

Munich, October 10th 2023

Digital Accessibility



Customer
Transformation



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accessibility?

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01.

What is accessibility?

Accessibility is an **attribute**

Inclusion is a **goal**

What is Accessibility?



The **feature** of a service or an object which makes it **usable by everyone**

Main principle of accessibility

Separate form from content

The power of the Web
is in its **universality**

Tim Berners-Lee

Who benefits from accessibility?

Everyone! But the formal beneficiaries are people with problems of:

- Blindness, low vision, color blindness
- Deafness
- Epilepsy
- Learning disorders
- Cognitive disabilities
- Motor disabilities (especially upper limbs)



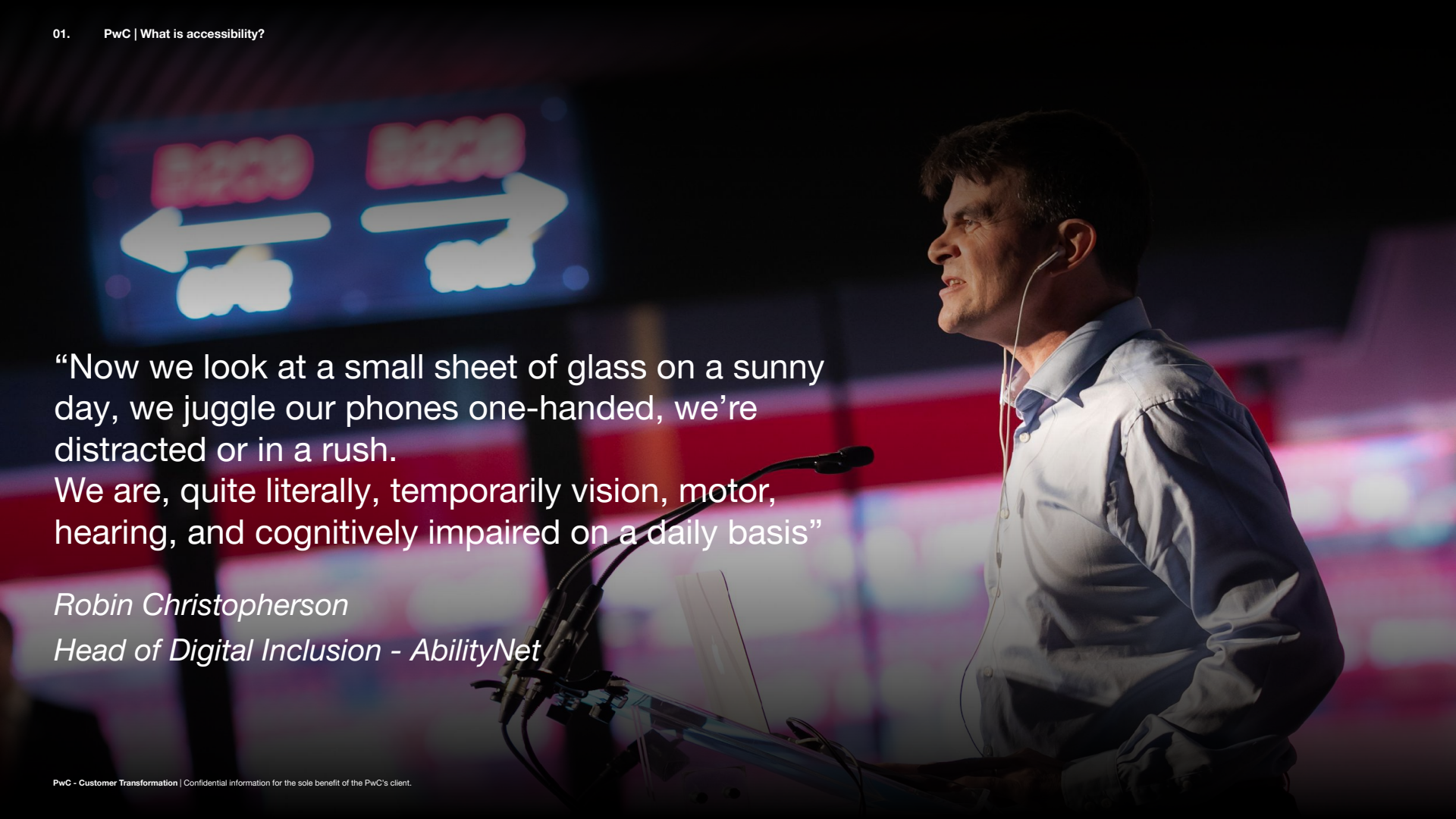
People with disabilities

The largest minority in the world

How Common are Specific Disabilities?



Source: Americans with Disabilities: 2010, from Survey of Income and Program Participation

A man in a light blue shirt is speaking at a podium on a stage. In the background, there are blurred signs with arrows pointing left and right, suggesting a busy or complex environment. The lighting is dramatic, with the man's face and shirt highlighted against a darker background.

“Now we look at a small sheet of glass on a sunny day, we juggle our phones one-handed, we’re distracted or in a rush. We are, quite literally, temporarily vision, motor, hearing, and cognitively impaired on a daily basis”

Robin Christopherson
Head of Digital Inclusion - AbilityNet

The cure of accessibility

Digital accessibility should be **integrated from the beginning** of your product lifecycle. It's a lot easier to design with accessibility in mind than trying to incorporate it as an afterthought.

Digital accessibility is **not a one-time project**. Digital products grow and expand.

Digital accessibility should be treated like cybersecurity and **updated at regular intervals**.

Myths about accessibility:

“Accessibility makes the interface ugly”

Sometimes, design can be affected by all the rules to follow. Still, a **good interface is not based on coolness**, but on user experience.

Accessibility can **ensure an optimized user experience to everyone**.

Great User Experience (UX) is...



Usability

+



Graphic design

+



Accessibility

Myths about accessibility:

“It costs too much and it’s not worth it”

Accessibility requires an investment of time and resources.

But the goal of inclusion should be enough to justify it.

The **more people can access the services** we provide, the more profit we can make of those services.

In addition, **costs can be lowered** by taking accessibility into account **from the beginning** of the project.



Accessible content

The **Web Content Accessibility Guidelines** provide a **framework** for accessible content.

These guidelines are based on **four principles**:

- **Perceivable:** content must be perceivable for users through sight, sound, and touch;
- **Operable:** content must be operable meaning that the content works regardless of the technology used to access it;
- **Understandable:** content must be understandable with simple, clear language;
- **Robust:** content must be robust and meet recognized standards and conventions for the web.

Accessibility assessment

A process to **evaluate the accessibility level of a digital product**, through the **compliance to WCAG** and other requirements **across 3 different areas**:

UX/UI

It involves checking colors, shapes and other features of the visual elements

Development

It involves checking if code is written properly

Content

It involves checking if text is clear and consistent

02.

EU Directive

Accessibility Act (Directive 2019/882)

The European Accessibility Act (EAA), also known as Directive 2019/882, came into effect in **April 2019**. EU member states needed to have passed implementation laws by June 2022, and, by June 2025, they must ensure the **implementation** of the necessary **accessibility measures**.

The main goal of this legislation is to **increase** and **standardize** the accessibility of **digital products** and **services**, especially for people with disabilities and functional limitations, whether permanent or temporary.

Accessibility Act (Directive 2019/882)

The EAA covers all **products** and **services** sold or used in the EU.

Even foreign-based companies must **comply with the Act** if they sell relevant products or services within the EU.

However, the **EAA does not cover microenterprises**, which are businesses that employ fewer than 10 people and have an annual turnover of less than €2 million.

Accessibility Act (Directive 2019/882)

Art. 15 – Presumption of Conformity

Products and services which are in conformity with harmonised standards or parts thereof the references of which have been published in the Official Journal of the European Union, shall be presumed to be in conformity with the accessibility requirements of this Directive in so far as those standards or parts thereof cover those requirements.

European Harmonised Standard EN 301 549

EN301549 specifies the functional accessibility requirements applicable to ICT products and services.

It covers **web** based technologies, **non-web** technologies and hybrids that use **both**.

The relationship between the present document and the essential requirements of **Directive 2016/2102** on the accessibility of the websites and mobile applications [i.28] is given in Annex (pag33.), tables A.1 (web) and A.2 (software/mobile).

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Overview - Criteria for web contents (137 criteria)

Cluster of criteria	Description	Total number of criteria	Notes
5.	Generic requirements	3	Generic criteria that analyze aspects regarding the functioning of the platform, some of these will not be applicable
6.	ICT with two-way voice communication	19	Criteria that analyze aspects concerning communication tools, some of these will not be applicable
7.	ICT with video capabilities	9	Criteria that analyze aspects regarding video playback tools, some of these will not be applicable
9.	Web with WCAG	50	Criteria also containing WCAG rules, these are the ones most interested in the analysis of a website
10.	Non-web documents with WCAG	45	Criteria also containing WCAG rules, these are those most interested in the analysis of a non-web document (PDF, PPT, WORD, etc.). Since there are no documents to analyze within the scope, these criteria will not be applicable
11.	Software with WCAG	6	Criteria also containing WCAG rules, these are the ones most interested in the analysis of a mobile application. These criteria in this context are applicable if the website falls within the content creation tools, in which case they will probably be considered not applicable
12.	Documentation and support services	5	These criteria analyze the accessible documentation and whether the customer service is adequately accessible

DIGITAL ACCESSIBILITY

Overview - Criteria for mobile applications (162 criteria)

Cluster of criteria	Description	Total number of criteria	Notes
5.	Generic requirements	10	Generic criteria that analyze aspects regarding the functioning of the platform, some of these will not be applicable
6.	ICT with two-way voice communication	19	Criteria that analyze aspects concerning communication tools, some of these will not be applicable
7.	ICT with video capabilities	9	Criteria that analyze aspects regarding video playback tools, some of these will not be applicable
10.	Non-web documents with WCAG	45	Criteria also containing WCAG rules, these are those most interested in the analysis of a non-web document (PDF, PPT, WORD, etc.). Since there are no documents to analyze within the scope, these criteria will not be applicable
11.	Software with WCAG	74	Criteria also containing WCAG rules, these are the ones most interested in the analysis of a mobile application
12.	Documentation and support services	5	These criteria analyze the accessible documentation and whether the customer service is adequately accessible

03.

PwC Accessibility Approach

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Importance of accessibility assessment

Be compliant with European legislation

In 2025, legislation will come into force that establishes the importance of having digital services that are accessible to all types of users. Public and private entities will have to adapt by this date to improve their service in this direction..

Being aware of the state of the art

The assessment activity makes it possible to understand the main findings on accessibility; identify gaps and identify a roadmap for remedy

Being ready to bridge gaps

Once the main problems have been identified, it is possible to identify a detailed roadmap in which business and IT identify priorities and design the list of actions to be taken according to the severity and priority assigned



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The iterative process of digital accessibility



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Induction workshop

To find the best way to do the assessments and to deliver accessibility results we will do a deep dive through a **workshop on 2 days** with the aim of find indication about the methodology for plan and assess with a specific focus on **channels perimeters, techniques, tools** and **solution** from the market recommended by the competent authority for an accessible design and a summary operating manual of the topics covered.



Activities

The first day: Some notes about Accessibility

Theoretical introduction to examine the current EU directive and the guiding principles for making a service accessible.

The aim is to provide take-outs that can help to understand the subsequent operational steps

The second day: Technical approach to Accessibility

Definition of the structure of accessibility reports, template, procedures and tools for verifying accessibility and an in-depth analysis of mitigation tools for web solutions.

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1. Assessment evaluation - Perimeter





Considering the volume of touchpoints and the timeline requested, the Assessment will be based on the following activities:

Activity	Activity Description	Output	Deliverable
Assessment preparation	<ul style="list-style-type: none"> Pages/templates definition Timeline definition User profile setup 	List of pages to analyse	/
Automatic Checks	Testers will scan pages once with 1 automatic tool and 1 second tool for double-check	Gaps identified automatically	Pre-Assessment xls, Digital Accessibility Assessment Request xls
Manual Checks	The manual check will be carried out partially (for most important and impacted WCAG criteria), testing the main navigation of pages through 1) keyboard and 2) screen reader in order to detect the most blocking accessibility gaps	Gaps identified manually on a subjective subset of WCAG criteria	Pre-Assessment xls, Digital Accessibility Assessment Request xls
Formalization	Results formalization	A powerpoint will highlight main accessibility gaps	<p>Gap Ppt Document:</p> <p>For each assessment we will return a powerpoint document with a qualitative feedback on the status of the analysed pages and a list of recommended intervention priorities according to two main drivers: how blocking is a given gap for the website navigation, how consistent is the gap throughout the pages. The analysis will not verify the status vs all criteria but there will only be a qualitative feedback on the overall status.</p>

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1. Assessment - Activities and effort

The Assessment for each channel will be based on the following activities

Activity	Activity Description	PwC Team	UC product owner	UC IT	UC Local Support
Assessment preparation	<ul style="list-style-type: none"> Pages/templates definition Timeline definition User profile setup 		8 h (pages perimeter definition)	16 h (data preparation)	16h (data preparation)
Automatic Checks	Testers will scan pages once with 1 automatic tool like IBM Equal Access.			Random support in unexpected difficulties	Random support in unexpected difficulties
Manual Checks	The manual check will be carried out partially (major part of WCAG criteria), testing the main navigation of pages through 1) keyboard and 2) screen reader in order to detect the most blocking accessibility gaps			Random support in unexpected difficulties	Random support in unexpected difficulties
Formalization	Results formalization.		8h (review documents)		

*For any assessment it will be needed that a local UC resource will work together with the assessment team in order to execute those checks that require the understanding of the local language. Effort forecasted is 250 h but it could vary according to the complexity of the given application /assessment

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3. Planning of remediation activities

High level BR proposal approach:

When assessment are finished, PwC will provide a document in which all the issues will be catalogued, prioritized and grouped, for each group we will provide a possible resolution and high level BRs based on our experience with Unicredit (keeping an inspiration also from Italy's assessment BRs).

BR workshops approach:

After your review about our BR proposals we will activate discussion table in a form of workshop to enable business/IT people to deep dive on uncertain situations and/or better solutions with our accessibility expert consultants.

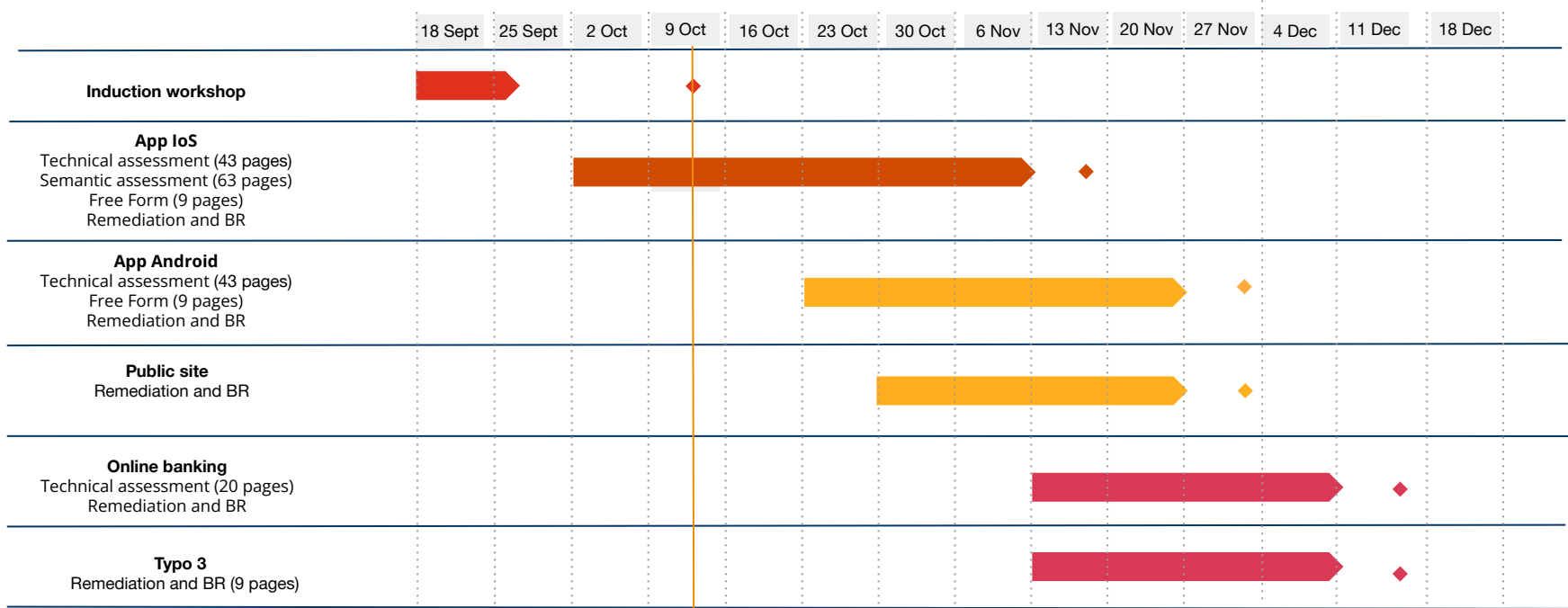
The output of this activity will be BRs agreed with you and it will be the base for starting estimation of your future impact in this focus.



04.

Project plan

Project timeline



◆ 9-10 Oct, Munich, 3h both days

◆ 14-15 Nov, Milan, 4h both days

◆ 28-29 Nov, Munich, 4h both days

◆ 13-14 Dec, Remote, 4h Online banking and 2h typo3

Annex

DIGITAL ACCESSIBILITY

Assessment - Perimeter of Criterias

Criteria for web contents (137 criteria)

5.2 Activation of accessibility features	6.2.3 Interoperability item b)	7.1.1 Captioning playback	9.1.2.2 Captions (pre-recorded)	9.1.4.4 Resize text
5.3 Biometrics	6.2.3 Interoperability item c)	7.1.2 Captioning synchronization	9.1.2.3 Audio description or media alternative (pre-recorded)	9.1.4.5 Images of text
5.4 Preservation of accessibility information during conversion	6.2.3 Interoperability item d)	7.1.3 Preservation of captioning	9.1.2.5 Audio description (pre-recorded)	9.1.4.10 Reflow
6.1 Audio bandwidth for speech	6.2.4 RTT responsiveness	7.1.4 Captions characteristics	9.1.3.1 Info and relationships	9.1.4.11 Non-text contrast
6.2.1.1 RTT communication	6.3 Caller ID	7.1.5 Spoken subtitles	9.1.3.2 Meaningful sequence	9.1.4.12 Text spacing
6.2.1.2 Concurrent voice and text	6.4 Alternatives to voice-based services	7.2.1 Audio description playback	9.1.3.3 Sensory characteristics	9.1.4.13 Content on hover or focus
6.2.2.1 Visually distinguishable display	6.5.2 Resolution item a)	7.2.2 Audio description synchronization	9.1.3.4 Orientation	9.2.1.1 Keyboard
6.2.2.2 Programmatically determinable send and receive direction	6.5.3 Frame rate item a)	7.2.3 Preservation of audio description	9.1.3.5 Identify input purpose	9.2.1.2 No keyboard trap
6.2.2.3 Speaker identification	6.5.4 Synchronization between audio and video	7.3 User controls for captions and audio description	9.1.4.1 Use of colour	9.2.1.4 Character key shortcuts
6.2.2.4 Visual indicator of Audio with RTT	6.5.5 Visual indicator of audio with video	9.1.1.1 Non-text content	9.1.4.2 Audio control	9.2.2.1 Timing adjustable
6.2.3 Interoperability item a)	6.5.6 Speaker identification with video (sign language) communication	9.1.2.1 Audio-only and video-only (pre-recorded)	9.1.4.3 Contrast (minimum)	9.2.2.2 Pause, stop, hide

DIGITAL ACCESSIBILITY

Assessment - Perimeter of Criterias

Criteria for web contents (137 criteria)

9.2.3.1 Three flashes or below threshold	9.2.5.4 Motion actuation	9.4.1.1 Parsing	10.1.3.3 Sensory characteristics	10.1.4.13 Content on hover or focus
9.2.4.1 Bypass blocks	9.3.1.1 Language of page	9.4.1.2 Name, role, value	10.1.3.4 Orientation	10.2.1.1 Keyboard
9.2.4.2 Page titled	9.3.1.2 Language of parts	9.4.1.3 Status messages	10.1.3.5 Identify input purpose	10.2.1.2 No keyboard trap
9.2.4.3 Focus Order	9.3.2.1 On focus	9.6 WCAG conformance requirements	10.1.4.1 Use of colour	10.2.1.4 Character key shortcuts
9.2.4.4 Link purpose (in context)	9.3.2.2 On input	10.1.1.1 Non-text content	10.1.4.2 Audio control	10.2.2.1 Timing adjustable
9.2.4.5 Multiple ways	9.3.2.3 Consistent navigation	10.1.2.1 Audio-only and video-only (pre-recorded)	10.1.4.3 Contrast (minimum)	10.2.2.2 Pause, stop, hide
9.2.4.6 Headings and labels	9.3.2.4 Consistent identification	10.1.2.2 Captions (pre-recorded)	10.1.4.4 Resize text	10.2.3.1 Three flashes or below threshold
9.2.4.7 Focus visible	9.3.3.1 Error identification	10.1.2.3 Audio description or media alternative (pre-recorded)	10.1.4.5 Images of text	10.2.4.2 Document titled
9.2.5.1 Pointer gestures	9.3.3.2 Labels or instructions	10.1.2.5 Audio description (pre-recorded)	10.1.4.10 Reflow	10.2.4.3 Focus Order
9.2.5.2 Pointer cancellation	9.3.3.3 Error suggestion	10.1.3.1 Info and relationships	10.1.4.11 Non-text contrast	10.2.4.4 Link purpose (in context)
9.2.5.3 Label in name	9.3.3.4 Error prevention (legal, financial, data)	10.1.3.2 Meaningful sequence	10.1.4.12 Text spacing	10.2.4.6 Headings and labels

DIGITAL ACCESSIBILITY

Assessment - Perimeter of Criterias

Criteria for web contents (137 criteria)

10.2.4.7 Focus visible	10.3.1.2 Language of parts	10.3.3.4 Error prevention (legal, financial, data)	11.8.2 Accessible content creation	12.2.2 Information on accessibility and compatibility features
10.2.5.1 Pointer gestures	10.3.2.1 On focus	10.4.1.1 Parsing	11.8.3 Preservation of accessibility information in transformations	12.2.3 Effective communication
10.2.5.2 Pointer cancellation	10.3.2.2 On input	10.4.1.2 Name, role, value	11.8.4 Repair assistance	12.2.4 Accessible documentation
10.2.5.3 Label in name	10.3.3.1 Error identification	10.4.1.3 Status messages	11.8.5 Templates	
10.2.5.4 Motion actuation	10.3.3.2 Labels or instructions	11.7 User preferences	12.1.1 Accessibility and compatibility features	
10.3.1.1 Language of document	10.3.3.3 Error suggestion	11.8.1 Content technology	12.1.2 Accessible documentation	

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Assessment - Perimeter of Criterias

Criteria for mobile applications (162 criteria)

5.2 Activation of accessibility features	6.2.1.1 RTT communication	6.3 Caller ID	7.1.5 Spoken subtitles	10.1.3.2 Meaningful sequence
5.3 Biometrics	6.2.1.2 Concurrent voice and text	6.4 Alternatives to voice-based services	7.2.1 Audio description playback	10.1.3.3 Sensory characteristics
5.4 Preservation of accessibility information during conversion	6.2.2.1 Visually distinguishable display	6.5.2 Resolution item a)	7.2.2 Audio description synchronization	10.1.3.4 Orientation
5.5.1 Means of operation	6.2.2.2 Programmatically determinable send and receive direction	6.5.3 Frame rate item a)	7.2.3 Preservation of audio description	10.1.3.5 Identify input purpose
5.5.2 Operable parts discernibility	6.2.2.3 Speaker identification	6.5.4 Synchronization between audio and video	7.3 User controls for captions and audio description	10.1.4.1 Use of colour
5.6.1 Tactile or auditory status	6.2.2.4 Visual indicator of Audio with RTT	6.5.5 Visual indicator of audio with video	10.1.1.1 Non-text content	10.1.4.2 Audio control
5.6.2 Visual status	6.2.3 Interoperability item a)	6.5.6 Speaker identification with video (sign language) communication	10.1.2.1 Audio-only and video-only (pre-recorded)	10.1.4.3 Contrast (minimum)
5.7 Key repeat	6.2.3 Interoperability item b)	7.1.1 Captioning playback	10.1.2.2 Captions (pre-recorded)	10.1.4.4 Resize text
5.8 Double-strike key acceptance	6.2.3 Interoperability item c)	7.1.2 Captioning synchronization	10.1.2.3 Audio description or media alternative (pre-recorded)	10.1.4.5 Images of text
5.9 Simultaneous user actions	6.2.3 Interoperability item d)	7.1.3 Preservation of captioning	10.1.2.5 Audio description (pre-recorded)	10.1.4.10 Reflow
6.1 Audio bandwidth for speech	6.2.4 RTT responsiveness	7.1.4 Captions characteristics	10.1.3.1 Info and relationships	10.1.4.11 Non-text contrast

DIGITAL ACCESSIBILITY

Assessment - Perimeter of Criterias

10.1.4.12 Text spacing	10.2.4.6 Headings and labels	10.3.3.2 Labels or instructions	11.1.2.3.1 Audio description or media alternative (pre-recorded - open functionality)	10.1.3.2 Meaningful sequence
10.1.4.13 Content on hover or focus	10.2.4.7 Focus visible	10.3.3.3 Error suggestion	11.1.2.3.2 Audio description or media alternative (pre-recorded - closed functionality)	10.1.3.3 Sensory characteristics
10.2.1.1 Keyboard	10.2.5.1 Pointer gestures	10.3.3.4 Error prevention (legal, financial, data)	11.1.2.5 Audio description (pre-recorded)	10.1.3.4 Orientation
10.2.1.2 No keyboard trap	10.2.5.2 Pointer cancellation	10.4.1.1 Parsing	11.1.3.1.1 Info and relationships (open functionality)	10.1.3.5 Identify input purpose
10.2.1.4 Character key shortcuts	10.2.5.3 Label in name	10.4.1.2 Name, role, value	11.1.3.2.1 Meaningful sequence (open functionality)	10.1.4.1 Use of colour
10.2.2.1 Timing adjustable	10.2.5.4 Motion actuation	10.4.1.3 Status messages	11.1.3.3 Sensory characteristics	10.1.4.2 Audio control
10.2.2.2 Pause, stop, hide	10.3.1.1 Language of document	11.1.1.1.1 Non-text content (open functionality)	11.1.3.4 Orientation	10.1.4.3 Contrast (minimum)
10.2.3.1 Three flashes or below threshold	10.3.1.2 Language of parts	11.1.1.1.2 Non-text content (closed functionality)	11.1.3.5.1 Identify input purpose (open functionality)	10.1.4.4 Resize text
10.2.4.2 Document titled	10.3.2.1 On focus	11.1.2.1.1 Audio-only and video-only (pre-recorded - open functionality)	11.1.3.5.2 Identify input purpose (closed functionality)	10.1.4.5 Images of text
10.2.4.3 Focus Order	10.3.2.2 On input	11.1.2.1.2 Audio-only and video-only (pre-recorded - closed functionality)	11.1.4.1 Use of colour	10.1.4.10 Reflow
10.2.4.4 Link purpose (in context)	10.3.3.1 Error identification	11.1.2.2 Captions (pre-recorded)	11.1.4.2 Audio control	10.1.4.11 Non-text contrast

Thank you.



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