

33. Simply conforming to the standards in the VRS Access Technology Standards Profile that is ultimately specified will be insufficient for achieving interoperability in as much as any given standard is likely to have numerous optional features from which to choose. Thus we propose that the necessary specification of protocol options and parameters necessary to meet the specific requirements will be agreed by VRS Provider industry consensus in consultation with VRS access technology developers and producers.<sup>28</sup>

#### B. Transitional Interoperability Requirements

34. To facilitate the transition to a fully interoperable system that allows for full service interoperability and portability among providers, we outline a proposed transitional set of standards below. It is important to note that in both the “Transitional” and “Final” states the networks are communications protocols are SIP-based; the “Transitional” state is not an intermediate hybrid mix of H.323 and SIP technologies. This set is selected to allow existing VRS access technology hardware to be upgraded or managed through protocol conversion techniques until it can be replaced by the “Final” state. At the end of the transitional interoperability deadline, we propose that all VRS access technology must support the functionality outlined in the column labeled “Transitional” below. At the beginning of the final interoperability deadline, we propose that all systems must support the functionality in the right-most column. This functionality corresponds to the more detailed description above.

Functionality	Now	Transitional	Final
Internet data transport	IPv4, UDP, TCP, DNS, DHCP	same + IPv6	same as transitional
NAT traversal	-	STUN	ICE/STUN
Web access	HTTP	HTTP, HTTPS	same as transitional
Time synchronization	-	SNTP	SNTP
NG9-1-1 support	-	-	HELD, LoST, SIP
Device configuration	-	XCAP	same as transitional
Call signaling	H.323	SIP	same as transitional
Session description	H.323	SDP	same as transitional
Media transport	RTP	same	same
Audio and video	G.723.1, G.711, H.263	same	same + H.264
Real-time text	-	-	RTT
Contact list	-	vCard ex/im [server]	vCard network access
Speed dial list	-	file ex/im [server]	file network access

Table 2. VRS Access Technology Standards Transition.

#### C. Discussion

35. We seek comment on the proposed VRS Access Technology Standards Profile and transitional interoperability approach described above. Is the Profile consistent with mass market commercial-off-the-shelf videophone technology directions? What are the practical realities of implementing an intermediate set of SIP-based standards, for example, to allow existing hardware to be upgraded or managed through protocol conversion techniques? Is there a more appropriate mix of

<sup>28</sup> See *supra* para. 21.

standards to meet a transitional functionality state? Would it be more beneficial to simply move to the final state without going through an intermediate transition?

## Appendix B – Attachment

### Suggested Standard Options

1. In this Attachment to Appendix B we describe in more detail our proposal for how specific industry standards could be applied to provide the functionalities necessary to meeting the Commission's policy objectives. We emphasize that this material is provided for discussion purposes only, in order to lend more substance to the abstract VRS Access Technology Standards Profile above.<sup>1</sup> We envision that the final choices and mechanisms would be determined through an industry consensus process.

#### I. ACCOUNT MANAGEMENT

2. The following sections describe the communications between VRS access technology and VRS Provider and illustrate the relevant protocol exchanges, including the VRS access technology user's manual information entry and the VRS Provider to iTRS Numbering Directory exchanges when needed.

##### A. Set-up

3. Consensus specifications may include the security requirements on passwords and the generation and use of Universally Unique Identifier URNs.

4. The default provider must establish authentication information for the user including a unique username, the telephone number assigned to the user, and a password.

5. The default provider must communicate the authentication information and the provider's DNS domain to the user using an appropriate level of security. The precise mechanism is unspecified. The default provider may also preset information in the device software that enables the VRS access technology to automatically connect to the default provider and obtain authentication information.

##### 1. Acquisition of IP and DNS Settings

6. Upon initialization a standalone VRS access technology initiates a standard Dynamic Host Configuration Protocol exchange with the Internet Service Provider to obtain IP address, DNS addresses and other configuration options. In the case where the user has a device that has already executed a standard DHCP exchange, such as the user's Network Address Translator (NAT), this exchange may be between the VRS access technology and the NAT.

7. The VRS access technology user interface must present the user the option to specify a default VRS Provider DNS domain, the account username, the phone number assigned the VRS access technology, and the password provided by the default VRS Provider. The format is undefined. The VRS access technology may store this information for subsequent reference, while providing the option for the user to re-enter the information.

##### 2. Detection of Public IP Address

8. It is assumed that most VRS access technologies will be separated from the Internet by a device performing Network Address Translation (NAT), such as a residential wireless router or an enterprise firewall. A NAT device will assign the VRS access technology a private IP Address that only has significance in the local network. Therefore the VRS access technology must communicate with the VRS Provider's STUN server to discover the VRS access technology's public IP address using the Simple Traversal UDP through NATs (STUN) protocol and algorithm specified in RFC 3489.<sup>2</sup>

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<sup>1</sup> See Appendix B, para. 32.

<sup>2</sup> Although original STUN specification (RFC 3489) has been superseded by the Interactive Connectivity Establishment (ICE) approach for using the Session Traversal Utilities for NAT (RFC 5389) the simpler, original

(continued....)

9. The STUN protocol allows a VRS access technology operating through a Network Address Translator to detect the presence of the Network Address Translator and to obtain the mapped public IP address (*i.e.*, the NAT's address) and the port number that the NAT has allocated for VRS access technology UDP connection to a VRS Provider.

10. The VRS access technology determines the IP address of the VRS Provider's STUN service by querying the DNS for a STUN Service (SRV) record for the VRS Provider' domain name. The VRS access technology then sends a unique binding request to the STUN server to obtain the public IP address that can be used to reach the VRS Videophone from the rest of the Internet. Other possibilities include using a NAPTR request, or specifying the use of shared-secret mechanism.

### 3. Acquisition of UTC Time

11. The VRS access technology will update its time setting by making a single request for the UTC time of a single Network Time server (Simple Network Time Protocol). The VRS access technology determines the IP address of a Network Time server to query by sending a DNS query to *us.pool.ntp.org*, which replies with IP addresses of three servers selected at random from the pool of U.S.-based servers. The VRS access technology queries a Network Time server on port 123 which replies with the current UTC timestamp.

### 4. Initial Configuration

12. The VRS access technology determines the URL of the VRS Provider's Configuration Service by querying the DNS for Naming Authority Pointer URI-enabled Resource Records (U-NAPTR records) for the VRS Provider' domain name. The VRS access technology selects the return records for which the service field value is "SFUA.CFG" (SIP Forum User Agent Configuration Service) and extracts the HTTPS URL of the provider's Configuration Service.

13. The VRS access technology adds Configuration Request parameters identifying the VRS VP user, vendor, model, etc., and then uses HTTPS to download configuration information from the provider's Configuration Service. Since the Configuration request scheme uses HTTPS, the VRS access technology must use Transport Layer Security to connect with the Provider's Configuration Service. The Provider may use HTTP redirection to retrieve the appropriate configuration.

### B. Authentication – General

14. The VRS access technology must use HTTP digest authentication when connecting to the VRS Provider Register service (*i.e.*, on REGISTER messages) or Redirect service (*i.e.*, INVITE messages). Digest authentication verifies that both the VRS access technology and the VRS service know a shared password. The mechanism is based on cryptographic hashes to ensure that the user's password is not transferred in the clear. See RFC 3261, Section 22 for implementation details.

15. The provider Registration service (Registrar) and Redirect service must use the identical credentials for authenticating a VRS access technology, either from a common database or from tightly-synchronized databases. VRS access technology and provider services must support quality of protection at the "authentication" level ("qop=auth") using the MD5 algorithm ("algorithm=MD5"). Other alternatives include "authentication with integrity," or that authentication may be facilitated by providing on initial configuration a cryptographic (X.509) certificate for the phone number assigned to the user.

(Continued from previous page) \_\_\_\_\_  
STUN specification is sufficient for detecting the VRS Videophone address, particularly in typical residential networks.

16. A VRS service authenticates a user by generating and sending a digest challenge to the VRS access technology containing a set of parameters. The VRS access technology uses the parameters to generate a digest reply with credentials that is sent back to the VRS service. The parameters sent by the service ensure that the credentials have been generate in response to a particular challenge and within a limited time span.

17. The VRS access technology must allow the user the option to request to change his phone number and password. Once the changes are implemented by the provider the VRS access technology will display a 401 response from the Registrar or Redirect service and enable the user to manually enter the changes.

18. If an attempt to register with the user's current default provider returns a 404 failure response, the VRS access technology must display it and present the user the option to enter a provider DNS domain, assigned phone number, and password. This failure indicates that the specified provider is no longer the default provider for the user's number.

### C. Registration

19. Registration creates a binding that associates the VRS access technology's location (*i.e.*, URI) with its phone number. Registration entails sending a REGISTER request to a VRS Provider's Registration service (Registrar). The Registrar acts as the front end to the VRS Provider's location service, which maintains bindings between the VRS access technology telephone number and URI, for those VRS access technologies for which the VRS Provider is the default provider.

20. The Registrar is also the front end to the FCC iTRS Numbering Directory which is the national location service in which the phone number-to-URI bindings for all VRS access technologies are stored. Typically, when a VRS Provider is requested to complete a call to a telephone number, it first checks its own location service, then the national location service (the iTRS Numbering Directory) to see if the number is the number of a registered VRS access technology (see Placing and receiving Calls).

21. The VRS access technology is responsible for refreshing the binding that it has previously established. The 200 (OK) response from the register contains an Expires field value that indicates the time for the binding expiration. The VRS access technology must refresh its registration before it expires. (*See RFC 3261 10.2.4.*)

## II. ACCOUNT PORTING

22. When a user wants to port his service to another provider, the following steps take place:
- a. The user calls the new VRS provider, using their advertised 10-digit customer care number. (The numbers of all licensed VRS providers may be stored by default in the user contact list.)
  - b. The new provider initiates a number porting operation. As part of this operation, the new and old providers are notified when the porting has occurred.
  - c. When the number porting has completed, the new VRS provider initiates a call to the VRS user. The call information contains a SIP header that points, via an HTTPS URL, to new configuration data containing the user's user name, password, domain name and 10-digit phone number.
  - d. Alternatively, the VRS access technology may attempt to register (via SIP REGISTER) with the old provider. Since the old provider no longer maintains the registration record after porting, this returns a 404 error code, which triggers a query to a pre-defined iTRS-provided HTTP URL, which then redirects to the appropriate

new VRS provider.

Alternative: The old provider maintains the old credentials for a limited time and provides the VRS access technology with a randomized URL that allows the VRS access technology to obtain the new configuration for the iTRS. This assumes that the provider can obtain such a URL from the iTRS. This approach avoids the need for PIN.

- e. The VRS access technology retrieves this information via HTTPS. To ensure that only VRS access technologies owned by the legitimate user obtain these credentials, the user is provided with a 4-digit PIN during the porting operation and needs to enter this PIN. (Repeated false entry of the PIN blocks further retrievals.)

### III. PLACING AND RECEIVING CALLS

23. FCC rules enable VRS users and telephony users to reach one another through the VRS using the standard geographically-appropriate 10-digit phone numbers allocated from the North American Numbering Plan (NANP). The system also enables users to establish a video link directly between one another using their 10-digit phone numbers.

24. The VRS provider's Redirect service (see Figure 1) supports these functions by looking up the called party's 10-digit telephone number in databases created by the Registration process and redirecting the call as appropriate. If the called party's telephone number is found in the VRS provider's own Location service database of 10-digit telephone numbers for VRS access technologies or in the FCC's national Location service (iTRS Numbering Directory) of all VRS access technologies, then the call is to another user's VRS access technology and the video link will be set up between the two Internet-based VRS access technologies using SIP signaling procedures.

25. If the 10-digit telephone number is not found in the iTRS Numbering Directory, then it is assumed to be the number of a voice telephone accessible via the public switched telephone network. In this case the video link will be set up between the calling VRS user's VRS access technology and the VRS access technology of a VRS Provider's Communications Assistant via the provider's VRS Call Queue service. The CA relays the VRS user's signed conversation as a voice conversation with a voice telephony user to whom the CA has been connected via the PSTN.

26. The Redirect service performs the lookups, creates a list of one or more current URI mappings for the called number and returns the list to the VRS access technology originating the call. The VRS Videophone then extracts the list of URIs and sends another request directly to the called party. See Sections 8.3 and 21.3 of RFC 3261 for more details.

## APPENDIX C

## Calculating At Scale Target Compensation Rates

## I. DEFINITIONS

1. We must define certain classes of users in order to establish the proposed per-user compensation mechanism contemplated in this *Further Notice*. These terms are defined in relation to the term Registered Internet-based TRS User, set forth in section 64.603(18) of our rules. We seek comment on each of these proposed definitions.

2. *VRS User*. An individual who is deaf, hard of hearing, deaf-blind, or has a speech disability who has registered with a VRS provider as described in section 64.611 of our rules.<sup>1</sup>

3. *New VRS User*. A VRS user who has not previously registered with a provider of Internet-based TRS pursuant to section 64.611 of the Commission's rules.

4. Should there be a time period included in the definition of New VRS User? For example, should the definition read ". . . has not registered with a provider . . . in the preceding 24 months?" If so, what would the appropriate time period be? How would it be justified given that the compensation for New VRS Users is intended to cover the extra expense of finding users who were previously unaware of VRS, which would presumably exclude individuals who had previously registered for the service.

5. *Enterprise VRS Employer*. A valid, ongoing business concern that (i) has been assigned an Employer Identification Number by the Internal Revenue Service;<sup>2</sup> (ii) employs one or more VRS Users; and (iii) has entered into a written agreement with a provider of VRS certified pursuant to section 64.604 of the Commission's rules to provide VRS to its employees that use VRS in the normal course of their employment.

6. *Enterprise VRS User*. A VRS User who is employed by an Enterprise VRS Employer.

7. With respect to the definition of Enterprise VRS Employer, we seek comment on the additional requirements that should be established to ensure that businesses are not formed solely for the purpose of qualifying as an Enterprise VRS Employer. Should we require additional proof that a business is a valid and ongoing concern, like an SBA certification for small businesses?<sup>3</sup> We also seek comment on how to classify individuals who have multiple jobs or who are self-employed.

8. *Active User*. A VRS User or Enterprise VRS user that meets the minimum monthly usage requirement described below.

9. With respect to the definition of Active Users, we propose to define an "active user" in a given month as a VRS user who makes at least two minutes of outbound calls to parties that are not affiliates of any VRS provider during that month. We note that this qualifying threshold for compensation is set far below the average minutes of VRS per user assumed in the calculating the per user rate to serve as a *de minimis* screen on inactive accounts. We seek to find a balance between a high threshold, which might leave providers serving an unreasonable number of users without compensation,

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<sup>1</sup> See *Further Notice* n. 45.

<sup>2</sup> See United States Internal Revenue Service, Employer ID Numbers (EINs), <http://www.irs.gov/businesses/small/article/0,,id=98350,00.html>; United States Internal Revenue Service, Understanding your Employer Identification Number, available at <http://www.irs.gov/pub/irs-pdf/p1635.pdf>.

<sup>3</sup> United States Small Business Administration, Small Business Certification, <http://www.sba.gov/content/small-business-certification-0> (last visited Sept. 9, 2011).

and a low threshold, which might be vulnerable to fraudulent stimulation of calls (for the same reason we define the threshold in terms of *outbound* minutes, which are likely harder to stimulate fraudulently). We seek comment on this proposed two outbound minutes per month minimum threshold level, and in particular encourage parties to submit actual historical data regarding outbound call distributions to support their comments. Are there other steps the Commission should take to ensure that providers are compensated only for actual, legitimate VRS users?

## II. DETERMINING THE SCALE CURVE AND MINIMUM EFFICIENT SCALE

10. As discussed in section IV.C of this *Further Notice*, a VRS provider's cost structure exhibits a scale curve and so there is a corresponding minimum efficient scale of operation. It follows that if the total demand for the provision of VRS is divided up among too many players, many will by necessity operate below the minimum efficient scale, leading to little meaningful increase in consumer choice but inefficient operation of, and unnecessary costs for, the Fund.<sup>4</sup> This is the case today, where a single entity is responsible for the vast majority of minutes of use billed to the Fund and serves as default provider for most VRS users, while a number of subscale providers are supported through the tiered rate structure.

11. From the perspective of the Fund, the most efficient solution might be to simply enter into a contract with a single provider so as to maximize the chances of that provider operating at minimum efficient scale. This solution could, however, lead to a potentially unacceptable lack of consumer choice.<sup>5</sup> Conversely a large number of providers could lead to an unacceptable level of inefficiency in the operation of the Fund. We therefore seek a reasonable balance between efficiency and the freedom of users to have more than one choice of VRS service provider.

12. Currently, there are twelve providers eligible to receive compensation from the Fund for providing VRS.<sup>6</sup> Given the Commission's adoption of new certification rules, it is possible that the

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<sup>4</sup> For example, suppose that there are 200,000 potential users, and minimum efficient scale for a provider is achieved when that provider serves at least 50,000 users. In that scenario, an efficient industry structure contains at most four providers, each with 50,000 users if the market shares are equal, and potentially fewer providers if the shares are unequal. A decision to ensure that there are five or more providers would inevitably lead to the support of sub-scale players and unnecessary costs. We note that while this might be acceptable for a short period of time while market shares are in flux, there would be no reason to support it in the long term.

<sup>5</sup> *2010 VRS Reform NOI*, 25 FCC Rcd at 8615, para. 63 ("How can we encourage competition that would reduce the costs of VRS?"); *2007 TRS Rate Methodology Order*, 22 FCC Rcd at 20169, para. 77 ("the Commission has recently encouraged competition in the provision of VRS"); Consumer Groups' TRS Policy Statement at 5 (stating that one of five goals for VRS should be "Competition & Choices"). We note, however, that if – in a competitive environment – the vast majority of users choose a single provider, as long as the threat of new entry is present, the extra expense and complication of supporting competitors may not be appropriate.

<sup>6</sup> Rolka Loubé Saltzer Associates, TRS Fund Performance Status Report, Funding Year July 2010 – June 2011, Fund Status as of July 31, 2011, available at <http://www.r-l-s-a.com/TRS/reports/FundPerformanceAsof7-31-11.pdf> (RLSA July 31, 2011 Fund Status Report); *Notice of Conditional Grant of Application of Hancock, Jahn, Lee & Puckett, LLC d/b/a Communication Access Ability Group for Certification as a Provider of Video Relay Service Eligible for Compensation from Interstate Telecommunications Relay Service Fund*, CG Docket No. 10-51, Public Notice, DA 11-1903 (rel. Nov. 15, 2011); *Notice of Conditional Grant of Application of ASL Services Holdings, LLC for Certification as a Provider of Video Relay Service Eligible for Compensation from Interstate Telecommunications Relay Service Fund*, CG Docket No. 10-51, Public Notice, DA 11-1902 (rel. Nov. 15, 2011); *Notice of Conditional Grant of Application of Convo Communications, LLC for Certification as a Provider of Video Relay Service Eligible for Compensation from Interstate Telecommunications Relay Service Fund*, CG Docket No. 10-51, Public Notice, DA 11-1901 (rel. Nov. 15, 2011).

number of certified providers will change.<sup>7</sup> We seek comment on the shape of the cost curve in the VRS industry (*i.e.*, how a provider's cost per user varies with its number of users), the number of users at which minimum efficient scale is achieved, and the actual and potential size of the VRS market. Providers should submit quantitative information to support their comments.

### III. CALCULATING TARGET BASE RATES

#### A. Residential Rate

13. The direct costs of providing the core of VRS fall into three categories: CA-related (*i.e.*, interpretation) costs and related overhead (*e.g.*, call center facilities, telecom costs, direct CA supervisory functions); costs related to end user iTRS access technology (*e.g.*, product development, installation, customer support); and general and administrative (G&A) costs (*e.g.*, general managerial staff). We propose to set the monthly per-user compensation rate for VRS providers after the transition period as the total of the reimbursement amount for each of these cost categories and seek comment on whether these cost categories are appropriate and the appropriate per user costs for each for an at-scale VRS provider (corresponding to R\* in Figure 3 above).<sup>8</sup> For illustration, a rough estimate of the appropriate rate may be calculated as follows:

14. *CA-related cost.* CA-related cost per-user equals the average number of VRS minutes per user (inbound and outbound) times the CA cost per minute (including overhead) divided by the CA utilization. We note that, by definition, if the minutes assumed per user is set at the average level, then providers will be adequately compensated even though some users may generate more minutes and others less in a given month.<sup>9</sup> Further, as providers are assumed to be at scale, there is no reason to think that the average will vary between providers for legitimate reasons, particularly if enterprise users (who may have systematically higher minutes of use per user) are excluded. We seek comment on this reasoning. If, for example, an average user generates 70 VRS minutes per month, the CA salary including overhead is \$60 per hour, and CAs are, on average, utilized for 25 minutes per hour (or at ~40%), then the effective CA-related cost per user =  $70/60 * \$60 / 40\% = \$175$  per user per month. We seek comment on this estimate, and request that such comments be supported by actual data.

15. *iTRS access technology cost.* If we determine that we can and should provide TRS support for iTRS access technology costs, an estimate for the corresponding cost might be \$650 every two years, or \$27 per month for the cost of iTRS access technology and installation. For comparison we note that the reported average retail computer price in the United States was \$615 in 2010,<sup>10</sup> the current retail

<sup>7</sup> See generally 2011 VRS Certification Order. See also *supra* para. 24.

<sup>8</sup> We remind commenters that the Commission previously has stated that “the ‘reasonable’ costs of providing service for which providers are entitled to compensation do not include profit or a mark-up on expenses. Providers are entitled to their reasonable costs of providing service consistent with the mandatory minimum standards, as well as an 11.25% rate of return on capital investment so that they are not left to finance reasonable capital investments out of pocket.” 2007 TRS Rate Methodology Order, 22 FCC Rcd at 20161, para. 49 (footnote omitted); see also 2004 TRS Report & Order, 19 FCC Rcd at 12542-45, paras. 177-182.

<sup>9</sup> For example, suppose a provider has 5 users with 40, 50, 60, 80, and 120 minutes of VRS usage per month. The average use is  $(40+50+60+80+120)/5 = 70$  minutes per user per month, and so, assuming a per user rate based on 70 VRS minutes per user, will lead to effective compensation for  $5*70=350$  minutes if use, the same as a per minute scheme (but without the incentives to inflate minutes of use and other problems with a per minute methodology described above).

<sup>10</sup> See, *e.g.*, Ben Worthen, *Rising Computer Prices Buck Trend*, Wall St. J., [http://online.wsj.com/article/SB10001424052748704681804576017883787191962.html?mod=rss\\_whats\\_news\\_technology&utm\\_source=feedburner&utm\\_medium=feed&utm\\_campaign=Feed%3A+wsj%2Fxml%2Frss%2F3\\_7015+%28WSJ.com%3A+What%27s+News+Technology%29](http://online.wsj.com/article/SB10001424052748704681804576017883787191962.html?mod=rss_whats_news_technology&utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+wsj%2Fxml%2Frss%2F3_7015+%28WSJ.com%3A+What%27s+News+Technology%29).

price of an Apple iPad2 – including a docking station, an HDMI connector and shipping that would make it suitable for VRS usage at least equivalent to much current iTRS access technology – is \$499.<sup>11</sup> CSD's Project Endeavor is offering a variety of VRS suitable equipment for \$130-\$300 (including a variety of netbooks, smartphones, and tablets, including the iPad2),<sup>12</sup> and that the VP-200, which makes up the majority of the installed base of VRS equipment, was first introduced almost 5 years ago.<sup>13</sup> We seek comment on this estimate, and request that such comments be supported by actual data.

16. We seek comment on whether it is appropriate to link the duration of any equipment compensation cycle (*e.g.*, the two years proposed in the preceding paragraph) to the length of any service contracts allowed under our rules.<sup>14</sup> Such a linkage might be appropriate to ensure that providers recover the full cost of any equipment provided to their users. We note, however, that consumers will not always require new equipment when registering with a VRS provider (as they may bring their own equipment, either purchased off-the-shelf or obtained from a previous provider) or at the end of an equipment compensation cycle. Further the new-to-category incentive payment may help to defray the cost of providing equipment to new users.<sup>15</sup> *G&A costs*: This covers other general and administrative costs incurred by providers, such as product development, general managers, and so forth. We might assume a 40% margin above the direct CA and iTRS access technology costs to cover indirect costs, that is  $40\% * (\$175 + \$27) = \$81$  per user per month. We seek comment on this estimate, and request that such comments be supported by actual data.

17. Given the above, we might, illustratively, estimate an appropriate level for the at-scale target base rate reimbursement per user at  $\$175 + \$27 + \$81 = \$283$  per user per month, or \$3,400 per user per year for expenses directly related to providing VRS.<sup>16</sup> Going back to the assumed minutes of VRS usage per user in this estimate, we note that this cost as calculated – which excludes the cost of broadband and of the proposed one-time payment for adding new-to-category users (which should replace some of the current marketing and outreach expenses) – corresponds to \$283 per user per month / 70 minutes per user per month  $\approx$  \$4 per minute. However, as the above calculations make clear, an incremental minute of use does not generate an extra \$4 of costs, as the CA-related cost only accounts for  $\$175 / \$283 \approx 60\%$  of the total cost, and not all of that varies by the minute of VRS usage, as it includes CA-related overhead. This highlights the potential structural weakness of the current per minute compensation methodology.

18. We seek comment on this rough estimate of the target per-user compensation rate and on the methodology and inputs used to calculate it, and urge commenters to submit other proposals for calculating a reasonable per-user compensation rate, supported by actual data from their experience. As outlined above, the methodology for setting the at-scale per user rate is relatively straightforward and transparent, and once in place can be easily revisited in the face of changing circumstances. For example, if, at the time at which the target base rate is reached ( $t_{\text{final}}$  in Figure 3) the average number of VRS

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<sup>11</sup> See Apple, Apple Store, Select an iPad2, [http://store.apple.com/us/browse/home/shop\\_ipad/family/ipad/select](http://store.apple.com/us/browse/home/shop_ipad/family/ipad/select) (last visited Sept. 9, 2011).

<sup>12</sup> See Press Release, CSDVRS, Project Endeavor New Equipment Offerings Feature Up to 50 Percent Off Handhelds, Tablets and More, available at <https://app.e2ma.net/app/view:CampaignPublic/id:14147.10669337199/rid:e9a1d9369529b2d4e1e3a25e1c9933ae>.

<sup>13</sup> See Sorenson, Company Timeline, [http://www.sorenson.com/company\\_timeline](http://www.sorenson.com/company_timeline) (last visited Sept. 8, 2011).

<sup>14</sup> See *Further Notice* section V.B.5.

<sup>15</sup> See *Further Notice* section IV.A.2.

<sup>16</sup> As noted above, we recognize that a VRS call involves two parties. We are proposing that the compensation amounts be determined per ASL user for accounting purposes only.

minutes per user has legitimately increased, or the actual cost of equipment has decreased, it is a simple arithmetical exercise to adjust the rate  $R^*$ .

#### **B. Enterprise User Rate**

19. The average minutes per user for ASL users of VRS at work may be significantly higher than average, and so we propose that VRS providers be compensated separately for the service provided to Enterprise VRS Users.

20. For example, using the same illustrative methodology described above, but with twice as many VRS minutes per user per month (*i.e.*, 140 minutes/user per month) yields a rate of \$528 per user per month for each enterprise user. We seek actual data on the differences between the costs of serving enterprise and residential users. For example, what is the difference in the number of minutes per user? Is the difference significant enough outweigh the extra complexity of introducing a separate enterprise rate, or should enterprise users rather just be considered at the high end of the distribution curve used to calculate a blended per user rate?

21. We propose that VRS Providers be required to provide proof to the Fund Administrator that individuals they seek compensation for at the enterprise user rate are, in fact, active Enterprise VRS Users, with such proof subject to audit by the Administrator. We propose that at a minimum, VRS Providers submit to the Administrator (i) the Enterprise VRS Employer's EIN and (ii) the unique user ID's of each Enterprise VRS User. We further propose that a VRS provider that seeks compensation for Enterprise VRS Users maintain, during the period for which they seek such compensation and a period of five years thereafter, a copy of the written agreement with a provider of VRS certified pursuant to section 64.604 of the Commission's rules to provide VRS to its employees that use VRS in the normal course of their employment. We seek comment on these proposals, including whether the provision of the employer's EIN and the unique user ID of each Enterprise VRS User would pose any privacy concerns for VRS users. To the extent they would, are there other ways by which the Commission could verify Enterprise VRS Users?

22. We propose that, for purposes of administering the VRS program as proposed herein, each enterprise user be assigned a separate telephone number by their employer for use in the course of their employment. This will better enable the VRS provider and the Fund Administrator to identify minutes of use generated by Enterprise VRS Users in the course of their employment, which will in turn facilitate accurate recordkeeping and oversight.

23. Given that the higher enterprise user compensation rate is based on the assumption that the enterprise user has higher average monthly minutes of use, should we require VRS providers to demonstrate that each enterprise user for which they seek compensation is, in fact, utilizing VRS at a higher rate? For example, should the Commission require that a VRS provider seek compensation for a user at the enterprise user rate only if their work related minutes of use are above a certain threshold? If so, what should that threshold be?

#### **C. Reimbursement**

24. We propose that the Administrator reimburse each provider on a monthly basis based on the number of active VRS users and active Enterprise VRS Users during that month. We seek comment on this proposal.

#### **D. Request for Data**

25. We also request that providers submit to the Commission data to assist in our assessment of the costs of providing VRS. We are mindful of the sensitive nature of such materials, but also of the right of the public to participate in this proceeding in a meaningful way. We will therefore, if so requested by parties to this proceeding, make such information available to participants in this proceeding

pursuant to a protective order that will give appropriate access to the public while protecting proprietary and confidential information from improper disclosure.

## APPENDIX D

## VRS User Database (VRSURD)

## I. DATABASE FUNCTIONS

1. We propose that the VRSURD should facilitate four primary functions: (i) ensure that each user has one default provider, (ii) facilitate identification of new-to-category users, (iii) facilitate the operation of the TRS Broadband Pilot Program discussed in Appendix A, and (iv) facilitate efficient program administration.

**A. Ensuring Only One Provider is Compensated for each Residential User and Enterprise User**

2. Under a per-user compensation system, a VRS provider must be able to determine whether an individual seeking to register with that VRS provider as his or her default provider is already registered with another VRS provider. A VRS user registry database would make it possible for a VRS provider to ensure that it is not providing service to, and seeking compensation for providing service to, a residential user or an enterprise user that is receiving service from another VRS provider.

**B. TRS Broadband Pilot Program**

3. As set forth in section IV.A.1 of this *Further Notice*, we propose to create a TRS Broadband Pilot Program that will utilize the TRS Fund to subsidize broadband Internet access for low-income deaf, hard of hearing, deaf-blind, or speech disabled Americans who use VRS. VRS providers, broadband providers, and the TRS Fund Administrator all must be able to determine whether a consumer is eligible for support, and whether reimbursement for broadband Internet access is due to a provider, under the TRSBPP. A VRSURD would make this possible.

**C. New-to-category Identification**

4. As set forth in section IV.A.2 of this *Further Notice*, we propose to implement a "new-to-category" compensation mechanism to defray the cost of bringing those users online. A VRS user registry database would make it possible for VRS providers, broadband providers, and the TRS Fund Administrator to determine whether an individual seeking to register with that VRS provider as their default provider qualifies as new-to-category or is transferring from an existing provider.

**D. Facilitate Efficient Program Administration**

5. A VRSURD would provide a reliable source of data on the number of VRS users – data the Commission does not currently possess, and the impact of the TRSBPP. In addition, the VRSURD would facilitate efforts by the TRS Fund Administrator and the Commission to conduct audits, determine compliance with the Commission's rules, and minimize the possibility of waste, fraud, and abuse.

6. We seek comment on these proposed functions for the VRSURD. What other functions might the database fulfill? Are there other benefits that would flow from the creation of a registry of VRS users?

## II. INFORMATION TO BE PROVISIONED

7. We seek comment on the nature of the information that should be provisioned to the VRSURD. Given the functions proposed in Appendix D, section I above, we propose below a set of data elements to be provisioned to the VRSURD.

**A. User Identifying Information****1. Residential Users**

8. We propose that VRS providers provision for each of their residential users, upon default provider registration, information sufficient to identify that user, including, at a minimum, their name and residential addresses. We seek comment on this proposal, and on whether additional user identifying information, such as a unique user ID, TND, customer profile info (*i.e.*, information that would fall under section 64.404(c)(7) of the Commission's rules), should be gathered from users to facilitate the database functions described above.

9. We propose that each VRS user registered in the VRSURD be assigned a unique user identification to facilitate the administration of the TRSBPP and the VRS program. We seek comment on this proposal, on the form that this unique identifier should take, and the standards and practices associated with assigning and managing such a unique user ID.

**2. Enterprise Users**

10. We propose that VRS providers provision for each of their enterprise users, at a minimum, the unique user ID that the enterprise user was assigned when registering as a residential user and the employer's name, business address, EIN, and the enterprise VRS user's business telephone number. We seek comment on this proposal, and on whether additional information should be gathered from providers regarding their enterprise users to facilitate the database functions described above.

**B. User Service Information**

11. We propose that the VRSURD be provisioned with information sufficient to allow VRS providers, the TRS Fund Administrator and, as necessary, broadband providers providing discounted services under the TRSBPP to effectively identify the services provided to each VRS user. Thus, we propose that each user's default provider provision to the VRSURD the name of the default provider, whether the user is a residential user, an enterprise user, or both, whether the user is under contract with the provider and the entry and expiration date of contract with provider, whether the user is an active user, and whether the user has demonstrated eligibility for the TRSBPP. We seek comment on this proposal, and on whether additional information regarding VRS services taken by each user should be provisioned to the VRSURD to facilitate the database functions described above.

**III. FORM OF DATA ELEMENTS**

12. We propose that the form of the data elements to be provisioned to the TRSBPP be determined by the database administrator pursuant to the terms of its contract. We seek comment on this proposal.

**IV. MEANS BY WHICH INFORMATION IS PROVISIONED**

13. We propose that a VRS provider be authorized to provision user identifying information (other than the user's unique user ID) and user service information for their registered users, and only their registered users, to the VRSURD. We seek comment on this proposal.

14. We propose that the TRS Fund Administrator and Commission be authorized to direct the VRSURD administrator to provision information to the VRSURD as necessary to ensure the efficient operation of the VRS program and the TRSBPP. Such information may include, for example, a change in a user's eligibility for the TRSBPP that has come to the attention of the TRS Fund Administrator but has not yet been communicated to the users default VRS provider. We seek comment on this proposal. Should other entities be authorized to provision information to the VRSURD? If so, under what circumstances?

## V. WHO WILL BE AUTHORIZED TO QUERY THE DATABASE

15. We propose that VRS providers be entitled to query the VRSURD to (i) determine if a potential user is “new-to-category,” and (ii) obtain a new registered users unique user ID. We seek comment on this proposal, and on whether there are other reasons that VRS providers may need to query the VRSURD.

16. We propose that the TRS Fund Administrator and the Commission be entitled to query the VRSURD as necessary to ensure the efficient operation of the VRS program and the TRSBPP, as well as to determine compliance with the requirements of these programs. We seek comment on this proposal.

17. We propose that broadband providers be entitled to query the VRSURD in order to determine whether an individual is eligible for discounted broadband service under the TRSBPP. Such query would take the form of submitting the potential subscriber’s unique VRS user ID to the VRSURD. We seek comment on this proposal. Should broadband providers be entitled to query the VRSURD for other reasons?

## VI. OTHER CONSIDERATIONS

18. *Coordination with Lifeline and Link Up Program.* We have proposed in the *Lifeline and Link Up Modernization NPRM* to create a national database to verify consumer eligibility, track verification and check for duplicates to ensure greater accountability of the Lifeline and Link Up programs.<sup>1</sup> We seek comment on whether or how the database proposed in this order can be coordinated or combined with the proposed Lifeline database. Given the similarity of purpose between the databases, could a single database efficiently support all three programs?

19. *Architecture.* We seek comment on appropriate architectures for the VRSURD. We further seek comment on whether the Commission should itself specify the VRSURD or, consistent with successful past practice, delegate to a contracted neutral third party administrator the task of specifying the database architecture.<sup>2</sup>

20. *Data Security and Privacy Issues.* We note that the privacy-based limitations on the government’s access to customer information in Title II of Electronic Communications Privacy Act (ECPA), section 222 of the Communications Act, and our implementing rules and the privacy provisions of the Cable Act, may be implicated by collection of the data discussed here.<sup>3</sup> We seek comment on whether any of these pre-existing regulatory or statutory requirements would impose any restrictions on the storage by a database administrator of customer data. We seek comment on how best to address these concerns. Would it be appropriate or necessary under ECPA to require VRS users to consent to certain disclosures as a condition of receiving service in order to ensure that the VRS program is operated efficiently and the Commission and the Fund Administrator can fulfill their auditing and management functions effectively? What would be the appropriate extent of such a consent requirement, and what other regulatory privacy protections, if any, would be necessary if such a requirement were adopted?

21. Are there other databases that have been constructed that could serve as a model for developing a VRSURD? Specifically, we seek input from the states that have developed similar databases on how best to achieve our goal of allowing VRS providers and broadband providers to access relevant data while protecting consumers’ privacy.

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<sup>1</sup> *Lifeline and Link Up Reform and Modernization NPRM*, 26 FCC Rcd at 2833-38, paras. 205-222.

<sup>2</sup> See *Internet-based TRS Numbering Order*, 23 FCC Rcd at 11617, para. 68.

<sup>3</sup> See, e.g., ECPA, tit. II (SCA), 18 U.S.C. §§ 2701-12 (2006); 47 U.S.C. § 551 (2006); 47 U.S.C. § 222.

22. *Neutral Administration.* Consistent with our practice in connection with the iTRS database, we propose that the VRSURD be built, maintained and operated by a neutral third-party administrator under contract to the Commission and compensated through the TRS Fund.<sup>4</sup>

23. We propose to delegate authority to the Office of the Managing Director, with the assistance of CGB and the Office of General Counsel, to select the neutral administrator based on a competitive bidding process. We propose that the Managing Director initiate this process immediately upon release of a final order in this proceeding.

24. We propose that the VRSURD database administrator meet certain neutrality criteria, both with respect to being selected as the administrator and in performing its functions. Consistent with the iTRS database functions performed under contract, we believe that the neutral administrator should be a non-governmental entity that is not aligned with any particular telecommunications or broadband industry segment.<sup>5</sup> We further propose that the neutral administrator must be fair and impartial, and it must also meet neutrality criteria similar to those we have established for the iTRS database, but adjusted as appropriate to reflect the purposes of this particular database.<sup>6</sup>

25. In summary, we propose that: (1) the neutral administrator must be a non-governmental entity that is impartial and is not an affiliate<sup>7</sup> of any Internet-based TRS provider or broadband provider; (2) the neutral administrator and any affiliate may not issue a majority of its debt<sup>8</sup> to, nor derive a majority of its revenues from, any Internet-based TRS provider or broadband provider. Notwithstanding satisfying the neutrality criteria set forth in (1) and (2) above, the administrator may not to be subject to undue influence by parties with a vested interest in the outcome of VRS program or TRSBPP

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<sup>4</sup> *Internet-based TRS Numbering Order*, 23 FCC Rcd at 11618-20, paras. 73-78.

<sup>5</sup> *Id.* at 11619, para. 76.

<sup>6</sup> *Id.*

<sup>7</sup> We base our definition of “affiliate” on the statutory definition in section 3 of the Act. *See* 47 U.S.C. § 153(1) (defining “affiliate”). We elaborate on that definition as follows: “Affiliate” is a person who controls, is controlled by, or is under the direct or indirect common control of another person. A person shall be deemed to control another if such person possesses, directly or indirectly, (1) an equity interest by stock, partnership (general or limited) interest, joint venture participation, or member interest in the other person ten percent (10%) or more of the total outstanding equity interests in the other person; or (2) the power to vote ten percent (10%) or more of the securities (by stock, partnership (general or limited) interest, joint venture participation, or member interest) having ordinary voting power for the election of directors, general partner, or management of such other person; or (3) the power to direct or cause the direction of the management and policies of such other person, whether through the ownership of or right to vote voting rights attributable to the stock, partnership (general or limited) interest, joint venture participation, or member interest of such other person, by contract (including but not limited to stockholder agreement partnership (general or limited) agreement, joint venture agreement, or operating agreement, or otherwise. *See* 47 C.F.R. § 52.12(a)(1)(i); *see also Internet-based TRS Numbering Order*, 23 FCC Rcd at 11619, n. 185 *Numbering Resource Optimization*, CC Docket No. 99-200, Report and Order and Further Notice of Proposed Rulemaking, 15 FCC Rcd 7574, 7642, para. 154 n.354 (2000) (*NRO First Report and Order*); *Administration of the North American Numbering Plan; Toll Free Service Access Codes*, CC Docket Nos. 99-237, 95-155, Third Report and Order and Third Report and Order, 12 FCC Rcd 23040, 23076, para. 69 (1997) (*NANP Administration Third Report and Order*).

<sup>8</sup> “Majority” means greater than 50%, and “debt” means stock, bonds, securities, notes, loans, or any other instrument of indebtedness. *See* 47 C.F.R. § 52.12(a)(1)(ii); *Internet-based TRS Numbering Order*, 23 FCC Rcd at 11619, n. 186; *NRO First Report and Order*, 15 FCC Rcd at 7643, para. 154 n.356; *NANP Administration Third Report and Order*, 12 FCC Rcd at 23076, para. 69.

administration and activities.<sup>9</sup> We propose that any subcontractor that performs functions of the neutral administrator must also meet these criteria. We seek comment on these proposals.

26. We seek comment on what responsibilities the Administrator may be assigned with respect to the VRSURD. Should the administrator be responsible for regularly reviewing the database to determine if the Commission's rules are being followed, for example by reviewing entries for potential ineligibility? For purposes of auditing the program, should the Commission have access to the database or only through the administrator?

27. *Funding.* We propose, consistent with the operation of the iTRS database, that the neutral database administrator selected by the Commission be compensated directly from the TRS Fund, rather than by entities that provision information to or query the database on a per transaction basis. We seek comment on this proposal.

28. *Timing.* We seek comment on the amount of time it will take to implement the VRSURD as discussed in this *Further Notice*.

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<sup>9</sup> See 47 C.F.R. § 52.12(a)(1)(iii); *Internet-based TRS Numbering Order*, 23 FCC Rcd at 11619, n. 185; *NRO First Report and Order*, 15 FCC Rcd at 7643, para. 154, n.357; *NANP Administration Third Report and Order*, 12 FCC Rcd at 23076, para. 69.

**APPENDIX E**  
**Proposed Definitions**

1. *VRS User.* An individual who is deaf, hard of hearing, deaf-blind, or has a speech disability that has registered with a VRS provider as described in section 64.611 of our rules.
2. *New VRS User.* A VRS user that has not previously registered with a provider of Internet-based TRS pursuant to section 64.611 of the Commission's rules.
3. *Enterprise VRS Employer.* A valid, going business concern that (i) has been assigned an Employer Identification Number by the Internal Revenue Service; (ii) employs one or more registered VRS Users; and (iii) has entered into a written agreement with a provider of VRS certified pursuant to section 64.604 of the Commission's rules to provide VRS to its employees that use VRS in the normal course of their employment.
4. *Enterprise VRS User.* A registered VRS User that is employed by an Enterprise VRS Employer.
5. *Active User.* A VRS User or Enterprise VRS user that [meets a minimum monthly usage requirement].

## APPENDIX F

## Initial Regulatory Flexibility Analysis

CG Docket No. 03-123

CG Docket No. 10-51

1. As required by the Regulatory Flexibility Act (RFA),<sup>1</sup> the Commission has prepared this present Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities by the policies and rules proposed in this Further Notice of Proposed Rule Making (*Further Notice*). Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments to this *Further Notice*. The Commission will send a copy of this *Further Notice*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (SBA).<sup>2</sup> In addition, the *Further Notice* and IRFA (or summaries thereof) will be published in the Federal Register.<sup>3</sup>

**I. NEED FOR, AND OBJECTIVES OF, THE PROPOSED RULES**

2. In this *Further Notice*, the Commission seeks comment on a series of proposals to improve the structure and efficiency of the VRS program, to ensure that it is available to all eligible users and offers functional equivalence – particularly given advances in commercially-available technology – and is as immune as possible from the waste, fraud, and abuse that threaten the long-term viability of the program as it currently operates.

3. Among these proposals, the Commission proposes to establish a “TRS Broadband Pilot Program” (TRSBPP) to utilize the TRS Fund to provide discounted broadband Internet access to low-income deaf, hard of hearing, deaf-blind, and speech disabled Americans who use ASL as their primary form of communication, and providing incentives to providers for adding new-to-category customers. The Commission proposes such a subsidy to meet the objective of increasing utilization of VRS by eligible individuals who cannot currently afford broadband.

4. The Commission seeks comment on whether the TRSBPP should support fixed services, mobile services, or both. Fixed connections – whether wireline or wireless – that are advertised as capable of delivering 256 kbps, generally deliver such speeds to their customers, and can be shared by all members of a residential unit. The Commission proposes that broadband providers will provide discounts to eligible households or residences and receive reimbursement from the TRS Fund for the provision of such discounts. The Commission proposes to establish the discount amount for the TRSBPP at a level that will make broadband Internet access service capable of supporting VRS at no cost, or very low cost, to consumers. We seek comment on how to set the amount of the discount that should be provided to qualifying households or residences. Given the Commission’s experience in administering the Lifeline and Link Up programs, we propose to adopt the Lifeline and Link Up certification and verification rules that are ultimately adopted in the *Lifeline and Link Up Modernization NPRM* proceeding,<sup>4</sup> modified as necessary to reflect the differences between possible future changes in the Lifeline program and the proposed TRSBPP.

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<sup>1</sup> See 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. § 601 *et. seq.*, has been amended by the Contract With America Advancement Act of 1996, Pub. L. No. 104-121, 110 Stat. 847 (1996) (CWAAA). Title II of the CWAAA is the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA).

<sup>2</sup> See 5 U.S.C. § 603(a).

<sup>3</sup> See *id.*

<sup>4</sup> See *Lifeline and Link Up Reform and Modernization NPRM*, 26 FCC Rcd 2770.

5. In addition, the Commission proposes to concretely define iTRS access technology, which will help ensure that the rules governing VRS can be applied equally to any medium used to access VRS. The goal of establishing standards for iTRS access technology is to meet the Commission's policy objectives of facilitating an open, competitive market for VRS by supporting interoperability, portability, affordability, supportability and compatibility of VRS equipment. Specifically, the Commission proposes: (1) defining "iTRS access technology" as "any equipment, software, or other technology issued, leased, or provided by an Internet-based TRS provider that can be used to make or receive an Internet-based TRS call"; (2) establishing standards for iTRS access technology; and (3) supporting the use of off-the-shelf iTRS access technology. The Commission intends to apply its definitions and standards in a manner that will allow for the use of VRS through off-the shelf technology, because this will give VRS users enhanced choice and accessibility to utilize VRS. Accordingly, the Commission seeks comment on the proposal.

6. In addition, the Commission seeks comment on the extent to which the statute supports the use of the Fund to support iTRS access technology research and development costs. Research and development would help to achieve the goals of establishing standards and furthering technological advancements that both meet the needs of VRS users, and provide compatibility with mainstream, off-the-shelf equipment. If research and development are supported by the Fund, than the Commission's goals of providing greater access to VRS will be better achieved.

7. Next, the Commission explores the option of instituting a more efficient compensation mechanism that reduces incentives for waste, fraud, and abuse by shifting from a per-minute to a per-user compensation mechanism with a specific plan for transitioning the industry structure to ensure economies of scale. Per-minute compensation has provided an incentive for the manufacturing of illegitimate minutes by some providers in order to increase reimbursements. Shifting to a per-user compensation mechanism will remove the incentive to increase VRS traffic through illegitimate means. The Commission states, "[t]he ultimate result could be a program in which providers' incentives are aligned with the statute's goals of efficiency, functional equivalence, choice, and maximizing access to VRS, the Fund could be paying an effective rate per user that may better reflect the actual costs of providing VRS than is currently the case, and which could eliminate the current tiered rates, which provide seemingly indefinite support for subscale providers and introduce extra complexity into the management of the program."<sup>5</sup>

8. The Commission specifically proposes a greater per-user reimbursement rate to VRS providers for their registered *enterprise users* vs. *residential users*. This proposal is intended to serve two objectives: 1) to account for the potentially greater volume of calls an *enterprise user* may make, and 2) to provide an incentive to providers to market and support their services to deaf individuals in the workplace. Accordingly, we seek comment on this separate proposal.

9. The transition phase for restructuring VRS as described above is intended to account for current subscale providers who may need time to attempt to achieve scale. By subscale, the Commission refers to providers whose cost of delivering VRS may be higher than costs other providers may incur because of their small market share. The Commission notes that any transition will be accompanied by risk. However, if adopted, an appropriately implemented structural reform program and transition process will give each provider a real opportunity to achieve minimum efficient scale during the transition period and result in an end state for the program that is better for VRS users, as well as being more sustainable for the Fund. To that end, the Commission seeks comment on whether to allow VRS providers to require VRS users who are either (i) new-to-category VRS users (*i.e.*, have not previously signed up for VRS) or

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<sup>5</sup> See *Further Notice* para. 64.

(ii) switching from another VRS provider, to enter into a service contract after the adoption of a per-user compensation mechanism in order to support the growth of smaller providers under the new structure.

10. The rules addressed in this section raise questions about related new reporting requirements that will be addressed in section D. Even though our record is not yet ample enough for us to propose specific rules, we raise questions about record-keeping, reporting and info-gathering, *e.g.*, info-gathering pursuant to the PRA, and seek comments on these issues, because comments received on those areas may guide us toward a more efficient administration of our proposed use of a per-user mechanism; our proposed expanded use of R&D; and our proposed changes in the definition of iTRS. Comments on proposed changes in our record-keeping, reporting and information gathering actions are directly related to these major proposed structural changes in VRS rules because proposed changes in these recordkeeping and informational areas will in all likelihood facilitate an improved monitoring of all costs imposed on impacted small entities by all of our proposed general structural reforms. For example, the Commission may, to facilitate improved monitoring of the costs of our overall structural reforms, decide to require service providers of all kinds, including broadband-based services providers, to provide certain specific types of reports on their activities and may require them to hire accountants to prepare independent audits of their activities and operations in this context. The specific questions we raise with regard to record-keeping, reporting, and info-gathering, and the comments we seek on these issues, are discussed in greater detail in Section D, the Section D of this IRFA where an expanded treatment of such issues is required.

## II. LEGAL BASIS

11. The legal basis for any action that may be taken pursuant to the *Further Notice* is contained in Sections 1, 2, 4(i), 225, 255, 303(r), and 706 of the Communications Act of 1934, as Amended, 47 U.S.C. §§ 151, 152, 154(i), 225, 254, 255, 303(r), and 1302(b).

## III. DESCRIPTION AND ESTIMATE OF THE NUMBER OF SMALL ENTITIES TO WHICH THE PROPOSED RULES MAY APPLY

12. *Small Businesses.* Nationwide, there are a total of approximately 29.6 million small businesses, according to the SBA.<sup>6</sup> Entities that provide VRS could generally be referred to as, “Wired Telecommunications Carriers” or “All Other Telecommunications”.

13. *Wired Telecommunications Carriers.* The Census Bureau defines this category as follows: “This industry comprises establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired telecommunications networks. Transmission facilities may be based on a single technology or a combination of technologies. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephony services, including VoIP services; wired (cable) audio and video programming distribution; and wired broadband Internet services. By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry.”<sup>7</sup>

14. In this category, the SBA deems a wired telecommunications carrier to be small if it has 1,500 or fewer employees.<sup>8</sup> Census data for 2007 shows 3,188 firms in this category<sup>9</sup> Of these 3,188

<sup>6</sup> See SBA, Office of Advocacy, “Frequently Asked Questions,” <http://www.sba.gov/advocacy/7495/8425> (last visited Feb. 28, 2011).

<sup>7</sup> U.S. Census Bureau, 2007 NAICS Definitions, 517110 Wired Telecommunications Carriers, <http://www.census.gov/econ/industry/def/d517110.htm>.

<sup>8</sup> 13 C.F.R. § 121.201, NAICS Code 517110.

firms, only 44 had 1,000 or more employees. While we could not find precise Census data on the number of firms with in the group with 1,500 or fewer employees, it is clear that at least 3,144 firms with fewer than 1,000 employees would be in that group. On this basis, the Commission estimates that a substantial majority of the providers of interconnected VoIP, non-interconnected VoIP, or both in this category, are small.<sup>10</sup>

15. *All Other Telecommunications.* Under the 2007 U.S. Census definition of firms included in the category “All Other Telecommunications (NAICS Code 517919)” comprises “establishments primarily engaged in providing specialized telecommunications services, such as satellite tracking, communications telemetry, and radar station operation. This industry also includes establishments primarily engaged in providing satellite terminal stations and associated facilities connected with one or more terrestrial systems and capable of transmitting telecommunications to, and receiving telecommunications from, satellite systems. Establishments providing Internet services or voice over Internet protocol (VoIP) services via client-supplied telecommunications connections are also included in this industry.”<sup>11</sup>

16. In this category, the SBA deems a provider of “all other telecommunications” services to be small if it has \$25 million or less in average annual receipts.<sup>12</sup> For this category of service providers, Census data for 2007 shows that there were 2,383 such firms that operated that year.<sup>13</sup> Of those 2,383 firms, 2,346 (approximately 98%) had \$25 million or less in average annual receipts and, thus, would be deemed small under the applicable SBA size standard. On this basis, Commission estimates that approximately 98% or more of the providers of interconnected VoIP, non-interconnected VoIP, or both in this category are small.

17. *Wireless Telecommunications Carriers (except Satellite).* Since 2007, the Census Bureau has placed wireless firms within this new, broad, economic census category.<sup>14</sup> Prior to that time, such firms were within the now-superseded categories of “Paging” and “Cellular and Other Wireless Telecommunications.”<sup>15</sup> Under the present and prior categories, the SBA has deemed a wireless business

(Continued from previous page)

<sup>9</sup> [http://factfinder.census.gov/servlet/IBQTable?\\_bm=y&-geo\\_id=&-\\_skip=600&-ds\\_name=EC0751SSSZ5&-\\_lang=en](http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=&-_skip=600&-ds_name=EC0751SSSZ5&-_lang=en).

<sup>10</sup> *Id.* As noted in para. 18 above with regard to the distinction between manufacturers of equipment used to provide interconnected VoIP and manufactures of equipment to provide non-interconnected VoIP, our estimates of the number of the number of providers of non-interconnected VoIP (and the number of small entities within that group) are likely overstated because we could not draw in the data a distinction between such providers and those that provide interconnected VoIP. However, in the absence of more accurate data, we present these figures to provide as thorough an analysis of the impact on small entities as we can at this time.

<sup>11</sup> U.S. Census Bureau, 2007 NAICS Definitions, 517919 All Other Telecommunications, <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517919&search=2007%20NAICS%20Search>.

<sup>12</sup> 13 C.F.R. § 121.201, NAICS Code 517919.

<sup>13</sup> [http://factfinder.census.gov/servlet/IBQTable?\\_bm=y&-geo\\_id=&-\\_skip=900&-ds\\_name=EC0751SSSZ4&-\\_lang=en](http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=&-_skip=900&-ds_name=EC0751SSSZ4&-_lang=en).

<sup>14</sup> U.S. Census Bureau, 2007 NAICS Definitions, 517210 Wireless Telecommunications Carriers (Except Satellite), <http://www.census.gov/naics/2007/def/ND517210.HTM#N517210>.

<sup>15</sup> U.S. Census Bureau, 2002 NAICS Definitions, 517211 Paging, <http://www.census.gov/epcd/naics02/def/NDEF517.HTM>; U.S. Census Bureau, 2002 NAICS Definitions, “517212 Cellular and Other Wireless Telecommunications”; <http://www.census.gov/epcd/naics02/def/NDEF517.HTM>.

to be small if it has 1,500 or fewer employees.<sup>16</sup> For the category of Wireless Telecommunications Carriers (except Satellite), Census data for 2007 shows that there were 1,383 firms that operated that year.<sup>17</sup> Of those 1,383, 1,368 had fewer than 100 employees, and 15 firms had more than 100 employees. Thus under this category and the associated small business size standard, the majority of firms can be considered small. Similarly, according to Commission data, 413 carriers reported that they were engaged in the provision of wireless telephony, including cellular service, Personal Communications Service (“PCS”), and Specialized Mobile Radio (“SMR”) Telephony services.<sup>18</sup> Of these, an estimated 261 have 1,500 or fewer employees and 152 have more than 1,500 employees.<sup>19</sup> Consequently, the Commission estimates that approximately half or more of these firms can be considered small. Thus, using available data, we estimate that the majority of wireless firms can be considered small.

18. The Commission notes that under the standards listed above some current VRS providers and potential future VRS providers would be considered small businesses. There are currently ten eligible VRS providers, five of which may be considered small businesses. In addition, there are several pending applications from entities seeking to become certified to provide VRS that may be considered small businesses. Although we do not estimate a significant adverse economic impact on such entities, we nevertheless seek comment on the potential impact of the rules and policies proposed in this *Further Notice* due to the fact that some affected entities would likely be considered small businesses.

#### IV. DESCRIPTION OF PROJECTED REPORTING, RECORDKEEPING, AND OTHER COMPLIANCE REQUIREMENTS

19. Certain rule changes proposed in this proceeding would, if adopted, modify rules governing data collection obtained from TRS providers and might also modify the filing of information with the Administrator.<sup>20</sup> For example, the Commission may decide that it is sufficient to grant to the Administrator a general authority to request information, or it may decide to require providers to submit additional detailed information, such as information regarding their financial status, *e.g.* a cash-flow-to-debt ratio. Proposed rule changes may also modify records of calls so that Enterprise Users and Enterprise VRS Employers can be readily identified based on their call history. Such changes may also authorize the Administrator to require VRS providers to file the requisite cost data, and may require the Administrator and/or providers to obtain independent audits of the data to be submitted. Additional rule changes may result in a Commission decision to accept late-filed data, or in the alternative to calculate the VRS rate based on data submitted by the deadline established by the Commission or the Administrator.

20. Section 64.604(c)(5)(iii)(C) of our rules requires TRS providers to “provide the administrator with true and adequate data necessary to determine TRS Fund Section 64.604(c)(5)(iii)(C) of our rules requires TRS providers to “provide the administrator with true and adequate data necessary to determine TRS Fund revenue requirements and payments.” The Commission has proposed to place the primary responsibility for managing the TRSBPP enrollment, certification, and eligibility verification processes on VRS providers. This may result in a Commission decision to require VRS providers to

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<sup>16</sup> 13 C.F.R. § 121.201, NAICS code 517210 (2007 NAICS). The now-superseded, pre-2007 C.F.R. citations were 13 C.F.R. § 121.201, NAICS codes 517211 and 517212 (referring to the 2002 NAICS).

<sup>17</sup> U.S. Census Bureau, 2007 Economic Census, Sector 51, 2007 NAICS code 517210 (rel. Oct. 20, 2009), [http://factfinder.census.gov/servlet/IBQTable?\\_bm=y&-geo\\_id=&-fds\\_name=EC0700A1&-\\_skip=700&-ds\\_name=EC0751SSSZ5&-\\_lang=en](http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=&-fds_name=EC0700A1&-_skip=700&-ds_name=EC0751SSSZ5&-_lang=en).

<sup>18</sup> See *Trends in Telephone Service*, at tbl. 5.3.

<sup>19</sup> *Id.*

<sup>20</sup> See, *e.g.*, *Further Notice* paras. 93, 95.

collect and maintain user enrollment, initial certification, and verification of eligibility for TRSBPP support documentation for submission upon request to the TRS Fund Administrator or the Commission. The Commission may also determine that the TRS Fund Administrator should be empowered to collect additional data under the proposals in this *Further Notice*.<sup>21</sup> For example, the Commission may decide that broadband providers that receive disbursements from the TRS Fund should be required to report certain information.

21. The Commission is also considering record keeping requirements regarding individuals seeking TRSBPP support. One possibility would be to adopt the existing federal Lifeline program eligibility criteria. As discussed in the *Lifeline and Link Up Reform and Modernization NPRM*, Lifeline discounts are available to eligible consumers in households that qualify as “low-income,” but there is no uniform national definition of households for all programs.

22. The Commission will provide an analysis of the costs associated with any new record keeping or reporting requirements it adopts based in part on the record in this proceeding. The costs of compliance with new rules adopted in this proceeding will be fully reimbursed by the TRS Fund as the costs of compliance with the current VRS are reimbursable from the TRS Fund.

23. Current VRS providers and newly certified VRS providers that may fall into the small business categories listed in section C above will be subject to the costs imposed by any rules adopted as a result of this proceeding. If the Commission adopts any new or revised information collection requirements, the Commission will publish a separate notice in the Federal Register inviting the public to comment on the requirement, as mandated by the Paperwork Reduction Act of 1995. In addition, pursuant to the Small Business Paperwork Relief Act of 2002, the Commission will seek specific comment from the public on how it might “further reduce the information collection burden for small business concerns with fewer than 25 employees.”<sup>22</sup>

#### V. STEPS TAKEN TO MINIMIZE SIGNIFICANT ECONOMIC IMPACT ON SMALL ENTITIES AND SIGNIFICANT ALTERNATIVES CONSIDERED

24. The RFA requires an agency to describe any significant alternatives that it has considered in developing its approach, which may include the following four alternatives (among others): “(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities; (3) the use of performance rather than design standards; and (4) an exemption from coverage of the rule, or any part thereof, for such small entities.”<sup>23</sup>

25. In general, alternatives to proposed rules are discussed only when those rules pose a significant adverse economic impact on small entities. In this context, however, the proposed rules generally confer benefits as explained below. Therefore, we limit our discussion of an alternative to paragraph number twenty-four below.

26. The purpose of the proposed TRSBPP<sup>24</sup> is to provide discounted broadband Internet access to low-income deaf, hard of hearing, deaf-blind, and speech disabled Americans who use ASL as their primary form of communication. Such a program would be consistent with the recommendations of

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<sup>21</sup> See, e.g., *Further Notice* paras. 93, 95.

<sup>22</sup> See *Further Notice* para. 160.

<sup>23</sup> 5 U.S.C. § 603(c)(1)-(c)(4).

<sup>24</sup> See *Further Notice* para. 30.

the National Broadband Plan,<sup>25</sup> the Commission's broader effort to meet the 21st century communications needs of low-income consumers,<sup>26</sup> and the Act.<sup>27</sup> In addition, the TRSBPP will help to ensure that Fund resources are not spent on merely transferring existing users back and forth between providers, and instead are used to expand the availability of VRS to more users. This in turn would confer a benefit on small entities operating as VRS providers in that it would increase the current user base, thereby offering greater business opportunities for VRS providers.

27. As noted above, the Commission seeks comment on new iTRS definitions and standards that will facilitate the use of VRS through mainstream equipment and provide better functionality for VRS users. We believe that setting such uniform definitions and standards for VRS technology will stabilize the VRS market and allow for the greatest number of potential users to avail themselves of VRS. The more users who are registered, the more financial gain for VRS providers. In addition, with established definitions and standards, a level playing field for all providers will be possible. Finally uniform application of VRS rules to all forms of VRS equipment will provide predictability for VRS providers. Therefore, the Commission believes that such measures to provide definitions and standards will benefit all industry participants including small businesses.

28. Moreover, if the Commission adopts rules based on the record received in response to its proposal to support research and development through the Fund, we believe that all entities, small and large, will benefit from such funding. We seek comment on this position.

29. The Commission considers an alternative to structural reform by proposing the possibility of adopting per-minute rates based on a criterion not discussed above, *i.e.*, weighted average actual per-minute provider costs for the most recently completed fund year, and by eliminating the current tier structure. Although the Commission believes this alternative would neither achieve the policy goals set forth above, nor minimize the adverse economic impact on small entities, we nevertheless seek comment on this alternative proposal.

30. Applications to become a certified VRS provider are voluntarily submitted. If a small entity, as defined by the SBA, applies for certification by showing that it can comply with all of the Commission's rules, including the proposed new rules in this *Further Notice*, its expenses will be reimbursed from the Fund once it becomes a certified provider, regardless of whether the Commission adopts the proposed structural reforms to the VRS program. The Interstate TRS Fund is sized each year based on the foreseeable costs associated with providing service in compliance with the Commission rules. A contribution factor based on this proposed Fund size is then used to determine the amount each entity responsible for paying into the Fund must contribute. The Commission believes that its proposals will not impose an adverse financial burden on entities, including small businesses, because entities that are able to provide VRS in compliance with these proposed structural reforms will continue to be promptly reimbursed from the Interstate TRS Fund for all costs associated with compliance with the Commission's proposed reforms. Although all participating VRS providers will be compensated from the Fund for the costs of providing service, we seek comment on whether there may still be some adverse financial impact on a substantial number of small entities resulting from restructuring VRS.

31. Each of the proposed rules, with the exception of the alternative discussed above in paragraph twenty-four, confers a benefit rather than imposes a significant adverse economic impact on regulated small businesses. Therefore, the need for consideration of alternatives is very limited.

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<sup>25</sup> See NATIONAL BROADBAND PLAN at 172.

<sup>26</sup> See *Lifeline and Link Up Reform and Modernization NPRM*, 26 FCC Rcd at 2849-62, paras. 255-302.

<sup>27</sup> See 47 U.S.C. § 225(b)(1) ("...shall ensure that [TRS is] available . . . to hearing-impaired and speech-impaired individuals in the United States").

However, we ask for comment on the reimbursement of all costs incurred via compliance with new structural reforms in case there are costs of such compliance that may not have been considered fully or may not be compensable from the Fund under the proposed structural reforms.

**VI. FEDERAL RULES THAT MAY DUPLICATE, OVERLAP, OR CONFLICT WITH PROPOSED RULES**

32. None.