



EN301549 Technical Report

Chapter 5: Generic requirements

Criteria	Conformance levels	Notes
5.1 Closed functionality	<i>Header cell no response required</i>	<i>Header cell no response required</i>
5.1.2 General	<i>Header cell no response required</i>	<i>Header cell no response required</i>
5.1.2.1 Closed functionality	<i>See clauses 5.2 to 13</i>	<i>See information in clauses 5.2 to 13</i>
5.1.2.2 Assistive technology	<i>See clauses 5.1.3 to 5.1.6</i>	<i>See information in clauses 5.1.3 to 5.1.6</i>
5.1.3 Non-visual access	<i>Header cell no response required</i>	<i>Header cell no response required</i>
5.1.3.1 Audio output of visual information	Not applicable	
5.1.3.2 Auditory output delivery including speech	Not applicable	
5.1.3.3 Auditory output correlation	Not applicable	
5.1.3.4 Speech output user control	Not applicable	
5.1.3.5 Speech output automatic interruption	Not applicable	
5.1.3.6 Speech output for non-text content	Not applicable	
5.1.3.7 Speech output for video information	Not applicable	
5.1.3.8 Masked entry	Not applicable	
5.1.3.9 Private access to personal data	Not applicable	
5.1.3.10 Non-interfering audio output	Not applicable	
5.1.3.11 Private listening volume	Not applicable	
5.1.3.12 Speaker volume	Not applicable	

Criteria	Conformance levels	Notes
5.1.3.13 Volume reset	Not applicable	
5.1.3.14 Spoken languages	Not applicable	
5.1.3.15 Non-visual error identification	Not applicable	
5.1.3.16 Receipts, tickets and transactional outputs	Not applicable	
5.1.4 Functionality closed to text enlargement	Not applicable	
5.1.5 Visual output for auditory information	Not applicable	
5.1.6 Operation without keyboard interface	<i>Header cell no response required</i>	<i>Header cell no response required</i>
5.1.6.1 Closed functionality	<i>See clauses 5.1.3.1 to 5.1.3.16</i>	<i>See information in clauses 5.1.3.1 to 5.1.3.16</i>
5.1.6.2 Input focus	Not applicable	
5.1.7 Access without speech	Not applicable	
5.2 Activation of accessibility features	Not applicable	
5.3 Biometrics	Not applicable	
5.4 Preservation of accessibility information during conversion	Not applicable	
5.5 Operable parts	<i>Header cell no response required</i>	<i>Header cell no response required</i>
5.5.1 Means of operation	Not applicable	
5.5.2 Operable part discernibility	Not applicable	
5.6 Locking or toggle controls	<i>Header cell no response required</i>	<i>Header cell no response required</i>
5.6.1 Tactile or auditory status	Not applicable	
5.6.2 Visual status	Not applicable	

Criteria	Conformance levels	Notes
5.7 Key repeat	Not applicable	
5.8 Double-strike key acceptance	Not applicable	
5.9 Simultaneous user actions	Not applicable	

Chapter 6: ICT with two-way voice communication

Criteria	Conformance levels	Notes
6.1 Audio bandwidth for speech	<i>Not applicable</i>	
6.2 Real-Time Text (RTT) functionality	<i>Header cell no response required</i>	<i>Header cell no response required</i>
6.2.1.1 RTT communication	Not applicable	
6.2.1.2 Concurrent voice and text	Not applicable	
6.2.2.1 Visually distinguishable display		
6.2.2.2 Programmatically determinable send and receive direction	Not applicable	
6.2.2.3 Speaker identification	Not applicable	
6.2.2.4 Visual indicator of audio with RTT	Not applicable	
6.2.3 Interoperability	Not applicable	
6.2.4 RTT responsiveness	Not applicable	
6.3 Caller ID	Not applicable	
6.4 Alternatives to voice-based services	Not applicable	
6.5 Video communication	<i>Header cell no response required</i>	<i>Header cell no response required</i>
6.5.1 General	<i>Header cell no response required</i>	<i>Header cell no response required</i>
6.5.2 Resolution	Not applicable	
6.5.3 Frame rate	Not applicable	
6.5.4 Synchronisation between audio and video	Not applicable	

Criteria	Conformance levels	Notes
6.5.5 Visual indicator of audio with video	Not applicable	
6.5.6 Speaker identification with video (sign language) communication	Not applicable	
6.6 Alternatives to video-based services	<i>Advisory – no response required</i>	<i>Advisory – no response required</i>

Chapter 7: ICT with video capabilities

Criteria	Conformance levels	Notes
7.1 Caption processing technology	<i>Header cell no response required</i>	<i>Header cell no response required</i>
7.1.1 Captioning playback	Not applicable	
7.1.2 Captioning synchronisation	Not applicable	
7.1.3 Preservation of captioning	Not applicable	
7.1.4 Captions characteristics	Not applicable	
7.1.5 Spoken subtitles	Not applicable	
7.2 Audio description technology	<i>Header cell no response required</i>	<i>Header cell no response required</i>
7.2.1 Audio description playback	Not applicable	
7.2.2 Audio description synchronisation	Not applicable	
7.2.3 Preservation of audio description	Not applicable	
7.3 User controls for captions and audio description	Not applicable	

Chapter 8: Hardware

Criteria	Conformance levels	Notes
8.1.1 Generic requirements	<i>Header cell no response required</i>	<i>Header cell no response required</i>
8.1.2 Standard connections	Not applicable	
8.1.3 Colour	Not applicable	
8.2 Hardware products with speech output	<i>Header cell no response required</i>	<i>Header cell no response required</i>
8.2.1.1 Speech volume range	Not applicable	
8.2.1.2 Incremental volume control	Not applicable	
8.2.2.1 Fixed-line devices	Not applicable	
8.2.2.2 Wireless communication systems	Not applicable	
8.3 Stationary ICT	<i>Header cell no response required</i>	<i>Header cell no response required</i>
8.3.2.1 Unobstructed high forward reach	Not applicable	
8.3.2.2 Unobstructed low forward reach	Not applicable	
8.3.2.3.1 Clear space	Not applicable	
8.3.2.3.2 Obstructed (< 510 mm) forward reach	Not applicable	
8.3.2.3.3 Obstructed (< 635 mm) forward reach	Not applicable	
8.3.2.4 Knee and toe clearance width	Not applicable	
8.3.2.5 Toe clearance	Not applicable	
8.3.2.6 Knee clearance	Not applicable	
8.3.3.1 Unobstructed high side reach	Not applicable	
8.3.3.2 Unobstructed low side reach	Not applicable	

Criteria	Conformance levels	Notes
8.3.3.3.1 Obstructed (< 255 mm) side reach	Not applicable	
8.3.3.3.2 Obstructed (< 610 mm) side reach	Not applicable	
8.3.4.1 Change in level	Not applicable	
8.3.4.2 Clear floor or ground space	Not applicable	
8.3.4.3.2 Forward approach	Not applicable	
8.3.4.3.3 Parallel approach	Not applicable	
8.3.5 Visibility	Not applicable	
8.3.6 Installation instructions	Not applicable	
8.4 Mechanically operable parts	<i>Header cell no response required</i>	<i>Header cell no response required</i>
8.4.1 Numeric keys	Not applicable	
8.4.2.1 Means of operation of mechanical parts	Not applicable	
8.4.2.2 Force of operation of mechanical parts	Not applicable	
8.4.3 Keys, tickets and fare cards	Not applicable	
8.5 Tactile indication of speech mode	Not applicable	

Chapter 9: Web (also applies to 10, 11 and 12)

Corresponding to WCAG 2.2 Level A

Criteria	Conformance levels	Notes
1.1.1 Non-text content	Partially supported	Not all non-text content

		presented to the user has a text alternative that serves the same purpose.
1.2.1 Audio-only and video-only (pre-recorded)	Supported	
1.2.2 Captions (pre-recorded)	Supported	
1.2.3 Audio description or media alternative (pre-recorded)	Supported	
1.3.1 Info and relationships	Partially supported	In some cases, information, structure or relationships conveyed through the presentation of pages cannot be programmatically determined (or are not available through text)
1.3.2 Meaningful sequence	Supported	
1.3.3 Sensory characteristics	Supported	
1.4.1 Use of colour	Partially supported	In some cases, colour alone has been used to identify a purpose or distinguish information or a function
1.4.2 Audio control	Supported	
2.1.1 Keyboard	Supported	
2.1.2 No keyboard trap	Supported	
2.1.4 Character key shortcuts	Supported	
2.2.1 Timing adjustable	Supported	

2.2.2 Pause, stop, hide	Supported	
2.3.1 Three flashes or below threshold	Supported	
2.4.1 Bypass blocks	Supported	
2.4.2 Page titled	Supported	
2.4.3 Focus order	Supported	
2.4.4 Link purpose (in context)	Partially supported	The purpose of some links cannot be determined from the link text alone or from the link text together with adjacent content
2.5.1 Pointer gestures	Supported	
2.5.2 Pointer cancellation	Supported	
2.5.3 Label in name	Supported	
2.5.4 Motion actuation	Supported	
3.1.1 Language of page	Supported	
3.2.1 On focus	Supported	
3.2.2 On input	Supported	
3.2.6 Consistent help	Supported	
3.3.1 Error identification	Partially supported	In some cases, when an input error is automatically detected, the erroneous item is not identified and/or the error is not described in text
3.3.2 Labels or instructions	Partially supported	In some cases, labels or instructions are not provided when content requires user input

3.3.7 Redundant entry	Supported	
4.1.1 Parsing	Supported	
4.1.2 Name, role, value	Partially supported	In some cases, user interface components (including form elements, links, and script-generated components) do not have correct or set names, roles, states, properties and values, or the user and assistive technologies are not notified when these change

Corresponding to WCAG 2.2 Level AA

Criteria	Conformance levels	Notes
1.2.5 Audio description (pre-recorded)	Supported	
1.3.4 Orientation	Supported	
1.3.5 Identify input purpose	Supported	
1.4.3 Contrast (minimum)	Partially supported	The visual presentation of text and images of text does not always meet the required minimum contrast ratio, except where permitted by regulation (e.g. logotypes)
1.4.4 Resize text	Supported	

1.4.5 Images of text	Supported	
1.4.10 Reflow	Supported	
1.4.11 Non-text contrast	Supported	
1.4.12 Text spacing	Supported	
1.4.13 Content on hover or focus	Supported	
2.4.5 Multiple ways	Supported	
2.4.6 Headings and labels	Supported	
2.4.7 Focus visible	Partially supported	On some interactive elements, the focus indicator is not visible
2.4.11 Focus not obscured (minimum)	Supported	
2.5.7 Dragging movements	Supported	
2.5.8 Target size (minimum)	Supported	
3.1.2 Language of parts	Supported	
3.2.3 Consistent navigation	Supported	
3.2.4 Consistent identification	Supported	
3.3.3 Error suggestion	Supported	
3.3.4 Error prevention (legal, financial, data)	Supported	
3.3.8 Accessible authentication (minimum)	Supported	
4.1.3 Status messages	Partially supported	In some cases, status messages are not

		presented to the user in a way that allows assistive technologies to interpret them without moving focus
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Chapter 10: Non-web documents

Criteria	Conformance levels	Notes
10.0 General (informative)	<i>Header cell no response required</i>	<i>Header cell no response required</i>
From clause 10.1.1.1 to 10.4.1.3	See WCAG 2.2 section	See information in the WCAG 2.2 section
10.5 Caption positioning	Not applicable	
10.6 Audio description timing	Not applicable	

Chapter 11: Software

Criteria	Conformance levels	Notes
11.0 General (informative)	<i>Header cell no response required</i>	<i>Header cell no response required</i>
From clause 11.1.1.1 to 11.4.1.3	See WCAG 2.2 section	See information in the WCAG 2.2 section
11.5 Interoperability with assistive technology	<i>Header cell no response required</i>	<i>Header cell no response required</i>
11.5.1 Closed functionality	<i>Header cell no response required</i>	<i>Header cell no response required</i>
11.5.2 Accessibility services	<i>Header cell no response required</i>	<i>Header cell no response required</i>
11.5.2.1 Platform accessibility service support for software that provides a user interface	See clauses 11.5.2.5 to 11.5.2.17	See information from clauses 11.5.2.5 to 11.5.2.17
11.5.2.2 Platform accessibility service support for assistive technologies	See clauses 11.5.2.5 to 11.5.2.17	See information from clauses 11.5.2.5 to 11.5.2.17
11.5.2.3 Use of accessibility services	See clauses 11.5.2.5 to 11.5.2.17	See information from clauses 11.5.2.5 to 11.5.2.17
11.5.2.4 Assistive technology	Not applicable	
11.5.2.5 Object information	Not applicable	
11.5.2.6 Row, column and headers	Not applicable	
11.5.2.7 Values	Not applicable	
11.5.2.8 Label relationships	Not applicable	
11.5.2.9 Parent-child relationships	Not applicable	
11.5.2.10 Text	Not applicable	
11.5.2.11 List of available actions	Not applicable	
11.5.2.12 Execution of available actions	Not applicable	
11.5.2.13 Tracking of focus and selection	Not applicable	

Criteria	Conformance levels	Notes
attributes		
11.5.2.14 Modification of focus and selection attributes	Not applicable	
11.5.2.15 Change notification	Not applicable	
11.5.2.16 Modifications of states and properties	Not applicable	
11.5.2.17 Modifications of values and text	Not applicable	
11.6 Documented accessibility usage	<i>Header cell no response required</i>	<i>Header cell no response required</i>
11.6.1 User control of accessibility features	Not applicable	
11.6.2 No disruption of accessibility features	Not applicable	
11.7 User preferences	Not applicable	
11.8 Authoring tools	<i>Header cell no response required</i>	<i>Header cell no response required</i>
11.8.1 Content technology	<i>Header cell no response required</i>	<i>Header cell no response required</i>
11.8.2 Accessible content creation	See WCAG 2.2 section (If the software is not an authoring tool, specify “Not applicable”)	See information in the WCAG 2.2 section
11.8.3 Preservation of accessibility information in transformations	Not applicable	
11.8.4 Repair assistance	Not applicable	
11.8.5 Templates	Not applicable	

Chapter 12: Documentation and support services

Criteria	Conformance levels	Notes
12.1 Product documentation	<i>Header cell no response required</i>	<i>Header cell no response required</i>
12.1.1 Accessibility and compatibility features	Not applicable	
12.1.2 Accessible documentation	See WCAG 2.2 section	See information in the WCAG 2.2 section
12.2 Support services	<i>Header cell no response required</i>	<i>Header cell no response required</i>
12.2.2 Information on accessibility and compatibility features	Not applicable	
12.2.3 Effective communication	Not applicable	
12.2.4 Accessible documentation	See WCAG 2.2 section	See information in the WCAG 2.2 section

Chapter 13: ICT providing relay or emergency service access

Criteria	Conformance levels	Notes
13.1 Relay service requirements	<i>Header cell no response required</i>	<i>Header cell no response required</i>
13.1.2 Text relay services	Not applicable	
13.1.3 Sign relay services	Not applicable	
13.1.4 Lip-reading relay services	Not applicable	
13.1.5 Captioned telephony services	Not applicable	
13.1.6 Text to speech services	Not applicable	
13.2 Access to relay services	Not applicable	
13.3 Access to emergency services	Not applicable	

Web accessibility

Disability is defined as: any limitation of activity or restriction of participation in society experienced by a person as a result of a substantial, long-term or permanent impairment of one or more physical, sensory, mental, cognitive or psychological functions, multiple disabilities or a disabling health condition.

Web accessibility consists in making online public communication services accessible to people with disabilities and is based on four fundamental principles:

Perceivable: information and user interface components must be presented to users in ways they can perceive. For example, by providing text alternatives for all non-text content so that it can be presented in other forms according to user needs: large print, braille, speech synthesis, symbols or simplified language.

Operable: user interface components and navigation must be operable. For example, by making all functionality available via keyboard.

Understandable: information and the operation of the user interface must be understandable. Text content must be readable and navigation must be consistent.

Robust: content must be robust enough to be interpreted reliably by a wide range of user agents, including assistive technologies.

Test environments

Operating systems

- Apple macOS X (latest version)
- Microsoft Windows (latest version)
- Apple iOS (latest version)
- Google Android (latest version)

We did not use Linux as it is currently very rarely used by users with disabilities.

Browsers and user software

Latest available versions across the different operating systems:

- Google Chrome
- Microsoft Edge
- Safari
- Adobe Acrobat Reader / Preview on Mac (PDF only)

Screen readers and assistive technologies

To get the most standardised assessment possible, we test everything using the default configuration of assistive technologies.

To make the assessment more realistic, we also test:

- Graphic adaptations available in the different systems (colours, contrast, captions, etc.)
- Mouse emulation, screen magnifiers and on-screen keyboards or advanced keyboard settings, across the different systems
- VoiceOver – Apple systems only
- TalkBack – Android only
- NVDA (latest version) and Freedom Scientific JAWS (previous version) – PC systems only

Methodology

Objective manual and semi-automated verification methodology

We analyse content using different automated and semi-automated systems and compare the results across tools to obtain the most complete and objective verification possible. Unless otherwise specified, the standard of reference is always the latest available (WCAG 2.2), in order to ensure compliance in all countries from which the touchpoint (website, app, etc.) can be accessed.

Our verification is therefore compliant with WCAG 2.2 Level AA and with the requirements of UNI EN 301 549 or their implementation in the French RGAA. Each tool produces results that are then analysed by our experts. Therefore, not all results of the tools may appear, as some may be deemed false negatives.

Automated tools for checking syntax

- **W3C Markup Validation Service:** Used with generated code, as it is the official tool for checking HTML, XHTML, MathML, etc.
- **W3C CSS Validation Service:** Although CSS correctness does not directly affect accessibility, it may influence certain aspects related to it if it is not interpreted correctly due to errors. Verification is therefore appropriate and is carried out using the W3C CSS Validation Service.
- **PAC PDF checker**

Automated and semi-automated tools for colour verification

- **Colour Contrast Analyser (CCA):** Used on a case-by-case basis for doubtful contrast scenarios.
- **WCAG Colour Contrast Checker:** Used as an initial check to verify the colour contrasts used in the page CSS.
- **Text on background image accessibility check:** Used to verify cases where text is intended to overlap images.
- **Colour contrast accessibility evaluator:** Used as an additional check for certain online pages.

Automated and semi-automated tools for accessibility checking

Some online validators used as samples on pages:

- Accescan
- Wave

And other tools:

- **Web developer toolbar:** Used to support manual verification. Allows identification of images without alternative text, fields without labels, etc.
- **AXE and Lighthouse for Chrome:** Provide precise indications of accessibility defects in HTML code, as well as in WAI-ARIA attributes, which are essential for web applications and interactive components.

Terminology

The terms used in information on Conformance Levels are defined as follows:

Supported: the product function has at least one method that satisfies the criterion without known defects or that satisfies it with an equivalent facilitation.

Partially supported: some product functions do not meet the criterion.

Not supported: most product functions do not meet the criterion.

Not applicable: the criterion is not relevant to the product.

Not evaluated: the product has not been evaluated against the criterion. This may be used only for WCAG Level AAA criteria.