

EN301549 technical report

Chapter 5: Generic Requirements

Criteria	Conformance Level	Remarks and explanations
5.1 Closed functionality	Heading cell no response required	Heading cell no response required
5.1.2 General	Heading cell no response required	Heading cell no response required
5.1.2.1 Closed functionality	See 5.2 through 13	See information in 5.2 through 13
5.1.2.2 Assistive technology	See 5.1.3 through 5.1.6	See information in 5.1.3 through 5.1.6
5.1.3 Non-visual access	Heading cell no response required	Heading cell no response required
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 Level	Remarks and explanations
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	Heading cell no response required	Heading cell no response required
5.1.6.1 Closed functionality	See 5.1.3.1 through 5.1.3.16	See information in 5.1.3.1 through 5.1.3.16
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	Heading cell no response required	Heading cell no response required
5.5.1 Means of operation	Not Applicable	
5.5.2 Operable parts discernibility	Not Applicable	
5.6 Locking or toggle controls	Heading cell no response required	Heading cell no response required
5.6.1 Tactile or auditory status	Not Applicable	
5.6.2 Visual status	Not Applicable	
5.7 Key repeat	Not Applicable	

Criteria	Conformance Level	Remarks and explanations
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 Level	Remarks and explanations
6.1 Audio bandwidth for speech	Not Applicable	
6.2 Real-time text (RTT) functionality	Heading cell no response required	Heading cell no response required
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	Heading cell no response required	Heading cell no response required
6.5.1 General (informative)	Heading cell no response required	Heading cell no response required

Criteria	Conformance Level	Remarks and explanations
6.5.2 Resolution	Not Applicable	
6.5.3 Frame rate	Not Applicable	
6.5.4 Synchronization between audio and video	Not Applicable	
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 (advisory only)	Advisory no response required	Advisory no response required

Chapter 7: ICT with Video Capabilities

Criteria	Conformance Level	Remarks and explanations
7.1 Caption processing technology	Heading cell no response required	Heading cell no response required
7.1.1 Captioning playback	Not Applicable	
7.1.2 Captioning synchronization	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	Heading cell no response required	Heading cell no response required
7.2.1 Audio description playback	Not Applicable	

Criteria	Conformance Level	Remarks and explanations
7.2.2 Audio description synchronization	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 Level	Remarks and explanations
8.1.1 Generic requirements	Heading cell no response required	Heading cell no response required
8.1.2 Standard connections	Not Applicable	
8.1.3 Colour	Not Applicable	
8.2 Hardware products with speech output	Heading cell no response required	Heading cell no response required
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 devices	Not Applicable	
8.3 Stationary ICT	Heading cell no response required	Heading cell no response required
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	Not Applicable	

Criteria	Conformance Level	Remarks and explanations
reach		
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	
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	Heading cell no response required	Heading cell no response required
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 (applies also to 10, 11 and 12)

Corresponding to WCAG 2.2 Level A

Criteria	Conformance level	Remarks and explanations
1.1.1 Non-text Content	Partially supports	Some images, icons, or other non-text content do not have a text description.
1.2.1 Audio-only and Video-only (Prerecorded)	Supports	
1.2.2 Captions (Prerecorded)	Supports	
1.2.3 Audio Description or Media Alternative (Prerecorded)	Supports	
1.3.1 Info and Relationships	Partially supports	In some cases, the structure or meaning of content is shown only visually and is not coded so assistive tools can read it.
1.3.2 Meaningful Sequence	Supports	
1.3.3 Sensory Characteristics	Supports	
1.4.1 Use of Color	Partially supports	In some cases, color alone is used to give meaning or show a difference.
1.4.2 Audio Control	Supports	

2.1.1 Keyboard	Partially supports	Some features cannot be used with a keyboard.
2.1.2 No Keyboard Trap	Supports	
2.1.4 Character Key Shortcuts	Supports	
2.2.1 Timing Adjustable	Supports	
2.2.2 Pause, Stop, Hide	Supports	
2.3.1 Three Flashes or Below Threshold	Supports	
2.4.1 Bypass Blocks	Supports	
2.4.2 Page Titled	Supports	
2.4.3 Focus Order	Partially supports	When users tab through content, the focus order does not match the meaning or how things work.
2.4.4 Link Purpose (In Context)	Partially supports	The purpose of some links or controls is not clear from their text or context.
2.5.1 Pointer Gestures	Supports	
2.5.2 Pointer Cancellation	Supports	
2.5.3 Label in Name	Supports	
2.5.4 Motion Actuation	Supports	
3.1.1 Language of Page	Supports	

3.2.1 On Focus	Supports	
3.2.2 On Input	Supports	
3.2.6 Consistent Help	Supports	
3.3.1 Error Identification	Partially supports	When an error is detected, the wrong field is not shown or the error is not described in text.
3.3.2 Labels or Instructions	Partially supports	There are no labels or instructions when the user must enter data.
3.3.7 Redundant Entry	Supports	
4.1.1 Parsing	Supports	
4.1.2 Name, Role, Value	Partially supports	Some components do not pass their name, role, state, or value to assistive tools, or do not notify them of changes.

Corresponding to WCAG 2.2 Level AA

Criteria	Conformance level	Remarks and explanations
1.2.5 Audio Description (Prerecorded)	Supports	
1.3.4 Orientation	Supports	
1.3.5 Identify Input Purpose	Partially supports	Some input fields do not tell assistive tools what data they collect, or this is set up wrong.
1.4.3 Contrast	Partially supports	Text and images of text do not

(Minimum)		always have enough contrast, except for items like logos.
1.4.4 Resize text	Partially supports	Some text cannot be made twice as big without losing content or features (captions and text images excluded).
1.4.5 Images of Text	Supports	
1.4.10 Reflow	Partially supports	Content that does not need a 2D layout does not reflow when the screen is resized.
1.4.11 Non-text Contrast	Partially supports	Some important components do not have a contrast ratio of at least 3:1 with nearby items.
1.4.12 Text Spacing	Partially supports	Changing line, paragraph, letter, or word spacing makes some content disappear.
1.4.13 Content on Hover or Focus	Supports	
2.4.5 Multiple Ways	Supports	
2.4.6 Headings and Labels	Partially supports	Some headings or labels do not clearly describe the content or function.
2.4.7 Focus Visible	Partially supports	Some interactive elements have no visible focus indicator when using the keyboard.
2.4.11 Focus Not Obscured (Minimum)	Supports	
2.5.7 Dragging Movements	Supports	

2.5.8 Target Size (Minimum)	Supports	
3.1.2 Language of Parts	Supports	
3.2.3 Consistent Navigation	Supports	
3.2.4 Consistent Identification	Supports	
3.3.3 Error Suggestion	Supports	
3.3.4 Error Prevention (Legal, Financial, Data)	Supports	
3.3.8 Accessible Authentication (Minimum)	Supports	
4.1.3 Status Messages	Partially supports	Some status messages cannot be read by assistive tools without changing focus.

Chapter 10: Non-Web Documents

Criteria	Conformance Level	Remarks and explanations
10.0 General (informative)	Heading cell no response required	Heading cell no response required
10.1.1.1 through 10.4.1.3	See WCAG 2.2 section	See information in WCAG 2.2 section
10.5 Caption positioning	Not Applicable	
10.6 Audio description timing	Not Applicable	

Chapter 11: Software

Criteria	Conformance Level	Remarks and explanations
11.0 General (informative)	Heading cell no response required	Heading cell no response required
11.1.1.1 through 11.4.1.3	See WCAG 2.2 section	See information in WCAG 2.2 section
11.5 Interoperability with assistive technology	Heading cell no response required	Heading cell no response required
11.5.1 Closed functionality	Heading cell no response required	Heading cell no response required
11.5.2 Accessibility services	Heading cell no response required	Heading cell no response required
11.5.2.1 Platform accessibility service support for software that provides a user interface	See 11.5.2.5 through 11.5.2.17	See information in 11.5.2.5 through 11.5.2.17
11.5.2.2 Platform accessibility service support for assistive technologies	See 11.5.2.5 through 11.5.2.17	See information in 11.5.2.5 through 11.5.2.17
11.5.2.3 Use of accessibility services	See information in 11.5.2.5 through 11.5.2.17	See information in 11.5.2.5 through 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	

Criteria	Conformance Level	Remarks and explanations
11.5.2.13 Tracking of focus and selection attributes	Not Applicable	
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	Heading cell no response required	Heading cell no response required
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	Heading cell no response required	Heading cell no response required
11.8.1 Content technology	Heading cell no response required	Heading cell no response required
11.8.2 Accessible content creation	See WCAG 2.2 section (If not authoring tool, enter "Not Applicable")	See information in 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 Level	Remarks and explanations
12.1 Product documentation	Heading cell no response required	Heading cell no response required
12.1.1 Accessibility and compatibility features	Not Applicable	
12.1.2 Accessible documentation	See WCAG 2.2 section	See information in WCAG 2.2 section
12.2 Support Services	Heading cell no response required	Heading cell no response required
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 WCAG 2.2 section

Chapter 13: ICT Providing Relay or Emergency Service

Access

Criteria	Conformance Level	Remarks and explanations
13.1 Relay services requirements	Heading cell no response required	Heading cell no response required
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 Speech to speech relay 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 activity limitation or participation restriction in society, experienced by a person as a result of a substantial, lasting or definitive alteration of one or more physical, sensory, mental, cognitive, or psychic functions, a multiple disability, or a disabling health condition.

Web accessibility consists of 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 the user in such a way that they can perceive them. For example, providing textual equivalents for all non-textual content that can then be presented in other forms according to the user's needs: large characters, braille, speech synthesis, symbols or simplified language.

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

Understandable: Information and the use of the user interface must be understandable. Textual content must be made readable and navigation must be consistent.

Robust: Content must be sufficiently robust to be reliably interpreted by a wide variety of user agents, including assistive technologies.

Test environments

Operating systems

- Apple Mac Os X (latest version)
- Microsoft Windows (latest version)
- Apple Ios (latest version)
- Google Android (latest version)

We have not used Linux as it is currently very uncommon among users with disabilities.

Browsers and user software

In the latest versions available on the different operating systems:

- Google Chrome
- Windows Edge
- Safari
- Adobe Acrobat Reader / Preview on Mac (for PDFs only)

Screen readers and assistive technologies

In order to achieve the most standard evaluation we test everything with assistive technologies default configuration.

In order to make the most realistic evaluation we also test:

- Graphic adaptations present on the different systems (colors, contrasts, subtitles, etc.)
- Mouse emulations, magnifiers and screen keyboards or keyboard improved settings always of the different systems
- Voiceover - Apple systems only
- Talkback - Android only
- NVDA (latest version) and Freedom scientific Jaws (second-to-latest version) - PC systems only

Methodology

Objective manual and semi-automatic verification methodology

We analyze content with different automatic and semiautomatic systems and compare the results between tools to obtain the most complete and objective verification. The reference standard, unless specifically requested, that we use is always the latest (WCAG 2.2) so that we can ensure compliance in all countries from which the touchpoint (site, app, etc.) can be accessed.

Our verification is therefore compliant with WCAG 2.2 level AA, and the requirements in UNI EN 301549 Guidelines or their declination in the French RGAA. Each tool produces results that are then analyzed by our experts: it is, therefore, possible that not all tool results appear because they are judged to be false negatives.

Automated tools for syntax checking

- **W3C Markup Validation Service** : used with generated code, because it is the official tool for checking HTML, XHTML, MathHTML, etc.
- **W3C CSS Validation service** : although the correctness of the CSS does not affect accessibility, it could affect some aspects that still have an impact on it if not correctly interpreted because it is incorrect. The verification is therefore appropriate and done with W3C CSS Validation Service
- **PAC PDF checker**

Automatic and semi-automatic tools for color verification

- **Color Contrast Analyser (CCA)** : used punctually on dubious contrasts.
- **WCAG Color contrast checker** : used as the first check to verify the contrasts of the colors used in the CSS of the pages.
- **Text on background image a11y check** : used to check when text should overlap images.
- **Color contrast accessibility evaluator** : used as an additional control for some online pages.

Automatic and semi-automatic tools for checking accessibility

Some online validators used as samples on the pages:

- Accescan
- Wave

And other local tools:

- **Web developer toolbar**: Used to support manual verification. It allowed us to locate images without alt texts, fields without labels, etc.
- **AXE e Lighthouse for Chrome**: they have provided us with precise indications on the defects of the accessibility of the HTML code but also on WAI ARIA attributes, fundamental in the case of web applications and interactive components.

Terms

The terms used in the Conformance Level information are defined as follows:

Supports: The functionality of the product has at least one method that meets the criterion without known defects or meets with equivalent facilitation.

Partially Supports: Some functionality of the product does not meet the criterion.

Does Not Support: The majority of product functionality does 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 can only be used in WCAG Level AAA criteria.