

# Avaya Aura® Communication Manager 6

## Voluntary Product Accessibility Template (VPAT)

Following its initial introduction, there have been continuous improvements in Avaya Aura Communication Manager 6, as designated by version numbers such as 6.1, 6.2, and 6.3. The statements in this document apply to all versions of Avaya Aura Communication Manager 6.

The responses to the requirements in § 1194.21 refer to the Avaya Aura Communication Manager 6 administrative interfaces. In many cases, these interfaces will be located in spaces frequented only by service personnel for maintenance, repair, or occasional monitoring of equipment, and therefore *may* qualify for exemption under § 1194.3(f), General Exceptions.

The Avaya Aura Communication Manager 6 is administered using the following three tools or methods:

- A text-only interface, referred to in Avaya documentation as the System Access Terminal or SAT.
- A Microsoft® Windows® thick-client application, referred to in Avaya documentation as Avaya Site Administration or SA. This application combines elements of the text-only SAT interface with Avaya's Graphically Enhanced Definity® Interface ("GEDI"). In addition, the SA tool includes wizards that make it easier to perform common administrative functions.
- A browser-based graphical interface.

Generally, the browser interface is only used by Avaya personnel and business partners to support initial installation and upgrades. In most cases, the routine administrative tasks performed by owners of Communication Manager systems are managed via the SAT and SA tools. Unless otherwise specified, the information in this document refers to the SA tool. (NOTE: The Avaya Aura Communication Manager Messaging server, which is included with some configurations of Avaya Aura Communication Manager 6, is administered via a separate mechanism. The statements in this document do not apply to the Communication Manager Messaging administrative interfaces.)

The SA tool pre-dates the Section 508 rules by several years. Although over one hundred different station characteristics are accessible via the SA tool, it has been Avaya's experience that the vast majority of operations performed by administrators are in a category commonly referred to as "MAC" tasks: Moves, Adds, and Changes.

Unless otherwise noted, the statements of conformance in Sections § 1194.21 and § 1194.31 are limited to MAC operations performed via the SA tool and associated wizards. Avaya does *not* certify that the conformance statements are valid for all of the screens that may be presented by the SA tool. Service personnel and system administrators who require the support of assistive technologies may be unable to perform the initial physical installation, system setup and upgrades, and some of the less frequent or more complex administrative tasks.

## § 1194.21 Software Applications and Operating Systems

<i>Criteria</i>	<i>Support Levels</i>	<i>Remarks and Explanations</i>
1194.21(a) When software is designed to run on a system that has a keyboard, product functions shall be executable from a keyboard where the function itself or the result of performing a function can be discerned textually.	Supports	All MAC functions presented by the SA tool and associated wizards are executable from the keyboard. All system responses for these operations are presented in standard ASCII or Unicode text.
1194.21(b) Applications shall not disrupt or disable activated features of other products that are identified as accessibility features, where those features are developed and documented according to industry standards. Applications also shall not disrupt or disable activated features of any operating system that are identified as accessibility features where the application programming interface for those accessibility features has been documented by the manufacturer of the operating system and is available to the product developer.	Supports	The SA tool and associated wizards do not disrupt or disable the accessibility features of operating systems, nor do they disrupt or disable the features or settings of other software applications.
1194.21(c) A well-defined on-screen indication of the current focus shall be provided that moves among interactive interface elements as the input focus changes. The focus shall be programmatically exposed so that assistive technology can track focus and focus changes.	Supports	Unless something other than the default Microsoft Windows color scheme has been selected, the SA tool and associated wizards present text in a bold black font against a light tan background. Data entry fields use the same bold black font against a white background. The "current focus" is indicated by white text (same font) against a navy blue background. The location and changes in focus are displayed visually and exposed programmatically.
1194.21(d) Sufficient information about a user interface element including the identity, operation and state of the element shall be available to assistive technology. When an image represents a program element, the information conveyed by the image must also be available in text.	Not applicable	All MAC information presented by the SA tool and associated wizards is displayed as text.
1194.21(e) When bitmap images are used to identify controls, status indicators, or other programmatic elements, the meaning assigned to those images shall be consistent throughout an application's performance.	Not applicable	All MAC information presented by the SA tool and associated wizards is displayed as text. There are no bitmap images that provide information to the user or serve as controls, status indicators, or other programmatic elements.

1194.21(f) Textual information shall be provided through operating system functions for displaying text. The minimum information that shall be made available is text content, text input caret location, and text attributes.	Supports	All MAC information presented by the SA tool and associated wizards is provided to the operating system as either ASCII or Unicode text.
1194.21(g) Applications shall not override user selected contrast and color selections and other individual display attributes.	Supports	The default contrast and color schemes for the SA tool and associated wizards are described in the Remarks for requirement 1194.21(c). It is possible to change these characteristics as part of the overall environment via the "Appearance" tab on the "Display Properties" function within Microsoft Windows.  The font type and size settings in the SA tool are user configurable from within the application.
1194.21(h) When animation is displayed, the information shall be displayable in at least one non-animated presentation mode at the option of the user.	Not applicable	All MAC information presented by the SA tool and associated wizards is displayed as text. There is no animation.
1194.21(i) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.	Not applicable	All MAC information presented by the SA tool and associated wizards is displayed as text. There is no color coding.
1194.21(j) When a product permits a user to adjust color and contrast settings, a variety of color selections capable of producing a range of contrast levels shall be provided.	Supports	The color and contrast settings for the SA tool and associated wizards are controlled by the user's operating system. Adjustments are made via the "Appearance" tab on the "Display Properties" function within Microsoft Windows.
1194.21(k) Software shall not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.	Supports	The SA tool and associated wizards do not present text, objects, or elements that flash or blink. The blink rate of the cursor is controlled by the user's operating system.
1194.21(l) When electronic forms are used, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.	Supports	The text entry fields that are presented by the SA tool and associated wizards are labeled in a manner that permits assistive technologies to discover and report the field identifiers.

## § 1194.23 Telecommunications Products

**Avaya Aura Communication Manager 6 has two modes of operation: Evolution Server and Feature Server. Evolution Server mode supports analog, digital, H.323 IP, and SIP endpoints. Feature Server mode is SIP-only. (Despite its lack of support for analog, digital, and H.323 IP endpoints, Feature Server mode might be preferred by some customers because it allows for full sequencing of other applications.)**

**In some cases, the manner and extent to which the requirements in § 1194.23 are satisfied by Avaya Aura Communication Manager 6 depends on whether the end-user's device is analog, digital, H.323 IP, or SIP. The device-specific responses for all four device types are valid for Evolution Server mode. Responses that are specific to analog, digital, and H.323 IP devices are not applicable to Feature Server mode.**

<i>Criteria</i>	<i>Support Levels</i>	<i>Remarks and Explanations</i>
<p>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.</p>	<p>Supports</p>	<p>The manner in which Avaya Aura Communication Manager 6 satisfies this requirement depends on whether the primary communication link between the user's workstation and the Communication Manager is analog, digital, H.323, or SIP.</p> <p><u>Analog.</u> Most stand-alone TTY devices that permit an electronic, non-acoustic connection to the telephone network do so through RJ-11 tip/ring connectors of the sort found on residential analog telephone equipment. These devices may be connected directly to an analog port on an Avaya Aura Communication Manager-Evolution Server.</p> <p><u>Digital.</u> There are two ways that a TTY device may be used in conjunction with an Avaya digital telephone, such as the Model 2420. The first is to connect the TTY to the Communication Manager in the manner described in the previous paragraph, and then administer the TTY as a bridged call appearance on the digital telephone. The second is to configure the digital telephone with an Analog Interface Module that would permit the TTY to be connected directly to the telephone via an RJ-11 jack. (Note that not all Avaya digital telephones may be equipped with an Analog Interface Module.)</p> <p><u>H.323 IP.</u> There are two ways to configure an H.323 IP system to support TTY communication. The first is to connect the TTY to the Communication Manager in the manner described previously, and then administer the TTY as a bridged call appearance on an Avaya H.323 IP telephone. The second is to utilize an Avaya H.323 softphone application in which there is embedded support for TTY communication, such as Release 2 of Avaya one-X® Agent.</p> <p><u>SIP.</u> In configurations that are SIP-only, the recommended solution is to utilize an Avaya-compatible SIP "soft TTY" PC client, such as the Accessaphone™ ipTTY by Tenacity.</p> <p>In all four configurations, there is no aspect of Communication Manager that would disrupt the ability of a microphone-equipped device to support the intermixing of speech and TTY use.</p>

<p>1194.23(b) Telecommunications products, which include voice communication functionality, shall support all commonly used cross-manufacturer non-proprietary standard TTY signal protocols.</p>	<p>Supports</p>	<p>When communicating via analog and non-IP digital links, Avaya Aura Communication Manager 6 transmits all TTY signals, regardless of protocol, in their original format.</p> <p>When communicating via IP links with other appropriately configured and enabled Avaya systems, Avaya Aura Communication Manager has the ability to encode 45.45 baud Baudot TTY signals (the TTY format most commonly used in the US) and 50 baud Baudot signals (a format commonly used outside of the US in countries such as Australia, Ireland, and the UK) as redundant data packets that, in essence, contain descriptions of the tones rather than the tones themselves. The encoding format for these descriptive packets conforms to RFC-2833, an international standard for the transmission of audio tones on IP networks. Independent testing has verified that this Avaya approach provides reliable transport of TTY signals with packet loss rates up to 10%, even when G.729 compression is being used on the audio channels.</p> <p>NOTE: When the receiving endpoint is an analog TTY device, the associated Communication Manager system transcodes automatically between the RFC-2833 descriptions and the corresponding analog TTY signals. Alternatively, the Avaya one-X Agent TTY application is able to send and receive the RFC-2833 descriptive packets, thereby eliminating the need for transcoding between those packets and the corresponding audio tones.</p> <p>A mechanism commonly used by other vendors is to transport the TTY signals within IP networks as uncompressed G.711 audio packets. In addition to the RFC-2833 approach described in the two previous paragraphs, the Avaya TN2302, TN2602, G250, G350, G430, G450, IG550, and G700 VoIP modules support an Avaya-only G.711 “pass-through” approach similar to that used by others. Specifically, when configured for pass-through mode, rather than RFC-2833 mode, the firmware of these modules detects the audio tones that indicate the type of device being used (FAX, modem, or TTY) and then uses G.711 to encode and transport the signals over the IP network.</p> <p>Note that Avaya pass-through mode provides higher quality transmission when endpoints are synchronized to the same clock source. Note also that some text telephony modem protocols such as 300 baud and 1200 baud ASCII, as well as the non-Baudot V.18 protocols commonly used outside the US, are not supported by the Avaya RFC-2833 approach, but are supported by pass-through mechanisms of the TN2302, TN2602, G250, G350, G430, G450, G860, IG550, and G700 VoIP modules.</p> <p>Interoperability with non-Avaya equipment is supported when signals are encoded in G.711 voice mode, with all proprietary mechanisms set to OFF on the system administrator’s “ip-codec set” form.</p> <p>(NOTE: 50 baud Baudot TTY encoding, using RFC-2833, is <i>not</i> supported by the Avaya TN2303AP media processor, hardware version 3. The RFC-2833 mechanism in this device supports only the US standard 45.45 baud TTY protocol.)</p>
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<p>1194.23(c) Voice mail, auto-attendant, and interactive voice response telecommunications systems shall be usable by TTY users with their TTYs.</p>	<p>Supports</p>	<p>The Avaya Aura Communication Manager 6/ Communication Manager Messaging configuration provides a fully featured TTY user interface that was the winner of the Access Innovation Award from the Association of Access Engineering Specialists.</p> <p>NOTE: If the transmissions between Avaya Aura Communication Manager and the TTY user are via an IP link, Communication Manager Messaging's conformance with this requirement is not assured if the TTY signals are not encoded and transmitted using ITU-T Recommendation G.711 or if the link is experiencing packet loss greater than 0.12%.</p> <p>NOTE: If the Avaya Aura Communication Manager configuration includes a TN2302AP Media Processor board, TN2302 firmware version 72 or later is required.</p>
<p>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.</p>	<p>Supports</p>	<p>In most cases, this requirement will apply to the platforms used in conjunction with Avaya Aura Communication Manager, rather than to the Communication Manager itself. One exception is the S8300D, S8510 (with 8GB), and the S8800 Simplex configurations that include the embedded Communication Manager Messaging application. In addition to satisfying this requirement, the Communication Manager Messaging application allows the time-out period to be adjusted by the system administrator.</p>
<p>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.</p>	<p>Not applicable (This requirement applies to devices that are co-located with the users, such as telephones, TTYs, and PC-based soft phones.)</p>	<p>There is no aspect of Avaya Aura Communication Manager 6 that would interfere with the conformance of a properly equipped endpoint device.</p> <p>NOTE: For users of Avaya digital and H.323 IP telephones who cannot see displays, satisfaction of this requirement, as well as requirement 1194.23(k)(4), can be achieved by using the telephone in conjunction with Avaya "Universal Access Phone Status" software. This software, which is available as a free download from Avaya, utilizes the Communication Manager "shared control" feature.</p>
<p>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.</p>	<p>Not applicable (This requirement applies to devices that are co-located with the users, such as telephones and PC-based soft phones.)</p>	<p>There is no aspect of Avaya Aura Communication Manager 6 that would interfere with the conformance of a properly equipped endpoint device.</p>

<p>1194.23(g) If the telecommunications product allows a user to adjust the receive volume, a function shall be provided to automatically reset the volume to the default level after every use.</p>	<p>Not applicable  (This requirement applies to devices that are co-located with the users, such as telephones and PC-based soft phones.)</p>	<p>There is no aspect of Avaya Aura Communication Manager 6 that would interfere with the conformance of a properly equipped endpoint device. The methods for achieving conformance depend on the nature of the endpoint:</p> <p><u>Analog.</u> Third-party analog telephones that satisfy this requirement may be used in conjunction with Avaya Aura Communication Manager 6.</p> <p><u>Digital.</u> There are two ways to satisfy this requirement. Avaya Aura Communication Manager 6 permits system administrators to specify that all Avaya digital telephones connected to system shall automatically reset the volume to the default level after every use. Alternatively, Avaya Model 1408 and 1416 digital telephones may be equipped with Model S1-K6 special-purpose variable amplified handsets that include an automatic post-call amplitude reset function.</p> <p><u>H.323 IP.</u> There are two ways to satisfy this requirement. Avaya Aura Communication Manager 6 permits system administrators to specify that all Avaya H.323 IP telephones connected to system shall automatically reset the volume to the default level after every use. Alternatively, Avaya Model 16xx and 96xx series H.323 IP telephones may be equipped with special-purpose variable amplified handsets that include an automatic post-call amplitude reset function. (The Avaya special-purpose handset for 16xx-series telephones is a Model S1-K6. The Avaya special-purpose handset for 96xx-series telephones is a Model S1-K5.)</p> <p><u>SIP.</u> Avaya Model 96xx-series SIP telephones may be equipped with Model S1-K5 special-purpose variable amplified handsets that include an automatic post-call amplitude reset function.</p>
<p>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.</p>	<p>Not applicable  (This requirement applies to handsets and headsets.)</p>	<p>There is no aspect of Avaya Aura Communication Manager that would interfere with the conformance of a properly equipped endpoint device.</p> <p>All Avaya telephones are equipped with handsets that conform to this requirement.</p>
<p>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.</p>	<p>Not applicable  (This requirement applies to devices that are co-located with the users, such as telephones, TTYs, and PC-based soft phones.)</p>	<p>There is no aspect of Avaya Aura Communication Manager that would interfere with the conformance of a properly equipped endpoint device.</p>

<p>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.</p>	<p>Supports</p>	<p>The manner in which Avaya Aura Communication Manager supports the transmission of Baudot TTY signals and other text telephony protocols is described in the response to 1194.23(b).</p> <p>Support for other cross-manufacturer, non-proprietary, industry-standard codes, translation protocols, formats or other non-voice information is provided by the “pass-through” mechanism described in the response to 1194.23(b).</p> <p>NOTE: Many VoIP protocols, potentially of value when used in support of assistive technologies, have been proposed as standards but not yet adopted by the majority of manufacturers. Avaya does not certify that these protocols will be supported by Communication Manager.</p>
<p>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.</p>	<p>Not applicable (This requirement applies to devices that are co-located with the users, such as telephones, TTYs, and PC-based soft phones.)</p>	<p>There is no aspect of Avaya Aura Communication Manager that would interfere with the conformance of a properly equipped endpoint device.</p>
<p>1194.23(k)(2) Products which have mechanically operated controls or keys shall comply with the following: Controls and Keys shall be operable 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.</p>	<p>Not applicable (This requirement applies to devices that are co-located with the users, such as telephones, TTYs, and PC-based soft phones.)</p>	<p>There is no aspect of Avaya Aura Communication Manager that would interfere with the conformance of a properly equipped endpoint device.</p>
<p>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.</p>	<p>Not applicable (This requirement applies to devices that are co-located with the users, such as telephones, TTYs, and PC-based softphones.)</p>	<p>There is no aspect of Avaya Aura Communication Manager that would interfere with the conformance of a properly equipped endpoint device.</p>
<p>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.</p>	<p>Not applicable (This requirement applies to devices that are co-located with the users, such as telephones, TTYs, and PC-based softphones.)</p>	<p>There is no aspect of Avaya Aura Communication Manager that would interfere with the conformance of a properly equipped endpoint device.</p> <p>NOTE: For users of Avaya digital and H.323 IP telephones who cannot see displays, satisfaction of this requirement, as well as requirement 1194.23(e), can be achieved by using Avaya telephones in conjunction with Avaya "Universal Access Phone Status" software. This software, which is available as a free download from Avaya, utilizes the Communication Manager “shared control” feature.</p>



## § 1194.31 Functional Performance Criteria

<i>Criteria</i>	<i>Support Levels</i>	<i>Remarks and Explanations</i>
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	<p>The manner in which the Avaya Aura Communication Manager 6 Site Administration interface supports system administrators who are blind or visually impaired, when performing MAC operations, is documented in the responses to § 1194.21 “Software Applications and Operating Systems.”</p> <p>The manner in which the Avaya Aura Communication Manager 6 supports end-users who are blind or visually impaired is documented in the responses to § 1194.23(e) and 1194.23(k)(4).</p>
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	<p>The manner in which the Avaya Aura Communication Manager 6 Site Administration interface supports system administrators who are blind or visually impaired, when performing MAC operations, is documented in the responses to § 1194.21 “Software Applications and Operating Systems.”</p> <p>The manner in which the Avaya Aura Communication Manager 6 supports end-users who are blind or visually impaired is documented in the responses to § 1194.23(e) and 1194.23(k)(4).</p>
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	<p>The Avaya Aura Communication Manager 6 Site Administration interface does not have an audio component.</p> <p>The manner in which the Avaya Aura Communication Manager 6 supports end-users who are deaf or hard of hearing is documented in the responses to § 1194.23(a), 1194.23(b), 1194.23(c), and 1194.23(j).</p>
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	<p>The Avaya Aura Communication Manager 6 Site Administration interface does not have an audio component.</p> <p>The manner in which the Avaya Aura Communication Manager 6 supports end-users who are deaf or hard of hearing is documented in the responses to § 1194.23(a), 1194.23(b), 1194.23(c), and 1194.23(j).</p>
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	For both the administrative and end-user interfaces, no mode of operation or information retrieval in the Avaya Aura Communication Manager 6 system requires user speech.
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	For both the administrative and end-user interfaces, no mode of operation or information retrieval in the Avaya Aura Communication Manager 6 system requires fine motor control or simultaneous actions. Conformance with the reach and strength requirements is dependent on the user’s endpoint device.

## § 1194.41 Information, Documentation and Support

<i>Criteria</i>	<i>Support Levels</i>	<i>Remarks and Explanations</i>
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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