

§ 64.604 Mandatory minimum standards.

(b) Technical standards –

(1) ASCII and Baudot. TRS shall be capable of communicating with ASCII and Baudot format, at any speed generally in use.

Rhode Island Relay is capable of receiving and transmitting using Voice, Turbo Code, ASCII or Baudot formats, at any speed generally in use. All equipment is compatible with industry-wide standards. The modems used by Rhode Island Relay can auto-detect the difference between ASCII and Baudot signals within the same modem so that each call is connected correctly.

(2) Speed of answer.

(i) TRS providers shall ensure adequate TRS facility staffing to provide callers with efficient access under projected calling volumes, so that the probability of a busy response due to CA unavailability shall be functionally equivalent to what a voice caller would experience in attempting to reach a party through the voice telephone network.

(ii) TRS facilities shall, except during network failure, answer 85% of all calls within 10 seconds by any method which results in the caller's call immediately being placed, not put in a queue or on hold. The ten seconds begins at the time the call is delivered to the TRS facility's network. A TRS facility shall ensure that adequate network facilities shall be used in conjunction with TRS so that under projected calling volume the probability of a busy response due to loop trunk congestion shall be functionally equivalent to what a voice caller would experience in attempting to reach a party through the voice telephone network.

(A) The call is considered delivered when the TRS facility's equipment accepts the call from the local exchange carrier (LEC) and the public switched network actually delivers the call to the TRS facility.

(B) Abandoned calls shall be included in the speed-of-answer calculation.

(C) A TRS provider's compliance with this rule shall be measured on a daily basis.

(D) The system shall be designed to a P.01 standard.

(E) A LEC shall provide the call attempt rates and the rates of calls blocked between the LEC and the TRS facility to relay administrators and TRS providers upon request.

Rhode Island Relay is committed to complying with the speed of answer requirements applicable to relay. Rhode Island Relay answers eighty-five percent (85%) of calls within ten (10) seconds from the time the call enters the TRS system during all times of the day by any method which results in the caller's call immediately placed, not put in a queue or on hold.

Rhode Island's Relay provider begins measuring Average Answer time from the moment a Relay call arrives at its relay switch (i.e. in the TRS center's network). As soon as the equipment used by Rhode Island's Relay provider accepts the call, call detail records start to capture answer time data. Rhode Island Relay's timing is very accurate as no rounding takes place since this time is measured in seconds. The information reported is taken from Call Detail Records ensuring the accuracy of the data. Each call detail record tracks the amount of time a call waits to be answered. Rhode Island Relay's CAs do not answer a call until they are ready to engage the call. Calls in queue or calls receiving the intercept message are not counted as answered. This "queue time" field will be analyzed and reported, but not billed. Abandoned calls are included in the speed of answer calculation.

Rhode Island Relay has the ability to monitor speed of answer on a real-time basis via a monitoring system that is accessible to management and supervisors. This information is utilized to make CA staffing changes throughout the day. Average Answer time is displayed on the supervisor console. The Supervisor workstation and reader boards in the center indicate if calls are in queue waiting to be answered. The Supervisors are responsible for making sure that when that alert comes up that all available CA resources are logged in to the system and answering calls. Each of these tracking mechanisms allows Rhode Island Relay to respond quickly by adding more CAs immediately.

Daily activity reports used for internal management purposes also track answer performance information for future scheduling. In addition, Rhode Island Relay uses a variety of other scheduling techniques to ensure that staffing meets traffic demands. Rhode Island's Relay provider makes use of historical data, trending, call patterns and combines that with the knowledge of current events (e.g. football games, weather, Mother's Day, etc.) to anticipate staffing needs.

Rhode Island Relay has outstanding answer performance. Average answer seconds for the past year were 1.1 with 95% of calls answered in ten seconds or less.

Rhode Island Relay also meets all FCC call blockage standards. Rhode Island Relay's relay service is designed to a P.01 standard. No more than one call in 100 will receive a busy signal when calling the relay center at the busiest hour. Rhode Island Relay defines "blockage" as any call that arrives at the relay switch but is not answered due to the customer receiving a busy signal. Currently, Rhode Island Relay has never come close to blocking 1 call in 100.

The systems used by Rhode Island Relay's are designed to prevent blockage. The switches used are high-speed, stand-alone, non-blocking digital switching matrixes. The system is fully redundant to ensure quality and reliable performance, making blockage or any downtime nearly impossible. The system auto-detects any problems and moves to the secondary system immediately if necessary.

Another measure Rhode Island Relay has taken to prevent blocking is to use networks that make use of SONET survivability technology. All of the networks controlled by Rhode Island Relay - from the point a relay user picks up the phone in their home or business, through the relay and

then back to the other phone being called - are redundant and can survive fiber cuts and other such outages.

Rhode Island Relay measures, records and reports its answer performance and blockage rate information to the Rhode Island PUC and abides by the FCC rules (i.e. a LEC shall provide the call attempt and the rates of calls blocked between the LEC and the relay center upon request).

The transmission circuits used by Rhode Island's provider meet or exceed industry interexchange performance standards for circuit loss and noise.

(3) Equal access to interexchange carriers. TRS users shall have access to their chosen interexchange carrier through the TRS, and to all other operator services, to the same extent that such access is provided to voice users.

Equal Access (Carrier of Choice)

Rhode Island Relay provides relay users with access to the interexchange carrier of their choice through TRS, and to all other operator services, to the same extent that such access is provided to voice users. Interlata and intralata long distance toll charges are recorded and billed by the relay user's carrier of choice in the same manner as the carrier bills that customer for long distance calls made without the relay. On each interlata and intralata call, Rhode Island Relay forwards the appropriate information digits (identifying the call as a relay call), calling number and called number as part of the call information so that the long distance company can bill the customer at correct functionally equivalent rate through their normal billing mechanisms. Calling card or credit card billing is handled in the same manner. Rhode Island Relay's provider has provisioned the necessary trunks at each of its relay switching tandems for all long distance companies participating in equal access so that they can receive Rhode Island Relay traffic. Rhode Island Relay offers equal access to all carriers who choose to participate.

Rhode Island Relay provides relay users with access to all other Operator Services to the same extent as that provided to voice users. Operator services are handled in the same manner as explained above. All operator assisted calls are sent to the customers' carrier of choice for processing and billing.

The type of arrangement explained above gives the control to the relay user. The relay user can pick their carrier of choice, receive one bill for all of their calls, and the relay user can shop for the best rates, just like they do today for calls not made through the relay. The relay user can continue to work with one carrier and the relay remains invisible.

The customer profile program used by Rhode Island Relay is based on the relay users' ANI that provides automatic connection to the carrier of choice for both interlata and intralata calls made by the relay user. Relay users complete a customer profile with their carrier information and Rhode Island Relay adds this information to its database. On each subsequent relay call relay users are automatically connected to their carrier of choice. Relay users can also notify the CA of their carrier of choice when making a long distance relay call. In the event a relay user elects to change his/her carrier of choice, the CA is able to do so.

Rhode Island Relay offers 1010 dialing through the relay. This service is functionally equivalent to using 1010 services when not placing calls through the relay.

In order to obtain new carriers on its platform, Rhode Island Relay contacts all carriers that are requested by Rhode Island relay users to see if they will participate in relay equal access. Rhode Island's Relay provider then works through ordering and testing phases with that carrier to ensure that the carrier becomes available to Rhode Island relay users. Rhode Island's Relay provider maintains a list of participating long distance carriers and makes this information available to relay users.

(4) TRS facilities.

(i) TRS shall operate every day, 24 hours a day. Relay services that are not mandated by this Commission need not be provided every day, 24 hours a day, except VRS.

Rhode Island Relay provides telecommunications relay service 24 hours a day, 7 days a week. .

(ii) TRS shall have redundancy features functionally equivalent to the equipment in normal central offices, including uninterruptible power for emergency use.

The facility used by Rhode Island Relay has the needed redundancy in switching mechanisms and telecommunication facilities to ensure operation 24 hours a day. Rhode Island Relay is operated from a center located in Pittsfield, Massachusetts. Rhode Island Relay calls automatically overflow during peak volume times and during any failure of switching or telecommunications facilities to other centers operated by the Rhode Island relay provider. This ensures continuous operation of the Rhode Island Relay.

The switches and relay platforms used by Rhode Island Relay's provider's are located in the Louisiana and the Nebraska relay centers. Workstation equipment, database information, and CA are located in all relay centers. Workstations in the Maryland and Massachusetts centers are controlled by the main processing and switch unit located in Nebraska via digital telecommunications facilities which are redundant T -1 circuits. Workstations in the Rhode Island Center are controlled by the main processing and switch unit located in Louisiana via digital telecommunications facilities which are redundant T -1 circuits. All incoming relay calls enter the relay provider's network. Calls can then be connected to workstations in any of the Relay provider's facilities. This all happens instantaneously with no call delays. Calls made to the terminating party exit through the call network as well. Rhode Island Relay users receive outstanding call processing and superior answer performance as a result of this network configuration.

Uninterruptible Power

All relay centers operated by Rhode Island's Relay provider make use of an uninterruptible power source with full battery backup to operate each center at full capacity for extended periods of time. In addition, battery back-up systems have the capability to automatically connect to a generator at each of its existing relay centers. The combination of battery and generator back-up

allows Rhode Island Relay's provider to provide relay service for days and weeks at a time during power outages.

The power system supports the switch system and its peripherals, switch room environmentals (air conditioning/heating, fire suppression system, emergency lights & system alarms), CA consoles/terminals, CA work-site and lighting and Call Detail Record recording at each center. Employees are given procedures to follow in the event of emergency.

Rhode Island's Relay provider provides auxiliary power sources for nine central offices in addition to all its relay centers and has significant experience at purchasing, installing, testing and insuring that such back-up equipment is in place. All of Hamilton's back-up power systems have redundancy features functionally equivalent to the equipment in normal central offices including uninterruptible power for emergency use.

Switching System

Rhode Island Relay provider's second generation relay platform makes use of an Excel telecommunications switch. Its switch is a programmable, non-blocking switching system that supports a wide range of digital telephony services. Its open, modular architecture and programmable interfaces allow for simplified and cost-effective application development. The switch supports up to 2,048 ports in a single high-density system. Its components include a matrix CPU, network interface cards, Digital Signal Processing service cards and SS7 packet engine cards. The switch adapts to all standard network and line interfaces, including T1, E1, 11, and ISDN PRI.

The InterCall Switch Operating System (ISOS) was developed in response to the need to quickly develop applications on the Excel Inc. programmable switching platforms. The ISOS can simply be loaded on a UNIX host, and plugged into the switch to offer basic tandem type switching capabilities including routing and call detail records.

The ISOS is a fully operational basic switch and has great flexibility. Rhode Island's Relay provider took advantage of this flexibility and has customized many relay functions in the ISOS operating system.

The relay workstation application takes advantage of the power and flexibility of the ISOS operating system. It provides a high level of Communication Assistant control processing with complete flexibility to connect any type of call protocol to any other type of call protocol. A database was developed to maintain a profile of each caller to speed up call connections and to provide information for tailored call processing. The switching systems contain a fully redundant central processing unit on hot standby with automatic failover. This is to ensure that no calls are dropped due to technical failure. It also has a redundant power supply on hot standby. Backup control and database servers are also on hot standby with automatic failover. Rhode Island's Relay provider maintains an inventory of spare critical components for the switching system onsite to ensure that the required levels of service are met (listed below).

The on-sight switching system spare equipment includes:

- D4 channel bank
- All required channel bank cards
- T1 CSU packs
- Switch T -1 card
- Switch conference card

If one of the switching systems cannot be returned to service by transferring control to redundant equipment, the calls automatically will overflow to another switching system. The switching systems are designed to provide a very high level of operational security with two fully redundant processors and power supplies in each switch. Each fully redundant control system, which includes keyboard, monitor and printer capabilities, is used to control and monitor each of the switching systems. The control systems provide online system monitoring and real-time programming capabilities that will not take the system off-line and the ability to perform preventative maintenance or repair while the system is online. Remote capabilities are also provided so the system can be remotely monitored, reconfigured or controlled as necessary. All of this is provided to ensure the required levels of service are always met.

Rhode Island's Relay provider has made changes to its relay platform in recent years, making use of leading edge technology. It has upgraded its switching servers to new hardware that evolved its switching operating system from 32 bit UNIX to 64 bit Linux for more robust hardware support; and tested and deployed new switching control code which allows additional ad hoc reporting capabilities for comprehensive traffic analysis and enhanced failover and recovery. Rhode Island's Relay provider has also replaced database servers with new hardware and replaced legacy profile database servers with SQL servers for improved redundancy and database management. Finally Rhode Island's Relay provider has completed a multi-year upgrade of all production workstations to newer, standardized hardware; upgraded workstation operating systems from 16 bit to 32 bit which provides a higher level of stability; and rolled out several new workstation versions to support a variety of new features.

(5) Technology. No regulation set forth in this subpart is intended to discourage or impair the development of improved technology that fosters the availability of telecommunications to person with disabilities. TRS facilities are permitted to use SS7 technology or any other type of similar technology to enhance the functional equivalency and quality of TRS. TRS facilities that utilize SS7 technology shall be subject to the Calling Party Telephone Number rules set forth at 47 CFR 64.1600 et seq.

Upgrades in Technology/Process in Determining of Technology is Reliable

Using flexible software and hardware (i.e. standard carrier switch, common equipment frames, standard T1 interfaces, windows servers, UNIX operating System, etc.) where components can easily be modified in order to accommodate new technology, the platform used by Rhode Island Relay is ideal for today's rapidly changing technologically advanced environment. Rhode Island Relay's provider takes advantage of innovations and technological improvements to enhance the state of Rhode Island's relay service.

Signaling System Seven (SS7)

The relay platform used by Rhode Island Relay has made use of SS7 signaling since February 2002. The Relay platforms have been retrofitted to deliver Caller ID in the same manner that these services are delivered today in the public switched network (i.e. Rhode Island Relay provides true Caller ID service where the actual information of the calling party (not the relay center number) appears on the called party's Caller ID box).

(6) Caller ID. When a TRS facility is able to transmit any calling party identifying information to the public network, the TRS facility must pass through, to the called party, at least one of the following: the number of the TRS facility, 711, or the 10-digit number of the calling party.

True Caller ID

Through the use of SS7 signaling Rhode Island Relay provides true Caller ID service where the actual information of the calling party (not the relay center number) appears on the called party's Caller ID box. Rhode Island Relay provides this information on all call types and on all carriers. Rhode Island Relay brings true functional equivalence to Caller ID relay users.

Rhode Island Relay receives and passes calling line identification information, including blocking information from all users calling through the relay service.