Avaya Modular Messaging 5.2 Telephone User Interface

Voluntary Product Accessibility Template (VPAT)

§ 1194.23 Telecommunications Products

Three different DTMF ("touch-tone") telephone user interface styles are supported by Avaya Modular Messaging 5.2: Intuity™ AUDIX®, Aria®, and Serenade®. The statements of compliance in this document refer to the Intuity AUDIX telephone user interface. This interface is winner of the Access Innovation Award from the Association of Access Engineering Specialists.

The Avaya Modular Messaging 5.2 telephone user interface includes an important accessibility enhancement that was added in version 4.0: Avaya one-X™ Speech software licenses are now included with Modular Messaging, thereby allowing many messaging and call-control functions to be accessed by voice command.

In addition, Avaya Speech to Text is available as an optional feature of Avaya Modular Messaging 5.2. This adjunct allows new voice messages to be converted automatically into text email or mobile phone messages, thereby allowing voice messages to be accessed more easily by people who are deaf or hard of hearing.

Criteria	*Support Levels*	*Remarks and Explanations*
1194.23(a) Telecommunications products or systems which provide a function allowing voice communication and which do not themselves provide a TTY functionality shall provide a standard non-acoustic connection point for TTYs. Microphones shall be capable of being turned on and off to allow the user to intermix speech with TTY use.	Supports.	With regard to provision of a non-acoustic connection point for TTYs, all end-user communication with Avaya Modular Messaging 5.2 is via standard telephone lines or via standard LAN or web connections. With regard to intermixing speech and TTY use, many vendors have stated that this requirement applies only to telephones, and does not apply to messaging systems. By contrast, Avaya believes that the ability to intermix speech and TTY is essential in a messaging system. Here's why: nearly half of the people who use TTYs do so in a mixed-mode fashion, the most common being people who are hard of hearing but still able to speak clearly. These individuals often prefer to receive on their TTYs and then speak in response, a process commonly referred to as Voice Carry

		Over or VCO. For this reason, Modular Messaging allows callers to select whether they wish to be prompted by voice or by TTY, and then, regardless of whether voice or TTY prompting is being used, Modular Messaging allows users to leave a voice or TTY message. For example, even when the system is providing menu choices in TTY format, users are able to leave a voice message. NOTE: This ability of callers to select whether they wish to be prompted by voice or in TTY format means that it is *not* necessary to provide separate phone numbers or separate mailboxes to employees who will be receiving both voice and TTY calls.
1194.23(b) Telecommunications products, which include voice communication functionality, shall support all commonly used cross-manufacturer non-proprietary standard TTY signal protocols.	Supports.	The only TTY protocol that the US Access Board presently requires in messaging systems is TIA/EIA 825, commonly referred to as 45.45 baud Baudot signaling. NOTE: Avaya Modular Messaging 5.2 permits system administrators to choose from among different audio encoding algorithms. It may be necessary to select G.711 audio encoding, rather than GSM, in order to ensure reliable support for TTY messaging. Please note also that TTY messaging is supported only when TTY signals are transported reliably by the network to and from the Modular Messaging system. This can be accomplished by using one of the following types of telephony integration when Modular Messaging 5.2 runs on servers prior to S8800 vintage: analog in-band; analog serial/SMDI; analog CLAN; digital set emulation; T1 Q.SIG; E1 Q.SIG. If SIP integration is employed, communication to and from the Modular Messaging system must be configured to utilize G.711 audio encoding and provide a packet loss rate less than 0.12%. Note that, because WANs typically do not support a packet loss rate of less than 0.12%, IP QSIG trunks are recommended for the connections between Avaya Communication Manager systems, in

		order to ensure that TTY signals that originate or terminate on remote systems are transported reliably.
1194.23(c) Voice mail, auto-attendant, and interactive voice response telecommunications systems shall be usable by TTY users with their TTYs.	Supports.	Avaya Modular Messaging 5.2 is operable with TTYs in pure TTY mode or in a mixed TTY-and-voice mode, such as VCO (Voice Carry Over). Full TTY compatibility is provided for all telephone-access functions, including the subscriber user interface, call-answer user interface, and auto-attendant functions. In addition, mailboxes are accessible via fully featured graphical user interfaces, thereby further facilitating use by individuals with hearing impairments. The Modular Messaging system permits mailboxes to be configured with different telephone user interface styles. One of the options, the “Intuity AUDIX” user interface, is winner of the Access Innovation Award from the Association of Access Engineering Specialists. NOTE: It has been our experience that most of the auto-attendant scripts that operate on Avaya platforms have been implemented by the managers of the systems, rather than by Avaya. For this reason, in many auto-attendant applications, it will be the purchaser's responsibility to ensure conformance with this accessibility standard.
1194.23(d) Voice mail, messaging, auto-attendant, and interactive voice response telecommunications systems that require a response from a user within a time interval, shall give an alert when the time interval is about to run out, and shall provide sufficient time for the user to indicate more time is required.	Supports.	In addition to satisfying this requirement, Avaya Modular Messaging 5.2 permits the time-out interval to be adjusted by the system administrator. NOTE: The Modular Messaging system permits mailboxes to be configured with different telephone user interface styles. Some of the convenience features in the "Octel Aria style" interface require users to press the same telephone key twice in rapid succession. Although none of the features necessary for operating the “Octel Aria” interface requires a double-press on the keys, some people with motor control impairments may find that the "Intuity AUDIX" interface is

		easier to use. (The “Intuity AUDIX” interface is winner of the 2000 Access Innovation Award from the Association of Access Engineering Specialists.)
1194.23(e) Where provided, caller identification and similar telecommunications functions shall also be available for users of TTYs, and for users who cannot see displays.	Supports.	When a message-sender's ID information is obtained by Avaya Modular Messaging 5.2, it is accessible to the mailbox owner visually via LAN- or web-based graphical user interfaces, visually via the TTY user interface, and aurally via the telephone user interface. NOTE: Modular Messaging 5.2 allows each mailbox to be configured to use one of three different telephone user interface styles. It is recommended that the “Intuity AUDIX” TUI be used in conjunction with TTYs because it allows message senders to be identified by their mailbox number.
1194.23(f) For transmitted voice signals, telecommunications products shall provide a gain adjustable up to a minimum of 20 dB. For incremental volume control, at least one intermediate step of 12 dB of gain shall be provided.	Supports.	The user-adjustable amplitude range in the Avaya Modular Messaging 5.2 telephone user interface (i.e., the lowest user-selectable amplitude versus the highest user-selectable amplitude) exceeds 20 dB. An intermediate step of 12 dB is provided. NOTE: It is important to recognize that none of the commonly accepted standards for voice communication between telephones and associated back-office equipment (such as voicemail servers) has 20 dB of amplitude headroom available. Under typical conditions, the maximum additional gain in the output of back-office systems, without introducing unacceptable levels of distortion, is approximately 10 dB – the amount provided by Modular Messaging 5.2. Users who require higher levels of amplification can access the system via endpoints that provide additional amplification, such as any Avaya telephone or any soundcard-equipped PC that supports the Modular Messaging LAN- or web-based user interfaces.
1194.23(g) If the telecommunications product allows a user to adjust the receive volume, a function shall be provided to automatically reset the	Supports.	All audio adjustments, made during a call by sending appropriate DTMF (“touch-tone”) commands to the Avaya Modular Messaging 5.2, are reset

volume to the default level after every use.		automatically to the default level when the call is completed. Note that, in addition to amplitude and call-answer prompting language, the playback speed of messages and prompts is user-adjustable. The ability to adjust the playback rate can be helpful to people who have trouble understanding speech when it is presented at a normal rate, such as people who are hard-of-hearing, people who are not fluent in the language being spoken, and people with cognitive disabilities.
1194.23(h) Where a telecommunications product delivers output by an audio transducer which is normally held up to the ear, a means for effective magnetic wireless coupling to hearing technologies shall be provided.	Not Applicable.	Avaya Modular Messaging 5.2 systems do not have audio transducers. There is no aspect of Avaya Modular Messaging 5.2 that would interfere with the ability of a transducer-equipped device (e.g., a telephone handset) to conform to this requirement.
1194.23(i) Interference to hearing technologies (including hearing aids, cochlear implants, and assistive listening devices) shall be reduced to the lowest possible level that allows a user of hearing technologies to utilize the telecommunications product.	Not Applicable.	The physical components of Avaya Modular Messaging 5.2 systems are not co-located with the users. There is no aspect of Avaya Modular Messaging 5.2 that would interfere with the ability of a transducer-equipped device (e.g., a telephone handset) to conform to this requirement.
1194.23(j) Products that transmit or conduct information or communication, shall pass through cross-manufacturer, non-proprietary, industry-standard codes, translation protocols, formats or other information necessary to provide the information or communication in a usable format. Technologies which use encoding, signal compression, format transformation, or similar techniques shall not remove information needed for access or shall restore it upon delivery.	Supports.	Please refer to the Remarks and Explanations for 1194.23(b).
1194.23(k)(1) Products which have mechanically operated controls or keys shall comply with the following: Controls and Keys shall be tactilely discernible without activating the controls or keys.	Not Applicable.	Modular Messaging 5.2 is operated via the controls and keys of the user's endpoint device, e.g., the user's telephone or desktop computer.
1194.23(k)(2) Products which have mechanically operated controls or keys shall comply with the following: Controls and Keys shall be operable	Not Applicable.	Modular Messaging 5.2 is operated via the controls and keys of the user's endpoint device, e.g., the user's telephone or desktop computer.

with one hand and shall not require tight grasping, pinching, twisting of the wrist. The force required to activate controls and keys shall be 5 lbs. (22.2N) maximum.		
1194.23(k)(3) Products which have mechanically operated controls or keys shall comply with the following: If key repeat is supported, the delay before repeat shall be adjustable to at least 2 seconds. Key repeat rate shall be adjustable to 2 seconds per character.	Supports.	There are no key repeat functions in the Avaya Modular Messaging 5.2 telephone user interface.
1194.23(k)(4) Products which have mechanically operated controls or keys shall comply with the following: The status of all locking or toggle controls or keys shall be visually discernible, and discernible either through touch or sound.	Supports.	The status of all toggled functions associated with Avaya Modular Messaging 5.2, such as whether the message being created by the user is marked Private or Priority, is accessible by voice output through the standard telephone user interface, and is visually discernible by TTY users.

§ 1194.31 Functional Performance Criteria

Criteria	*Support Levels*	*Remarks and Explanations*
1194.31(a) At least one mode of operation and information retrieval that does not require user vision shall be provided, or support for assistive technology used by people who are blind or visually impaired shall be provided.	Supports.	The Avaya Modular Messaging 5.2 telephone user interface is an audio-only interface that is operable without user vision.
1194.31(b) At least one mode of operation and information retrieval that does not require visual acuity greater than 20/70 shall be provided in audio and enlarged print output working together or independently, or support for assistive technology used by people who are visually impaired shall be provided.	Supports.	The Avaya Modular Messaging 5.2 telephone user interface is an audio-only interface that is operable without user vision.
1194.31(c) At least one mode of operation and information retrieval that does not require user hearing shall be provided, or support for assistive technology used by people who are deaf or hard of hearing shall be provided.	Supports.	The Avaya Modular Messaging 5.2 telephone user interface is operable with TTYs in pure TTY mode or in a mixed TTY-and-voice mode, such as VCO (Voice Carry Over). Full TTY compatibility is provided for all telephone-access functions, including the subscriber user interface, call-answer user interface, and auto-attendant functions. In addition, mailboxes are accessible via fully

		featured graphical user interfaces, thereby further facilitating use by individuals with hearing impairments.
1194.31(d) Where audio information is important for the use of a product, at least one mode of operation and information retrieval shall be provided in an enhanced auditory fashion, or support for assistive hearing devices shall be provided.	Supports.	The user-adjustable amplitude range in the Avaya Modular Messaging 5.2 telephone user interface (i.e., the lowest user-selectable amplitude versus the highest user-selectable amplitude) exceeds 20 dB. An intermediate step of 12 dB is provided. In addition to amplitude, the playback speed of messages and prompts is user-adjustable. The ability to adjust the playback rate can be helpful to people who have trouble understanding speech when it is presented at a normal rate, such as people who are hard-of-hearing, people who are not fluent in the language being spoken, and people with cognitive disabilities. There is no aspect of Avaya Modular Messaging 5.2 that would interfere with the ability of transducer-equipped telecommunication devices (e.g., a telephone handset) to couple properly with telecoil-equipped assistive listening devices (e.g., hearing aids and cochlear implants).
1194.31(e) At least one mode of operation and information retrieval that does not require user speech shall be provided, or support for assistive technology used by people with disabilities shall be provided.	Supports.	All functions that are presented by the Avaya Modular Messaging 5.2 telephone user interface are accessible via DTMF (“touch tone”) key presses on the user’s telephone dial pad. Please note also that people who are unable to speak are nevertheless able to send messages by utilizing the TTY user interface.
1194.31(f) At least one mode of operation and information retrieval that does not require fine motor control or simultaneous actions and that is operable with limited reach and strength shall be provided.	Supports.	All functions that are presented by the Avaya Modular Messaging 5.2 telephone user interface are accessible via DTMF (“touch tone”) key presses on the user’s telephone dial pad. No operations require multiple keys to be pressed simultaneously. NOTE: The Modular Messaging system permits mailboxes to be configured with different telephone user interface styles. Some of the convenience features in the "Octel Aria

		style" interface require users to press the same telephone key twice in rapid succession. Although none of the features necessary for operating the "Octel Aria" interface requires a double-press on the keys, some people with motor control impairments may find that the "Intuity AUDIX" interface is easier to use. (The "Intuity AUDIX" interface is winner of the 2000 Access Innovation Award from the Association of Access Engineering Specialists.)

§ 1194.41 Information, Documentation and Support

Criteria	*Support Levels*	*Remarks and Explanations*
1194.41(a) Product support documentation provided to end-users shall be made available in alternate formats upon request, at no additional charge	Supports.	Will provide upon request.
1194.41(b) End-users shall have access to a description of the accessibility and compatibility features of products in alternate formats or alternate methods upon request, at no additional charge.	Supports	Will provide upon request.
1194.41(c) Support services for products shall accommodate the communication needs of end-users with disabilities.	Supports	Avaya's point-of-contact for accessibility-related issues: Dr. Paul R. Michaelis Voice: 303-538-4101 TTY: 303-538-3740 prmichaelis-at-avaya.com.

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