under "CRTC Rules of Practice and Procedure."

(b) indicate whether they wish to make their oral presentation in Gatineau or in one of the Commission's regional offices and, if the latter, which regional office; and

(c) indicate whether they will require accommodation to participate in the public hearing (e.g. assistive listening devices) and, if so, provide details on the accommodation requested.

Only those parties whose requests to appear have been granted will be contacted by the Commission and invited to appear at the hearing.

41. Parties are permitted to coordinate, organize, and file, in a single submission, interventions of persons who share their position but do not wish to appear at the hearing as a "Joint Supporting Intervention." More information on how to do so and a template for the covering letter to be filed by the parties can be found in Telecom Information Bulletin 2011-693. Parties are encouraged to use this method rather than form letter campaigns and petitions, as it improves efficiency for the Commission and parties alike and ensures that all interveners filing jointly are aware that their personal information will appear on the Commission's website.
42. Interventions will be posted on the Commission's website shortly after they are filed. The public record of this proceeding is posted on the Commission's website under "Public Proceedings." It is also available in the Commission's offices and public examination rooms, which are listed in paragraph 64 of this notice. The Commission encourages interested persons and parties to monitor the record of this proceeding and/or the Commission's website for additional information that they may find useful when preparing their submissions.
43. The Commission may issue further requests for information, by **10 June 2013**, to TSPs and to some or all of the other parties. The deadline for submitting responses to these requests for information is **12 July 2013**.
44. All parties may file reply comments with the Commission by **26 August 2013**. Reply comments must respond only to interventions and answers to Commission questions previously submitted by other parties.
45. An organization and conduct letter providing directions on procedure with respect to the public hearing will be issued prior to the commencement of the public hearing.
46. Following the public hearing, parties may file brief final comments, by **15 November 2013**, in reply to submissions presented at the public hearing on any matter within the scope of this proceeding. Final reply comments must be no longer than 20 pages, including an executive summary.
47. Parties wishing to make a procedural request (e.g. extend a deadline, submit new evidence at the hearing, request the disclosure of information designated as confidential, hold part or all of the hearing in camera) are to follow the following instructions:
 - (a) address the procedural request to the Secretary General;

- (b) provide reasons for the requested change and address how it might affect other persons; and
 - (c) make the request as soon as possible.
48. Any resulting changes to the procedure will be set out as an amendment to this notice or in a procedural letter issued by the Commission or Commission staff and added to the public record of the proceeding.
49. Because the procedure can change after the proceeding has started, all parties are advised to monitor the public record to see if amendments to this notice or procedural letters have been issued.

Procedures for filing comments

50. Submissions must be filed by sending them to the Secretary General of the Commission using **only one** of the following means:

by completing the
[Intervention/comment/answer form]

or

by mail to
CRTC, Ottawa, Ontario K1A 0N2

or

by fax to
819-994-0218

or

by ASL or LSQ video to
the Commission's YouTube page

51. The Commission will not formally acknowledge interventions or comments. It will, however, fully consider all submissions, which will form part of the public record of the proceeding. Submissions longer than five pages should include a summary.
52. Parties are reminded that, in accordance with the Rules of Procedure, if a document is to be filed or served by a specific date, the document must be actually received, not merely sent, by that date. A document must be filed with the Commission by 5 p.m. Vancouver time (8 p.m. Ottawa time) on the date it is due. The Commission takes no responsibility for postal delays and will not notify parties if their submissions are received after the deadline. Late submissions will not be considered by the Commission and will not be made part of the public record.

53. Each paragraph of all submissions should be numbered. In addition, the line *****End of document***** should follow the last paragraph. This will help the Commission verify that the document has not been damaged during electronic transmission.

Procedures for video interventions

54. To permit interested persons whose first language is ASL or LSQ to fully participate in this proceeding, the Commission will accept video interventions in ASL and LSQ in response to this notice. The deadline for submitting video interventions is **17 May 2013**. Video interventions are to follow the same procedures as written interventions, as set out in the previous sections of this notice, and indicate whether the person wishes to appear at the public hearing. The intervention must also indicate any requests for accommodation regarding such appearance at the public hearing.
55. All parties who filed video interventions may file video reply comments with the Commission by **26 August 2013**. Reply comments must respond only to interventions and answers to Commission questions previously submitted by other participants. Parties may also submit final video reply comments by **15 November 2013**.
56. The Commission will post English transcripts of ASL videos and French transcripts of LSQ videos on its website. Videos will be made public when the transcript becomes available. Intervenors may choose to submit written transcripts with their videos to facilitate the process.
57. For videos longer than fifteen (15) minutes, a brief summary should be provided at the beginning of the video.

Important notice

58. All information provided as part of this public process, except information granted confidentiality, whether sent by postal mail, facsimile, email, ASL or LSQ video, or through the Commission's website at www.crtc.gc.ca, becomes part of a publicly accessible file and will be posted on the Commission's website. This includes personal information, such as full names, email addresses, postal/street addresses, telephone and facsimile numbers, and any other personal information provided. ASL and LSQ videos will be posted on the Commission's YouTube channel. All personal information in such videos will be publicly available. Parties choosing to submit sign language videos should read YouTube's terms of service and privacy policies, and those of any applications they use to access YouTube.
59. The personal information provided will be used and may be disclosed for the purpose for which the information was obtained or compiled by the Commission, or for a use consistent with that purpose.
60. Documents received electronically or otherwise will be posted on the Commission's website in their entirety exactly as received, including any personal information contained therein, in the official language and format in which they are received. Documents not received electronically will be available in PDF format.

61. The information provided to the Commission as part of this public process is entered into an unsearchable database dedicated to this specific public process. This database is accessible only from the web page of this particular public process. As a result, a general search of the Commission's website with the help of either its search engine or a third-party search engine will not link directly to the information provided as part of this public process.

Examination of documents

62. Electronic versions of the documents referred to in this notice are available on the Commission's website at www.crtc.gc.ca by using the file numbers provided at the beginning of this notice or by visiting the "Public Proceedings" section of the Commission's website. The documents are accessed by selecting "View all proceedings open for comment," then clicking on the "View entire record" link associated with this particular notice. All interventions are also available on the Commission's website, at the same location, by clicking on the "Interventions" link associated with this particular notice.
63. Documents are also available during normal office hours at the Commission offices and documentation centres directly involved with these applications or, upon request, within two working days at all other Commission offices and documentation centres.

Location of CRTC offices

64. Submissions may be examined or will be made available promptly upon request at Commission offices during normal business hours.

Toll-free telephone: 1-877-249-2782

Toll-free TDD: 1-877-909-2782

Central Building
Les Terrasses de la Chaudière
1 Promenade du Portage, Room 206
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Fax: 403-292-6686

858 Beatty Street, Suite 290
Vancouver, British Columbia V6B 1C1
Tel.: 604-666-2111
Fax: 604-666-8322

Secretary General

Related Commission documents

- *Filing of joint supporting interventions*, Telecom Information Bulletin CRTC 2011-693, 8 November 2011
- *Accessibility of telecommunications and broadcasting services*, Broadcasting and Telecom Regulatory Policy CRTC 2009-430, 21 July 2009
- *Unresolved issues related to the accessibility of telecommunications and broadcasting services to persons with disabilities*, Broadcasting Notice of Public Hearing CRTC 2008-8 and Telecom Public Notice CRTC 2008-8, 10 June 2008, as amended by Broadcasting Notice of Public Hearing CRTC 2008-8-1 and Telecom Public Notice CRTC 2008-8-1, 24 July 2008, and Broadcasting Notice of Public Hearing CRTC 2008-8-2 and Telecom Public Notice CRTC 2008-8-2, 17 October 2008

- *Use of deferral account funds to improve access to telecommunications services for persons with disabilities and to expand broadband services to rural and remote communities*, Telecom Decision CRTC 2008-1, 17 January 2008
- *Small incumbent local exchange carriers' show cause – Follow-up to Telecom Decision 2006-14*, Telecom Decision CRTC 2007-109, 21 November 2007
- *Bell Aliant Regional Communications, Limited Partnership and Bell Canada – Application to extend certain time frames to equip pay telephones with teletypewriter units, established in Telecom Decision CRTC 2004-47*, Telecom Decision CRTC 2007-12, 27 February 2007
- *Reconsideration of Regulatory framework for voice communication services using Internet Protocol*, Telecom Decision CRTC 2006-53, 1 September 2006
- *Message relay service in a VoIP environment – Follow-up to Decision 2005-28*, Telecom Decision CRTC 2006-12, 16 March 2006
- *Disposition of funds in the deferral accounts*, Telecom Decision CRTC 2006-9, 16 February 2006
- *Regulatory framework for voice communication services using Internet Protocol*, Telecom Decision CRTC 2005-28, 12 May 2005, as amended by Telecom Decision CRTC 2005-28-1, 30 June 2005
- Telecom Order CRTC 98-1, 7 January 1998
- *Local Competition*, Telecom Decision CRTC 97-8, 1 May 1997
- *Newfoundland Telephone Company Limited – Revenue requirement for the years 1990 and 1991 and attachment of customer-provided multi-line terminal equipment*, Telecom Decision CRTC 90-15, 12 July 1990
- *Bell Canada – Review of revenue requirements for the years 1985, 1986 and 1987*, Telecom Decision CRTC 86-17, 14 October 1986
- *British Columbia Telephone Company – Voice Relay Service Centre*, Telecom Decision CRTC 85-29, 23 December 1985
- *British Columbia Telephone Company – General increase in rates*, Telecom Decision CRTC 85-8, 30 April 1985

Other related documents

- Groupe Consult-Com Techno, *Report on the Technical Feasibility of VRS Implementation in Canada* (translated), November 2012

- CONNECTUS Consulting Inc., *The Evolution of Alternative Communications Technologies for the Deaf, Hard of Hearing and Speech Impaired*, August 2012
- Mission Consulting, LLC, *VRS Feasibility Study – Final Report*, 4 April 2012, submitted by Bell Canada
- TELUS Communications Company, *Final Report – TELUS’ Video Relay Services Trial*, 14 March 2012
- Certain documents related to the proceeding initiated by Broadcasting Notice of Public Hearing 2008-8 and Telecom Public Notice 2008-8

Appendix A: VRS funding and administration models

Presented below are two examples of VRS models for consideration. These models are described at a high level and are intended solely to facilitate discussion. Comments need not be restricted to the models or options presented here. Potential comments could include why the following models should or should not be implemented, and whether or not the following options ensure efficient use of resources. Parties may include proposals for additional models or options not mentioned in this appendix.

Table 1: VRS funding and administration models

	Model A: Centralized fund	Model B: Mandate certain TSPs to provide VRS
Funding method	Create a new centralized contribution fund for the purpose of VRS	Each LEC will be responsible for managing its revenues and expenditures, as per status quo
Revenue source	Percentage of telecommunications revenues for TSPs with revenues greater than \$10 million	Same as current MRS funding
Administrator	Third-party administrator with a board consisting of representatives from all key stakeholders. The mandate would be determined with Commission involvement and continued oversight.	Not applicable, as each LEC is responsible for providing its customers with mandated relay services
VRS provider	Competitive bid – initial rollout should be one provider for ASL and one provider for LSQ	Each TSP will be responsible for providing the service directly, or through a third party
VRS provider compensation scheme	Fixed, pre-established rate. For example, the rate applied could be the rate set out in the successful bid resulting from a request for proposals process. This could be done by proposing a fixed number of operator positions to serve VRS users.	Not applicable – TSPs provide their own services and are responsible for their revenues and expenditures

	Model A: Centralized fund	Model B: Mandate certain TSPs to provide VRS
Call centre (VRS) platform	Determined by VRS provider. For example, the VRS provider may choose to make a joint bid with a VRS technology provider or to independently procure the VRS platform.	Determined by TSPs, but mandate interoperability
	Mandate interoperability and recommend Session Initiation Protocol (SIP)-based family of standards	
Operator location	Call centres with option for operators to telework, so that impact on community interpreting is minimized	Call centres with no prohibition to telework; however, this would be determined by the TSPs
Network	Public Internet	Public Internet
Consumer devices	Consumer's choice, but limited to devices that are compatible with the VRS platform	Consumer's choice, but limited to what their VRS provider (TSP) offers

Appendix B: Methodology

This appendix describes the method followed to obtain the projected number of VRS users provided in paragraph 9 of this notice. The lower boundary was presented by the Bell Canada study,¹⁵ and the upper boundary was estimated using the methodology presented below.

Projected number of users

The Bell Canada study, completed by Mission Consulting, LLC, forecast the number of VRS users by applying American estimates as a proxy.¹⁶ Using Statistics Canada census results to forecast the number of VRS users, as described below, results in an estimate of 19,908 VRS users. This forecast is almost 30 percent higher than the estimate of 15,345 users found in the Bell Canada study. Using the estimates derived from the two separate methodologies, the range of projected users is thus estimated to be between 15,345 and 19,908 at full saturation.

Statistics Canada's 2006 PALS shows that in the 2006 census year, 35,470 adults (ages 15 and over) self-reported as having a hearing or communication limitation and using sign language, while 2,620 children (ages 14 and under) with a hearing limitation reported using sign language to communicate. As the census survey addressed adults and children separately, the calculation set out below does the same.

Adults (ages 15 and over)

Respondents who reported a hearing limitation, but not necessarily a communication limitation, answered follow-up questions which revealed that

- of those who used sign language, almost half (49.8 percent) used ASL, 23.1 percent used LSQ, and 27.1 percent used a sign language other than ASL or LSQ; and
- nearly one half (48.2 percent) of all people with a hearing limitation who used sign language said they have never used the services of a language interpreter;¹⁷ therefore, 51.8 percent have used such services.

The information above was used as follows to obtain the forecast number of VRS users:

- 1) The percentage of people with a hearing limitation who have used the services of a language interpreter (51.8 percent) was used as a proxy for the percentage of sign language users who would use VRS. This percentage was applied to the total number of adults with a hearing or communication limitation who use sign language (35,470) to get the forecast number of adult VRS users (18,373).

¹⁵ Bell Canada study, Phase 9 – Forecasts of VRS User Demand

¹⁶ Bell Canada study, Phase 9 – Forecasts of VRS User Demand

¹⁷ *Statistics Canada Participation and Activity Limitation Survey of 2006: A Profile of Assistive Technology for People with Disabilities*. The reasons for not using the service of a language interpreter were not cited in the Statistics Canada report.

- 2) It is assumed that individuals who use a sign language other than ASL or LSQ are not likely to use the services of a language interpreter, due to lack of availability of interpreters in sign languages other than ASL or LSQ. This assumption was also applied to VRS.
- 3) Therefore, 68 percent of VRS users will use ASL and 32 percent will use LSQ. These percentages were applied to the forecast number of adult VRS users (18,373) to obtain the breakdown of forecast VRS users by language.

Table 2: Adult users

	Number of sign language users	Forecast number of adult VRS users (15+)
ASL	17,664	12,494
LSQ	8,194	5,879
Other	9,612	0
Total	35,470	18,373

Children (ages 14 and under)

Statistics Canada’s 2006 PALS reveals that 2,620 children aged 5 to 14 with a hearing limitation, but not necessarily a communication limitation, use sign language. Of that number,

- 41.4 percent reported that they have never used the services of a sign language interpreter; the assumption is that the remaining 58.6 percent have done so; and
- 78.5 percent reported using ASL.

Similar to the methodology used to forecast the number of adult VRS users, the following two-step process was applied:

- 1) The percentage of children with a hearing limitation who have used the services of a language interpreter (58.6 percent) was used as a proxy for the percentage of sign language users who would use VRS. This percentage was applied to the total number of children with a hearing limitation who use sign language (2,620) to get the forecast number of children who will use VRS (1,535).
- 2) The ratio of ASL to LSQ use among children, versus a sign language other than ASL or LSQ, is not reported. It is known that 78.5 percent of children use ASL, as per the number reported above. Using an over-estimate, it is assumed that the remaining 21.5 percent use LSQ. Assuming this ratio of ASL to LSQ users, it is forecast that 1,205 children will benefit from an ASL VRS offering, and 330 children will benefit from an LSQ VRS offering.

Total forecast VRS users

The total number of forecast users of VRS, obtained by adding the forecast number of adult VRS users to the forecast number for children, is 19,908. The Bell Canada forecast and the forecast based on Statistics Canada data are presented below as two possible methods of projecting the number of VRS users and thus offer a possible range for the projected number of VRS users.

Table 3: Total forecast VRS users

	Bell Canada forecast	Forecast based on Statistics Canada data
ASL	11,816	13,699
LSQ	3,529	6,209
Total	15,345	19,908