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Accessibility requirements for ICT products and services

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Foreword

This final draft Harmonised European Standard (EN) has been produced by ETSI Technical Committee Human Factors (HF), and is now submitted for the Vote phase of the ETSI Standardisation Request deliverable Approval Procedure (SRdAP).

EN 301 549 was originally produced under Mandate M 376 [i.4] and specified accessibility requirements applicable to ICT products and services, together with a description of the test procedures and evaluation methodology for each accessibility requirement in a form that is suitable for use in procurement.

EN 301 549 (V3.2.1) was prepared under the Commission's standardisation request C(2017)2585 final [i.26] to provide, in additions to its other uses, one voluntary means of conforming to the essential requirements of Directive (EU) 2016/2102 on the accessibility of the websites and mobile applications of public sector bodies [i.27]. The minimum requirements of the European Web Accessibility Directive (Directive (EU) 2016/2102) are explicitly detailed in Annex ZA of the present document.

The present document has been prepared under the Commission's standardisation request C(2022) 6456 final [i.28] to provide one voluntary means of conforming to the essential requirements of Directive (EU) 2019/882 on the accessibility requirements for products and services [i.29]. The minimum requirements of Directive (EU) 2019/882 are explicitly detailed in Annex ZB.

Once the present document is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of the present document given in the tables in clause A.2 confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding essential requirements of that Directive and associated EFTA regulations.

The present document has been developed from EN 301 549 (V3.2.1) (03-2021) [i.30].

The significant changes since EN 301 549 (V3.2.1) [i.30] are:

- the requirements related to Real-Time Text (RTT) in clause 6.2 have been significantly revised and extended to include total conversation;

- the requirements of clauses 9, 10 and 11 have all been updated to align with the WCAG 2.2 recommendation [4];
- a new Annex ZA showing the relationship between the present document and the essential requirements of Directive (EU) 2016/2102 has been added (this is an update of Annex A from the previous version of EN 301 549 [i.30]);
- a new Annex ZB showing the relationship between the present document and the essential requirements of Directive (EU) 2019/882 has been added;
- a new clause A.2 has been added that enables conformance of specific ICT products and services with the essential requirements of Directive (EU) 2019/882 to be evaluated.

Proposed national transposition dates	
Date of latest announcement of this EN (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	18 months after doa

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

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Introduction

The present document is developed in response to standardisation request M 587 [i.28] from the European Commission to CEN, CENELEC and ETSI. It is a revision of the EN 301 549 [i.30] (V3.2.1) that was initially prepared in response to Mandate M 554 [i.26].

The present document covers a wide range of requirements for a variety of ICT products and services. Information and Communication Technology (ICT) covers but is not limited to web pages, non-web and hybrid documents, electronic content, hardware, communication products, computers and ancillary equipment, software including mobile applications, information kiosks and transaction machines, audiovisual technologies, videos, intelligent user agents.

The present document is relevant for all organizations who buy, sell, import, distribute, develop or manufacture ICT products or services. It consists of fourteen clauses and eight annexes:

- Clauses 0 to 3 include background information, the scope of the standard, and links to other standards, definitions and explanations of abbreviations.
- Clause 4 contains functional performance criteria that explain the functionality that is required to enable users with different abilities to locate, identify and operate functions in technology. The user needs underlying the functional performance criteria are the basis for the technical requirements in subsequent clauses.
- Clauses 5 to 13 provide specific testable criteria for accessible ICT, related to technical requirements for different kinds of ICT, starting with generic requirements in clause 5.
- Clause 14 is about conformance. All clauses containing requirements are self-scoping. This means they are introduced with the phrase 'Where ICT <precondition>'. Conformance is required when the preconditions for a requirement are true. A sufficient test for conformance for each requirement is provided in Annex C.

- Annex A is divided into two parts, A.1 and A.2 that are intended to be used to enable the conformance of specific ICT products and services with the essential requirements of the Directives to be evaluated:
  - Clause A.1 directs users to the tables in Annex ZA, which contains tables that are suitable for evaluating the conformance of specific websites and mobile applications with Directive (EU) 2016/2102 [i.27].
  - Clause A.2 contains five tables which allow a specific ICT product or service to be evaluated for conformance with Directive (EU) 2019/882 [i.29].
- Annex B contains a table showing which of the requirements set out in clauses 5 to 13 related to different types of ICT support the user needs as expressed in the functional performance criteria of clause 4.
- Annex C is a normative annex that sets out sufficient means to determine conformance with the individual requirements. It does not provide a testing methodology.
- Annex D points to additional resources related to improving accessibility for users with limited cognitive, language and learning abilities.
- Annex E provides an overview and simple explanation of the structure of the present document. It talks in general about how EN 301 549 can be used and identifies additional resources that are of benefit to those intending to apply EN 301 549 in specific technical sectors such as the Web and digital television.
- Annex F provides a change history table.
- Annex ZA has two tables with requirements related to Directive (EU) 2016/2102 on the accessibility of the websites and mobile applications of public sector bodies [i.27]. Table ZA.1 applies to web pages and documents and Table ZA.2 applies to mobile applications. The minimum requirements are collected from clauses 9, 10 and 11 and some requirements from clauses 5, 6, 7 and 12 that are relevant to fulfil the Directive.
- Annex ZB has five tables with requirements related to Directive (EU) 2019/882 on the accessibility requirements for products and services [i.29]. Tables ZB.1 to ZB.3 apply directly to the products within the scope of the Directive. Table ZB.4 applies to all services within the scope of the Directive. Table ZB.5 applies to the specific services within the scope of the Directive.
- Annex ZC has a table showing how requirements from other directives relate to the clauses of the present document according to Directive (EU) 2019/882 Section VI of Annex I [i.29].

When the present document is used for most purposes, including when used in ICT procurement, all of the technical requirements in clauses 5 to 13, as well as the functional performance criteria in clause 4 should be considered. The potential applicability of any requirement can be determined from the self-scoping phrase at the beginning of each requirement.

When the present document is used as the basis to determine conformity with the essential requirements of Directive (EU) 2016/2102 on the accessibility of the websites and mobile applications of public sector bodies [i.27], Table ZA.1 and Table ZA.2 in Annex ZA identify all the applicable requirements.

When the present document is used as the basis to determine conformity with the essential requirements of Directive (EU) 2019/882 on the accessibility requirements for products and services [i.27], Table A.1, Table A.2, Table A.3, Table A.4, and Table A.5 in clause A.2 identify all the applicable requirements.

NOTE 1: The content of the present document has been updated to align with the WCAG 2.2 Recommendation [4].

NOTE 2: Annex E provides an overview and simple explanation of the structure of the present document, including an explanation of how it can be used. Readers who are unfamiliar with the present document are recommended to read Annex E first to give them a better understanding of the present document and how to use it.

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1 Scope

The present document specifies the accessibility requirements applicable to ICT products and services, together with a description of the test procedures and evaluation methodology for each accessibility requirement.

The present document is intended for use by designers, developers, evaluators, manufacturers, market surveillance entities, procurers, researchers, and anyone else interested in the accessibility of ICT products and services.

The present document is not intended to apply to assistive technologies that are designed specifically for use by people with disabilities, except for requirement 11.5.2.4 that requires assistive technologies to use the documented platform accessibility services, although making assistive technologies usable and applicable for people with multiple disabilities is desirable. The requirements do apply to the launch of assistive technologies since that is a function of the platform, not the assistive technology.

The present document supports the implementation of Directive (EU) 2016/2102 on the accessibility of the websites and mobile applications of public sector bodies [i.27], and of Directive (EU) 2019/882 on the accessibility of ICT products and services [i.29]. The coverage of the essential requirements of these Directives is given in Annexes ZA and ZB.

The present document contains the necessary accessibility requirements and provides a reference document such that if procedures are followed by different actors, the results of testing are similar and the interpretation of those results is clear. The test descriptions and evaluation methodology included in the present document are elaborated to a level of detail compliant with ISO/IEC 17007:2009 [i.14], so that conformance testing can give conclusive results.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found in the ETSI docbox.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long-term validity.

The following referenced documents are necessary for the application of the present document.

[1] Void.

[2] ETSI ES 200 381-1 (V1.2.1) (October 2012): "Telephony for hearing impaired people; Inductive coupling of telephone earphones to hearing aids; Part 1: Fixed-line speech terminals".

[3] ETSI ES 200 381-2 (V1.1.1) (October 2012): "Telephony for hearing impaired people; Inductive coupling of telephone earphones to hearing aids; Part 2: Cellular speech terminals".

[4] W3C® Recommendation (12 December 2024)/ISO/IEC 40500:2025: "Web Content Accessibility Guidelines (WCAG) 2.2".

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long-term validity.

The following referenced documents may be useful in implementing an ETSI deliverable or add to the reader's understanding, but are not required for conformance to the present document.

[i.1] ANSI/IEEE C63.19 (2019): "American National Standard Methods of Measurement of Compatibility between Wireless Communication Devices and Hearing Aids".

[i.2] ANSI/TIA-4965: "Telecommunications telephone terminal equipment receive volume control requirements for digital and analogue wireline handset terminals".

[i.3] ANSI/TIA-5050: "Telecommunications Communications Products Receive Volume Control Requirements for Wireless (Mobile) Devices".

[i.4] European Commission M 376 - EN: "Standardisation Mandate to CEN, CENELEC and ETSI in support of European accessibility requirements for public procurement of products and services in the ICT domain".

[i.5] ETSI EG 201 013: "Human Factors (HF); Definitions, abbreviations and symbols".

[i.6] ETSI ES 202 975: "Human Factors (HF); Requirements for relay services".

[i.7] ETSI ETS 300 767: "Human Factors (HF); Telephone Prepayment Cards; Tactile Identifier".

[i.8] Void.

[i.9] Void.

[i.10] Void.

[i.11] ETSI TS 126 114: "Universal Mobile Telecommunications System (UMTS); LTE; 5G; IP Multimedia Subsystem (IMS); Multimedia Telephony; Media handling and interaction (3GPP TS 26.114)".

[i.12] ETSI TS 122 173: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; IP Multimedia Core Network Subsystem (IMS) Multimedia Telephony Service and supplementary services; Stage 1 (3GPP TS 22.173)".

[i.13] IETF RFC 4103 (2005): "RTP Payload for Text Conversation".

[i.14] ISO/IEC 17007:2009: "Conformity assessment — Guidance for drafting normative documents suitable for use for conformity assessment".

[i.15] ISO 9241-11:2018: "Ergonomics of human-system interaction — Part 11: Usability: Definitions and concepts".

[i.16] ISO 9241-110:2020: "Ergonomics of human-system interaction — Part 110: Interaction principles".

[i.17] ISO 9241-171:2008: "Ergonomics of human-system interaction — Part 171: Guidance on software accessibility".

[i.18] ISO/IEC 13066-1:2011: "Information technology — Interoperability with assistive technology (AT) — Part 1: Requirements and recommendations for interoperability".

[i.19] Recommendation ITU-T E.161 (2001): "Arrangement of digits, letters and symbols on telephones and other devices that can be used for gaining access to a telephone network".

[i.20] Recommendation ITU-T G.722 (1988): "7 kHz audio-coding within 64 kbit/s".

[i.21] Recommendation ITU-T G.722.2 (2003): "Wideband coding of speech at around 16 kbit/s using Adaptive Multi-Rate Wideband (AMR-WB)".

[i.22] Recommendation ITU-T V.18 (2000): "Operational and interworking requirements for DCEs operating in the text telephone mode".

[i.23] TIA-1083-B (2015): "Telecommunications Communications Product; Handset Magnetic Measurement Procedures and Performance Requirements".

[i.24] Void.

[i.25] W3C® Group Note (11 December 2025): "Guidance on Applying WCAG 2 to Non-Web Information and Communications Technologies (WCAG2ICT)".

[i.26] C(2017)2585 - Standardisation request M/554: "Commission Implementing Decision of 27.4.2017 on a standardisation request to the European standardisation organisations in support of Directive (EU) 2016/2102 of the European Parliament and of the Council on the accessibility of the websites and mobile applications of public sector bodies".

[i.27] Directive (EU) 2016/2102 of the European Parliament and of the Council of 26 October 2016 on the accessibility of the websites and mobile applications of public sector bodies.

[i.28] C(2022)6456 - Standardisation request M/587: " Commission Implementing Decision of 14.9.2022 on a standardisation request to the European standardisation organisations as regards the accessibility requirements of products and services in support of Directive (EU) 2019/882 of the European Parliament and of the Council".

[i.29] Directive (EU) 2019/882 of the European Parliament and of the Council of 17 April 2019 on the accessibility requirements for products and services.

[i.30] EN 301 549 (V3.2.1) (March 2021): "Accessibility requirements for ICT products and services" (jointly produced by ETSI/CEN/CENELEC).

[i.31] Void.

[i.32] ISO/IEC TS 20071-25:2017: "Information technology — User interface component accessibility — Part 25: Guidance on the audio presentation of text in videos, including captions, subtitles and other on-screen text".

[i.33] W3C Recommendation (24 September 2015): "Authoring Tool Accessibility Guidelines (ATAG) 2.0".

[i.34] W3C Working Group Note (15 December 2015): "User Agent Accessibility Guidelines (UAAG) 2.0".

[i.35] ISO 21542:2021: "Building construction — Accessibility and usability of the built environment".

[i.36] Void.

[i.37] Recommendation ITU-T T.140 (1998): "Protocol for multimedia application text conversation".

[i.38] Recommendation ITU-T F.703 (2000): "Multimedia conversational services".

[i.39] W3C Final Community Group Report (26 March 2026): "Schema.org Accessibility Properties for Discoverability Vocabulary".

[i.40] Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC.

[i.41] W3C Recommendation (11 December 2008)/ISO/IEC 40500:2012: "Web Content Accessibility Guidelines (WCAG) 2.0".

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[i.44] GSMA PRD IR.92: "IMS Profile for Voice and SMS".

[i.45] GSMA PRD IR.94 "IMS Profile for Conversational Video Service".

[i.46] GSMA NG.114: "IMS Profile for Voice, Video and Messaging over 5GS".

[i.47] ETSI TS 103 478: "Emergency Communications (EMTEL); Pan-European Mobile Emergency Application".

[i.48] ETSI TS 103 479: "Emergency Communications (EMTEL); Core elements for network independent access to emergency services".

[i.49] ETSI TS 103 871: "Emergency Communications (EMTEL); PEMEA Real-Time Text Extension".

[i.50] IETF RFC 3261: "SIP: Session Initiation Protocol", J. Rosenberg et al., 2005.

[i.51] IETF RFC 3550: "RTP: A Transport Protocol for Real-Time Applications", H. Schulzrinne et al., 2003.

[i.52] IETF RFC 9071 (2021): "RTP-Mixer Formatting of Multiparty Real-Time Text".

[i.53] ISO/IEC 10646:2020: "Information technology — Universal coded character set (UCS)".

[i.54] ISO/IEC 17549-1:2022: "Information technology — User interface requirements and recommendations on menu navigation: Part 1: Framework".

[i.55] ETSI TS 126 226: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Cellular text telephone modem; General description (3GPP TS 26.226)".

[i.56] ETSI EN 303 919: "Emergency Communications (EMTEL); Accessibility and Interoperability of Emergency Communications

[i.57] IETF RFC 8831: "WebRTC Data Channels".

[i.58] W3C® Recommendation (8 October 2024): "WebRTC: Real-Time Communication in Browsers".

[i.59] ETSI TR 103 708: "Human Factors (HF); Real-Time Text (RTT) in Multiparty Conference Calling".

[i.60] ISO/IEC 23859:2023: "Information technology — User interfaces — Requirements and recommendations on making written text easy to read and understand".

[i.61] Recommendation ITU-T P.1305 (2016): "Effect of delays on telemeeting quality".

[i.62] IETF RFC 5194 (2008): "Framework for Real-Time Text over IP Using the Session Initiation Protocol (SIP)".

[i.63] Center for Inclusive Design and Environmental Access (2010): "Anthropometry of Wheeled Mobility Project - Final Report".

[i.64] CEN/CENELEC EN 17210: "Accessibility and usability of the built environment - Functional requirements".

[i.65] Recommendation ITU-T H.Sup1 (1999): "Application profile - Sign language and lip-reading real-time conversation using low bit rate video communication".

[i.66] ETSI TR 104 060: "Human Factors (HF); Guidance on how to apply the EN 301 549 to digital television products".

[i.67] Void.

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[i.69] ISO/TR 22411:2021: "Ergonomics data for use in the application of ISO/IEC Guide 71:2014".

[i.70] W3C® Recommendation (7 June 2011): "Cascading Style Sheets Level 2 Revision 1 (CSS 2.1) Specification", 2011 / 2016 / 2021.

[i.71] ISO 14289-1:2014: Document management applications — Electronic document file format enhancement for accessibility: Part 1: Use of ISO 32000-1 (PDF/UA-1).

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[i.73] ISO/IEC TS 20071-23:2018: "Information technology — User interface component accessibility — Part 23: Visual presentation of audio information (including captions and subtitles)".

[i.74] Recommendation ITU-T H.264: "Advanced video coding for generic audiovisual services".

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[i.78] ADA Accessibility Standards: "Americans with Disabilities Act - Accessibility Standards", 2010.

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[i.80] ETSI ETS 300 381 (Edition 1) (December 1994): "Telephony for hearing impaired people; Inductive coupling of telephone earphones to hearing aids".

[i.81] Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code (Recast) (Text with EEA relevance).

[i.82] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (Text with EEA relevance).

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[i.84] IETF RFC 7874: "WebRTC Audio Codec and Processing Requirements", 2016.

[i.85] IETF RFC 7875: "Additional WebRTC Audio Codecs for Interoperability", 2016.

[i.86] IETF RFC 8251: "Updates to the Opus Audio Codec", 2017.

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[i.88] ETSI TS 126 441: "Universal Mobile Telecommunications System (UMTS); LTE; 5G; Codec for Enhanced Voice Services (EVS); General overview (3GPP TS 26.441)".

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3 Definition of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the terms given in ETSI EG 201 013 [i.5] and the following apply:

access space: space intended to be occupied by the person, including their Assistive Technology, while they are using the product

accessibility: extent to which products, systems, services, environments and facilities can be used by people from a population with the widest range of user needs, characteristics and capabilities, to achieve identified goals in identified contexts of use (from ISO 9241-11:2018 [i.15])

NOTE 1: Context of use includes direct use or use supported by assistive technologies.

NOTE 2: The context in which the ICT is used may affect its overall accessibility. This context could include other products and services with which the ICT may interact.

accessibility inspection tool for platforms: software-based tool that can be used by developers or third party accessibility evaluators to check the use of the documented platform accessibility services

NOTE 1: For a given platform, the accessibility inspection tool can be:

1) Platform-provided tool for accessibility inspection.

2) Platform-provided assistive technologies, if 1 is not available or is not useful to test a given requirement.

3) Generally-available assistive technologies for the platform, if neither 1 nor 2 are available.

NOTE 2: Platform tools are resources provided to software developers by the organization producing the platform. Some platform tools may include the function of inspecting the accessibility of ICTs developed for that platform. Some platform tools may be available to developers but not to 3rd party accessibility evaluators.

NOTE 3: Platform-provided assistive technologies are assistive technologies that are part of the platform. In the context of the present document, operating systems are popular examples of platforms.

NOTE 4: Examples of assistive technologies (either platform or non-platform) that can be used as inspection tools are, but are not limited to, a screen reader and a voice control system.

applicable (accessibility) requirement: requirement, whose preconditions are true for an ICT

applicable scenario: scenario, whose preconditions are true for an ICT

applicable test: test, whose preconditions are true for an ICT

Application Programming Interface (API): collection of invocation methods and associated parameters used by one piece of software to request actions from another piece of software (from ISO/IEC 18012-1:2004 [i.79])

Assistive Listening Devices (ALDs): devices that help separate the sounds, particularly speech, that a person wants to hear from background noise by bringing sound directly into the ear

NOTE: These are often found in meetings and public venues such as plays, concerts and places of worship. They can also be used at home with televisions and other products with auditory output.

Assistive Technology (AT): any item, piece of equipment, service or product system including software that is used to increase, maintain, substitute or improve functional capabilities of persons with disabilities or for, alleviation and compensation of impairments, activity limitations or participation restrictions

NOTE 1: Assistive technology is an umbrella term that is broader than assistive products.

NOTE 2: Assistive technology can include assistive services, and professional services needed for assessment, recommendation and provision. Some examples of "assistive services" would be: all of the relay services, text to speech services, OCR services that change images of text to text, AI's that shift the language level of a document.

NOTE 3: Where ICT does not support directly connected assistive technology, but which can be operated by a system connected over a network or other remote connection, such a separate system (with any included assistive technology) can also be considered assistive technology.

audio description: narration added to the soundtrack to describe important visual details of synchronized audio-visual content, which cannot be understood from the main soundtrack alone

NOTE 1: This is also variously described using terms such as "video description" or variants such as "descriptive narration" and "described video".

NOTE 2: Audio description helps blind persons, persons with low vision, and persons who need assistance with understanding important facial expressions and other visual content to perceive and understand the visual content of audio-visual media.

NOTE 3: Audio description can provide information about actions, characters, scene changes, on-screen text, and other visual content.

NOTE 4: The audio description is generally inserted in the gaps in the main audio narrative. It typically uses a different voice, tone, or speed to separate it from the main audio.

authoring tool: software that can be used to create or modify content

NOTE 1: An authoring tool may be used by a single user or multiple users working collaboratively.

NOTE 2: An authoring tool may be a single stand-alone application or be comprised of collections of applications.

NOTE 3: An authoring tool may produce content that is intended for further modification or for use by end-users.

NOTE 4: Authoring tool software can be web-based or non-web-based application(s) such as Content Management Systems, social media, word processors and courseware tools.

caller identifier (caller ID): information presented to the recipient of an incoming request for a communication session (such as a phone call, video call, or messaging) that uniquely specifies the identity of the originating party

captioned telephony: service which converts speech to real-time text towards the primary user while letting voice through in both directions

NOTE 1: When provided for VoIP, it is called IP Captioned Telephony Service or IPCTS in the US.

NOTE 2: A conversation may have more than one primary user.

closed functionality: functionality that is limited by characteristics that prevent a user from attaching, installing or using assistive technology

closed subtitles: subtitle visually presented only in response to user preference (after ISO/IEC TS 20071-23 [i.73])

communication client: terminating software that transmits and receives communications

NOTE 1: A communication client can be limited to work with only one communication system that is provided by one specific system provider.

NOTE 2: The ICT that is, or includes, the communication client is responsible for ensuring that the content of the communication is communicated to and from the user of the communication client.

communication system: ICT that enables real-time bidirectional voice communications to flow between communication clients

NOTE 1: A communication system can contain several component parts that may not be separately identifiable from outside the system. Some communication systems might simply be an "interpersonal communication service" as defined in point 5 of Article 2 of Directive (EU) 2018/1972 [i.81].

NOTE 2: Some communication systems are separate from their communication clients while in others the communication clients form an integral part of a proprietary communication system.

communicator: natural person, or software imitating a natural person, using a communication client to communicate

NOTE: Software that imitates a natural person can also be an effective way to test whether the requirements in the present document are met.

compatible communication system: communication system that uses the same communication standards as another communication system

content: information and sensory experience to be communicated to the user by means of software, including code or mark-up that defines the content's structure, presentation, and interactions (after WCAG2ICT [i.25])

NOTE 1: Content occurs in three places: web pages, non-web documents and non-web software. When content occurs in a web page or a non-web document, a user agent is needed in order to communicate the content's information and sensory experience to the user. When content occurs in software, a separate user agent is not needed in order to communicate the content's information and sensory experience to the user - the software itself performs that function.

NOTE 2: For non-web software, content also includes the user interface.

context of use: combination of users, goals and tasks, resources, and environment (from ISO 9241-11:2018 [i.15])

NOTE: The "environment" in a context of use includes the technical, physical, social, cultural and organizational environments.

control (when used as a noun in the form of a "user interface control"): user interface element that is operated by a user in order to interact with a product

NOTE 1: Examples of things controls are used for include, but are not limited to, input of information, direct actions, adjustments or commands for the product to act on, store, or pass along.

NOTE 2: Controls may be physical, or virtual (buttons on a screen, or gestures in the air, or biological measurements, etc.).

conversational gain: increase, measured in decibels [dB], of the speech level delivered to a user's ear above a reference level of 70 dB SPL

destination address: addressable identity specified by the initiating participant to initiate a session

NOTE: The specification typically involves choosing a number, a contact from address book, or alike.

discoverability metadata: information about a digital resource (e.g. a PDF document, a video document, an audio document, etc.) that supports users and systems to find, identify, and evaluate that resource

document (non-web document): logically distinct assembly of content (such as a file, set of files, or streamed media) that functions as a single entity rather than a collection, that is not part of software and that does not include its own user agent (after WCAG2ICT [i.25])

NOTE 1: A document always requires a user agent to present its content to the user.

NOTE 2: Letters, e-mail messages, spreadsheets, books, pictures, presentations, and movies are examples of documents.

NOTE 3: Software configuration and storage files such as databases and virus definitions, as well as computer instruction files such as source code, batch/script files, and firmware, are examples of files that function as part of software and thus are not examples of documents. If and where software retrieves "information and sensory experience to be communicated to the user" from such files, it is just another part of the content that occurs in software and is covered by WCAG2ICT like any other parts of the software. Where such files contain one or more embedded documents, the embedded documents remain documents under this definition.

NOTE 4: A collection of files zipped together into an archive, stored within a single virtual hard drive file, or stored in a single encrypted file system file, do not constitute a single document when so collected together. The software that archives/encrypts those files or manages the contents of the virtual hard drive does not function as a user agent for the individually collected files in that collection because that software is not providing a fully functioning presentation of that content.

NOTE 5: Anything that can present its own content without involving a user agent, such as a self-playing book, is not a document but is software.

NOTE 6: A single document may be composed of multiple files such as the video content and closed caption text. This fact is not usually apparent to the end-user consuming the document/content.

NOTE 7: An assembly of files that represented the video, audio, subtitles and timing files for a movie is an example of a document.

NOTE 8: A binder file used to bind together the various exhibits for a legal case would not be a document.

NOTE 9: Documents may contain sub-documents.

documented accessibility feature: feature of an ICT offered to end-users that can enhance accessibility and is documented

documented platform accessibility feature: feature of a platform offered to end users that can enhance accessibility and is documented

documented platform accessibility service: subset of the platform's Application Programming Interface (API) that supports interoperability between a user interface running on the platform software and assistive technology

NOTE 1: They allow application developers to create software that is compatible with assistive technologies.

NOTE 2: These services are also often used by non-accessibility software and testing software.

documented platform service: service provided by the platform that is documented by the platform author for public use by accessibility applications and utilities created by third parties

NOTE: Platform services provide documented methods that allow software to add or integrate functionality provided by the platform rather than having to attach themselves in an ad-hoc fashion which is hard for both parties to support.

Electronic Program Guide (EPG): means of presenting available content to the consumer, allowing selection of desired content

embedded: directly included in the content that is downloaded to the user agent and its extension, and is intended to be used in rendering the web page

NOTE: Something that is downloaded using a mechanism on the web page but is not used in rendering the page is not "embedded" in the page.

height in CSSpx: height as measured in CSS pixels

NOTE 1: CSS pixels are not a unit of length but a measure of angle of view. The angle of view for 1 CSSpx is defined as 2*arctan (28/(1/192)). (The angle which is created by looking at a real pixel with the size 1/96th of an inch at 28 inches viewing distance of the eye). To convert 1 CSSpx into a physical measure of height one would have to multiply the viewing distance with 2/(28/(1/192)).

NOTE 2: See https://www.w3.org/TR/CSS2/syndata.html#length-units for an explanation of absolute length calculations.

Information and Communication Technology (ICT): technology, interconnected system or subsystem used for the creation, conversion, processing, transmission, gathering, or presentation of information or commands from users

NOTE 1: Examples of ICT include but are not limited to web pages, non-web and hybrid documents, electronic content, hardware, communication products, computers and ancillary equipment, software including mobile applications, information kiosks and transaction machines, audiovisual technologies, videos, intelligent user agents, information services.

NOTE 2: Anything with a digital user interface would fall within this definition although most but not all requirements relate to ICT that accepts information or commands from a user in addition to transmitting and/or presenting information.

ICT network: technology and resources supporting the connection and operation of interconnected ICT

interlingual subtitles: subtitles that translate the original audio information into a different language

NOTE: Interlingual subtitles provide a translation of the audio content into a different language, which is visually displayed to enable the understanding of the content by persons who do not understand, or have difficulties understanding, the language of the original audio content.

keyboard interface: interface used by software to obtain keystroke input

NOTE 1: A keyboard interface allows users to provide keystroke input to programs even if the native technology does not contain a keyboard.

EXAMPLE: A touchscreen PDA has a keyboard interface built into its operating system as well as a connector for external keyboards. Applications on the PDA can use the interface to obtain keyboard input either from an external keyboard or from other applications that provide simulated keyboard output, such as handwriting interpreters or speech-to-text applications with "keyboard emulation" functionality.

NOTE 2: Operation of the application (or parts of the application) through a keyboard-operated mouse emulator, such as MouseKeys, does not qualify as operation through a keyboard interface because operation of the program is through its pointing device interface, not through its keyboard interface.

lipspeaking: a specialized communication service where a trained hearing person (a lipspeaker) silently or quietly repeats a speaker's words, reproducing the rhythm, flow, and facial expressions to make speech easy for deaf or hard-of-hearing people to follow

manual operation and control: using physical human actions to perform an operation or to exert control

NOTE: Examples of manual operation and control include, but are not limited to:

- pushing a physical button in a way that causes button travel;
- making a gesture on a touchscreen;
- grasping or pinching a physical tactile operable part in a way that will allow that tactile operable part to be physically moved or rotated in some direction;
- inserting or retrieving cards, coins, tickets, etc. into or from slots in the ICT are also examples of manual operation and control.

mechanism for private listening: auditory output designed so that only the current user can receive the sound

NOTE: Personal headsets, directional speakers and audio hoods are examples of mechanisms for private listening.

media: different specific forms of presenting information to the user

NOTE: Examples of media include, but are not limited to, text, video, audio, graphics, animations, etc.

media establishment: process of agreeing between ICT about resources and characteristics of media to be used in a communication session, so that media then can be communicated and used

menu: set of selectable options (after ISO 17549-1:2022 [i.54])

multimedia: combinations of static and/or dynamic media presented simultaneously

NOTE: Examples of multimedia include combinations of text and video, or audio and animation, etc.

non-text content: content that is not a sequence of characters that can be programmatically determined or where the sequence is not expressing something in human language (after WCAG 2.2 [4])

NOTE: An image, graphic, audio clip, or other feature that conveys meaning through either a picture or sound. Examples include: buttons, check boxes, input fields, pictures, animations, and audio/video that is embedded or streamed.

non-web document: document that is not a web page, not embedded in web pages nor used in the rendering or functioning of the page

non-web software: software that is not a web page, not embedded in web pages nor used in the rendering or functioning of the page

open functionality: functionality that supports access by assistive technology

NOTE: This is the opposite of closed functionality.

open subtitles: subtitle visually presented regardless of user preference (after ISO/IEC TS 20071-23 [i.73])

NOTE: Open subtitles cannot be turned off or moved because they are embedded in the video content.

operable part: hardware element that operates the ICT when touched or manipulated

NOTE 1: The areas of a touch screen that need to be touched for operation are operable parts.

NOTE 2: When used as a surface for non-location specific gestures, the entire touch area is considered a single operable part whose location as a whole need only be discerned.

NOTE 3: Not all operable parts are required to meet the requirements of the present document, only enough to allow full operation in one mode of operation unless otherwise stated.

NOTE 4: Under the conformance requirement in clause 14.2, not all operable parts will be expected to meet all the requirements that apply to operable parts in all contexts.

NOTE 5: Operable parts may also include slots for input of cards, coins and bills as well as slots to receive printed tickets, paper receipts and change (coins).

physical height: actual height (of a pixel or other item) in units of linear measure such as mm or inch

NOTE: See the notes below height in CSSPx for more information about physical height and height in CSSpx.

platform software (platform): collection of software components that runs on an underlying software or hardware layer, and that provides a set of software services to other software components that allows those applications to be isolated from the underlying software or hardware layer (after ISO/IEC 13066-1 [i.18])

NOTE: A particular software component might play the role of a platform in some situations and a client in others.

primary user (of relay service): person who is using relay services because of a disability

NOTE: See secondary user.

programmatically determinable: able to be read by software from developer-supplied data in a way that other software, including assistive technologies, can extract and present this information to users in different modalities

NOTE: WCAG 2.2 uses "determined" where this definition uses "able to be read" (to avoid ambiguity with the word "determined").

Real-Time Text (RTT): form of text conversation in point to point situations or in multipoint conferencing where the text being entered is sent in such a way that the communication is perceived by the user as being continuous on a character-by-character basis

NOTE 1: Users will perceive communication as continuous if the delay between text being created by the sender and received by the recipient is less than 1 s. However, the actual delay will be dependent on the communications network.

NOTE 2: The creation of text will differ between systems where text is entered on a word-by-word basis (e.g. speech-to-text and predictive-text based systems) and systems where each character is separately generated (e.g. typing on a physical keyboard).

NOTE 3: Although RTT may often be "perceived by the user" as being sent character-by-character, none of the RTT standards require this to be the case. They assume accumulation of characters before sending and only require that no character is held for more than 500 ms after it is created before the accumulated text is sent. An accumulation time of 300 ms or less is recommended.

NOTE 4: It is already common for autonomous ICT to be at one end of continuous bidirectional voice communication. The RTT requirements in the present document ensure that there will be RTT communication wherever there is real-time bidirectional voice communication, even when there is an autonomous ICT at one end.

relay service: electronic communication service which enables real-time bidirectional communication between remote end-users of different modes of communication

NOTE: This is typically achieved by providing conversion between different modes of communication such as text, sign, and speech, or by providing the needed cognitive support for end-users during the communication, by a human operator or automatic means.

relay service invocation functions: set of functions related to decisions, communication establishments and media interconnections between users and a relay service

satisfies a success criterion: success criterion does not evaluate to "false" when applied to the ICT (after WCAG 2.2 [4])

secondary user (of relay service): communication user other than a primary user, participating in a communication facilitated by a relay service that is invoked based on the primary user's preferences and actions

NOTE 1: See primary user.

NOTE 2: A secondary user may initiate or answer a communication in which a relay service is invoked by primary user's preferences or actions.

NOTE 3: A secondary user may also be another primary user participating in a communication via another relayed communication.

set of non-web documents: collection of non-web documents that share a common purpose; are created by the same author, group or organization; are published together; and all refer to each other by name or link (after WCAG2ICT [i.25])

NOTE 1: Republishing or bundling previously published documents as a collection does not constitute a set of documents.

NOTE 2: If a set is broken apart, the individual parts are no longer part of a set, and would be evaluated as any other individual document is evaluated.

single user operation: operation performed by a user and recognized by the ICT as a discrete and complete operation

NOTE: A double-click is not a single user operation.

speech output: speech received during voice communication, or spoken information originating from ICT

spoken subtitles: subtitles that are voiced over the audiovisual content (after ISO/IEC TS 20071-25 [i.32])

stationary ICT: ICT that stands directly or indirectly on the floor, or is mounted on, fully integrated into, or installed through a wall or other immovable structure, and is not intended to be moved by its user

NOTE 1: Typically, stationary ICT rests on the ground or a plinth (such as an information kiosk) or is installed in a wall (such as control panels for lifts, lighting or air-conditioning) or through a wall (such as a machine that dispenses cash or performs other banking services) or attached to a pole (such as passenger information systems) or permanently mounted on a desk (such as check-in systems).

NOTE 2: A manufacturer cannot control the third party installation of a stationary ICT but can provide installation guidance to meet requirements for reach ranges, lighting or privacy.

NOTE 3: Mounted on the wall means: the stationary ICT is protruding:

- Integrated in a wall means: the surface of the stationary ICT is nearly flush with the wall. It may be slightly recessed or protrude due to an installation frame.
- Installed through a wall means: The main components of the ICT are installed behind a wall and only the panel of the stationary ICT is integrated in the wall. Stationary ICT integrated in or installed through a wall are often protected by a security shutter.

Sound Pressure Level (SPL): logarithmic measure, expressed in decibels (dB), of the effective sound pressure of a sound relative to a reference value

subtitles: written text that is offered in the audiovisual content, which aims to account for (i) either the spoken words of the content, or (ii) the spoken words of the content in combination with other elements of a soundtrack

NOTE 1: When subtitles are used as an accommodation for deaf or hard of hearing users, they are also known as captions or as subtitles for the deaf and hard of hearing and also include additional information on other elements of the soundtrack needed to understand the audiovisual content.

NOTE 2: Outside North America, the term Subtitles is often used synonymously with Closed Captions. The term "Hardsubs" is sometimes used in place of Open Captions.

NOTE 3: Subtitles can appear anywhere on the display, and where possible are positioned to avoid overlapping content that needs to be visible (such as a "news ticker"), or where the background content would make the subtitles difficult to read.

NOTE 4: Subtitles may be open subtitles or closed subtitles.

tactilely discernible operable part: operable part that can be located via the sense of touch without activating it

NOTE 1: Physical properties of the tactilely discernible operable part, or its surroundings, that enable operable part to be tactilely discerned include, but are not limited to:

- some portion of the operable part being above or below the surface that surrounds it;
- the operable part having a raised feature that differentiates it from its surroundings;
- a detectable gap that surrounds the tactile part;
- having a different surface texture to surrounding surfaces;
- a part of a touchscreen being located adjacent to a tactilely discernible edge, corner, tactile markings on a screen frame;
- a touchscreen or touchpad that is tactilely discernible that is used as a whole as a gesture surface for non-location-specific gestures.

NOTE 2: The part of a touchscreen where an on-screen control is located is a tactilely discernible operable part if it is located adjacent to a tactilely discernible edge, corner, or tactile marking on a screen frame.

terminal: combination of hardware and/or software with which the end user directly interacts and that provides the user interface

NOTE 1: The hardware may consist of more than one device working together e.g. a mobile device and a computer.

NOTE 2: For some systems, the software that provides the user interface may reside on more than one device such as a telephone and a server.

NOTE 3: The software in a communications terminal is often called "communication client".

text handling capabilities: means to accept text input from and present text to a user

NOTE: This would typically be the presence of, or ability to connect, an alphanumeric keyboard and display or device which can act as an alphanumeric keyboard and display.

total conversation: bidirectional symmetric real time transfer of motion video, real-time text and voice between users in two or more locations

Uniform Resource Identifier (URI): compact string of characters for identifying an abstract or physical resource

NOTE 1: Examples of ICT resources that can be identified by URIs are communications addresses, web pages, digital books, servers, etc.

NOTE 2: A Uniform Resource Locator (URL) is a type of URI. One example of a URL is "https://www.w3.org". When entered in the address bar of a browser, it will render the home web page of the World Wide Web Consortium.

user agent: software that retrieves and presents content for users (after WCAG 2.2 [4])

NOTE 1: Software that only displays the content contained within it is treated as software and not considered to be a user agent.

NOTE 2: An example of software that is not a user agent is a calculator application that does not retrieve the calculations from outside the software to present it to a user. In this case, the calculator software is not a user agent, it is simply software with a user interface.

NOTE 3: Software that only shows a preview of content such as a thumbnail or other non-fully functioning presentation is not providing user agent functionality.

user interface: all components of an interactive system (software or hardware) that provide information and/or controls for the user to accomplish specific tasks with the interactive system (from ISO 9241-110 [i.16])

user interface element: entity of the user interface that is presented to the user by the software (after ISO 9241-171 [i.17])

NOTE 1: This term is also known as "user interface component".

NOTE 2: User-interface elements can be interactive or not.

visiting communication client: communication client that is registered to work with a communication system that is different from the one it is currently connected to

web content: content that belongs to a web page, and that is used in the rendering or that is intended to be used in the rendering of the web page

NOTE: Web content is the text, visual or audio content that is made available online and encountered by users as part of the online usage and experience on websites. It may include text, images, sounds and audio, online videos, among other items placed within web pages.

web page: non-embedded resource obtained from a single URI using HTTP plus any other resources that are used in the rendering or intended to be rendered together with it by a user agent (after WCAG 2.2 [4])

x-height: height of the lower-case character "x" of a font in mm (for a given distance) or CSSpx

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ADA	Americans with Disabilities Act
AI	Artificial Intelligence
ALD	Assistive Listening Device
AMR-WB	Adaptive Multi-Rate WideBand
ANSI	American National Standards Institute
API	Application Programming Interface
AT	Assistive Technology
ATAG	Authoring Tool Accessibility Guidelines (of W3C®)
ATM	Automated Teller Machine
AV	AudioVisual
CEN	Comité Européen de Normalisation
CPS	Characters Per Second
CSS	Cascading Style Sheets
DTMF	Dual Tone Multi-Frequency
EAA	European Accessibility Act (Directive (EU) 2019/882 [i.29])
EFTA	European Free Trade Area
EPG	Electronic Program Guide
EU	European Union
EVS	(Codec for) Enhanced Voice Services
FPS	Frames Per Second
GDPR	General Data Privacy Regulation
GTT	Global Text Telephony
GTT-IP	Global Text Telephony over IP
HEX	HEXadecimal
HTML	HyperText Markup Language
HTTP	HyperText Transfer Protocol
ICT	Information and Communication Technology
ID	IDentity
IETF	Internet Engineering Task Force
IMS	IP Multimedia System
IP	Internet Protocol

ISO	International Organization for Standardization
ITU-T	International Telecommunication Union - Telecommunication standardization sector
LED	Light Emitting Device
LTE	Long-Term Evolution
NAT	Network Address Translation
OCR	Optical Character Recognition
PDA	Personal Digital Assistant
PSAP	Public Safety Answering Point
QVGA	Quarter Video Graphics Array
RFC	Request For Comment
RTP	Real-Time Protocol
RTT	Real-Time Text
SIP	Session Initiation Protocol
SPL	Sound Pressure Level
TIA	Telecommunications Industry Association
UAAG	User Agent Accessibility Guidelines (of W3C®)
U-C	Use Case
URI	Uniform Resource Identifier
URL	Uniform Resource Locator
USB	Universal Serial Bus
VGA	Video Graphics Array
ViLTE	Video over LTE
VoIP	Voice over Internet Protocol
VOIP	Voice Over IP
VoLTE	Voice over LTE
W3C	World Wide Web Consortium
WAI	Web Accessibility Initiative
WCAG	Web Content Accessibility Guidelines (of W3C®)
WLAN	Wireless Local Access Network
XAML	eXtensible Application Markup Language
XML	eXtensible Markup Language
XUL	XML User interface Language

4 Functional performance

4.1 Meeting Functional Performance Criteria

The criteria set out in clause 4.2 are intended to describe the functional performance of ICT ensuring equivalent functionality and enabling people to locate, identify, and operate ICT functions, and to access the information provided, regardless of physical, cognitive or sensory abilities. Any differences in ability may be permanent, temporary or situational. The requirements in clauses 5 to 13 provide specific testable criteria for accessible ICT, corresponding to the Functional Performance Criteria reflected in clause 4.2.

NOTE 1: The relationship between the requirements from clauses 5 to 13 and the Functional Performance Criteria is set out in Annex B.

NOTE 2: The intent of clause 4.2 is to describe the ICT performance in enabling users to access the full functionality and documentation of the product or the service with or without the use of assistive technologies.

NOTE 3: The methods of meeting the accessibility needs of users with multiple accessibility needs will depend on the specific combination of needs. Meeting these user accessibility needs may be addressed by considering multiple clauses in clause 4.2.

NOTE 4: Several users' accessibility needs rely on ICT providing specific modes of operation. If a user is to activate, engage or switch to the mode that complies with his or her user accessibility needs, the method for activating, engaging or switching to that mode would need to comply with the same user accessibility needs.

4.2 Functional Performance Criteria

4.2.1 Usage without vision

Where ICT provides visual modes of operation,
the ICT shall provide at least one mode of operation that does not require vision.

NOTE 1: This is essential for users without vision and benefits many more users in different situations.

NOTE 2: A web page or application with a well formed semantic structure can allow users without vision to identify, navigate and interact with a visual user interface.

NOTE 3: Audio and tactile user interfaces may contribute towards meeting this clause.

4.2.2 Usage with limited vision

Where ICT provides visual modes of operation,
the ICT shall provide features that enable users to make better use of their limited vision.

NOTE 1: This is essential for users with limited vision and benefits many more users in different situations.

NOTE 2: Magnification, reduction of required field of vision and control of contrast, brightness and intensity (including of external lighting) can contribute towards meeting this clause.

NOTE 3: Where significant features of the user interface are dependent on depth perception, the provision of additional methods of distinguishing between the features may contribute towards meeting this clause.

NOTE 4: Best practice is for the smallest text have an x-height of at least 8 CSS px which corresponds to an x-height of 1.2mm, at a viewing distance of 400mm, with no zooming or screen scaling. This is the smallest font size - not the recommended font size for body text which should be larger.

NOTE 5: The formula for calculating the physical x-height (in mm) from the x-height (in CSSpx) and the distance D (in mm) from the eye to the display is **x-height (mm) = D (mm) × x-height (CSSpx) / 2 688**.

NOTE 6: For handheld devices D should be assumed as 400 mm.

NOTE 7: Users with limited vision may also benefit from non-visual access (see clause 4.2.1).

4.2.3 Usage without perception of colour

Where ICT provides visual modes of operation,
the ICT shall provide a visual mode of operation that does not require user perception of colour.

NOTE 1: This is essential for users with limited colour perception and benefits many more users in different situations.

NOTE 2: Where significant features of the user interface are colour-coded, the provision of additional methods of distinguishing between the features may contribute towards meeting this clause.

4.2.4 Usage without hearing

Where ICT provides auditory modes of operation,
the ICT shall provide at least one mode of operation that does not require hearing.

NOTE 1: This is essential for users without hearing and benefits many more users in different situations.

NOTE 2: Visual and tactile user interfaces, including those based on text and sign language, may contribute towards meeting this clause.

NOTE 3: Sign language content that accompanies audiovisual content and that has a resolution and frame rate that is consistent with the requirements in clauses 6.5.2 and 6.5.3, and that is well synchronized with the spoken content may contribute to meeting this clause.

4.2.5 Usage with limited hearing

Where ICT provides auditory modes of operation,
the ICT shall provide enhanced audio features.

NOTE 1: This is essential for users with limited hearing and benefits many more users in different situations.

NOTE 2: Enhancement of the audio clarity, reduction of background noise, providing a joint monaural option, adjustment of balance of both audio channels, increased range of volume and greater volume in the higher frequency range can contribute towards meeting this clause.

NOTE 3: Allowing the use of Assistive Listening Devices by providing a way to connect audio for example via headphone jacks, Bluetooth®, USB or WLAN can contribute to meeting this clause.

NOTE 4: Users with limited hearing may also benefit from non-hearing access (see clause 4.2.4).

4.2.6 Usage with no or limited vocal capability

Where ICT requires vocal input from users,
the ICT shall provide at least one mode of operation that does not require them to generate vocal output.

NOTE 1: This is essential for users with no or limited vocal capability and benefits many more users in different situations.

NOTE 2: Vocal output includes speech and other orally generated sounds, such as whistles and clicks.

NOTE 3: Keyboard, pen or touch user interfaces may contribute towards meeting this clause.

4.2.7 Usage with limited manipulation or strength

Where ICT requires manual actions,
the ICT shall provide features that enable users to make use of the ICT through alternative actions not requiring manipulation, simultaneous action or hand strength.

NOTE 1: This is essential for users with limited manipulation or strength and benefits many more users in different situations.

NOTE 2: Examples of operations that users may not be able to perform include those that require fine motor control, path dependant gestures, pinching, twisting of the wrist, tight grasping, or simultaneous manual actions.

NOTE 3: One-handed operation, sequential key entry and speech user interfaces may contribute towards meeting this clause.

NOTE 4: Some users have limited hand strength and may not be able to achieve the level of strength to perform an operation. Alternative user interface solutions that do not require hand strength may contribute towards meeting this clause.

4.2.8 Usage with limited reach

Where ICT is stationary, free-standing or installed,
all the elements required for operation shall be within reach of all users.

NOTE 1: This is essential for users with limited reach and benefits many more users in different situations.

NOTE 2 Considering the needs of wheelchair users and the range of user statures in the placing of operational elements of the user interface may contribute towards meeting this clause.

NOTE 3: Having a remote input capability can help satisfy this requirements.

4.2.9 Minimize photosensitive seizure triggers

Where ICT provides visual modes of operation,
the ICT shall provide at least one mode of operation, that is the default mode, that minimizes the potential for triggering photosensitive seizures or optionally, for audiovisual material, a warning in advance that such triggers might be present.

NOTE 1: This is essential for users with photosensitive seizure triggers.

NOTE 2: Limiting the area and number of flashes per second may contribute towards meeting this clause.

4.2.10 Usage with limited cognition, language or learning

Where ICT provides information or requires user interaction,
the ICT shall provide features and/or presentation that makes it simpler and easier to understand, operate and use.

NOTE 1: This is essential for users with limited cognition, language or learning, and benefits many more users in different situations.

NOTE 2: Adjustable audio playback speeds, timings, error indication and suggestion, and a logical focus order are examples of design features that may contribute towards meeting this clause.

NOTE 3: Providing an audio output of the text is an example of providing support for people with limited reading abilities.

NOTE 4: Providing spelling aid and word prediction of the text is an example of providing support for people with limited writing abilities.

NOTE 5: Interaction with content can be made easier, and less prone to errors, by presenting tasks in steps that are easy to follow.

NOTE 6: For a reference to requirements supporting the functional performance criteria 4.2.10, check Table B.2. in Annex B. All lines having "P" or "S" in column "LC" of Table B.2 may have an impact on usage with limited cognition, language or learning.

4.2.11 Privacy

Where ICT provides features for accessibility,
the ICT shall ensure that the privacy of the users of the ICT is maintained irrespective of the use of these features for accessibility.

NOTE: Enabling the connection of personal headsets for private listening, not providing a spoken version of characters being masked and enabling user control of legal, financial and personal data are examples of design features that may contribute towards meeting this clause.

5 Generic requirements

5.1 Closed functionality

5.1.1 Introduction (informative)

ICT has closed functionality for many reasons, including design or policy. Some of the functionality of products can be closed because the product is self-contained and users are precluded from adding peripherals or software in order to access that functionality.

ICT may have closed functionality in practice even though the ICT was not designed, developed or supplied to be closed.

Computers that do not allow end-users to adjust settings or install software are functionally closed.

5.1.2 General

5.1.2.1 Closed functionality

Where ICT includes closed functionality,
the closed functionality shall meet 5.1. For the non-closed functionality the applicable requirements set out in clauses 5.2 to 13 shall be met.

NOTE 1: ICT may close some, but not all, of its functionalities. Only the closed functionalities have to meet the requirements of clause 5.1.

NOTE 2: The requirements within this clause replace those in clauses 5.2 to 13 that specifically state that they do not apply to closed functionality. This may be because they relate to compatibility with assistive technology or to the ability for the user to adjust system accessibility settings in products with closed functionality (e.g. products that prevent access to the system settings control panel).

5.1.2.2 Assistive technology and closed functionality

Where ICT includes closed functionality,
that closed functionality shall be operable without requiring the user to attach, connect or install assistive technology and meet the generic requirements of clauses 5.1.3 to 5.1.6 as applicable. Personal headsets and personal induction loops are not classed as assistive technology for the purpose of this clause.

5.1.3 Non-visual access

5.1.3.1 Auditory output of visual information

Where ICT includes closed functionality, and visual information is needed to enable the use of the closed functionality of the ICT,
the closed functionality shall be provided through one or more non-visual means that includes auditory output to enable the use of those functions.

NOTE 1: Non-visual access may also include a tactile form such as braille in addition to audio. This is particularly useful for some individuals who are deaf-blind.

NOTE 2: The visual information needed to enable use of some functions may include operating instructions and orientation, transaction prompts, user input verification, error messages and non-text content.

5.1.3.2 Auditory output delivery including speech

Where ICT includes closed functionality, and auditory output is provided as non-visual access to closed functionality, the auditory output shall be delivered through one of the following:

a) directly by a mechanism included in or provided with the ICT; or

b) by a personal headset that can be connected through a 3,5 mm audio jack without requiring the use of vision; or

c) if it is a personal device (not a public-shared-use device), by a personal headset connected through any standard industry headset connection.

NOTE 1: Mechanisms included in or provided with ICT may be, but are not limited to, a loudspeaker, and a built-in handset/headset.

NOTE 2: The use of a speaker for providing personal information may be subject to privacy law restrictions in certain situations.

NOTE 3: For personal use devices only, industry standard audio connections include but are not limited to audio USB standards and Bluetooth®.

NOTE 4: If auditory output is delivered by a connection for personal headphones, it is best practice, where space permits, to provide both visual and tactile information to indicate that it is possible to connect personal headphones to the ICT device. This can be done, for example, by using a tactile symbol representing headphones.

NOTE 5: Any jack (mono, stereo, or microphone enabled) is sufficient to meet this requirement since all will provide audio output and will work interchangeably with headphones/earbuds to provide audio output.

NOTE 6: In a publicly shared device industry standard audio connections including but not limited to audio USB standards and Bluetooth® may be provided in addition to a 3,5 mm audio jack.

5.1.3.3 Auditory output correlation

Where ICT includes closed functionality, and auditory output is provided as non-visual access to closed functionality, and information that is under the control of the ICT is displayed on the screen,
the ICT shall provide auditory information that includes all the non-decorative information displayed on the current screen.

NOTE 1: Many people who are blind and partially sighted still have visual ability, and use aspects of the visual display even if it cannot be fully comprehended. An audio alternative that is both complete and complementary includes all visual information such as focus or highlighting, so that the audio can be correlated with information that is visible on the screen at any point in time.

NOTE 2: The auditory information is intended to allow the user to perform the task(s) currently on the screen.

NOTE 3: Examples of auditory information that allows the user to correlate the audio with the information displayed on the screen include structure and relationships conveyed through presentation.

5.1.3.4 Speech output user control

Where ICT includes closed functionality, and speech output is provided as non-visual access to closed functionality, the speech output shall be capable of being interrupted and repeated when requested by the user, where permitted by security requirements.

NOTE 1: Moving the speaking cursor away from an item is a common technique for interrupting the speech and is particularly important when moving from one item and to a different one causing that the new item will be read immediately. Moving off and back to an item can be used to cause it to re-read.

NOTE 2: It is best practice to allow the user to pause speech output rather than just allowing them to interrupt it when the speech output is longer than 5 seconds.

NOTE 3: It is best practice to allow the user to repeat only the most recent portion rather than requiring play to start from the beginning when the speech output is longer than 5 seconds.

5.1.3.5 Speech output automatic interruption

Where ICT includes closed functionality, and speech output is provided as non-visual access to closed functionality, and the speech output is generated to provide feedback on user interface choices and user actions,
the ICT shall interrupt current speech output when a user action occurs and when new speech output begins.

NOTE 1: This requirement applies to the speech output provided for non-visual access as feedback for user interface choices and actions, not to any other speech being played by the device. If audio is already playing, including audio description as part of playing AV material, it is common to mute or 'duck' the audio (greatly reduce the relative volume of the audio) to allow the accessibility audio to be clearly heard.

NOTE 2: Where it is essential that the user hears the entire message, e.g. a safety instruction or warning, the ICT may need to block all user action so that speech is not interrupted.

5.1.3.6 Auditory output for non-text content

Where ICT includes closed functionality that presents non-text content other than video,
any alternative for non-text content shall be presented to users via auditory output, including speech, unless the non-text content is pure decoration or is used only for visual formatting.

5.1.3.7 Auditory output for video information

Where ICT includes closed functionality, and pre-recorded video content is needed to enable the use of closed functionality of the ICT,
an auditory equivalent shall be provided for the pre-recorded video content originating from the ICT, and, if provided from another source along with video content, it is also made available by the ICT.

NOTE 1: This speech output can take the form of an audio description or, where there is a transcript of the video, a spoken version of the transcript content.

NOTE 2: ICT is not required to create an auditory equivalent for content not originating from the ICT.

5.1.3.8 Masked entry

Where ICT includes closed functionality, and auditory output is provided as non-visual access to closed functionality, and the characters displayed are masking characters,
the auditory output shall not be a spoken version of the characters entered unless the auditory output is known to be delivered only to a mechanism for private listening, or if the option exists and the user explicitly chooses to allow non-private auditory output.

NOTE 1: Masking characters are usually displayed for security purposes and include, but are not limited to asterisks representing personal identification numbers.

NOTE 2: Unmasked character output might be preferred when closed functionality is used, for example, in the privacy of the user's home. A warning highlighting privacy concerns might be appropriate to ensure that the user has made an informed choice.

5.1.3.9 Private access to personal data

Where ICT includes closed functionality, and the ICT is intended for public shared use, and auditory output is provided by that ICT as non-visual access to closed functionality, and that output contains data that is considered to be private according to the applicable privacy policy,
the corresponding auditory output shall only be delivered through a mechanism for private listening that can be connected without requiring the use of vision, or through any other mechanism explicitly chosen by the user.

NOTE 1: The wording of the requirement is such that it only applies to audio generated by that particular ICT for non-visual access, and not to any audio, such as audio descriptions, or any other information including private information that is passed to it from another source.

NOTE 2: The wording of this requirement means that does not apply in cases where data is not defined as being private according to the applicable privacy policy or where there is no applicable privacy policy.

NOTE 3: Non-private output might be preferred when closed functionality is used, for example, in the privacy of the user's home. A warning highlighting privacy concerns might be appropriate to ensure that the user has made an informed choice.

NOTE 4: An example of a privacy policy in Europe is the GDPR [i.82].

NOTE 5: Even if there are no privacy policies that cover the exact context in which the ICT is being used, it is best practice to not announce via a speaker a person's name, phone number, address, financial information (account numbers, amount of withdrawal) or other information that could be used to identify a person or track them later or to target them for robbery etc.

5.1.3.10 Non-interfering audio output

Where ICT includes closed functionality, and auditory output is provided as non-visual access to closed functionality, the ICT shall not automatically play, at the same time, any interfering audible output that lasts longer than three seconds.

5.1.3.11 Private listening volume

Where ICT includes closed functionality, and auditory output is provided as non-visual access to closed functionality, and the auditory output is delivered through a mechanism for private listening,
the ICT shall provide at least one non-visual mode of operation for controlling the volume.

5.1.3.12 Speaker volume

Where ICT includes closed functionality, and auditory output is provided as non-visual access to closed functionality, and is delivered through speakers on the ICT,
a non-visual incremental volume control shall be provided with output amplification up to a level of at least 65 dBA (-29 dBPaA).

NOTE: For noisy environments, 65 dBA may not be sufficient.

5.1.3.13 Volume reset

Where ICT includes closed functionality, and the ICT is intended for public shared use, and auditory output is provided as non-visual access to closed functionality through a mechanism for private listening,
a function that resets the volume to be at a level of 65 dBA or less after every use, shall be provided.

5.1.3.14 Spoken languages

Where ICT includes closed functionality, and speech output is provided as non-visual access to closed functionality, the speech output shall be in the same human language as the displayed content provided, except:

a) for proper names, technical terms, words of indeterminate language, and words or phrases that have become part of the vernacular of the immediately surrounding text;

b) where the content is generated externally and not under the control of the ICT vendor, the present clause shall not be required to apply for languages not supported by the ICT's speech synthesizer;

c) for displayed languages that cannot be selected using non-visual access;

d) where the user explicitly selects a speech language that is different from the language of the displayed content.

5.1.3.15 Non-visual error identification

Where ICT includes closed functionality, and speech output is provided as non-visual access to closed functionality, and an input error is automatically detected, and the error is indicated visually via text and/or other visual means,
the speech output shall present equivalent error information.

5.1.3.16 Receipts, tickets, and transactional outputs

Where ICT includes closed functionality, and provides physical receipts, tickets or other outputs as a result of a self-service transaction,
output that provides all information necessary to complete or verify the transaction shall be provided through one or more non-visual means that includes auditory output, except information that is printed and that is not needed to complete the transaction, such as receipts, itineraries, maps, etc.

NOTE: The speech output may be provided by any element of the total ICT system.

5.1.4 Functionality closed to text enlargement

Where ICT includes closed functionality, and any functionality of the ICT is closed to the text enlargement features of its platform or assistive technology,
the ICT shall provide a mode of operation where the text and images of text necessary for all functionality is displayed in such a way that the x-height of the text is at least 16 CSS px.

NOTE 1: The formula for calculating the physical height (in mm) from the height (in CSSpx) and the distance D (in mm) from the eye to the display is
physical height (mm) = D (mm) × height (CSSpx) / 2 688.

The relationship between viewing distance and physical x-height for a font with an x-height of 16 CSSpx is as follows:

Table 5.1

Viewing distance (mm)	x-height (mm) for 16CSSpx
400	2,38
500	2,98
700	4,17
1 000	5,95
2 000	11,90
3 000	17,86
5 000	29,76
10 000	59,52

NOTE 2: This is the smallest font size - not the recommended font size for body text which should be larger.

NOTE 3: For handheld devices D should be assumed as 400 mm.

NOTE 4: For detailed information about x-height, CSSpx, etc., see section 4.3.2 of [i.70].

5.1.5 Visual output for auditory information

Where ICT includes closed functionality, and auditory output is needed to enable the use of closed functionality of the ICT,
the ICT shall provide visual information that is equivalent to the auditory information.

NOTE 1: This visual information can take the form of subtitles or text transcripts.

NOTE 2: Sign language interpretation can also be provided as best practice, but this is not sufficient to meet this requirement by itself.

5.1.6 Operation without keyboard interface

5.1.6.1 Functionality closed to keyboards

Where ICT includes closed functionality, and the functionality is closed to keyboards or keyboard interfaces,
the functionality closed to keyboards or keyboard interfaces shall be operable without vision as required by clause 5.1.3.

NOTE: A soft keyboard (an onscreen keyboard) would meet this requirement if it is operable without vision as required by clause 5.1.3.

5.1.6.2 Input focus

Where ICT includes closed functionality, and the functionality is closed to keyboards or keyboard interfaces, and where input focus can be moved to a user interface element,
it shall be possible to move the input focus away from that element using the same mechanism, in order to avoid trapping the input focus.

5.1.7 Access without speech

Where ICT includes closed functionality, and speech is needed to operate closed functionality of the ICT,
the ICT shall provide at least one mode of operation using an alternative input mechanism that does not require speech.

5.1.8 Identify input purpose (closed functionality)

Where ICT includes closed functionality, and input field(s) collecting information about the user are needed to enable the use of the closed functionality of the ICT, and the input field(s) serve a purpose identified in the WCAG 2.2 Input Purposes for User Interface Components section [4],
in at least one mode of operation the ICT shall present to the user, in an audio form, the purpose of each of these input fields.

5.2 Activation of accessibility features

Where ICT includes documented accessibility features,
it shall be possible to activate those documented accessibility features that are required to meet a specific need without relying on a method that does not support that need.

5.3 Biometrics

Where ICT uses biological characteristics,
the ICT shall not rely on the use of a biological characteristic as the only means of user identification or for control of the ICT.

NOTE: Some examples of biological characteristics are fingerprints, eye retinal patterns, voice, and face.

5.4 Preservation of accessibility information during conversion

Where ICT converts information or communication,
the ICT shall preserve all documented non-proprietary information that is provided for accessibility to the extent that such information can be contained in or supported by the destination format.

NOTE 1: Any transmission that is not lossless would involve conversion and would be covered by this requirement.

NOTE 2: When transporting or displaying video, any loss of fidelity, synchronization, or quality would constitute a conversion and if the reduced fidelity, synchronization, or quality results in a loss of accessibility of, for example, the sign language portion of it, then it would constitute a violation of this requirement.

5.5 Tactilely discernible operable parts

Where ICT includes functionality that requires manual operation and control,
the ICT shall provide a mode of operation that allows all the functionality of the ICT that requires manual operation and control to be controlled without requiring vision using only tactilely discernible operable parts.

NOTE 1: As noted in the definition of tactilely discernible operable part, a touchscreen or touchpad that can be tactilely discerned, or a part of a touchscreen that is located adjacent to a tactilely discernible edge, corner, or tactile markings on a screen frame is a tactilely discernible operable part.

NOTE 2: Where physical buttons are arranged in small functional groups, or on-screen buttons are positioned in fixed positions adjacent to tactilely discernible boundaries (such as screen edges or surrounds), their position can be tactilely discerned.

5.6 Locking or toggle controls

5.6.1 Tactile or auditory status

Where ICT includes a locking or toggle control,
the ICT shall provide at least one mode of operation where the status of the control can be determined either through touch or sound without operating the control.

NOTE 1: Locking or toggle controls are those controls that can only have two or three states and that keep their state while being used.

NOTE 2: An example of a locking or toggle control is the "Caps Lock" key found on most keyboards. Another example is the volume button on a pay telephone, which can be set at normal, loud, or extra loud volume.

NOTE 3: For example, on some devices Power On/Off and Input Selection are physical toggle controls where the status can be felt. Tones can be used to indicate a change in different states such as a low-high tone for on and high-low tone for off. Or if speech output is enabled and the user invokes an action, feedback can be by speech at user option. However, the last two are not useful if the action is not a reversable one without consequence (e.g. power off/on that causes loss of information if done).

NOTE 4: Even though all the above examples relate to hardware toggle controls, this clause also applies to graphical controls in software.

NOTE 5: For graphical software controls in functionality that is not closed, this clause will usually be satisfied if the control conforms with the complementary WCAG success criteria 1.3.1 (Information and relationships) and 4.1.2 (Name, Role, Value), corresponding to clauses 9.1.3.1 and 9.4.1.2 (for web content), 10.1.3.1 and 10.4.1.2 (for non-web documents) and 11.1.3.1 and 11.4.1.2 (for non-web software). When state information is rendered in text or otherwise programmatically determinable it is possible to render it in an audible or tactile form.

5.6.2 Visual status

Where ICT includes a locking or toggle control,
the ICT shall provide at least one mode of operation where the status of the control can be visually determined when the control is presented.

NOTE 1: Locking or toggle controls are those controls that can only have two or three states and that keep their state while being used.

NOTE 2: An example of a locking or toggle control is the "Caps Lock" key found on most keyboards. An example of making the status of a control determinable is a visual status indicator on a keyboard.

NOTE 3: A visual status can be a change on the screen or a flash of an LED after the user invokes an action. Where appropriate, adopting a pattern for example, a short flash for "off" and a longer or double flash for "on" can be considered as a good practice.

5.7 Key repeat

Where ICT includes a keyboard or keypad, and a key repeat function that cannot be turned off, and that key repeat will result in the generation of multiple entries of the same alphanumeric data into input fields or into documents:

a) the delay before the key repeat shall be adjustable to at least 2 seconds; and

b) the key repeat rate shall be adjustable down to one character per 2 seconds.

5.8 Double-strike key acceptance

Where ICT includes a device-independent keyboard interface service, keyboard, or keypad, and includes a capability to adjust the time before the same key can be accepted again,
the delay after any keystroke, during which the same key-press will not be accepted, shall be adjustable up to at least 0,5 seconds.

5.9 Simultaneous user actions

Where ICT includes a mode of operation requiring simultaneous user actions for its operation,
the ICT shall provide at least one mode of operation that does not require simultaneous user actions to operate the ICT.

NOTE: Having to use both hands to open the lid of a laptop, having to press two or more keys at the same time or having to touch a surface with more than one finger are examples of simultaneous user actions.

5.10 Authoring tools

5.10.0 General (informative)

For those creating web content authoring tools, ATAG 2.0 [i.33] provides information that can be of interest to those who want to go beyond these requirements.

NOTE: This is applicable both to standalone and to web based authoring tools.

5.10.1 Content technology

Where ICT is, or includes, authoring tool functionality,
the authoring tool shall meet clauses 5.10.2 to 5.10.5 to the extent that information required for accessibility is supported by the format used for the output of the authoring tool.

5.10.2 Accessible content creation

Where ICT is, or includes, authoring tool functionality,
the authoring tool shall enable and guide the production of content that conforms to clause 9 (web), or clause 10 (Non-web documents), or clause 11 (Non-web software) as applicable.

NOTE: Authoring tools may rely on additional tools where conformance with specific requirements is not achievable by a single tool. For example, a video editing tool may enable the creation of video files for distribution via broadcast television and the web, but authoring of subtitle files for multiple formats may be provided by a different tool.

5.10.3 Preservation of accessibility information in transformations

Where ICT is, or includes, authoring tool functionality, and provides restructuring transformations or re-coding transformations,
accessibility information shall be preserved in the output if equivalent mechanisms exist in the content technology of the output.

NOTE 1: Restructuring transformations are transformations in which the content technology stays the same, but the structural features of the content are changed (e.g. linearizing tables, splitting a document into pages).

NOTE 2: Re-coding transformations are transformations in which the technology used to encode the content is changed.

5.10.4 Repair assistance

Where ICT is, or includes, authoring tool functionality, and is capable of detecting that content does not meet a requirement of clause 9 (Web), or clause 10 (Non-web document), or clause 11 (Non-web software) as applicable, the authoring tool shall provide repair suggestion(s).

NOTE 1: Automatic detection of failure to meet some requirements may be very challenging, but there are other types of failure that can be very easy to automatically detect. It is best practice that failure detection of at least the easily detected failures should be implemented.

NOTE 2: This does not preclude automated and semi-automated repair which is possible (and encouraged with author review) for many types of content accessibility problems.

5.10.5 Templates

Where ICT is, or includes, authoring tool functionality, and provides templates,
at least one template that supports the creation of content that conforms to the requirements of clause 9 (Web) or clause 10 (Non-web document). or clause 11 (Non-web software) as applicable shall be available and identified as such.

6 ICT supporting real-time bidirectional communication

6.0 Accessible real-time bidirectional communication operational scenarios

6.0.1 Rationale for scenarios (informative)

Clauses 6.0.2 to 6.0.5 specify a minimum set of operational scenarios in which real-time bidirectional communication typically takes place. To deliver the goal of accessible communications it is necessary to ensure that applicable accessibility requirements defined in clauses 6.1 to 6.6 are met in all applicable scenarios for the communication described by the scenarios.

Clauses 6.0.6 to 6.0.9 specify a minimum set of operational scenarios in which ICT is expected to deliver emergency communications. To ensure that emergency communications are accessible, it is necessary to ensure that ICT meets the applicable accessibility requirements defined in clauses 6.1 to 6.6 of the present document in all applicable scenarios for the emergency communications described by the scenarios.

NOTE 1: The scenarios add preconditions to each of the tests in clauses C.6.1 to C.6.6 to make sure that testing is done in a way that is both effective and practical for each of the different scenarios.

NOTE 2: For emergency communication aspects, the present document concerns the general accessibility aspects of ICT that is expected to provide access to emergency communications. The detailed aspects of how to ensure accessibility of emergency communications are covered in ETSI EN 303 919 [i.56] and are not further elaborated in the present document. These aspects include but are not limited to addressing, routing, location information provision, provision of emergency communication specific contextual information, details of invocation of relay services in emergency communications and invocation of other support services in the emergency communication.

6.0.2 Communication client

Where ICT is, or includes, a communication client that supports real-time bidirectional voice communication with or within a communication system that provides real-time bidirectional voice communication,
the communication client shall meet all applicable 6.1 and 6.3 to 6.6 requirements, when communicating with or within the communication system, and, where the communication client is part of a terminal with text handling capabilities, all applicable 6.2 requirements.

6.0.3 Communication system

Where ICT is, or includes, or is a part of, a communication system that provides real-time bidirectional voice communication with communication clients of the system,
the system shall meet all applicable 6.1 to 6.6 requirements when communicating with communication clients.

NOTE: ICT that are component parts of a communication system can be tested by ensuring that that ICT is included in a communication system during testing.

EXAMPLE: The suitability of a home/office internet router for correctly handling RTT communication can be evaluated by ensuring that this router is part of the local ICT that is used to perform a test of RTT communication routed through the real-time bidirectional voice communication system.

6.0.4 System connecting to another communication system

Where ICT is, or includes, a communication system that provides real-time bidirectional voice communication with one or more other communication systems that support real-time bidirectional voice communication,
the system shall meet all applicable 6.1 to 6.6 requirements when communicating with the other communication systems.

6.0.5 System with roaming visiting client

Where ICT is, or includes, a communication system that provides real-time bidirectional voice communication, and a communication client that supports real-time bidirectional voice communication with another compatible communication system, visits and connects to the communication system,
the system shall meet all applicable 6.1 to 6.6 requirements when communicating with the visiting communication client.

6.0.6 Client in emergency communications

Where ICT is required to provide, or otherwise provides, emergency communications, and is, or includes, a communication client that supports real-time bidirectional voice communication with or within a communication system that provides real-time bidirectional voice emergency communication,
the communication client shall meet applicable 6.1 and 6.3 to 6.6 requirements, when performing the emergency communication, and, where the communication client is part of a terminal with text handling capabilities, all applicable 6.2 requirements.

6.0.7 Emergency communications

Where ICT is, or includes, a communication system that provides real-time bidirectional voice communication in emergency communications with PSAPs,
the communication system shall meet all applicable 6.1 to 6.6 requirements, when performing the emergency communication.

6.0.8 System with roaming visiting client in an emergency

Where ICT is, or includes, a (first) communication system that provides real-time bidirectional voice communication in emergency communications with PSAPs, and a communication client that supports real-time bidirectional voice communication with another communication system that provides real-time bidirectional voice communication, visits and connects to the (first) communication system,
the (first) communication system shall meet all applicable 6.1 to 6.6 requirements, when communicating with the visiting communication client and a PSAP in emergency communications.

6.0.9 System with client in emergency visiting another country

Where ICT is, or includes, a communication system that provides real-time bidirectional voice communication in emergency communications with PSAPs, and a communication client of the ICT that supports real-time bidirectional voice communication, visits another country than the home country,
the communication system shall meet applicable 6.1 to 6.6 requirements when communicating with the communication client and a PSAP in the visited country in emergency communications.

NOTE: This scenario is intended for systems which in contrast to the systems of clause 6.0.8 of the present document do not use any roaming technology on call control level. Typical communication systems using the approach of the present clause are VoIP based systems using IP communications in the Internet or other IP networks, carried by mobile, Wi-Fi® or fixed technologies.

6.1 Real-time bidirectional voice communication

6.1.1 Voice communication interoperability

Where ICT provides functionality that allows real-time bidirectional voice communication, and connects to other ICT that allows real-time bidirectional voice communication,
the ICT's documentation shall contain information on the main specifications by which voice is implemented in a manner that allows the voice on the ICT to interoperate with the other ICT, providing electronic communication covering audio frequencies at least down to 100 Hz and at least up to 7 000 Hz using one of the following options:

a) Any set of specifications for voice communication that would fulfil the voice communications requirements in the present document that is mutually agreed to be used between the ICT and any other ICT with which the ICT interoperates for real-time bidirectional voice communication.

b) Recommendation ITU-T G.722 [i.20].

NOTE 1: Specifications for audio codec implementations that support the 100 Hz to 7 000 Hz frequency range are provided for a number of technologies. The following list provides an overview of the situation at the time of authoring the present document. It is presented here as a guide for achieving interoperability and suitable quality. It should be noted that most audio codecs can be used with varying parameter settings resulting in varying quality. They are listed here on the assumption that they are used with settings that allow them to provide sufficient quality to meet the requirements in the present clause. All audio codecs for the technologies listed are using IETF RFC 3550 [i.51] RTP [i.51] for media transport:

a) General VoIP and Multimedia communication: IETF, providing standards for Voice Over IP (VOIP) and Multimedia communications over IP based on the Session Initiation Protocol (SIP) IETF RFC 3261 [i.50]. In this technology, the following audio codecs capable of delivering sufficient quality are commonly used: Recommendation ITU-T G.722 [i.20], Recommendation ITU-T G.722.2 [i.21] also called AMR-WB. IETF RFC 6716 [i.83] updated by IETF RFC 8251 [i.86] called OPUS.

b) IP Multimedia Sub-System (IMS): 3GPP, that provides standards for mobile communication systems, including IP Multimedia Sub-System (IMS) has standardized the Multimedia Telephony concept, for communications with voice, video and RTT using the set of protocols specified in ETSI TS 126 114 [i.11] (= ETSI TS 126 114 [i.11]). Multimedia Telephony is specified to use Recommendation ITU-T G.722.2 [i.23], also called AMR-WB for wide band audio, and also EVS specified in ETSI TS 126 441 [i.88]. For interoperability with other systems, Recommendation ITU-T G.722 [i.20] is specified.

c) GSMA, that provides selected profiles of standards for implementing globally interoperating mobile communications services, has in GSMA PRD IR.92 [i.45] specified how to apply ETSI TS 126 114 [i.11] to implement RTT and Voice over LTE (VoLTE) and, in GSMA PRD IR.94 [i.46], Video over LTE (ViLTE) in 4G mobile systems. A similar document is published for RTT, voice and video over 5G in GSMA NG.114 [i.46]. Wide band audio is specified in these documents to use the same audio codecs as under b).

d) Web technologies: For communication in web technologies, W3C® and IETF have created the WebRTC concept specified in IETF RFC 8825 [i.87] where the mandatory audio codecs with wide band audio capabilities are specified in IETF RFC 7874 [i.84] to be Opus, while Recommendation ITU-T G.722 [i.20] is also recommended by IETF RFC 7875 [i.85] and is usually provided in implementations.

e) Emergency communications: An interface to IP based emergency communications is specified in ETSI TS 103 479 [i.48]. It makes use of Recommendation ITU-T G.722.2 [i.21] AMR-WB, IETF RFC 6716 [i.83] updated by IETF RFC 8251 [i.86] OPUS, and Recommendation ITU-T G.722 [i.20]. for wide-band audio. A corresponding standard exists for North America. For emergency apps, ETSI TS 103 478 [i.47] is specified in ETSI TS 103 945 [i.89] to implement wide band audio by use of Opus IETF RFC 6716 [i.83] updated by IETF RFC 8251 [i.86]. The use of these standards for accessible and interoperable emergency communications is specified in ETSI EN 303 919 [i.56].

f) Relay services: ETSI ES 202 975 [i.6] specifies in its clause 6.1 interfaces to relay services, referring to the present document for specific technologies.

NOTE 2: Frequencies between 250 Hz and 7 000 Hz are essential for good speech perception.

NOTE 3: Frequencies between 100 Hz and 250 Hz provide extra information for person recognition.

NOTE 4: Background information and detailed guidance about accessible voice communication is available in ETSI ES 204 009 [i.77].

6.1.2 Audio bandwidth for capture and presentation for voice communication

Where ICT provides functionality that allows real-time bidirectional voice communication, and has a user interface for real-time bidirectional voice communication,
the ICT shall be able to capture, communicate and present voice communication with a frequency range of at least down to 250 Hz and up to at least 7 000 Hz.

6.1.3 Audio presentation in attached listening devices for voice communication (recommendation)

Where ICT provides functionality that allows real-time bidirectional voice communication, and has an interface for external presentation of voice communication,
the ICT should be able to present audio with a frequency range of at least down to 100 Hz and up to at least 7 000 Hz.

6.1.4 Synchronization of subtitles (recommendation)

Where ICT provides subtitles for real-time bidirectional voice communication,
the delay of provided subtitles in relation to the speech should not exceed 2 seconds.

NOTE: The delay is measured from when a word is completely spoken until the first character of the word is presented.

6.2 Real-Time Text (RTT)

6.2.1 RTT provision

6.2.1.1 RTT functionality

Where ICT provides functionality that allows real-time bidirectional voice communication,
the ICT shall provide functionality that allows real-time bidirectional RTT communication.

NOTE 1: The above requirement implicitly requires that ICT that interoperates with other ICT for real-time bidirectional voice communication would interoperate for RTT as well.

NOTE 2: This requirement includes those products which do not have physical display or text entry capabilities but have the capability to connect to devices that do have such capabilities. It also includes intermediate ICT between the endpoints of the communication.

NOTE 3: The precondition of the present clause implies multi-party RTT support where multi-party voice is supported.

NOTE 4: Background reading about RTT and a comprehensive reference list is available in ETSI TR 103 708 [i.59]. Additional detailed guidance is provided in ETSI ES 204 009 [i.77].

NOTE 5: Many other clauses than 6.2 of the present document are valid for RTT implementation.

NOTE 6: Clause 11.5 of the present document presents considerations about use of assistive technology which are also considerations for RTT implementations. In the RTT case, best practice is that new text input can arrive anytime while the user is reading earlier received text and the user is made aware that new text is available while not disturbing the reading of earlier received text.

6.2.1.2 Concurrent voice and RTT

Where ICT provides real-time bidirectional voice communication, and supports RTT,
the ICT shall allow concurrent voice and RTT.

6.2.1.3 Single user action

Where ICT provides real-time bidirectional voice communication, and includes RTT capabilities,
the ICT shall allow single user operations to act on all requested or already established media, during requests to establish media, answering requests to establish media, modifications during the communication, and disconnections.

NOTE 1: Modification includes transfer, hold, and other changes to communications or participants.

NOTE 2: For a communication client, the single user operation may result in multiple media requests to answer or establish voice and RTT and optionally other media.

NOTE 3: A single user operation may request the establishment of a communication that involves media that are not available at both ends. In these cases, automatic retries, with a reduced number of media, may be used to complete the establishment of a session using only the media available at both ends.

6.2.2 Display of RTT

6.2.2.1 Distinguishable display

Where ICT provides real-time bidirectional voice communication, and includes RTT presentation capabilities,
displayed text that originates from different sources, as well as the text that is sent, shall be displayed with their sources indicated and differentiated.

NOTE 1: The ability of the user to choose between different layouts of the text that is sent, and the text received from the different sources, would allow users to display RTT in a form that works best for them, while still fulfilling the requirement of clause 6.2.2.

NOTE 2: Users relying on AT with small displays (e.g. deafblind users) may benefit from accessing the locally produced text and one other source side-by side to facilitate easy reading.

NOTE 3: The source indication does not require more than a unique identifier, not necessarily a real identity (e.g. Speaker 1 or Speaker 2 would be sufficient if nothing better is known).

6.2.2.2 Active communicator indication

Where ICT provides real-time bidirectional voice communication, and includes RTT send and receive capabilities, and provides speaker indication for voice,
the ICT shall provide indication of all active communicators including those using RTT.

NOTE: This is necessary to enable all parties to know who or what is currently communicating, whether it be in RTT or voice.

6.2.2.3 Indication of audio with RTT

Where ICT provides real-time bidirectional voice communication, and supports RTT,
the ICT shall provide a real-time indicator of non-local audio activity on the display.

NOTE 1: The indicator may be a simple character position on the display that flickers on and off to reflect the varied strength of the audio activity, or presentation of the information in another way that can be both visible to sighted users and presented to deaf-blind users.

NOTE 2: Without this indication a person who lacks the ability to hear does not know when someone is talking.

6.2.2.4 Presentation of relative time order of text

Where ICT provides real-time bidirectional voice communication, and includes RTT presentation capabilities,
the ICT shall present the text from each source, including the local source, as blocks of text that are arranged in order based on the point in time that each block of text is terminated by any sentence-terminating punctuation character followed by a space, or a line separator character is entered or received, or 5 seconds passes without a new character being entered or received. Editing of text in a block causes the entire block's termination time to change to the time of the last edited character.

NOTE 1: Text blocks from the same source are presented contiguously, forming a single block, unless an intervening text block from a different source is received. For example, the phrases 'J.D. Clampett is here! But no one else is.' will appear as one continuous text presentation when no other sources are sending concurrently. If, however, another source sends text at the same time, then within a single column view, the blocks are presented in chronological order, with text blocks from different sources interleaved but kept distinct.

NOTE 2: This requirement aims to establish an approximate chronological order for displaying text from different sources, while maintaining text blocks together for readability. Precise timing between texts from different sources received concurrently is unnecessary and would reduce readability in most layouts.

NOTE 3: Presentation aspects of RTT are presented in ETSI TR 103 708 [i.59] clause 7.2.

NOTE 4: The events terminating a block of text in the present clause is the minimum set. For smooth presentation other events can be added to a product, such as end of phrase or reasons found by linguistic analysis in languages not using explicit delimiter characters.

NOTE 5: See clause 6.2.5 of the present document for additional information regarding adding and erasing of text.

6.2.2.5 Review of RTT communication contents

Where ICT provides real-time bidirectional voice communication, and includes RTT presentation capabilities,
the ICT shall provide the ability to review the whole RTT content of the communication during the communication and, if the communication is recorded, after the communication has ended.

NOTE: Best practice is to have the text view scroll with the arrival of new text, but only when the view is fully scrolled to the end of the text display.

6.2.3 DTMF touch-tone generation during RTT operations

Where ICT is, or includes, a communication client, and provides functionality that allows real-time bidirectional voice communication, and supports the generation and transmission of touch-tone signals on voice calls,
the client shall provide a method for generation and transmission of touch-tone signals for touch-tone characters (0-9,*,#,A,B,C,D) that is distinct from the method for generating RTT for those same characters, and is compatible with the standard method for sending touch-tones during voice calls.

6.2.4 RTT responsiveness

Where ICT is, or includes, a communication client, and supports real-time bidirectional voice communication, and supports RTT,
RTT input shall be transmitted to the ICT network on which the ICT runs within 500 ms of the time that the smallest reliably composed unit of text entry is available to the ICT for transmission where delays due to network performance are not included in the 500 ms limit.

NOTE 1: The "smallest reliably composed unit of text entry" varies depending on how text is being generated. When typing individual characters, the "smallest reliably composed unit of text entry" would be a character, even if it is composed by multiple keystrokes. For word prediction, it would be a word. For some voice recognition systems - the text may not exit the recognition software until an entire word (or phrase) has been spoken, in which case, the smallest reliably composed unit of text entry available to the ICT would be the word (or phrase). Also, other operations, such as copy-paste, may occasionally cause the unit of text entry to be more than one character.

NOTE 2: The 500 ms limit allows buffering of characters for this period before transmission so character by character transmission is not required unless the characters are generated more slowly than 1 ms per 500 ms.

NOTE 3: A delay of 300 ms, or less, produces a better impression of flow to the user.

NOTE 4: If there is less than 1-second delay between when a key is pressed and when the character appears on another communication client included in the same communication, this requirement can be deemed as met because that is the user requirement behind this requirement as specified in Recommendation ITU-T F.703 [i.38], and the at least 500 ms time left for the packet with the character to reach the destination is sufficient in network conditions where voice communication show satisfying performance. (see testing C.6.2.4).

NOTE 5: Synchronization of RTT with audio and video is achieved when all three media are presented within their respective latency requirements.

6.2.5 Adding and erasing of RTT input

Where ICT provides real-time bidirectional voice communication, and includes RTT capabilities, and supports RTT user input,
the RTT user interface shall provide the functionality to enter new text and to erase text entered in an ongoing communication where the erasure is done from the current end of text without being limited by any new line or other delimiter in the earlier text.

NOTE 1: Each erase-previous-character operation erases a complete delimiter or text element (whether 1 or 2 characters) so that local and remote presentation is kept synchronized.

NOTE 2: The intention of this requirement is to enable entry of text and to allow corrections, which may include just erasure or erasure and entry of replacing text.

NOTE 3: "Functionality to erase text" includes both manual erasure, enabling replacement with corrected text, as well as automatic correction mechanisms such as automatic spelling correction or corrections done by speech-to-text and other such text-generating mechanisms that might perform auto-correction.

NOTE 4: It is best practice to mark sections where the text has changed.

NOTE 5: See clause 6.2.2.4 of the present document about presentation aspects of adding and erasing text.

6.2.6 Processing rate of RTT

Where ICT provides real-time bidirectional voice communication, and supports multiparty communication, and includes RTT capabilities,
the ICT shall have the capacity to receive and process RTT at a total rate of 90 characters per second coming from a minimum of 3 simultaneous sources sending 30 characters per second each.

NOTE: The requirement may have implications depending on the role of the ICT. For example, for a communications client, it means presenting, for a router it means transferring, and for a multi-party bridge it means mixing and distributing or just distributing.

6.2.7 Character representation

Where ICT provides real-time bidirectional voice communication, and includes RTT capabilities,
the ICT shall be capable of handling at least a subset of ISO/IEC 10646 [i.53] that includes at least:

- the Latin-1 part;
- the writing direction(s) and the characters for the languages of the regions in which the ICT is intended to be used;
- any emoji characters supported by the underlying platform;
- the ISO/IEC 10646 [i.53] "replacement character" (HEX:FFFD) used for indication of unsupported and lost characters, including emojis; and
- any characters used by the presentation protocol.

6.2.8 RTT input methods

Where ICT is, or includes, a communication client, and supports real-time bidirectional voice communication, and supports RTT,
the client shall provide RTT input methods in all ways available for general text input by the ICT.

6.2.9 RTT media establishment and use

Where ICT provides real-time bidirectional voice communication, and includes RTT capabilities,
all of the following shall be true for the ICT regardless of any system or client settings:

- it is possible to request establishment of a communication with RTT media;
- it is possible to answer a request for a communication and get RTT media included regardless of whether it was included in the original request;
- it is possible to upgrade an existing communication by any party to include RTT media.

NOTE 1: The establishment of the RTT media could be requested and answered by a user, an automatic procedure in a user terminal, a non-human process, or a setting in a conference session.

NOTE 2: The present clause implies that ICT with RTT capabilities has the RTT functionality ready for RTT media establishment and use when voice functionality is ready for media establishment and use.

6.2.10 RTT interoperability

Where ICT provides functionality that allows real-time bidirectional voice communication, and connects to other ICT that allows real-time bidirectional voice communication,
the ICT's documentation shall contain information on the main specifications by which RTT is implemented in a manner that allows the RTT on the ICT to interoperate with the other ICT that the ICT interoperates with for voice, using one of the following options:

a) Any set of specifications for RTT communication that would fulfil the RTT requirements in the present document that is mutually agreed to be used between the ICT and any other ICT with which the ICT interoperates for real-time bidirectional voice communication.

b) Recommendation ITU-T T.140 [i.37] for functions including coding and presentation and IETF RFC 4103 [i.13] updated by IETF RFC 9071 [i.52] for other aspects of RTT communication.

NOTE 1: If there is no agreement to use some other standard, then clause 6.2.10 allows any ICT to fulfil clause 6.2.10 by implementing option b). This is the fallback option to use when no other method has been agreed on, and it might serve as a 'safe harbour' for conforming to clause 6.2.10 when no agreement can be reached.

NOTE 2: ICT that provides Emergency communications with real-time bidirectional voice is an important case of an operational scenario where communication systems are required to interoperate. See clause 13.3.

NOTE 3: A number of other factors are important to also be agreed automatically or by external means in the communication system interface for RTT interoperability to work, such as security mechanisms, addressing, NAT-traversal mechanisms, transport method for session control, etc.

NOTE 4: Specifications for RTT implementation are provided for a number of technologies. The following list provides an overview of the situation at the time of authoring the present document. It is presented here as a guide for achieving interoperability. Almost all of these specifications make use of Recommendation ITU-T T.140 [i.37] for functions including coding and presentation:

a) General VoIP and Multimedia communication: IETF, providing standards for Voice Over IP (VOIP) and Multimedia communications over IP based on the Session Initiation Protocol (SIP) IETF RFC 3261 [i.50], has published IETF RFC 4103 [i.13] for session establishment and transport of RTT over RTP IETF RFC 3550 [i.51] and its update IETF RFC 9071 [i.52] for multiparty use.

b) IP Multimedia Sub-System (IMS): 3GPP, providing standards for mobile communication systems, including IP Multimedia Sub-System (IMS) has standardized the Multimedia Telephony concept, for communications with voice, video and RTT using the set of protocols specified in ETSI TS 126 114 [i.11] (= ETSI TS 126 114 [i.11]) to create the services including RTT and Total Conversation services specified in ETSI TS 122 173 [i.12] (= ETSI TS 122 173 [i.12]). Multimedia Telephony is specified to use IETF RFC 4103 [i.13] updated by IETF RFC 9071 [i.52] for session establishment and transport of RTT over RTP or the RTT based on WebRTC Data Channel Technologies. Details of the use of these variants can be found in ETSI TR 126 982 [i.43]. It should be noted that 3GPP and GSMA use the following varying terms for RTT: GTT, Global Text Telephony, GTT-IP, RTT, real time text, and text.

c) GSMA, providing selected profiles of standards for implementing globally interoperating mobile communication services has in GSMA PRD IR.92 [i.44] specified how to apply ETSI TS 126 114 [i.11] to implement RTT and Voice over LTE (VoLTE) and in GSMA PRD IR.94 [i.45] Video over LTE (ViLTE) in 4G mobile systems. A similar document is published for RTT, voice and video over 5G in GSMA NG.114 [i.46]. RTT is specified in these documents in clause B.2 to use ETSI TS 126 114 [i.11] for session establishment and transport of RTT.

d) Web technologies: For communication in web technologies, W3C and IETF have created the WebRTC concept where the Reliable WebRTC Data channel concept IETF RFC 8831 [i.57] in its section 3.2 use case U-C 5 is recommended to be used for RTT. The use of WebRTC Data Channels in web pages and apps is specified in W3C WebRTC: Real-Time Communication in Browsers [i.58].

e) Emergency communications: An interface to IP based emergency communications is specified in ETSI TS 103 479 [i.48], making use of IETF RFC 4103 [i.13] updated by IETF RFC 9071 [i.52] for RTT. A corresponding standard exists for North America. For emergency apps, ETSI TS 103 478 [i.47] is specified to implement RTT as specified in ETSI TS 103 871 [i.49]. The use of these standards for accessible and interoperable emergency communications including the use of RTT is specified in ETSI EN 303 919 [i.56].

f) Relay services: ETSI ES 202 975 [i.6] specifies in its Annexes A and B interfaces to relay services, referring to the present document for specific technologies.

NOTE 5: Analogue Text telephony is a legacy text communication concept providing functionality to some degree similar to RTT in circuit-switched fixed and mobile technologies. There are 6 variants for fixed lines, collected in Recommendation ITU-T V.18 [i.22], and one for circuit-switched 2G and 3G mobile technologies specified in ETSI TS 126 226 [i.55]. Interworking between these technologies and RTT can be achieved to some degree but with severe functional limitations such as no support for multiparty text communication, need for gateways for character conversion and buffering the much faster RTT text input to accommodate the slower rate of analog technologies, clashes due to lack of bi-directional support, and no possibility to use voice while text is transmitted. The differences can also cause confusion to users unaware of the differences. Details about the limitations can be found in the references in the present note and in IETF RFC 5194 [i.62], section 6.2.5. Considering these limitations, Analogue Text telephony does not provide a working (additional) sensory channel.

NOTE 6: For applying option b) it can be emphasized that the fallback method for multiparty mixing and presentation of RTT in multi-party unaware clients specified in IETF RFC 9071 [i.52], sections 2.2 and 4.2 does not provide a satisfactory user experience and is discouraged from regular use.

6.3 Caller ID

Where ICT provides caller identification or other identification functions,
the caller identification and other identification functions shall be available in text form as well as being programmatically determinable, for all functionality that is not closed to programmatic access of information by assistive technologies.

NOTE: See clause 5 for requirements on functionality that is closed.

6.4 Alternatives to voice-based services

Where ICT provides voice mail, auto-attendant, or interactive voice response facilities,
the ICT shall offer users a means to access the information and carry out the tasks provided by the ICT without the use of hearing or speech.

NOTE 1: Tasks that involve both operating the interface and perceiving the information would require that both the interface and information be accessible without use of speech or hearing.

NOTE 2: Solutions capable of handling audio, RTT and video media could satisfy the above requirement.

6.5 Video communication

6.5.1 General (informative)

Clause 6.5 (Video communication) provides performance requirements that support users who communicate using sign language and lip-reading. For these users, good usability is achieved with a resolution of at least Quarter Video Graphics Array (QVGA, 320 × 240), a frame rate of 20 frames per second and over, with a time difference between speech audio and video that does not exceed 100 ms.

Increasing the resolution and frame rate further improves both sign language (especially finger spelling) and lipreading, with frame rate being more important than resolution.

Time differences between audio and video (asynchronicity) can have a great impact on lip-reading - with video that lags behind audio having greater negative effect.

End-to-end latency can be a problem in video (sign) communication. Overall delay values below 400 ms are preferred, with an increase in preference down to 100 ms. Overall delay depends on multiple factors, including e.g. network delay and video processing. For this reason a testable requirement on minimum values for overall delay cannot be produced.

NOTE 1: Recommendation ITU-T F.703 [i.38] defines and gives requirements for Total Conversation that relate to the integration of audio, RTT and video in a combined real-time bidirectional communication.

NOTE 2: The delays are specified in Recommendation ITU-T P.1305 [i.61].

NOTE 3: For the purposes of interoperability and sufficient quality, support of Recommendation ITU-T H.264 [i.74] at least version 10 and at least constrained baseline level 3 is widely used for this purpose.

NOTE 4: Where codec negotiation is implemented, other standardized codecs such as Recommendation ITU-T H.265 [i.75] and IETF RFC 6386 [i.76] VP8 [i.76] are commonly used with proper settings are suitable so as to avoid transcoding.

NOTE 5: Background reading and detailed guidance about accessible video communication is provided in ETSI ES 204 009 [i.77].

6.5.2 Resolution

Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video communication,
the ICT:

a) shall support at least QVGA resolution;

b) should preferably support at least VGA resolution.

6.5.3 Frame rate

Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video communication,
the ICT:

a) shall support a frame rate of at least 20 Frames Per Second (FPS);

b) should preferably support a frame rate of at least 30 Frames Per Second (FPS) with or without sign language in the video stream.

6.5.4 Synchronization between audio and video

Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video communication,
the ICT shall ensure that voice is received by the user not earlier than 100 ms before and not later than 100 ms after the corresponding video is presented to the user.

NOTE: Verification material and methods are described in Recommendation ITU-T H.Sup1 [i.65], clause 6.

6.5.5 Indicator of audio with video

Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video communication,
the ICT shall provide a real-time indicator of audio activity.

NOTE 1: The indicator may be a simple visual dot, or other type of on/off indicator, that flickers to reflect audio activity.

NOTE 2: Without this indication a person who lacks the ability to hear does not know when someone is talking.

6.5.6 Indication of all active communication participants

Where ICT provides real-time bidirectional voice communication, includes real-time bidirectional video communication, and provides speaker indication for voice users,
the ICT shall provide indication of all active communicators including those signing.

NOTE 1: The indication of all active communicators can be in the same location as the speaker identification for voice users in multiparty communication sessions.

NOTE 2: This mechanism might be triggered manually by a user, or automatically where this is technically achievable.

6.6 Alternatives to video-based services (recommendation)

Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video communication, and provides answering machine, auto attendant or interactive response facilities,
the ICT should offer users a means to access the information and carry out the tasks related to these facilities:

a) for audible information, without the use of hearing;

b) for spoken commands, without the use of speech;

c) for visual information, without the use of vision.

NOTE: Solutions capable of generating real-time subtitles or handling RTT could satisfy the above requirement.

6.7 Total conversation

6.7.1 Total conversation provision

Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video functionality,
the ICT shall provide total conversation by also including RTT capability that conforms to the requirements of clause 6.2, voice that conforms to clause 6.1, and video that conforms to clause 6.5, conforming also to clauses 6.3 and 6.4.

NOTE: ETSI ES 204 009 [i.77] provides background information and detailed guidance on many aspects of total conversation, its media components, interoperability and use, including synchronization and multiparty aspects.

6.7.2 Total conversation interoperability

Where ICT provides functionality that allows real-time bidirectional voice communication, and includes real-time bidirectional video functionality, and connects to other ICT that allows real-time bidirectional voice communication, including real-time bidirectional video functionality,
the ICT's documentation shall contain information on the main specifications by which video is implemented in a manner that allows the video on the ICT to interoperate with other ICT that the ICT interoperates with for voice and video, using one of the following options:

a) Any set of specifications for video communication that would fulfil the total conversation requirements in the present document that is mutually agreed to be used between the ICT and any other ICT with which the ICT interoperates for real-time bidirectional voice and video communication.

b) Recommendation ITU-T H.264 [i.74] at least version 10 and at least constrained baseline level 3 for functions including coding and presentation, and/or, where codec negotiation is implemented, Recommendation ITU-T H.265 [i.75] and IETF RFC 6386 VP8 [i.76] to avoid transcoding.

7 ICT with video capabilities

7.1 Subtitle processing technology

7.1.1 Subtitle playback

Where ICT displays video with synchronized audio,
the ICT shall have a mode of operation to display the available subtitles. Where closed subtitles are provided as part of the content, the ICT shall allow the user to choose to display the subtitles.

NOTE 1: Subtitles may contain information about timing, colour and positioning. This subtitle data is necessary for subtitle users. Timing is used for subtitle synchronization. Colour can be used to convey additional information such as speaker identification, emotion or tone, or that the text represents music lyrics vs. dialog. Position can be used to avoid obscuring important information.

NOTE 2: If an assistive technology (such as a braille display, or large caption display) is connected to an ICT using a standard connection, identification, and data communication protocol for that type of device, it is best practice for the ICT to provide an option to display subtitles on the braille device.

NOTE 3: Clause 7.1.1 refers to the ability of the player to display subtitles. Clauses 9.1.2.2, 10.1.2.2 and 11.1.2.2 refer to the provision of subtitles for the content (the video).

7.1.2 Subtitle synchronization

Where ICT displays video with synchronized audio, and displays subtitles,
the ICT shall display subtitles within 100 ms of the timecode value attached to the subtitle.

NOTE 1: If subtitles without timecodes are to be displayed, the best practice is to display the subtitles as soon as they are received.

NOTE 2: It is good practice to display a subtitle within 20 ms of the respective timecode.

7.1.3 Preservation of subtitles

Where ICT transmits, converts, or records video with synchronized audio,
the ICT shall preserve subtitle data such that the subtitles can be displayed in a manner consistent with clause 7.1.1, including any data relating to presentational aspects such as screen position, text and background colours, text style and text fonts.

NOTE: Additional presentational aspects of the text such as screen position, text colours, text style and text fonts may convey meaning, based on regional conventions. Altering these presentational aspects could change the meaning and should be avoided wherever possible.

7.1.4 Subtitle characteristics

Where ICT displays video with synchronized audio, and has control over the presentation of its subtitles,
the ICT shall provide a way for the user to adapt the displayed characteristics of subtitles to their individual requirements, except where the subtitles are displayed as unmodifiable characters.

NOTE 1: Defining the background and foreground colour of subtitles, font type, size, opacity of the background box of subtitles, and the contour or border of the fonts can contribute to meeting this requirement.

NOTE 2: Subtitles that are bitmap images are examples of unmodifiable characters.

7.1.5 Spoken subtitles

Where ICT displays video with synchronized audio,
the ICT shall have a mode of operation to enable output of the available spoken subtitles.

NOTE 1: Spoken subtitles are sometimes provided to accompany interlingual subtitles, so that users who are blind and partially sighted or cannot read can understand dialogue that is being spoken in a language different to their own. They are also sometimes provided to offer an understandable version of indistinct or otherwise unintelligible speech.

NOTE 2: This requirement does not mean that players generate spoken subtitles from available subtitles, but only that they play spoken subtitle audio if it is available.

7.2 Audio description technology

7.2.1 Audio description playback

Where ICT displays video with synchronized audio,
the ICT shall provide a mechanism to select and play available audio description to the default audio channel.

Where video technologies do not have explicit and separate mechanisms for audio description, an ICT is deemed to satisfy this requirement if the ICT enables the user to select and play one of several audio tracks.

NOTE 1: In such cases, the video content can include the audio description as one of the available audio tracks.

NOTE 2: Audio descriptions in digital media sometimes include information to allow descriptions that are longer than the gaps between dialogue. Support in digital media players for this "extended audio description" feature is useful, especially for digital media that is viewed personally.

7.2.2 Audio description synchronization

Where ICT displays video with synchronized audio, and has a mechanism to play audio description,
the ICT shall preserve the synchronization between the audio/visual content and the corresponding audio description.

7.2.3 Preservation of audio description

Where ICT transmits, converts, or records video with synchronized audio,
the ICT shall preserve audio description data such that the audio description can be played in a manner consistent with clauses 7.2.1 and 7.2.2.

7.3 User control of audiovisual accessibility features

Where ICT primarily displays video with synchronized audio, and has control over the activation of subtitles, audio description, and spoken subtitles,
the ICT shall provide at least one mode of operation that allows the activation and deactivation of the user's choice of either subtitles, audio description, or spoken subtitles with a single user operation that is at the same level as the volume control and that meets the other accessibility requirements of the present document.

NOTE 1: Media player software would meet the precondition of this requirement because its primary purpose is to play audiovisual materials, but a preview feature in a file utility that shows quick views of the contents of files as they are selected, (including playing a video file in a window or pane without controls) would not, because its primary function is file management, and the primary function of the preview function is to allow files to be identified by peeking into them, not to view audiovisual content.

NOTE 2: It is best practice to allow other accessibility features related to audiovisual content to also be chosen with a single user operation.

NOTE 3: It is best practice for ICT to include mechanisms to enable the user to select whether subtitles, or audio description, or spoken subtitles are turned on or off each time the ICT is used.

NOTE 4: There could be separate methods for activating and deactivating these functions.

NOTE 5: The ability to use spoken commands is best practice to include because it makes it possible to have all accessibility functions available instantly, but since all speech control also requires a non-speech alternative (clause 5.1.7) it cannot be the only method for meeting clause 7.3.

NOTE 6: If the ICT is or includes a platform, on which other ICT can be implemented, it is not responsible to ensure that such other ICT meet the present clause. But it is responsible to meet clause 11.5.2.1 Platform interoperability with assistive technologies, which should result in API methods that the other ICT could use to meet the present clause.

EXAMPLE: One solution would be to have a single button at the volume control level, bring up a list of subtitles, audio description, spoken subtitles and (potentially) other accessibility features if it was held down for more than 2 seconds. The user could activate any accessibility feature from that menu - as well as chose an accessibility feature that would be turned on and off with a single short press of the same button that was used to bring up the menu with a long press. (If this was standardized across manufacturers it would facilitate dissemination of information about this feature and provide cross-manufacturer consistency). It is best practice to have a dedicated button for doing the above (providing single button to both chose and then later activate the single chosen function with a simple press), but a button that exists in a current design, like the mute button, could be repurposed for this where a remote has only a few buttons and a dedicated button cannot be provided.

8 Hardware

8.1 General

The "generic requirements" of clause 5 also apply to ICT that is hardware.

8.2 Hardware products with speech output

8.2.1 Speech volume

8.2.1.1 Speech volume gain

Where ICT is, or includes, hardware, and has speech output, and is a device that is typically held to the ear,
the ICT shall provide a means to adjust the speech output volume level to achieve at least 18 dB of conversational gain.

NOTE 1: ANSI/TIA-4965 [i.2] (for fixed-line handsets) and ANSI/TIA-5050 [i.3] (for mobile wireless handsets) require the option to enhance the SPL by at least 18 dB over the SPL level of speech for a conversation at a distance of 1 m which is 70 dB for monaural listening.

NOTE 2: Fixed-line handsets and headsets fulfilling the requirements of ANSI/TIA-4965 [i.2] and mobile wireless handsets fulfilling the requirements of ANSI/TIA-5050 [i.3] are deemed to comply with this requirement.

8.2.1.2 Incremental volume control

Where ICT is, or includes, hardware, and has speech output, and is a device that is typically held to the ear, and its volume control is incremental,
the ICT shall provide at least one intermediate step of 12 dB gain above the lowest volume setting.

8.2.2 Magnetic coupling

8.2.2.1 Fixed-line devices and handsets

Where ICT is, or includes, hardware, and has speech output, and is a fixed-line communication device or wired handset that is typically held to the ear,
the ICT shall provide a means of magnetic coupling to hearing technologies which meets the requirements of ETSI ES 200 381-1 [2] and shall be marked as being compatible with magnetic coupling if the ICT is designed for public use.

NOTE 1: ICT fulfilling the magnetic coupling, interference, and labelling requirements of TIA-1083-B [i.23] is deemed to comply with the requirements of this clause.

NOTE 2: Magnetic coupling is also known as inductive coupling for T-coil.

NOTE 3: Kiosks and other Information Transaction Machines (ITMs) sometimes have wired handsets that are held to the ear.

8.2.2.2 Wireless communication devices

Where ICT is, or includes, hardware, and has speech output, and is a wireless communication device that is typically held to the ear,
the ICT shall provide a means of magnetic coupling and reduced interference to hearing technologies which meets the requirements of ETSI ES 200 381-2 [3].

NOTE: ICT fulfilling the requirements of ANSI/IEEE C63.19 [i.1] is deemed to comply with the requirements of this clause.

8.3 Stationary ICT

8.3.1 General (informative)

The present document defines the requirements for the design of stationary ICT that can be placed in a built environment, but does not define the dimensions of the built environment. The current clause contains only those accessibility requirements that are caused by functional and design requirements of the ICT.

The scope includes stationary ICT and includes ICT installed in closed spaces (typically kiosks and cabins).

NOTE 1: For stationary ICT that stands on the floor, the base of the ICT is considered to be part of the stationary ICT.

Access space and manoeuvring space needed to access the stationary ICT (whether inside or outside of a closed space) are out of the scope of this clause 8.3. Advice and requirements related to the size and design of access spaces can be found in [i.35], [i.64] and [i.63].

For certain stationary ICT it may not be possible to meet the requirements in some clauses due to functional or design requirements which restrict the possible design of stationary ICT. The present document contains therefore two sets of requirements for ICT with no functional or design restrictions (8.3.3.1, 8.3.5.1, 8.3.7.1, 8.3.9.2, 8.3.10.2, or 8.3.11.1) (called "Set 1") and for ICT with functional or design restrictions (8.3.3.2, 8.3.5.2, 8.3.7.2, 8.3.9.3, 8.3.10.3, or 8.3.11.2) (called "Set 2").

Stationary ICT which is unable to meet the requirements in Set 1 is expected to meet the requirements in Set 2.

NOTE 2: Stationary ICT which meets the requirements in Set 1 also meets the requirements in Set 2.

If in a specified location several stationary ICT devices with identical functionality and purpose are installed, it may be possible to apply the requirements of this clause 8.3 to only a limited number of these stationary ICT devices. This exception and how it may be handled is out of scope of this clause 8.3.

NOTE 3: In the context of this exception, ICT that does not meet the requirements of Set 1, and which is installed based on this exception, is expected to meet the requirements in Set 2.

8.3.2 Display screen location

Where ICT is stationary ICT,
display screens which are part of the ICT shall be placed in a way that no part of the display extends below 800 mm above the floor of the access space.

NOTE: For ICT that is mounted on a wall or installed on a table, the required minimum height can be achieved by mounting the ICT at the appropriate height above the floor or the access space or by selecting a matching table height.

8.3.3 Presentation of information necessary for the operation of stationary ICT

8.3.3.1 Presentation of information necessary for the operation of stationary ICT (no design restrictions)

Where ICT is stationary ICT and there are no functional or design requirements which do not allow to present necessary information below 1 600 mm above the floor space,
information necessary to operate the stationary ICT shall be placed not higher than 1 600 mm above the floor of the access space.

8.3.3.2 Presentation of information necessary for the operation of stationary ICT (with design restrictions)

Where ICT is stationary ICT and there are functional or design requirements which do not allow to present necessary information below 1 600 mm above the floor space,
information necessary to operate the stationary ICT shall be placed not higher than 2 000 mm above the floor of the access space.

NOTE: Examples for stationary ICT for which it may not be possible to present all necessary information below 1 600 mm above the floor level include, but are not limited to large refrigerators or other devices which need large door openings.

8.3.4 Legibility of display screens (informative)

Where a display screen has closed functionality regarding text enlargement, clause 5.1.4 applies.

Where a display screen is a touch screen, the requirements in clauses 8.3.5 and 8.3.6 apply.

NOTE: The legibility of information on display screens is dependent on different parameters such as font size, colour contrast, environment lighting, glare, parallax, privacy screen features etc.

8.3.5 Control location (vertical)

8.3.5.1 Control location (vertical, no design restrictions)

Where ICT is stationary ICT and there are no functional or design requirements which do not allow to duplicate operable parts or locate them above 800 mm and below 1 100 mm,
at least one of each type of operable part shall be located in an elevation between 800 mm (minimum) and 1 100 mm (maximum) above the floor of the floor space.

NOTE 1: Keeping the minimum height of operable parts to 800 mm is intended to give better access for standing users and for wheelchair users with impaired upper body control.

NOTE 2: For controls of ICT that is mounted on a wall or installed on a table, the required minimum height can be achieved by mounting the ICT at the appropriate height above the floor or the access space or by selecting a matching table height.

8.3.5.2 Control location (vertical, with design restrictions)

Where ICT is stationary ICT and there are functional or design requirements which do not allow duplication of operable parts or locate them above 800 mm and below 1 100 mm,
the minimum height of operable parts which cannot be duplicated shall be 380 mm, and the maximum height of operable parts which cannot be duplicated shall be 1 220 mm, and access to operable parts which cannot be copied shall not be hindered by obstructions.

NOTE: Examples for stationary ICT for which it may not be possible to keep copies of all operable parts within the vertical control location limits required in clause 8.3.5.1 include, but are not limited to coin sorting machines, Automated Teller Machines (ATMs), payment and ticketing terminals, food and drink dispensing machines, or supermarket checkout terminals.

8.3.6 Control location (horizontal)

Where ICT is stationary ICT,
at least one of each type of operable part shall be located in an area that has a maximum horizontal extent of 900 mm.

NOTE 1: Keeping the maximum extent of the space available for controls limited ensures that users do not need to relocate to get access to all controls.

NOTE 2: The maximum horizontal extent is based on estimates provided in [i.69].

8.3.7 Reach depth

8.3.7.1 Reach depth (no design restrictions)

Where ICT is stationary ICT, and there are no functional or design requirements which do not allow duplication of operable parts or locating them in an area that has a maximum distance of 300 mm from the edge of the ICT
at least one of each type of operable part shall be located in an area that has a maximum distance of 300 mm from the edge of the ICT which has the shortest distance to the user.

NOTE 1: The reach depth may also effect the maximum depth of obstructions if the position of operable parts is recessed from the edge of the stationary ICT.

NOTE 2: If the position of operable parts is recessed from the edge of the stationary ICT by x mm ($x < 300$ mm) then the maximum depth of an obstruction is reduced by the same x mm.

8.3.7.2 Reach depth (with design restrictions)

Where ICT is stationary ICT, and there are functional or design requirements which do not allow duplication of operable parts or locating them in an area that has a maximum distance of 300 mm from the edge of the ICT,
at least one of each type of operable part shall be located in an area that has a maximum distance of 510 mm (for forward reach) and 610 mm (for side reach) from the edge of the ICT which has the shortest distance to the user.

NOTE 1: The reach depth also effects the maximum depth of obstructions if the position of operable parts is recessed from the edge of the stationary ICT.

NOTE 2: If the position of operable parts is recessed from the edge of the stationary ICT by x mm then the maximum depth of an obstruction is reduced by the same x mm.

8.3.8 Forward or side reach (informative)

Stationary ICT may be designed to enable users of wheeled mobility devices to access the stationary ICT for forward reach or for side reach.

NOTE: The assessment of the type of reach necessary depends on the following aspects:

a) For simple interactions (e.g. pushing a button, pulling a ticket), side reach is sufficient.

b) For more comprehensive interactions (e.g. reading comprehensive information on a screen, entering information on an input device), forward reach is preferred.

c) For interactions where privacy is essential or physical effort is required, forward approach is the best solution where other design constraints permit.

d) For ICT devices which require the use of both hands for control and input, forward reach is necessary.

8.3.9 Forward reach

8.3.9.1 Unobstructed forward reach (informative)

For unobstructed forward reach clauses 8.3.5 and 8.3.6 define the correct positioning of controls.

8.3.9.2 Obstructed forward reach (no design constraints)

Where ICT is stationary ICT, and has an obstruction that is an integral part of the ICT (this is called obstructed forward reach), and there are no functional or design constraints which require an obstruction deeper than 300 mm the ICT shall be designed so that:

a) the height of the obstruction shall not exceed 800 mm;

b) the maximum depth of the obstruction shall not exceed 300 mm.

NOTE: The maximum depth of the obstruction will be further reduced by clause 8.3.7.1 if the controls are recessed from the edge of the ICT.

8.3.9.3 Obstructed forward reach (with design constraints)

Where ICT is stationary ICT, and has an obstruction that is an integral part of the ICT (this is called obstructed forward reach), and there are functional or design constraints which require an obstruction deeper than 300 mm the ICT shall be designed so that:

a) the height of the obstruction shall not exceed 800 mm;

b) the maximum depth of the obstruction shall not exceed 510 mm.

NOTE: The maximum depth of the obstruction will be further reduced by clause 8.3.7.2 if the controls are recessed from the edge of the ICT.

8.3.10 Side reach

8.3.10.1 Unobstructed side reach (informative)

For unobstructed side reach clauses 8.3.5 and 8.3.6 define the correct positioning of controls.

8.3.10.2 Obstructed side reach (no design constraints)

Where ICT is stationary ICT, and has an obstruction that is an integral part of the ICT (this is called obstructed side reach), and there are no functional or design constraints which require an obstruction deeper than 300 mm the ICT shall be designed so that:

a) the height of the obstruction shall not exceed 800 mm;

b) the maximum depth of the obstruction shall not exceed 300 mm.

NOTE 1: The maximum depth of the obstruction will be further reduced by clause 8.3.7.1 if the controls are recessed from the edge of the ICT.

NOTE 2: See Figure 8.1 and Table 8.1 for details on obstructed side reach.

8.3.10.3 Obstructed side reach (with design constraints)

Where ICT is stationary ICT, and has an obstruction that is an integral part of the ICT (this is called obstructed side reach), and there are functional or design constraints which require an obstruction deeper than 300 mm the ICT shall be designed so that:

a) the height of the obstruction shall not exceed 865 mm;

b) the maximum depth of the obstruction shall not exceed 610 mm.

NOTE 1: The maximum depth of the obstruction will be further reduced by clause 8.3.7.2 if the controls are recessed from the edge of the ICT.

NOTE 2: Examples for stationary ICT for which it may not be possible to keep the depth of an obstruction below 300 mm include, but are not limited to, supermarket checkout terminals or stationary copier or scanner devices.

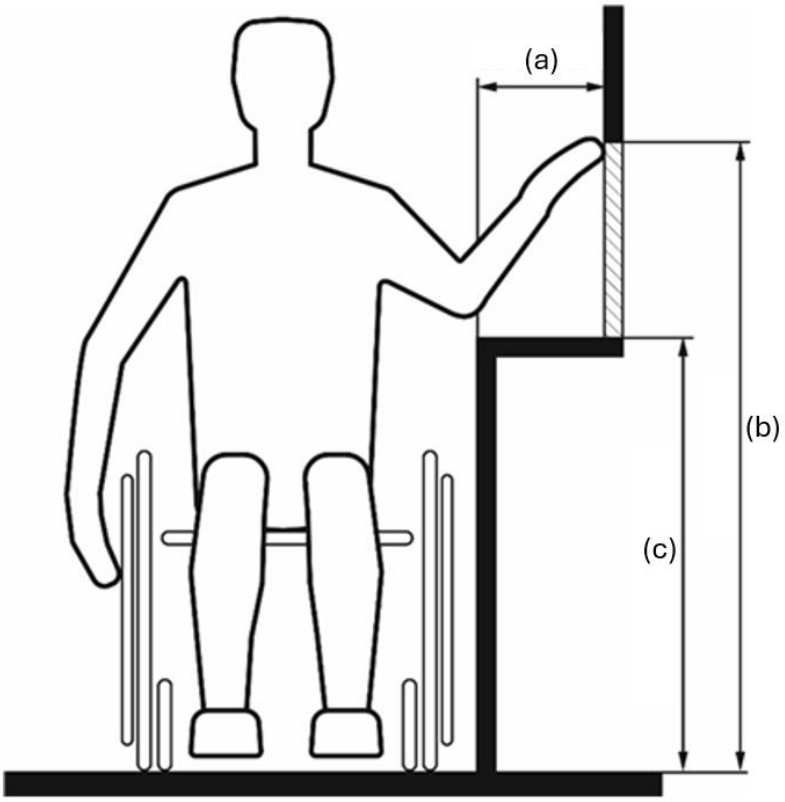

Figure 8.1: Obstructed side reach (see Table 8.1 for explanations)

Table 8.1: Values for the size of obstructions for side reach

Description	Values for stationary ICT which complies with clause 8.3.10.2	Values for stationary ICT which complies with clause 8.3.10.3
a) Obstruction depth (Side reach)	Maximum 300 mm	Maximum 610 mm
b) High reach	Maximum 1 100 mm	Maximum 1 220 mm for depth (a) up to 255 mm Maximum 1 170 mm for depth (a) of up to 610 mm
c) Obstruction height	Maximum 800 mm	Maximum 865 mm

NOTE 3: The values listed in the column "Values for stationary ICT which complies with clause 8.3.10.3" are compliant with the ADA-based requirements [i.78].

8.3.11 Free space underneath stationary ICT with or without an obstruction

8.3.11.1 Free space underneath stationary ICT with or without an obstruction (no design constraints)

Where ICT is stationary ICT and there are no functional or design constraints which prevent the provision of a free space underneath the ICT or restrict the size of that free space,
the stationary ICT shall provide an open space (knee and toe clearance) with the dimensions listed in Table 8.2, column "Values for stationary ICT which complies with clause 8.3.11.1" (see Figure 8.2).

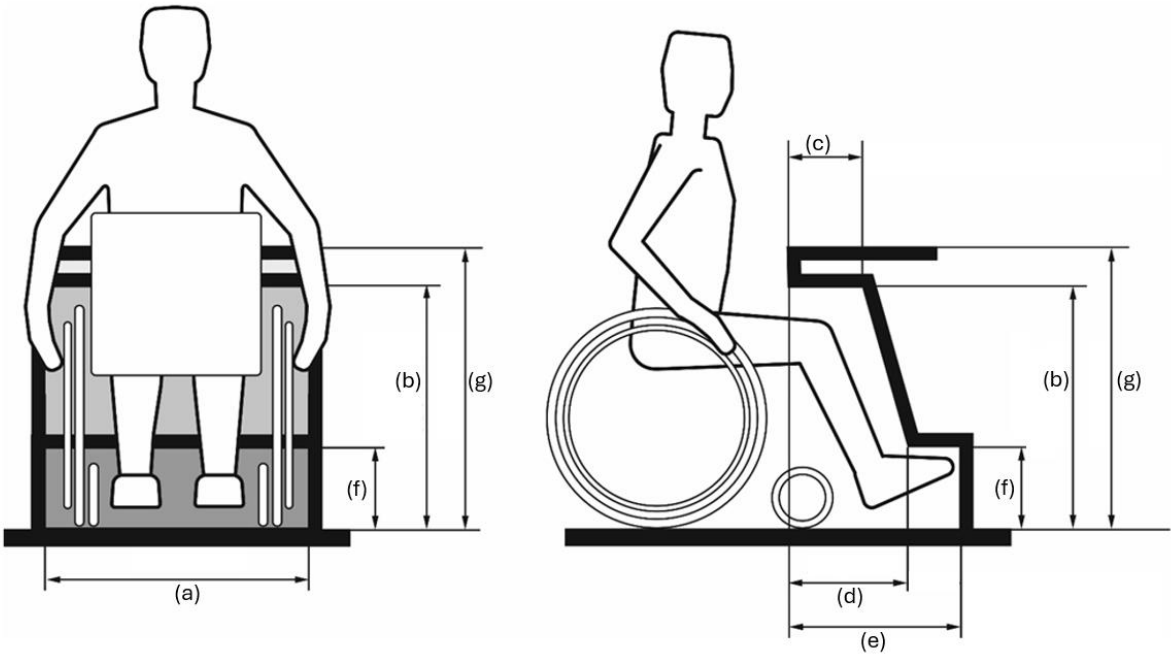

Figure 8.2: Knee and toe clearance underneath an obstruction (see Table 8.2 for explanations)

Table 8.2: Values for obstructions and knee and toe space below obstructions

Description	Values for stationary ICT which complies with clause 8.3.11.1	Values for stationary ICT which complies with clause 8.3.11.2
(a) Width of the clear space	900 mm, but max. the width of the stationary ICT	760 mm, but max. the width of the ICT
(b) Height of the free space below an obstruction	Min 700 mm	Min. 685 mm
(c) Depth of the knee space at the height of the free space (b)	Min 280 mm but not larger than depth of the stationary ICT including the depth of any obstruction	Min 205 mm but not larger than depth of the stationary ICT including the depth of any obstruction
(d) Depth of the knee space at the minimum height of the toe space.	Min. 350 but not larger than the depth of the ICT including the depth of any obstruction	Min. 280 but not larger than the depth of the ICT including the depth of any obstruction
(e) Depth of the toe space at the Height of the toe space (f).	Minimum 450 mm, but not larger than the depth of the ICT including the depth of any obstruction	Minimum 430 mm, but not larger that the depth of the ICT including the depth of any obstruction
(f) Height of the toe space	Minimum 350 mm	Minimum 230 mm
(g) Height of the obstruction	Maximum 800 mm	Maximum 865 mm

NOTE 1: The depth of the free spaces is always measured from the largest extent of an obstruction.

NOTE 2: The depth reduction of the knee clearance (from (c) to (d) in Table 8.2 and Figure 8.2) should be avoided if possible, leading to a minimal depth of the knee clearance (c) with the value of (d) underneath an obstruction.

NOTE 3: Stationary ICT that can be used with side reach and forward reach may not need free space underneath an obstruction.

NOTE 4: The values listed in the column "Values for stationary ICT which complies with clause 8.3.11.2" are compliant with the ADA-based requirements [i.78].

8.3.11.2 Free space underneath stationary ICT with or without an obstruction (with design constraints)

Where ICT is stationary ICT and there are no functional or design constraints which prevent the provision of a free space underneath the ICT, but there are functional or design requirements restricting the size of an open space below the ICT,
the stationary ICT shall provide an open space (knee and toe clearance) with the dimensions listed in Table 8.2, column "Values for stationary ICT which complies with clause 8.3.11.2" (see Figure 8.2).

NOTE: Functional or design constraints which may make it impossible to provide free space under stationary ICT include, but are not limited to:

- Security requirements (e.g. for ATMs).
- Vandalism protection.
- Need to have operable parts below the limits set in clause 8.3.5.1.
- Positioning stationary ICT freestanding (with a base which is part of the stationary ICT) and related stability requirements.
- There may be legal requirements or national standards which restrict the design of stationary ICT to exclude the provision of free space underneath such stationary ICT.

8.3.12 Floor characteristics (informative)

All floor characteristics including floor level changes, clear floor requirements, and the dimensions of necessary manoeuvring spaces are not caused by functional or design requirements of the stationary ICT and are therefore not in scope of this clause.

Advice and requirements related to the floor characteristics can be found in ISO 21542 [i.35] and [i.63].

There should be no change in floor level inside a kiosk, cabin or other closed space in which stationary ICT is installed.

8.3.13 Approach (informative)

The dimensions of the space required in front of stationary ICT for approaching the stationary ICT are not derived from functional or design requirements of the stationary ICT and are therefore not in scope of this clause.

Advice and requirements related to access and manoeuvring spaces can be found in [i.35] and [i.64].

8.3.14 Installation instructions

Where ICT is stationary ICT,
installation instructions shall be made available, that give guidance on how to install the stationary ICT in compliance with the applicable requirements of clause 8.3 of the present document and take into account applicable requirements for accessibility of the built environment as they apply to the installation of the ICT.

NOTE: EN 17210 [i.64] is the European standard that defines applicable requirements for accessibility of the built environment in Europe. Other applicable requirements may be found in ISO 21542 [i.35].

8.4 Operable parts

8.4.1 Numeric keys

Where ICT is, or includes, hardware, and has physical numeric keys arranged in a rectangular keypad layout,
the number five key shall be tactilely distinct from the other keys of the keypad.

NOTE: Recommendation ITU-T E.161 [i.19] describes the 12-key telephone keypad layout and provides further details of the form of tactile markers.

8.4.2 Operation of operable parts

8.4.2.1 Means of operation

Where ICT is, or includes, hardware, and has operable parts that require grasping, pinching, or twisting of the wrist to operate,
the ICT shall provide at least one mode of operation that does not require these actions.

8.4.2.2 Force of operation of operable parts

Where ICT is, or includes, hardware, and has a control that requires a force greater than 22,2 N to operate it,
the ICT shall provide a means of operation that does not requires a force greater than 22,2 N.

NOTE: ISO 21542:2021 [i.35] recommends a value between 2,5 and 5 N.

8.4.3 Keys, tickets and cards

Where ICT is, or includes, hardware, and has keys, tickets or cards, and the orientation of the keys, tickets or cards is important for further use,
the keys, tickets or cards shall each have an orientation that is tactilely discernible.

NOTE: ETSI ETS 300 767 [i.7] defines suitable tactile indications for plastic cards.

8.5 Tactile indication of speech mode

Where ICT is, or includes, hardware, and the ICT is intended for public shared use, and speech output is available,
a tactile indication of the means to initiate the speech mode of operation shall be provided.

NOTE: The tactile indication could include braille instructions.

8.6 Standard connections

Where ICT is, or includes, hardware, and provides input or output device connection points,
the ICT shall provide at least one input and/or output connection that conforms to an industry standard non-proprietary format, directly or through the use of commercially available adapters.

NOTE 1: The intent of this requirement is to ensure compatibility with assistive technologies by requiring the use of standard connections on ICT.

NOTE 2: The word connection applies to both physical and wireless connections.

NOTE 3: Current examples of industry standard non-proprietary connections are USB, Bluetooth®.

NOTE 4: For cables that have the same connector for two functions (data + charging and charging only), it is helpful for charging only to be marked in a manner detectable without vision or colour vision.

8.7 Colour on hardware

Where ICT is, or includes, hardware, and colour is used on the hardware to convey information,
colour shall not be used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.

8.8 Contrast on hardware

Where ICT is, or includes, hardware,
non-digitally displayed characters or symbols required for use, or hardware operable parts without labels on them that are not tactilely discernible, shall contrast visually from their background as either light on a dark background or dark on a light background.

NOTE 1: Logos are not considered required for use.

NOTE 2: A common approach is to use a Michelson contrast formula with a contrast of at least 0,7 for the display of information consisting of characters and pictorial symbols and a contrast of at least 0,4 for the identification of operating elements without characters and pictograms.

9 Web

9.0 General (informative)

Requirements in clause 9 apply to web pages including:

- Conformance with W3C® Web Content Accessibility Guidelines (WCAG 2.0) [i.41] Level AA is equivalent to conforming with clauses 9.1.1, 9.1.2, 9.1.3.1 to 9.1.3.3, 9.1.4.1 to 9.1.4.5, 9.2.1.1, 9.2.1.2, 9.2.2, 9.2.3, 9.2.4 except 9.2.4.11, 9.3 except 9.3.2.6, 9.3.3.7 and 9.3.3.8, 9.4.1.2 and with the conformance requirements of clause 9.6 of the present document.
- Conformance with W3C Web Content Accessibility Guidelines (WCAG 2.1) [i.42] Level AA is equivalent to conforming with all of clauses 9.1 to 9.4 except 9.2.4.11, 9.2.5.7, 9.2.5.8, 9.3.2.6, 9.3.3.7, 9.3.3.8 and with the conformance requirements of clause 9.6 of the present document.
- Conformance with W3C Web Content Accessibility Guidelines (WCAG 2.2) [4] Level AA is equivalent to conforming with all of clauses 9.1 to 9.4 and with the conformance requirements of clause 9.6 of the present document.
- Requirements for non-web documents and non-web software are given in clauses 10 and 11 respectively.

NOTE 1: When evaluating websites they are evaluated as individual web pages. Web applications, including mobile web applications, are covered under the definition of web page which is quite broad and covers all web content types.

NOTE 2: WCAG 2.0 is identical to ISO/IEC 40500:2012 [i.41].
WCAG 2.2 is identical to ISO/IEC 40500:2025 [4].

NOTE 3: When parts of non-web software, such as mobile apps, are implemented with web views, these web views are embedded in the app and thus do not meet the definition of a web page. The clause 11 "Non-web software" requirements are the appropriate requirements to be applied to these web views. There are no circumstances in which clause 9 requirements and the corresponding clause 11 requirements are both applicable. Where there is any doubt, clause 11 requirements have precedence.

The requirements in clauses 9.1 to 9.4 are written using the concept of satisfying success criteria (defined in clause 3.1). A web page satisfies a WCAG success criterion when the success criterion does not evaluate to false when applied to the web page. This implies that if the success criterion puts conditions on a specific feature and that specific feature does not occur in the web page, then the web page satisfies the success criterion.

EXAMPLE: For example, a web page that does not contain pre-recorded audio content in synchronized media will automatically satisfy WCAG success criterion 1.2.2 (captions - pre-recorded) and, in consequence, will also meet clause 9.1.2.2.

In addition to Level AA success criteria, the Web Content Accessibility Guidelines also include success criteria for Level AAA. These are listed in clause 9.5 of the present document. Web authors and procurement accessibility specialists are encouraged to consider whether any of the WCAG Level AAA success criteria offer suggestions that may be applicable and relevant to their project, as well as potentially beneficial to some users.

NOTE 4: The W3C states that "It is not recommended that Level AAA conformance be required as a general policy for entire sites because it is not possible to satisfy all Level AAA Success Criteria for some content".

NOTE 5: "Void" clauses have been inserted in order to maintain alignment with the numbering of WCAG 2.2 [4] Level A and Level AA Success Criteria.

9.1 Perceivable

9.1.1 Text alternatives

9.1.1.1 Non-text content

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.1.1 Non-text content.

9.1.2 Time-based media

9.1.2.1 Audio-only and video-only (pre-recorded)

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.2.1 Audio-only and Video-only (Prerecorded).

9.1.2.2 Subtitles (pre-recorded)

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.2.2 Captions (Prerecorded).

NOTE: The WCAG 2.2 definition of "captions" notes that "in some countries, captions are called subtitles". They are also sometimes referred to as "subtitles for the hearing impaired". Per the definition in WCAG 2, to satisfy this success criterion, whether called captions or subtitles, they would have to provide "synchronized visual and/or text alternative for both speech and non-speech audio information needed to understand the media content" where non-speech information includes "sound effects, music, laughter, speaker identification and location".

9.1.2.3 Audio description or media alternative (pre-recorded)

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.2.3 Audio Description or Media Alternative (Prerecorded).

NOTE 1: Audio descriptions (also called "video descriptions", "descriptive narration", and "described videos") add descriptive information of important visual information needed to understand the video content, including text displayed in the video. Where the main audio track of the video fully describes important visual information, audio descriptions would not be needed at all as the requirement would already be met. When audio descriptions are needed, one way to implement them is by providing a second audio track for the audio-video media.

NOTE 2: This clause corresponds to a WCAG success criterion at level A. Another clause (clause 9.1.2.5) addresses the same user need, but is based on a WCAG success criterion at the higher AA level of accessibility. ICT that meets the higher level of accessibility required by clause 9.1.2.5 automatically meets this clause. Because of this, there is no need to test this clause if the ICT under test has passed a test for clause 9.1.2.5. But if it has failed 9.1.2.5, testing and meeting this clause is still meaningful, as it is better to pass this clause at level A, than to fail both.

9.1.2.4 Subtitles (live)

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.2.4 Captions (Live).

NOTE: The WCAG 2.2 definition of "captions" notes that "in some countries, captions are called subtitles". They are also sometimes referred to as "subtitles for the hearing impaired". Per the definition in WCAG 2.2, to satisfy this success criterion, whether called captions or subtitles, they would have to provide "synchronized visual and/or text alternative for both speech and non-speech audio information needed to understand the media content" where non-speech information includes "sound effects, music, laughter, speaker identification and location".

9.1.2.5 Audio description (pre-recorded)

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.2.5 Audio Description (Prerecorded).

NOTE: Audio descriptions (also called "video descriptions", "descriptive narration", and "described videos") add descriptive information of important visual information needed to understand the video content, including text displayed in the video. Where the main audio track of the video fully describes important visual information, audio descriptions would not be needed at all as the requirement would already be met. When audio descriptions are needed, one way to implement them is by providing a second audio track for the audio-video media.

9.1.3 Adaptable

9.1.3.1 Info and relationships

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.3.1 Info and Relationships.

9.1.3.2 Meaningful sequence

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.3.2 Meaningful Sequence.

9.1.3.3 Sensory characteristics

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.3.3 Sensory Characteristics.

9.1.3.4 Orientation

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.3.4 Orientation.

9.1.3.5 Identify input purpose

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.3.5 Identify Input Purpose.

9.1.4 Distinguishable

9.1.4.1 Use of colour

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.4.1 Use of Color.

9.1.4.2 Audio control

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.4.2 Audio Control.

9.1.4.3 Contrast (minimum)

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.4.3 Contrast (Minimum).

9.1.4.4 Resize text

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.4.4 Resize text.

NOTE: Best practice is for the smallest text to have an x-height of at least 8 CSS px which corresponds to an x-height of 1,2 mm, at a viewing distance of 400 mm, with no zooming or screen scaling. This is the smallest font size - not the recommended font size for body text which should be larger.

9.1.4.5 Images of text

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.4.5 Images of Text.

9.1.4.6 Void

9.1.4.7 Void

9.1.4.8 Void

9.1.4.9 Void

9.1.4.10 Reflow

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.4.10 Reflow.

9.1.4.11 Non-text contrast

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.4.11 Non-text Contrast.

9.1.4.12 Text spacing

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.4.12 Text spacing.

9.1.4.13 Content on hover or focus

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 1.4.13 Content on Hover or Focus.

9.2 Operable

9.2.1 Keyboard accessible

9.2.1.1 Keyboard

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.1.1 Keyboard.

9.2.1.2 No keyboard trap

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.1.2 No Keyboard Trap.

9.2.1.3 Void

9.2.1.4 Character key shortcuts

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.1.4 Character Key Shortcuts.

9.2.2 Enough time

9.2.2.1 Timing adjustable

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.2.1 Timing Adjustable.

9.2.2.2 Pause, stop, hide

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.2.2 Pause, Stop, Hide.

9.2.3 Seizures and physical reactions

9.2.3.1 Three flashes or below threshold

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.3.1 Three Flashes or Below Threshold.

9.2.4 Navigable

9.2.4.1 Bypass blocks

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.4.1 Bypass Blocks.

9.2.4.2 Page titled

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.4.2 Page Titled.

9.2.4.3 Focus order

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.4.3 Focus Order.

9.2.4.4 Link purpose (in context)

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.4.4 Link Purpose (In Context).

9.2.4.5 Multiple ways

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.4.5 Multiple Ways.

9.2.4.6 Headings and labels

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.4.6 Headings and Labels.

9.2.4.7 Focus visible

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.4.7 Focus Visible.

9.2.4.8 Void

9.2.4.9 Void

9.2.4.10 Void

9.2.4.11 Focus not obscured (minimum)

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.4.11 Focus Not Obscured (Minimum).

9.2.5 Input modalities

9.2.5.1 Pointer gestures

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.5.1 Pointer Gestures.

9.2.5.2 Pointer cancellation

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.5.2 Pointer Cancellation.

9.2.5.3 Label in name

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.5.3 Label in Name.

9.2.5.4 Motion actuation

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.5.4 Motion Actuation.

9.2.5.5 Void

9.2.5.6 Void

9.2.5.7 Dragging movements

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.5.7 Dragging Movements.

9.2.5.8 Target size (minimum)

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 2.5.8 Target Size (Minimum).

9.3 Understandable

9.3.1 Readable

9.3.1.1 Language of page

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 3.1.1 Language of Page.

9.3.1.2 Language of parts

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 3.1.2 Language of Parts.

9.3.2 Predictable

9.3.2.1 On focus

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 3.2.1 On Focus.

9.3.2.2 On input

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 3.2.2 On Input.

9.3.2.3 Consistent navigation

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 3.2.3 Consistent Navigation.

9.3.2.4 Consistent identification

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 3.2.4 Consistent Identification.

9.3.2.5 Void

9.3.2.6 Consistent help

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 3.2.6 Consistent Help.

9.3.3 Input assistance

9.3.3.1 Error identification

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 3.3.1 Error Identification.

9.3.3.2 Labels or instructions

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 3.3.2 Labels or Instructions.

9.3.3.3 Error suggestion

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 3.3.3 Error Suggestion.

9.3.3.4 Error prevention (legal, financial, data)

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 3.3.4 Error Prevention (Legal, Financial, Data).

9.3.3.5 Void

9.3.3.6 Void

9.3.3.7 Redundant entry

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 3.3.7 Redundant Entry.

9.3.3.8 Accessible authentication (minimum)

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 3.3.8 Accessible Authentication (Minimum).

9.4 Robust

9.4.1 Compatible

9.4.1.1 Void

NOTE: Earlier versions of the present document referenced the 4.1.1 Parsing success criterion from WCAG 2.0 [i.41] and WCAG 2.1 [i.42]. In WCAG 2.2 [4], this criterion has been removed, because the accessibility problems it was intended to prevent "either no longer exist or are addressed by other criteria".

9.4.1.2 Name, role, value

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 4.1.2 Name, Role, Value.

9.4.1.3 Status messages

Where ICT is, or includes, a web page,
the web page shall satisfy WCAG 2.2 Success Criterion 4.1.3 Status Messages.

9.5 WCAG 2.2 AAA Success Criteria (informative)

In addition to the Level AA success criteria, included in clauses 9.1 to 9.4, the Web Content Accessibility Guidelines include success criteria for Level AAA. These are listed in Table 9.1. Web authors and procurement accessibility specialists are encouraged to consider the WCAG 2.2 Level AAA success criteria that, when it is possible to apply them, may provide access beyond that required in the present document.

NOTE 1: The W3C states that "It is not recommended that Level AAA conformance be required as a general policy for entire sites because it is not possible to satisfy all Level AAA Success Criteria for some content".

NOTE 2: As clause 9.5 is not normative but informative, it does not describe in detail every Success Criterion in the scope of this clause.

Table 9.1: WCAG 2.2 Level AAA Success Criteria

No.	Guideline	Success Criterion Number	Success Criteria Name
1	Time-based media	1.2.6	Sign Language (Prerecorded)
2	Time-based media	1.2.7	Extended Audio Description (Prerecorded)
3	Time-based media	1.2.8	Media Alternative (Prerecorded)
4	Time-based media	1.2.9	Audio-only (Live)
5	Adaptable	1.3.6	Identify Purpose
6	Distinguishable	1.4.6	Contrast (Enhanced)
7	Distinguishable	1.4.7	Low or No Background Audio
8	Distinguishable	1.4.8	Visual Presentation
9	Distinguishable	1.4.9	Images of Text (No Exception)
10	Keyboard Accessible	2.1.3	Keyboard (No Exception)
11	Enough time	2.2.3	No Timing
12	Enough time	2.2.4	Interruptions
13	Enough time	2.2.5	Re-authenticating
14	Enough time	2.2.6	Timeouts
15	Seizures and physical reactions	2.3.2	Three Flashes
16	Seizures and physical reactions	2.3.3	Animation from Interactions
17	Navigable	2.4.8	Location
18	Navigable	2.4.9	Link Purpose (Link Only)
19	Navigable	2.4.10	Section Headings
20	Navigable	2.4.12	Focus Not Obscured (Enhanced)
21	Navigable	2.4.13	Focus Appearance
22	Input modalities	2.5.5	Target Size (Enhanced)
23	Input modalities	2.5.6	Concurrent Input Mechanisms
24	Readable	3.1.3	Unusual Words
25	Readable	3.1.4	Abbreviations
26	Readable	3.1.5	Reading Level
27	Readable	3.1.6	Pronunciation
28	Predictable	3.2.5	Change on Request
29	Input assistance	3.3.5	Help
30	Input assistance	3.3.6	Error Prevention (All)
31	Input assistance	3.3.9	Accessible Authentication (Enhanced)

9.6 WCAG conformance requirements

Where ICT is, or includes, a web page,
the web page shall satisfy all the following five WCAG 2.2 conformance requirements at Level AA [4]:

1) Conformance level

2) Full pages

3) Complete processes

4) Only Accessibility-Supported Ways of Using Technologies

5) Non-interference

NOTE 1: Clause 9.6 is a direct copy of the WCAG Conformance Requirements, to ensure that web pages conforming to EN 301 549 also conform to WCAG. It is important to note that the WCAG 2.2 [4] success criteria (requirements in clauses 9.1 to 9.4 of the present document) and the conformance requirements were designed to work together, such that the language of the success criteria is based on the nature of the conformance requirements. Thus, the conformance conditions stated in clause 9.6 are to be applied when checking conformance of all requirements in clauses 9.1 to 9.4.

NOTE 2: A web page that meets all of requirements 9.1 to 9.4, or where a Level AA conforming alternate version is provided, will meet conformance requirement 1. Refer to the Glossary section in WCAG 2.2 [4] for the definition of the term "conforming alternate version".

NOTE 3: Conformance requirement 2 states that conformance (and conformance level) is for full web page(s) only, and cannot be achieved if part of a web page is excluded. Refer to the Glossary section in WCAG 2.2 [4] for the definition of the term "conformance".

NOTE 4: Conformance requirement 3 states that when a web page is one of a series of web pages presenting a process (i.e. a sequence of steps that need to be completed in order to accomplish an activity), all web pages in the process conform at the specified level or better. Refer to the Glossary section in WCAG 2.2 [4] for the definition of the term "process".

NOTE 5: Conformance requirement 4 states that only accessibility-supported ways of using technologies are relied upon to satisfy the success criteria, and any information or functionality that is provided in a way that is not accessibility supported is also available in a way that is accessibility supported. Refer to the Glossary section in WCAG 2.2 [4] for the definition of the terms "accessibility-supported", "technologies", "relied upon".

NOTE 6: Conformance requirement 5 states that if technologies are used in a way that is not accessibility supported, or if they are used in a non-conforming way, then they do not block the ability of users to access the rest of the page. In addition, the web page as a whole has to continue to meet the conformance requirements when any technology that is not relied upon is turned on, off, or is not supported in a user agent, and all content on the page, including content that is not otherwise relied upon to meet conformance, meets clauses 9.1.4.2, 9.2.1.2, 9.2.2.2 and 9.2.3.1. Refer to the Glossary section in WCAG 2.2 [4] for the definition of the terms "accessibility-supported", "technologies", "relied upon".

NOTE 7: According to W3C: "WCAG 2.2 extends Web Content Accessibility Guidelines 2.1 [i.42], which was published as a W3C Recommendation June 2018 (updated in May 2025). Content that conforms to WCAG 2.2 also conforms to WCAG 2.0 [i.41] and WCAG 2.1" [i.42].

9.7 User preferences for web pages

Where ICT is, or includes, a web page,
the web page shall not block the user agent's mode(s) of operation that present the web page according to user preference settings, or explicitly override user preference settings for documented platform accessibility features in these modes of operation, unless this is essential to the information or function of the web page.

NOTE 1: Clause 12.3 specifies that accessibility features of the ICT are to be documented either as part of the ICT or in a separate documentation.

NOTE 2: In a web browser that meets clause 11.7 there is at least one mode of operation where the web browser will enforce user preference settings.

NOTE 3: For web pages, the underlying platform is the user agent.

NOTE 4: This does not preclude the web page from specifying other values, but it does limit the use of specifications that explicitly override user settings (e.g. "forced-color-adjust" property in CSS) to cases where this is essential.

NOTE 5: Features that might be documented as platform accessibility features include, but are not limited to colour filters, contrast, text size, pointer size, and text cursor.

10 Non-web documents

10.0 General (informative)

Requirements in clause 10 apply to:

- documents that are not web pages;
- documents that are not embedded in web pages; and
- documents that are provided with web pages but are neither embedded nor rendered together with the web page from which they are provided (i.e. the present clause applies to downloadable documents).

Clause 9 provides requirements for documents that are in web pages or that are embedded in web pages and that are used in the rendering or that are intended to be rendered together with the web page in which they are embedded.

NOTE 1: Some examples of non-web documents are letters, spreadsheets, emails, books, pictures, presentations, and movies that have an associated user agent such as a document reader, editor or media player.

NOTE 2: A single non-web document may be composed of multiple files such as the video content and closed caption text. This fact is not usually apparent to the end-user consuming the document/content.

NOTE 3: Non-web documents require a user agent in order for the content to be presented to users. The requirements for user agents can be found in clause 11.

NOTE 4: The requirements for content that is part of non-web software, can be found in clause 11.

NOTE 5: The success criteria set out in clause 10 are intended to harmonize with the W3C® Group Note [i.25] produced by the W3C®'s WCAG2ICT Task Force.

NOTE 6: Where the meaning of WCAG glossary terms when applied to non-web documents is unclear, reference to the Glossary Items with Specific Guidance, in the W3C® Group Note [i.25] , can help to clarify how they are to be understood.

NOTE 7: "Void" clauses have been inserted in order to maintain alignment of the numbering in clauses 9, 10 and 11.

NOTE 8: Requirements in clause 10 also apply to non-web documents that are protected using mechanisms such as digital signatures, encryption, password protection, and watermarks when they are presented to the user.

NOTE 9: It is best practice to provide meta data on the accessibility of the non-web document within or separate to the document using the "Schema.org Accessibility Properties for Discoverability Vocabulary" [i.39].

NOTE 10: A non-web document satisfies a WCAG success criterion when the success criterion does not evaluate to false when applied to the non-web document. This implies that if the success criterion puts conditions on a specific feature and that specific feature does not occur in the non-web document, then the non-web document satisfies the success criterion.

EXAMPLE: For example, a non-web document that does not contain pre-recorded audio content in synchronized media will automatically satisfy WCAG success criterion 1.2.2 (captions - pre-recorded) and, in consequence, will also meet clause 10.1.2.2.

NOTE 11: ISO 14289-1:2014 [i.71] and ISO 14289-2:2024 [i.72] are the technical standards for accessible PDFs and would be useful in meeting EN 301 549.

10.1 Perceivable

10.1.1 Text alternatives

10.1.1.1 Non-text content

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy WCAG 2.2 Success Criterion 1.1.1 Non-text content.

NOTE: CAPTCHAs do not currently appear outside of the Web. However, if they do appear, this guidance is accurate.

10.1.2 Time-based media

10.1.2.1 Audio-only and video-only (pre-recorded)

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy WCAG 2.2 Success Criterion 1.2.1 Audio-only and Video-only (Prerecorded).

NOTE: The alternative can be provided directly in the non-web document - or provided in an alternate version that satisfies the success criterion.

10.1.2.2 Subtitles (pre-recorded)

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 1.2.2 Captions (Prerecorded).

NOTE: The WCAG 2.2 definition of "captions" notes that "in some countries, captions are called subtitles". They are also sometimes referred to as "subtitles for the hearing impaired". Per the definition in WCAG 2, to satisfy this success criterion, whether called captions or subtitles, they would have to provide "synchronized visual and/or text alternative for both speech and non-speech audio information needed to understand the media content" where non-speech information includes "sound effects, music, laughter, speaker identification and location".

10.1.2.3 Audio description or media alternative (pre-recorded)

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 1.2.3 Audio Description or Media Alternative (Prerecorded).

NOTE 1: Audio descriptions (also called "video descriptions", "descriptive narration", and "described videos") add descriptive information of important visual information needed to understand the video content, including text displayed in the video. Where the main audio track of the video fully describes important visual information, audio descriptions would not be needed at all as the requirement would already be met. When audio descriptions are needed, one way to implement them is by providing a second audio track for the audio-video media.

NOTE 2: This clause corresponds to a WCAG success criterion at level A. Another clause (clause 10.1.2.5) addresses the same user need, but is based on a WCAG success criterion at the higher AA level of accessibility. ICT that satisfies the higher level of accessibility required by clause 10.1.2.5 automatically meets this clause. Because of this, there is no need to test this clause if the ICT under test has passed a test for clause 10.1.2.5. But if it has failed 10.1.2.5, testing and meeting this clause is still meaningful, as it is better to pass this clause at level A, than to fail both.

10.1.2.4 Subtitles (live)

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 1.2.4 Captions (Live).

NOTE: The WCAG 2.2 definition of "captions" notes that "in some countries, captions are called subtitles". They are also sometimes referred to as "subtitles for the hearing impaired". Per the definition in WCAG 2.2, to satisfy this success criterion, whether called captions or subtitles, they would have to provide "synchronized visual and/or text alternative for both speech and non-speech audio information needed to understand the media content" where non-speech information includes "sound effects, music, laughter, speaker identification and location".

10.1.2.5 Audio description (pre-recorded)

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 1.2.5 Audio Description (Prerecorded).

NOTE: Audio descriptions (also called "video descriptions", "descriptive narration", and "described videos") add descriptive information of important visual information needed to understand the video content, including text displayed in the video. Where the main audio track of the video fully describes important visual information, audio descriptions would not be needed at all as the requirement would already be met. When audio descriptions are needed, one way to implement them is by providing a second audio track for the audio-video media.

10.1.3 Adaptable

10.1.3.1 Info and relationships

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 1.3.1 Info and Relationships.

NOTE: Where non-web documents contain non-standard structure types (roles), it is best practice to map them to a standard structure type as a fall-back solution for the reader.

10.1.3.2 Meaningful sequence

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 1.3.2 Meaningful Sequence.

10.1.3.3 Sensory characteristics

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 1.3.3 Sensory Characteristics.

10.1.3.4 Orientation

Where ICT is, or includes, a non-web document, and the non-web document is displayed on hardware that is designed to be reoriented in typical use,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 1.3.4 Orientation.

EXAMPLE: A non-web document that is only used on hardware that supports a single display orientation, or is only displayed on hardware that is physically fixed in one orientation (e.g. a digital building directory) is excluded by the precondition and therefore does not need to provide support for orientation changes.

10.1.3.5 Identify input purpose

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 1.3.5 Identify Input Purpose.

NOTE 1: Non-web document technologies that do not provide attributes that support identifying the expected meaning for the form input data are not in scope for this success criterion.

NOTE 2: For non-web documents that present input fields, the terms for the input purposes would be the equivalent terms to those listed in the WCAG 2.2 section Input Purposes for User Interface Components are supported by the technology used.

10.1.4 Distinguishable

10.1.4.1 Use of colour

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 1.4.1 Use of Color.

10.1.4.2 Audio control

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the success criterion in Table 10.1.

Table 10.1: Non-web document success criterion: Audio control

If any audio in the non-web document plays automatically for more than 3 seconds, either a mechanism is available to pause or stop the audio, or a mechanism is available to control audio volume independently from the overall system volume level.
NOTE 1: Since any content that does not meet this success criterion can interfere with a user's ability to use the whole non-web document, it would be necessary for all content in the non-web document (whether or not it is used to meet other success criteria) to satisfy this success criterion. NOTE 2: This success criterion is identical to the WCAG 2.2 Success Criterion 1.4.2 Audio Control, replacing "on a web page" with "in the non-web document", "any content" with "any part of a non-web document", "whole page" with "whole document", "on the web page" with "in the non-web document", removing "See Conformance Requirement 5: Non-Interference" and adding note 1.

10.1.4.3 Contrast (minimum)

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 1.4.3 Contrast (Minimum).

10.1.4.4 Resize text

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 1.4.4 Resize text.

NOTE 1: Content for which there are software players, viewers or editors with a 200 percent zoom feature would automatically meet this success criterion when used with such viewers or editors, unless the content will not work with that zoom feature.

NOTE 2: It is best practice to use only fonts that allow for scaling without loss of quality (e.g. pixelized presentation). This applies in particular to embedded fonts.

NOTE 3: Best practice is for the smallest text have an x-height of at least 8 CSS px which corresponds to an x-height of 1,2 mm, at a viewing distance of 400 mm, with no zooming or screen scaling. This is the smallest font size - not the recommended font size for body text which should be larger.

10.1.4.5 Images of text

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 1.4.5 Images of Text.

10.1.4.6 Void

10.1.4.7 Void

10.1.4.8 Void

10.1.4.9 Void

10.1.4.10 Reflow

Where ICT is, or includes, a non-web document, and where underlying user agent or platform software can present content at a width equivalent to 320 CSS pixels or more for vertical scrolling content and a height equivalent to 256 CSS pixels or more for horizontal scrolling content,
the non-web document shall satisfy the success criterion in Table 10.2.

Table 10.2: Non-web document success criterion: Reflow

Content can be presented without loss of information or functionality, and without requiring scrolling in two dimensions for: • Vertical scrolling content at a width equivalent to 320 CSS pixels. • Horizontal scrolling content at a height equivalent to 256 CSS pixels. Except for parts of the content which require two-dimensional layout for usage or meaning.
NOTE 1: 320 CSS pixels is equivalent to a starting viewport width of 1 280 CSS pixels wide at 400 percent zoom. For content which is designed to scroll horizontally (e.g. with vertical text), the 256 CSS pixels is equivalent to a starting viewport height of 1 024 pixels at 400 percent zoom. NOTE 2: Examples of content that requires two-dimensional layout are images required for understanding (such as maps and diagrams), video, games, presentations, data tables (not individual cells), and interfaces where it is necessary to keep toolbars in view while manipulating content. It is acceptable to provide two-dimensional scrolling for such parts of the content. NOTE 3: In technologies where CSS is not used, the definition of 'CSS pixel' applies as described in Applying "CSS pixel" to Non-web documents and Non-web software in [i.25]. NOTE 4: If a non-web document type and its available user agents do not support reflow, it may not be possible for a document of that type to meet this success criterion. NOTE 5: This success criterion is limited to those cases where the underlying user agent or platform software can present content at a width equivalent to 320 CSS pixels for vertical scrolling content and a height equivalent to 256 CSS pixels for horizontal scrolling content. However, even below this threshold, reflow is still encouraged as this capability is important to people with low vision. NOTE 6: This success criterion is identical to the WCAG 2.2 Success Criterion 1.4.10 Reflow replacing "web content" with "content" in the original WCAG 2.2 note 1 and adding notes 3, 4 and 5.

10.1.4.11 Non-text contrast

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the success criterion in Table 10.3.

Table 10.3: Non-web document success criterion: Non-text contrast

The visual presentation of the following have a contrast ratio of at least 3:1 against adjacent colour(s): • **User Interface Components:** Visual information required to identify user interface components and states, except for inactive components or where the appearance of the component is determined by the user agent or other platform software and not modified by the author; • **Graphical Objects:** Parts of graphics required to understand the content, except when a particular presentation of graphics is essential to the information being conveyed.
NOTE 1: An example of appearance modification by the author is content that sets the visual style of a control, such as a colour or border, to differ from the default style for the user agent or platform. NOTE 2: This success criterion is identical to the WCAG 2.2 Success Criterion 1.4.11 Non-text Contrast replacing "user agent" with "user agent or other platform software" and adding note 1.

10.1.4.12 Text spacing

Where ICT is, or includes, a non-web document, that is implemented using markup languages that allow users to modify text spacing properties,
the non-web document shall satisfy WCAG 2.2 Success Criterion 1.4.12 Text spacing.

NOTE: There are several mechanisms that allow users to modify text spacing properties of content implemented in markup languages. For example, an eBook technology may have an available user agent that allows users to override document text styles. This success criterion does not mean that non-web documents need to implement their own mechanisms to allow users to set text spacing; however, when such a mechanism is available, the success criterion requires that content respond appropriately to it.

10.1.4.13 Content on hover or focus

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the success criterion in Table 10.4.

Table 10.4: Non-web document success criterion: Content on hover or focus

Where receiving and then removing pointer hover or keyboard focus triggers additional content to become visible and then hidden, the following are true: • **Dismissible:** A mechanism is available to dismiss the additional content without moving pointer hover or keyboard focus, unless the additional content communicates an input error or does not obscure or replace other content; • **Hoverable:** If pointer hover can trigger the additional content, then the pointer can be moved over the additional content without the additional content disappearing; • **Persistent:** The additional content remains visible until the hover or focus trigger is removed, the user dismisses it, or its information is no longer valid. Exception: The visual presentation of the additional content is controlled by the user agent or other platform software and is not modified by the author.
NOTE 1: Examples of additional content controlled by the user agent or other platform software include tooltips created through use of user interface object attributes. NOTE 2: Custom tooltips, sub-menus, and other nonmodal popups that display on hover and focus are examples of additional content covered by this criterion. NOTE 3: This criterion applies to content that appears in addition to the triggering component itself. Since hidden components that are made visible on keyboard focus (such as links or other user interface controls that behave like a link used to skip to another part of the non-web document) do not present additional content they are not covered by this criterion. NOTE 4: This success criterion is identical to the WCAG 2.2 Success Criterion 1.4.13 Content on Hover or Focus replacing "user agent" with "user agent or other platform software", "browser tooltips" with "tooltips", and "the HTML title attribute" with "user interface object attributes", "links" with "links or other user interface controls that behave like a link", and "a page" with "the non-web document".

10.2 Operable

10.2.1 Keyboard accessible

10.2.1.1 Keyboard

Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 2.1.1 Keyboard.

10.2.1.2 No keyboard trap

Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface,
the non-web document shall satisfy the success criterion in Table 10.5.

Table 10.5: Non-web document success criterion: No keyboard trap

If keyboard focus can be moved to a component of the non-web document using a keyboard interface, then focus can be moved away from that component using only a keyboard interface, and, if it requires more than unmodified arrow or tab keys or other standard exit methods, the user is advised of the method for moving focus away.
NOTE 1: Since any content that does not meet this success criterion can interfere with a user's ability to use the whole non-web document, it would be necessary for all content in the non-web document (whether or not it is used to meet other success criteria) to meet this success criterion. NOTE 2: Standard exit methods may vary by platform. For example, on many desktop platforms, the Escape key is a standard method for exiting. NOTE 3: This success criterion is identical to the WCAG 2.2 Success Criterion 2.1.2 No Keyboard Trap replacing "page" with "non-web document, "on the web page" with "in the non-web document", removing "See Conformance Requirement 5: Non-Interference", adding note 2, and adjusting note 1 to avoid the use of the normative term "must".

10.2.1.3 Void

10.2.1.4 Character key shortcuts

Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface,
the non-web document shall satisfy WCAG 2.2 Success Criterion 2.1.4 Character Key Shortcuts.

10.2.2 Enough time

10.2.2.1 Timing adjustable

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the success criterion in Table 10.6.

Table 10.6: Non-web document success criterion: Timing adjustable

For each time limit that is set by the non-web document, at least one of the following is true: • **Turn off:** The user is allowed to turn off the time limit before encountering it; or • **Adjust:** The user is allowed to adjust the time limit before encountering it over a wide range that is at least ten times the length of the default setting; or • **Extend:** The user is warned before time expires and given at least 20 seconds to extend the time limit with a simple action (for example, "press the space bar"), and the user is allowed to extend the time limit at least ten times; or • **Real-time Exception:** The time limit is a required part of a real-time event (for example, an auction), and no alternative to the time limit is possible; or • **Essential Exception:** The time limit is essential and extending it would invalidate the activity; or • **20 Hour Exception:** The time limit is longer than 20 hours.
NOTE 1: This success criterion helps ensure that users can complete tasks without unexpected changes in content or context that are a result of a time limit. This success criterion should be considered in conjunction with WCAG 2.2 Success Criterion 3.2.1 On Focus, which puts limits on changes of content or context as a result of user action. NOTE 2: This success criterion is identical to the WCAG 2.2 Success Criterion 2.2.1 Timing Adjustable replacing "the content" with "non-web document" and with the words "WCAG 2.2" added before the words "Success Criterion" and "3.2.1 On Focus" after the words "Success Criterion" in note 1 above.

10.2.2.2 Pause, stop, hide

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the success criterion in Table 10.7.

Table 10.7: Non-web document success criterion: Pause, stop, hide

For moving, blinking, scrolling, or auto-updating information, all of the following are true: • **Moving, blinking, scrolling:** For any moving, blinking or scrolling information that (1) starts automatically, (2) lasts more than five seconds, and (3) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it unless the movement, blinking, or scrolling is part of an activity where it is essential; and • **Auto-updating:** For any auto-updating information that (1) starts automatically and (2) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it or to control the frequency of the update unless the auto-updating is part of an activity where it is essential.
NOTE 1: For requirements related to flickering or flashing content, refer to WCAG 2.2 Guideline 2.3. NOTE 2: Since any content that does not meet this success criterion can interfere with a user's ability to use the whole non-web document, it would be necessary for all content in the non-web document (whether or not it is used to meet other success criteria) to meet this success criterion. NOTE 3: Content that is updated periodically by software or that is streamed to the user agent is not required to preserve or present information that is generated or received between the initiation of the pause and resuming presentation, as this may not be technically possible, and in many situations could be misleading to do so. NOTE 4: An animation that occurs as part of a preload phase or similar situation can be considered essential if interaction cannot occur during that phase for all users and if not indicating progress could confuse users or cause them to think that content was frozen or broken. NOTE 5: While the success criterion uses the term "information", the WCAG 2.2 Intent from Understanding Success Criterion 2.2.2 makes it clear that this is to be applied to all content. Any content, even if just decorative, that is updated automatically, blinks, or moves may create an accessibility barrier. NOTE 6: This success criterion is identical to the WCAG 2.2 Success Criterion 2.2.2 Pause, Stop, Hide replacing "page" with "non-web document" and "on the web page" with "in the non-web document", removing "See Conformance Requirement 5: Non-Interference" in note 2 of the success criterion, with the words "WCAG 2.2" added before the word "Guideline" in note 1, adjusting note 2 to avoid the use of the normative text "must", and adding note 5.

10.2.3 Seizures and physical reactions

10.2.3.1 Three flashes or below threshold

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the success criterion in Table 10.8.

Table 10.8: Non-web document success criterion: Three flashes or below threshold

Non-web documents do not contain anything that flashes more than three times in any one second period, or the flash is below the general flash and red flash thresholds.
NOTE 1: Since any content that does not meet this success criterion can interfere with a user's ability to use the whole non-web document, it would be necessary for all content in the non-web document (whether or not it is used to meet other success criteria) to meet this success criterion. NOTE 2: This success criterion is identical to the WCAG 2.2 Success Criterion 2.3.1 Three Flashes or Below Threshold replacing "web pages" with "non-web documents", "page" with "non-web document", "on the web page" with "in the non-web document", removing "See Conformance Requirement 5: Non-Interference", and adjusting note 1 to avoid the use of the normative term "must".

10.2.4 Navigable

10.2.4.1 Void

NOTE 1: WCAG 2.2 Success Criterion 2.4.1 "Bypass blocks" does not apply to single non-web documents, but to a specific definition of "sets of non-web documents" that are rare.

NOTE 2: Although not a requirement, the ability to bypass blocks of content that are repeated within non-web documents is generally considered best practice and addresses user needs.

10.2.4.2 Non-web document titled

Where ICT is, or includes, a non-web document implemented in a format that supports a programmatically determinable "Title" attribute that is editable using common authoring tools for that document format,
the non-web document shall have a title that describes the name, topic, or purpose.

NOTE: The "Title" attribute is specified as "editable through that document format's common authoring tools" so that authors can view and edit the Title without requiring specialized or external metadata utilities. "Common authoring tools" are the most readily available tools used for editing a particular document type.

10.2.4.3 Focus order

Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface,
the non-web document shall satisfy the success criterion in Table 10.9.

Table 10.9: Non-web document success criterion: Focus order

If a non-web document can be navigated sequentially and the navigation sequences affect meaning or operation, focusable components receive focus in an order that preserves meaning and operability.
NOTE: This success criterion is identical to the WCAG 2.2 Success Criterion 2.4.3 Focus Order replacing "web page" with "non-web document".

10.2.4.4 Link purpose (in context)

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 2.4.4 Link Purpose (In Context).

10.2.4.5 Multiple ways (Void)

NOTE: WCAG 2.2 Success Criterion 2.4.5 "Multiple Ways" does not apply to single non-web documents, but to a specific definition of "sets of non-web documents" that are rare.

10.2.4.6 Headings and labels

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 2.4.6 Headings and Labels.

10.2.4.7 Focus visible

Where ICT is, or includes, a non-web document and the document provides a keyboard or accepts input from a keyboard or keyboard interface,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 2.4.7 Focus Visible.

10.2.4.8 Void

10.2.4.9 Void

10.2.4.10 Void

10.2.4.11 Focus not obscured (minimum)

Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface,
the non-web document shall satisfy WCAG 2.2 Success Criterion 2.4.11 Focus Not Obscured (Minimum).

10.2.5 Input modalities

10.2.5.1 Pointer gestures

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the success criterion in Table 10.10.

Table 10.10: Non-web document success criterion: Pointer gestures

All functionality that uses multipoint or path-based gestures for operation can be operated with a single pointer without a path-based gesture, unless a multipoint or path-based gesture is essential.
NOTE 1: This requirement applies to content that interprets pointer actions (i.e. this does not apply to actions that are required to operate the user agent or assistive technology). NOTE 2: Multipoint and path-based gestures are less common in non-web documents. An example where a non-web document author could add such gestures is an interactive prototype document created in a software design tool. NOTE 3: This success criterion is identical to the WCAG 2.2 Success Criterion 2.5.1 Pointer Gestures replacing "web content" with "content" in note 1 and adding note 2.

10.2.5.2 Pointer cancellation

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the success criterion in Table 10.11.

Table 10.11: Non-web document success criterion: Pointer cancellation

For functionality that can be operated using a single pointer, at least one of the following is true: • **No Down-Event:** The down-event of the pointer is not used to execute any part of the function; • **Abort or Undo:** Completion of the function is on the up-event, and a mechanism is available to abort the function before completion or to undo the function after completion; • **Up Reversal:** The up-event reverses any outcome of the preceding down-event; • **Essential:** Completing the function on the down-event is essential.
NOTE 1: Functions that emulate a keyboard or numeric keypad key press are considered essential. NOTE 2: This requirement applies to content that interprets pointer actions (i.e. this does not apply to actions that are required to operate the user agent or assistive technology). NOTE 3: Content that interprets pointer actions and controls which events are used for executing functionality is less common in non-web documents. An example where a non-web document author could add such functionality is an interactive prototype document created in a software design tool. NOTE 4: This success criterion is identical to the WCAG 2.2 Success Criterion 2.5.2 Pointer Cancellation replacing "web content" with "content" in note 2 and adding note 3.

10.2.5.3 Label in name

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy WCAG 2.2 Success Criterion 2.5.3 Label in Name.

10.2.5.4 Motion actuation

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy WCAG 2.2 Success Criterion 2.5.4 Motion Actuation.

10.2.5.5 Void

10.2.5.6 Void

10.2.5.7 Dragging movements

Where ICT is, or includes, a non-web document
the non-web document shall satisfy the success criterion in Table 10.12.

Table 10.12: Non-web document success criterion: Dragging movements

All functionality that uses a dragging movement for operation can be achieved by a single pointer without dragging, unless dragging is essential or the functionality is determined by the user agent or other platform software and not modified by the author.
NOTE 1: This requirement applies to content that interprets pointer actions (i.e. this does not apply to actions that are required to operate the user agent or assistive technology). NOTE 2: Dragging movements for operation are less common in non-web documents. An example where a non-web document author could add dragging functionality is an interactive prototype document created in a software design tool. NOTE 3: This success criterion is identical to the WCAG 2.2 Success Criterion 2.5.7 Dragging Movements replacing "user agent" with "user agent or other platform software", "web content" with "content" in note 1, and adding note 2.

10.2.5.8 Target size (minimum)

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the success criterion in Table 10.13.

Table 10.13: Non-web document success criterion: Target size (minimum)

The size of the target for pointer inputs is at least 24 by 24 CSS pixels, except when: • **Spacing:** Undersized targets (those less than 24 by 24 CSS pixels) are positioned so that if a 24 CSS pixel diameter circle is centred on the bounding box of each, the circles do not intersect another target or the circle for another undersized target; • **Equivalent:** The function can be achieved through a different control in the same non-web document that meets this criterion; • **Inline:** The target is in a sentence or its size is otherwise constrained by the line-height of non-target text; • **User agent or other platform software control:** The size of the target is determined by the user agent or other platform software and is not modified by the author; • **Essential:** A particular presentation of the target is essential or is legally required for the information being conveyed.
NOTE 1: Targets that allow for values to be selected spatially based on position within the target are considered one target for the purpose of the success criterion. Examples include sliders, colour pickers displaying a gradient of colours, or editable areas where the cursor is positioned. NOTE 2: For inline targets the line-height should be interpreted as perpendicular to the flow of text. For example, in a language displayed vertically, the line-height would be horizontal. NOTE 3: In technologies where CSS is not used, the definition of 'CSS pixel' applies as described in Applying "CSS pixel" to Non-web documents and Non-web software in [i.25]. NOTE 4: Some document formats are designed for viewing at a wide range of zoom levels provided by the user agent. However, the commonly available user agents for these formats may lack a consistent base zoom level from which to evaluate this criterion. For such documents, evaluate target sizes at a zoom level that aligns with the intended usage of the content. NOTE 5: This success criterion is identical to the WCAG 2.2 Success Criterion 2.5.8 Target Size (Minimum) replacing "user agent" with "user agent or other platform software", replacing "on the same page" with "in the same non-web document", and adding notes 3 and 4.

10.3 Understandable

10.3.1 Readable

10.3.1.1 Language of non-web document

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the success criterion in Table 10.14.

Table 10.14: Non-web document success criterion: Language of non-web document

The default human language of each non-web document can be programmatically determined.
NOTE: This success criterion is identical to the WCAG 2.2 Success Criterion 3.1.1 Language of Page. replacing "web page" with "non-web document".

10.3.1.2 Language of parts

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the success criterion in Table 10.15.

Table 10.15: Non-web document success criterion: Language of parts

The human language of each passage or phrase in the non-web document can be programmatically determined except for proper names, technical terms, words of indeterminate language, and words or phrases that have become part of the vernacular of the immediately surrounding text.
NOTE 1: Examples of programmatic identification include language metadata or markup. There are some non-web document technologies where there is no assistive technology supported method for marking the language for the different passages or phrases in the document, and it would not be possible to satisfy this success criterion with those technologies.
NOTE 2: Inheritance is one common method. For example where the primary language of a non-web document is programmatically determinable, it can be assumed that all of the text or user interface elements within that document will be using the same language unless it is indicated.
NOTE 3: This success criterion is identical to the WCAG 2.2 Success Criterion 3.1.2 Language of Parts replacing "content" with "non-web document" and with the addition of notes 1 and 2 above.

10.3.2 Predictable

10.3.2.1 On focus

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 3.2.1 On Focus.

NOTE: Some compound documents and their user agents are designed to provide significantly different viewing and editing functionality depending upon what portion of the compound document is being interacted with (e.g. a presentation that contains an embedded spreadsheet, where the menus and toolbars of the user agent change depending upon whether the user is interacting with the presentation content, or the embedded spreadsheet content). If the user uses a mechanism other than putting focus on that portion of the compound document with which they mean to interact (e.g. by a menu choice or special keyboard gesture), any resulting change of context would not be subject to this success criterion because it was not caused by a change of focus.

10.3.2.2 On input

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 3.2.2 On Input.

10.3.2.3 Consistent navigation

Where ICT is, or includes, a non-web document within a set of non-web documents,
the non-web document shall satisfy the success criterion in Table 10.16.

Table 10.16: Non-web document success criterion: Consistent navigation

Navigational mechanisms that are repeated in multiple non-web documents within a set of non-web documents occur in the same relative order each time they are repeated, unless a change is initiated by the user.
NOTE 1: See set of non-web documents to determine when a group of documents is considered a set for this success criterion.
NOTE 2: Although not required by this success criterion, ensuring that navigation elements have consistent order when repeated within non-web documents directly addresses user needs identified in the WCAG 2 Intent section for this success criterion, and is generally considered best practice.
NOTE 3: This success criterion is identical to the WCAG 2.2 Success Criterion 3.2.3 Consistent Navigation replacing "on multiple pages" with "in multiple non-web documents" and "set of web pages" with "set of non-web documents" and adding notes 1 and 2.

10.3.2.4 Consistent identification

Where ICT is, or includes, a non-web document within a set of non-web documents,
the non-web document shall satisfy the success criterion in Table 10.17.

Table 10.17: Non-web document success criterion: Consistent identification

Components that have the same functionality within a set of non-web documents are identified consistently.
NOTE 1: See set of non-web documents to determine when a group of documents is considered a set for this success criterion. NOTE 2: Although not required by this success criterion, ensuring that component identification be consistent when they occur more than once within non-web documents directly addresses user needs identified in the Intent section for this success criterion, and is generally considered best practice. NOTE 3: This success criterion is identical to the WCAG 2.2 Success Criterion 3.2.4 Consistent Identification replacing "on multiple pages" with "in multiple non-web documents" and "set of web pages" with "set of non-web documents" and adding notes 1 and 2.

10.3.2.5 Void

10.3.2.6 Consistent help

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the success criterion in Table 10.18.

Table 10.18: Non-web document success criterion: Consistent Help

If a non-web document contains any of the following help mechanisms, and those mechanisms are repeated in multiple non-web documents within a set of non-web documents, they occur in the same order relative to other content, unless a change is initiated by the user: • Human contact details; • Human contact mechanism; • Self-help option; • A fully automated contact mechanism.
NOTE 1: Help mechanisms may be provided directly in the non-web document, or may be provided via a direct link to a different non-web document, software, or web page containing the information. NOTE 2: For this success criterion, "the same order relative to other content" can be thought of as how the content is ordered when the non-web document content is serialized. The visual position of a help mechanism is likely to be consistent across non-web documents for the same content layout variation (e.g. CSS break-point). The user can initiate a change, such as changing the non-web document's zoom or orientation, which may trigger a different content layout variation. This criterion is concerned with relative order across non-web documents displayed in the same content layout variation (e.g. same zoom level and orientation). NOTE 3: See the set of documents definition to determine when a group of documents is considered a set for this success criterion. NOTE 4: This success criterion is identical to the WCAG 2.2 Success Criterion 3.2.6 Consistent Help replacing "web page(s)" and "page(s)" with "non-web document(s)", "set of web pages" with "set of non-web documents", "page content" with "content", "on the page" with "in the non-web document", "page is serialized" with "non-web document content is serialized", "different page" with "different non-web document, software, or web page", and "page variation" with "content layout variation", and adding note 3.

10.3.3 Input assistance

10.3.3.1 Error identification

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 3.3.1 Error Identification.

10.3.3.2 Labels or instructions

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 3.3.2 Labels or Instructions.

10.3.3.3 Error suggestion

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the WCAG 2.2 Success Criterion 3.3.3 Error Suggestion.

10.3.3.4 Error prevention (legal, financial, data)

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the success criterion in Table 10.19.

Table 10.19: Non-web document success criterion: Error prevention (legal, financial, data)

For non-web documents that cause legal commitments or financial transactions for the user to occur, that modify or delete user-controllable data in data storage systems, or that submit user test responses, at least one of the following is true: 1) Reversible: Submissions are reversible. 2) Checked: Data entered by the user is checked for input errors and the user is provided an opportunity to correct them. 3) Confirmed: A mechanism is available for reviewing, confirming, and correcting information before finalizing the submission.
NOTE: This success criterion is identical to the WCAG 2.2 Success Criterion 3.3.4 Error Prevention (Legal, Financial, Data) replacing "web pages" with "non-web documents".

10.3.3.5 Void

10.3.3.6 Void

10.3.3.7 Redundant entry

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy WCAG 2.2 Success Criterion 3.3.7 Redundant Entry.

10.3.3.8 Accessible authentication (minimum)

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the success criterion in Table 10.20.

Table 10.20: Non-web document success criterion: Accessible authentication (minimum)

A cognitive function test (such as remembering a password or solving a puzzle) is not required for any step in an authentication process unless that step provides at least one of the following: • **Alternative:** Another authentication method that does not rely on a cognitive function test. • **Mechanism:** A mechanism is available to assist the user in completing the cognitive function test. • **Object Recognition:** The cognitive function test is to recognize objects. • **Personal Content:** The cognitive function test is to identify non-text content the user provided to a non-web document.
NOTE 1: "Object recognition" and "Personal content" may be represented by images, video, or audio. NOTE 2: Examples of mechanisms that satisfy this criterion include: 1) support for password entry by password managers to reduce memory need, and 2) copy and paste to reduce the cognitive burden of re-typing. NOTE 3: This success criterion is identical to the WCAG 2.2 Success Criterion 3.3.8 Accessible authentication (minimum) replacing "website" with "non-web document".

10.4 Robust

10.4.1 Compatible

10.4.1.1 Void

NOTE: Earlier versions of the present document referenced the 4.1.1 Parsing success criterion from WCAG 2.0 [i.41] and WCAG 2.1 [i.42]. In WCAG 2.2 [4], this criterion has been removed, because the accessibility problems it was intended to prevent "either no longer exist or are addressed by other criteria".

10.4.1.2 Name, role, value

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy the success criterion in Table 10.21.

Table 10.21: Non-web document success criterion: Name, role, value

For all user interface components (including but not limited to: form elements, links and components generated by scripts), the name and role can be programmatically determined; states, properties, and values that can be set by the user can be programmatically set; and notification of changes to these items is available to assistive technologies and accessibility features of underlying software.
NOTE 1: For non-web document formats that support interoperability with assistive technology, standard user interface components often satisfy this success criterion when used according to the general design and accessibility guidance for the document format. NOTE 2: This success criterion is identical to the WCAG 2.2 Success Criterion 4.1.2 Name, Role, Value replacing "user agents, including assistive technologies" with "assistive technologies and accessibility features of underlying software", removing the original WCAG 2.2 note because it is only applicable to software, and adding note 1.

10.4.1.3 Status messages

Where ICT is, or includes, a non-web document,
the non-web document shall satisfy WCAG 2.2 Success Criterion 4.1.3 Status Messages.

NOTE: For non-web document where status messages are not implemented using markup languages, there is still a user need to have status messages be programmatically exposed so that they can be presented to the user by assistive technologies without receiving focus. This is typically enabled through the use of accessibility services of the user agent or other platform software.

10.5 Subtitle positioning (recommendation)

Where ICT is, or includes, a non-web document, and contains synchronized media with subtitles,
the subtitles should not obscure relevant information in the synchronized media.

10.6 Audio description timing (recommendation)

Where ICT is, or includes, a non-web document, and the non-web document contains synchronized media with audio description,
the audio description should not interfere with relevant audio information in the synchronized media.

10.7 User preferences for non-web documents

Where ICT is, or includes, a non-web document,
the non-web document shall not block the user agents mode(s) of operation that present the document according to user preference settings, or explicitly override user preference settings for documented platform accessibility features in these modes of operation, unless this is essential to the information or function of the non-web document.

NOTE 1: Clause 12.3 specifies that accessibility features of the ICT are to be documented either as part of the ICT or in a separate documentation.

NOTE 2: In-a non web document viewing software that meets clause 11.7 there is at least one mode of operation where the non web document viewing software will enforce user preference settings.

NOTE 3: For non-web documents, the underlying platform is the user agent.

NOTE 4: This does not preclude the non-web document from specifying other values, but it does limit the use of instructions that explicitly override user settings (in a mode of operation that is meant to meet clause 11.7) to cases where this is essential.

NOTE 5: Features that might be documented as platform accessibility features include, but are not limited to colour filters, contrast, text size, pointer size, and text cursor.

11 Non-web software

11.0 General (informative)

This clause includes requirements for the following types of non-web software as scoped by the preconditions for each requirement:

- platform software;
- non-web software that provides a user interface including content that is in the software;
- non-web software that operates as assistive technology;
- mobile applications.

NOTE 1: User agents are examples of software that provide a user interface. They retrieve, render and facilitate end user interaction with authored content. User agents play a necessary role in the accessibility of authored content rendered in the user interface. W3C® Group None UAAG 2.0 [i.34] provides additional advice for those who are creating user agents and want to increase functionality when rendering authored content in an accessible way.

NOTE 2: The requirements for web content, including software that is web content, can be found in clause 9.

NOTE 3: When parts of non-web software, such as mobile apps, are implemented with web views, such a view is embedded in the app and thus does not meet the definition of web page. The clause 11 "Non-web software" requirements are the appropriate requirements to be applied to these web views. There are no circumstances in which clause 9 requirements and the corresponding clause 11 requirements are both applicable. Where there is any doubt, clause 11 requirements have precedence.

NOTE 4: The requirements for non-web documents, that may be presented by user agents, can be found in clause 10.

NOTE 5: Although the accessibility of command line interfaces is not dealt with in the present document, accessibility may be achieved by context specific requirements, some of which may be found in clauses 5 or 11.

NOTE 6: A non-web software satisfies a WCAG success criterion when the success criterion does not evaluate to false when applied to the non-web software. This implies that if the success criterion puts conditions on a specific feature and that specific feature does not occur in the non-web software, then the non-web software satisfies the success criterion.

EXAMPLE: For example, a non-web software that does not contain pre-recorded audio content in synchronized media will automatically satisfy WCAG success criterion 1.2.2 (captions - pre-recorded) and, in consequence, will also meet clause 11.1.2.2.

Requirements in clauses 11.1 to 11.5 apply to non-web software:

- that is not a web page;
- not embedded in web pages nor used in the rendering or functioning of the page.

Clause 9 provides requirements for software that is in web pages or that is embedded in web pages and that is used in the rendering or that is intended to be rendered together with the web page in which it is embedded.

Some requirements in clauses 11.1 to 11.5 have a pre-condition that indicates that they do not apply to closed functionality, so these requirements only apply to the open functionality of the ICT.

Requirements that do not have a closed functionality pre-condition apply to both the open and closed functionality of the ICT. The requirements under clause 5.1 apply to the closed functionality of the ICT.

For non-web software that has functionality that is closed and other functionality that is not closed, the requirements in clauses 11.1 to 11.5 will still need to be met for the functionality that is not closed.

The success criteria set out in clauses 11.1 to 11.5 are intended to harmonize with the W3C® Working Group Note [i.25] produced by the W3C's WCAG2ICT Task Force.

NOTE 7: Where the meaning of WCAG glossary terms when applied to non-web software is unclear, reference to the Glossary Items with Specific Guidance, in the W3C® Working Group Note [i.25], can help to clarify how they are to be understood.

NOTE 8: Non-web software that provides a user interface includes its own content. Some examples of content in non-web software include: the controls and text displayed in a menu bar of a graphical user interface application, images that appear in a toolbar, prompts spoken in an auditory user interface, other user interaction controls, and other text, graphics or material that is not loaded from outside the software.

NOTE 9: "Void" clauses have been inserted in order to maintain alignment of the numbering in clauses 9, 10 and 11.

11.1 Perceivable

11.1.1 Text alternatives

11.1.1.1 Non-text content

Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies, the functionality that is not closed shall satisfy WCAG 2.2 Success Criterion 1.1.1 Non-text content.

NOTE: CAPTCHAs do not currently appear outside of the Web. However, if they do appear, this guidance is accurate.

11.1.2 Time-based media

11.1.2.1 Audio-only and video-only (pre-recorded)

Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies, the functionality that is not closed shall satisfy the WCAG 2.2 Success Criterion 1.2.1 Audio-only and Video-only (Prerecorded).

NOTE: The alternative can be provided directly in the non-web software - or provided in an alternate version that satisfies the success criterion.

11.1.2.2 Subtitles (pre-recorded)

Where ICT is, or includes, non-web software that provides a user interface,
the non-web software shall satisfy the WCAG 2.2 Success Criterion 1.2.2 Captions (Prerecorded).

NOTE: The WCAG 2.2 definition of "captions" notes that "in some countries, captions are called subtitles". They are also sometimes referred to as "subtitles for the hearing impaired". Per the definition in WCAG 2, to satisfy this success criterion, whether called captions or subtitles, they would have to provide "synchronized visual and/or text alternative for both speech and non-speech audio information needed to understand the media content" where non-speech information includes "sound effects, music, laughter, speaker identification and location".

11.1.2.3 Audio description or media alternative (pre-recorded)

Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies,
the functionality that is not closed shall satisfy the WCAG 2.2 Success Criterion 1.2.3 Audio Description or Media Alternative (Prerecorded).

NOTE 1: Audio descriptions (also called "video descriptions", "descriptive narration", and "described videos") add descriptive information of important visual information needed to understand the video content, including text displayed in the video. Where the main audio track of the video fully describes important visual information, audio descriptions would not be needed at all as the requirement would already be met. When audio descriptions are needed, one way to implement them is by providing a second audio track for the audio-video media.

NOTE 2: This clause corresponds to a WCAG success criterion at level A. Another clause (clause 11.1.2.5) addresses the same user need, but is based on a WCAG success criterion at the higher AA level of accessibility. ICT that satisfies the higher level of accessibility required by clause 11.1.2.5 automatically satisfies this clause. Because of this, there is no need to test this clause if the ICT under test has passed a test for clause 11.1.2.5. But if it has failed clause 11.1.2.5, testing and meeting this clause is still meaningful, as it is better to pass this clause at level A, than to fail both.

11.1.2.4 Subtitles (live)

Where ICT is, or includes, non-web software that provides a user interface,
the non-web software shall satisfy the WCAG 2.2 Success Criterion 1.2.4 Captions (Live).

NOTE: The WCAG 2.2 definition of "captions" notes that "in some countries, captions are called subtitles". They are also sometimes referred to as "subtitles for the hearing impaired". Per the definition in WCAG 2, to satisfy this success criterion, whether called captions or subtitles, they would have to provide "synchronized visual and/or text alternative for both speech and non-speech audio information needed to understand the media content" where non-speech information includes "sound effects, music, laughter, speaker identification and location".

11.1.2.5 Audio description (pre-recorded)

Where ICT is, or includes, non-web software that provides a user interface,
the non-web software shall satisfy the WCAG 2.2 Success Criterion 1.2.5 Audio Description (Prerecorded).

NOTE: Audio descriptions (also called "video descriptions", "descriptive narration", and "described videos") add descriptive information of important visual information needed to understand the video content, including text displayed in the video. Where the main audio track of the video fully describes important visual information, audio descriptions would not be needed at all as the requirement would already be met. When audio descriptions are needed, one way to implement them is by providing a second audio track for the audio-video media.

11.1.3 Adaptable

11.1.3.1 Info and relationships

Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies,
the functionality that is not closed shall satisfy the WCAG 2.2 Success Criterion 1.3.1 Info and Relationships.

NOTE: In non-web software, programmatic determinability is best achieved through the use of accessibility services provided by platform software to enable interoperability between software and assistive technologies and accessibility features of software. (see clause 11.5 Interoperability with keyboards and assistive technology).

11.1.3.2 Meaningful sequence

Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies,
the functionality that is not closed shall satisfy the WCAG 2.2 Success Criterion 1.3.2 Meaningful Sequence.

11.1.3.3 Sensory characteristics

Where ICT is, or includes, non-web software that provides a user interface,
the non-web software shall satisfy the WCAG 2.2 Success Criterion 1.3.3 Sensory Characteristics.

11.1.3.4 Orientation

Where ICT is, or includes, non-web software that provides a user interface, and the non-web software is displayed on hardware that is designed to be reoriented in typical use,
the non-web software shall satisfy the WCAG 2.2 Success Criterion 1.3.4 Orientation.

NOTE: Non-web software that is only used on hardware that supports a single display orientation, or where it is an application that is run only on hardware that is physically fixed in one orientation (e.g. a digital building directory) is excluded by the precondition and therefore does not need to provide support for orientation changes.

EXAMPLES: Software that is excluded by the precondition:

- The software on a typical handheld calculator (one that typically would only be used in one orientation).
- Software that runs on wristwatches (where the software typically only runs in one orientation) (sleep mode being non-typical).
- Building directory software written to ONLY be used on tablet devices bolted to the wall, all in the same orientation.

11.1.3.5 Identify input purpose

Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies, and where the technology used supports attributes to identify the meaning of form input data,
the functionality that is not closed shall satisfy the WCAG 2.2 Success Criterion 1.3.5 Identify Input Purpose.

NOTE 1: Non-web software technologies that do not provide attributes that support identifying the expected meaning for the form input data are not in scope for this success criterion.

NOTE 2: For non-web software that present input fields, the terms for the input purposes would be the equivalent terms to those listed in the WCAG 2.2 section Input Purposes for User Interface Components that are supported by the technology used.

11.1.4 Distinguishable

11.1.4.1 Use of colour

Where ICT is, or includes, non-web software that provides a user interface,
the non-web software shall satisfy the WCAG 2.2 Success Criterion 1.4.1 Use of Color.

11.1.4.2 Audio control

Where ICT is, or includes, non-web software that provides a user interface,
the non-web software shall satisfy the success criterion in Table 11.1.

Table 11.1: Non-web software success criterion: Audio control

1.4.2 Audio Control: If any audio in the non-web software plays automatically for more than 3 seconds, either a mechanism is available to pause or stop the audio, or a mechanism is available to control audio volume independently from the overall system volume level.	
NOTE 1:	Since any content that does not meet this success criterion can interfere with a user's ability to use the whole non-web software, it would be necessary for all content in the non-web software (whether or not it is used to meet other success criteria) to meet this success criterion.
NOTE 2:	This success criterion is identical to the WCAG 2.2 Success Criterion 1.4.2 Audio Control replacing "on a web page" with "in the non-web software", "whole page" with "whole non-web software", "on the web page" with "in the non-web software", removing "See Conformance Requirement 5: Non Interference" and adjusting note 1 to avoid the use of the normative term "must".

11.1.4.3 Contrast (minimum)

Where ICT is, or includes, non-web software that provides a user interface,
the non-web software shall satisfy the WCAG 2.2 Success Criterion 1.4.3 Contrast (Minimum).

11.1.4.4 Resize text

Where ICT is, or includes, non-web software that provides a user interface, and is not closed to enlargement,
the non-web software shall satisfy the success criterion in Table 11.2.

Table 11.2: Non-web software success criterion: Resize Text

1.4.4 Resize Text: Except for captions and images of text, text can be resized without loss of content or functionality and without assistive technology either up to 200 percent or, if the platform provides text resizing capabilities but it does not reach 200 percent for all text, up to the text sizing capabilities of the platform.	
NOTE 1:	It is best practice to use only fonts that allow for scaling without loss of quality (e.g. pixelized presentation). This applies in particular to embedded fonts.
NOTE 2:	The Intent section in Understanding 1.4.4 Resize Text refers to the ability to allow users to enlarge the text on screen at least up to 200 percent without needing to use assistive technologies. This means that the non-web software provides some means for enlarging the text 200 percent (zoom or otherwise) without loss of content or functionality, or that the non-web software works with the platform features to satisfy this success criterion.
NOTE 3:	For non-web software, sometimes the platform provides text scaling to 200 percent for most, but not all text (e.g. headings, which are naturally large, may not be increased in size to 200 percent, but other text does increase to 200 percent). In such cases, authors would only need to support text scaling to the extent provided by user settings in the platform, without losing text size semantics, content or functionality, to satisfy this success criterion.
NOTE 4:	Best practice is for the smallest text have an x-height of at least 8 CSS px which corresponds to an x-height of 1,2 mm, at a viewing distance of 400mm, with no zooming or screen scaling. This is the smallest font size - not the recommended font size for body text which should be larger.
NOTE 5:	This requirement is based on WCAG 2.2 Success Criterion 1.4.4 Resize Text but has been modified to make it more relevant for non-web software where resizing capabilities may be partly limited in the platform software functionality.

11.1.4.5 Images of text

Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies,
the functionality that is not closed shall satisfy the WCAG 2.2 Success Criterion 1.4.5 Images of Text.

11.1.4.6 Void

11.1.4.7 Void

11.1.4.8 Void

11.1.4.9 Void

11.1.4.10 Reflow

Where ICT is, or includes, non-web software that provides a user interface, the non-web software shall satisfy the success criterion in Table 11.3.

Table 11.3: Non-web software success criterion: Reflow

Content can be presented without loss of information or functionality, and without requiring scrolling in two dimensions for: • Vertical scrolling content at a width equivalent to 320 CSS pixels; • Horizontal scrolling content at a height equivalent to 256 CSS pixels. Except for parts of the content which require two-dimensional layout for usage or meaning.
NOTE 1: 320 CSS pixels is equivalent to a starting viewport width of 1 280 CSS pixels wide at 400 percent zoom. For content which is designed to scroll horizontally (e.g. with vertical text), the 256 CSS pixels is equivalent to a starting viewport height of 1 024 px at 400 percent zoom.
NOTE 2: Examples of content which requires two-dimensional layout are images required for understanding (such as maps and diagrams), video, games, presentations, data tables (not individual cells), and interfaces where it is necessary to keep toolbars in view while manipulating content. It is acceptable to provide two-dimensional scrolling for such parts of the content.
NOTE 3: In technologies where CSS is not used, the definition of 'CSS pixel' applies as described in Applying "CSS pixel" to Non-web documents and Non-web software.
NOTE 4: The intent section refers to the ability for content to reflow (for vertical scrolling content at a width equivalent to 320 CSS pixels, or for horizontal scrolling content at a height equivalent to 256 CSS pixels) when user agent zooming is used to scale content or when the viewport changes in width. For non-web software, this means that when users scale content, adjust the size of a window, dialog, or other resizable content area, or change the screen resolution, the content will reflow without loss of information or functionality, and without requiring scrolling in two dimensions; or that the application works with platform features that meet this success criterion.
NOTE 5: Non-web software will have more frequent cases where two-dimensional layout is relied upon for usage or meaning than what occurs on the Web. For example: • When the non-web software has a complex user interface with toolbars that need to be visible while manipulating content, as explained in the Intent from Understanding 1.4.10 Reflow.
NOTE 6: As written, this success criterion can only be met by non-web documents or non-web software where the underlying user agent or platform software can present content at a width equivalent to 320 CSS pixels for vertical scrolling content and a height equivalent to 256 CSS pixels for horizontal scrolling content. When the underlying user agent or platform software does not support these dimensions for scrolling, reflow is encouraged as this capability is important to people with low vision. As a reasonable benchmark, evaluate at the nearest size to what the Reflow success criterion specifies. When users modify zoom, scaling, and/or display resolution at the platform software level (e.g. Operating System), it impacts the size of all applications and the platform software itself. This can result in improved readability in some applications but unwanted consequences in others.
NOTE 7: Some non-web software applications provide a mode of operation where reflow is possible, while other modes are unable to reflow. An example is a document authoring tool, which includes both a "print preview mode" (without reflow, for users to view the spatial formatting) and a "drafting view mode" where reflow is supported. Such software would satisfy this success criterion as long as there is no loss of information or functionality in the drafting view.
NOTE 8: This success criterion is identical to the WCAG 2.2 Success Criterion 1.4.10 Reflow replacing "web content" with "content" and adding notes 3 to 7.

11.1.4.11 Non-text contrast

Where ICT is, or includes, non-web software that provides a user interface, the non-web software shall satisfy WCAG 2.2 Success Criterion 1.4.11 Non-text Contrast.

NOTE: An example of appearance modification by the author is content that sets the visual style of a control, such as a colour or border, to differ from the default style for the user agent or platform.

11.1.4.12 Text spacing

Where ICT is, or includes, non-web software that provides a user interface, that is implemented using markup languages that allow users to modify text spacing properties,
the non-web software shall satisfy WCAG 2.2 Success Criterion 1.4.12 Text spacing.

NOTE 1: "Content implemented using markup languages" includes parts of software that use markup internally to define a user interface. Examples of markup languages that are used internally to define a software user interface include but are not limited to: HTML (e.g. in Electron applications or mobile software web views), XAML, XML (e.g. in mobile software application layouts), and XUL.

NOTE 2: There are several mechanisms that allow users to modify text spacing properties of content implemented in markup languages. For example, a software application may provide a "user style sheet" facility to modify the appearance of the software's own user interface. This success criterion does not mean that non-web software needs to implement their own mechanisms to allow users to set text spacing; however, when such a mechanism is available, the success criterion requires that content respond appropriately to it.

11.1.4.13 Content on hover or focus

Where ICT is, or includes, non-web software that provides a user interface, and any visual presentation of the additional content caused by a hover or focus is not controlled by the user agent or platform software, or that visual presentation is modified by the non-web software,
the non-web software shall satisfy the success criterion in Table 11.4.

Table 11.4: Non-web software success criterion: Content on Hover or Focus

Where receiving and then removing pointer hover or keyboard focus triggers additional content to become visible and then hidden, the following are true: • **Dismissible:** A mechanism is available to dismiss the additional content without moving pointer hover or keyboard focus, unless the additional content communicates an input error or does not obscure or replace other content; • **Hoverable:** If pointer hover can trigger the additional content, then the pointer can be moved over the additional content without the additional content disappearing; • **Persistent:** The additional content remains visible until the hover or focus trigger is removed, the user dismisses it, or its information is no longer valid. Exception: The visual presentation of the additional content is controlled by the user agent or other platform software and is not modified by the author.
NOTE 1: Examples of additional content controlled by the user agent or other platform software include tooltips created through the use of user interface object attributes. NOTE 2: Custom tooltips, sub-menus, and other nonmodal popups that display on hover and focus are examples of additional content covered by this criterion. NOTE 3: This criterion applies to content that appears in addition to the triggering component itself. Since hidden components that are made visible on keyboard focus (such as links used to skip to another part of a page) do not present additional content they are not covered by this criterion. NOTE 4: This success criterion is identical to the WCAG 2.2 Success Criterion 1.4.13 Content on Hover or Focus replacing "user agent" with "user agent or other platform software", "browser tooltips" with "tooltips", and "the HTML title attribute" with "user interface object attributes".

11.2 Operable

11.2.1 Keyboard accessible

11.2.1.1 Keyboard

Where ICT is, or includes, non-web software that can be run on a software platform that provides a device-independent keyboard interface service,
the non-web software shall satisfy the WCAG 2.2 Success Criterion 2.1.1 Keyboard in accordance with the Intent from Understanding Success Criterion 2.1.1.

NOTE 1: Keyboard interface does not refer to a physical device but to the service of platform software (e.g. operating system, browser, etc.) that provides software with keystrokes from any keyboard or keyboard substitute. When the non-web software supports such a device-independent service of the platform software, and the non-web software functionality is made fully operable through the service, then this success criterion would be satisfied.

NOTE 2: A "device-independent keyboard interface service" refers to the platform service that provides keystrokes to any software running on the platform.

NOTE 3: Inclusion of an on-screen keyboard can be done as well but does not satisfy this requirement since it does not allow for the use of keyboard alternatives whereas support of input from the device-independent keyboard interface service does.

NOTE 4: This success criterion does not imply that non-web software always needs to directly support a keyboard or "keyboard interface" if one is not provided by the platform software. But if one is provided, the software needs to make all functionality available through it - unless the exception applies.

NOTE 5: The success criterion also does not imply that software always needs to provide its own virtual keyboard. But if it does, then the non-web software still needs to support keyboard input from any keyboard interface provided by platform software.

11.2.1.2 No keyboard trap

Where ICT is, or includes, non-web software that provides a user interface, and that provides a keyboard or accepts input from a keyboard or keyboard interface,
the non-web software shall satisfy the success criterion in Table 11.5.

Table 11.5: Non-web software success criterion: No keyboard trap

If keyboard focus can be moved to a component of the non-web software using a keyboard interface, then focus can be moved away from that component using only a keyboard interface, and, if it requires more than unmodified arrow or tab keys or other standard exit methods, the user is advised of the method for moving focus away.	
NOTE 1:	Since any content that does not meet this success criterion can interfere with a user's ability to use the whole non-web software, it would be necessary for all content in the non-web software (whether or not it is used to meet other success criteria) to meet this success criterion.
NOTE 2:	Standard exit methods may vary by platform. For example, on many desktop platforms, the Escape key is a standard method for exiting.
NOTE 3:	This criterion applies when focus can be moved using a keyboard interface. Some software may accept input from a keyboard, keypad, or controller, yet not offer any mechanism for focus; for example, the keys are mapped directly to functions without moving focus between on-screen controls. In this case, there is no concept of focus, and therefore keyboard traps cannot exist and this success criterion would be satisfied.
NOTE 4:	This success criterion is identical to the WCAG 2.2 Success Criterion 2.1.2 No Keyboard Trap replacing "page" with "non-web software" and "on the web page" with "in the non-web software", removing "See Conformance Requirement 5: Non-Interference", adding notes 2 and 3, and adjusting note 1 to avoid the use of the normative term "must".

11.2.1.3 Void

11.2.1.4 Character key shortcuts

Where ICT is, or includes, non-web software that provides a user interface, and that provides a keyboard or accepts input from a keyboard or keyboard interface,
the non-web software shall satisfy WCAG 2.2 Success Criterion 2.1.4 Character Key Shortcuts.

NOTE: A long press of a key (2 seconds or more) and other accessibility features provided by the platform do not meet the WCAG definition of a keyboard shortcut. See the keyboard shortcut definition for more details.

11.2.2 Enough time

11.2.2.1 Timing adjustable

Where ICT is, or includes, non-web software that provides a user interface, the non-web software shall satisfy the success criterion in Table 11.6.

Table 11.6: Non-web software success criterion: Timing adjustable

For each time limit that is set by the non-web software, at least one of the following is true: • **Turn off:** The user is allowed to turn off the time limit before encountering it; or • **Adjust:** The user is allowed to adjust the time limit before encountering it over a wide range that is at least ten times the length of the default setting; or • **Extend:** The user is warned before time expires and given at least 20 seconds to extend the time limit with a simple action (for example, "press the space bar"), and the user is allowed to extend the time limit at least ten times; or • **Real-time Exception:** The time limit is a required part of a real-time event (for example, an auction), and no alternative to the time limit is possible; or • **Essential Exception:** The time limit is essential and extending it would invalidate the activity; or • **20 Hour Exception:** The time limit is longer than 20 hours.
NOTE 1: This success criterion helps ensure that users can complete tasks without unexpected changes in content or context that are a result of a time limit. This success criterion should be considered in conjunction with WCAG 2.2 Success Criterion 3.2.1 On Focus, which puts limits on changes of content or context as a result of user action. NOTE 2: This success criterion is identical to the WCAG 2.2 Success Criterion 2.2.1 Timing Adjustable replacing "the content" with "non-web software" and with the words "WCAG 2.2" added before the word "Success Criterion" in note 1 above.

11.2.2.2 Pause, stop, hide

Where ICT is, or includes, non-web software that provides a user interface, the non-web software shall satisfy the success criterion in Table 11.7.

Table 11.7: Non-web software success criterion: Pause, stop, hide

For moving, blinking, scrolling, or auto-updating information, all of the following are true: • **Moving, blinking, scrolling:** For any moving, blinking or scrolling information that (1) starts automatically, (2) lasts more than five seconds, and (3) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it unless the movement, blinking, or scrolling is part of an activity where it is essential; and • **Auto-updating:** For any auto-updating information that (1) starts automatically and (2) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it or to control the frequency of the update unless the auto-updating is part of an activity where it is essential.
NOTE 1: For requirements related to flickering or flashing content, refer to WCAG 2.2 Guideline 2.3. NOTE 2: Since any content that does not meet this success criterion can interfere with a user's ability to use the whole non-web software, it would be necessary for all content in the non-web software (whether or not it is used to meet other success criteria) to meet this success criterion. NOTE 3: Content that is updated periodically by software is not required to preserve or present information that is generated or received between the initiation of the pause and resuming presentation, as this may not be technically possible, and in many situations could be misleading to do so. NOTE 4: An animation that occurs as part of a preload phase or similar situation can be considered essential if interaction cannot occur during that phase for all users and if not indicating progress could confuse users or cause them to think that content was frozen or broken. NOTE 5: While the success criterion uses the term "information", the WCAG 2.2 Intent from Understanding Success Criterion 2.2.2 makes it clear that this is to be applied to all content. Any content, even if just decorative, that is updated automatically, blinks, or moves may create an accessibility barrier. NOTE 6: This success criterion is identical to the WCAG 2.2 Success Criterion 2.2.2 Pause, Stop, Hide replacing "page" and "on the web page" with "in the non-web software", removing "See Conformance Requirement 5: Non-Interference" in note 2 of the success criterion, with the words "WCAG 2.2" added before the word "Guideline" in note 1, adjusting note 2 to avoid the use of the normative term "must" and adding note 5.

11.2.3 Seizures and physical reactions

11.2.3.1 Three flashes or below threshold

Where ICT is, or includes, non-web software that provides a user interface,
the non-web software shall satisfy the success criterion in Table 11.8.

Table 11.8: Non-web software success criterion: Three flashes or below threshold

Non-web software does not contain anything that flashes more than three times in any one second period, or the flash is below the general flash and red flash thresholds.
NOTE 1: Since any content that does not meet this success criterion can interfere with a user's ability to use the whole non-web software, it would be necessary for all content in the non-web software (whether or not it is used to meet other success criteria) to meet this success criterion.
NOTE 2: This requirement applies to flashing of content on a screen and flashing of any other type caused by the ICT.
NOTE 3: This requirement applies to those visual elements produced by the ICT itself. Content from an external source that is presented through the ICT, is the responsibility of the source. The requirement does not require the ICT to examine or modify such externally supplied content in any way.
NOTE 4: This success criterion is identical to the WCAG 2.2 Success Criterion 2.3.1 Three Flashes or Below Threshold replacing "web pages do" with "non-web software does", " page" with " non-web software", and "on the web page" with "in the non-web software", removing "See Conformance Requirement 5: Non-Interference", adjusting note 1 to avoid the use of the normative term "must", and adding notes 2 and 3.

11.2.4 Navigable

11.2.4.1 Bypass blocks (Void)

Void.

NOTE 1: WCAG 2.2 Success Criterion 2.4.1 "Bypass blocks" does not apply to single non-web software programs, but to a specific definition of "sets of non-web software programs" that are extremely rare.

NOTE 2: Although not a requirement, it is generally considered best practice, and to address user needs, to be able to bypass blocks of content that are repeated within non-web software.

11.2.4.2 Non-web software titled

Where ICT is, or includes, non-web software that provides a user interface, implemented on a platform that supports "Title" attributes for windows or screens,
the non-web software shall provide titles that describe the name, topic or purpose of each window or screen.

11.2.4.3 Focus order

Where ICT is, or includes, non-web software that provides a user interface, and that provides a keyboard or accepts input from a keyboard or keyboard interface,
the non-web software shall satisfy the success criterion in Table 11.9.

Table 11.9: Non-web software success criterion: Focus order

If non-web software can be navigated sequentially and the navigation sequences affect meaning or operation, focusable components receive focus in an order that preserves meaning and operability.
NOTE: This success criterion is identical to the WCAG 2.2 Success Criterion 2.4.3 Focus Order replacing "web page" with "non-web software".

11.2.4.4 Link purpose (in context)

Where ICT is, or includes, non-web software that provides a user interface,
the non-web software shall satisfy WCAG 2.2 Success Criterion 2.4.4 Link Purpose (In Context).

NOTE: In non-web software, a "link" is any user interface control that behaves like a hypertext link.

11.2.4.5 Multiple ways (Void)

NOTE: WCAG 2.2 Success Criterion 2.4.5 "Multiple ways" applies to "Sets" of web pages. In non-web software, the equivalent to "sets of web pages" would be "sets of non-web software", but these are extremely rare and an equivalent is not included in this clause on non-web software requirements.

11.2.4.6 Headings and labels

Where ICT is, or includes, non-web software that provides a user interface,
the non-web software shall satisfy the WCAG 2.2 Success Criterion 2.4.6 Headings and Labels.

NOTE: In non-web software, headings and labels are used to describe sections of content and controls respectively. In some cases it may be unclear whether a piece of static text is a heading or a label. But whether treated as a label or a heading, the requirement is the same: that if they are present they describe the topic or purpose of the item(s) they are associated with.

11.2.4.7 Focus visible

Where ICT is, or includes, non-web software that provides a user interface, and that provides a keyboard or accepts input from a keyboard or keyboard interface,
the non-web software shall satisfy the WCAG 2.2 Success Criterion 2.4.7 Focus Visible.

11.2.4.8 Void

11.2.4.9 Void

11.2.4.10 Void

11.2.4.11 Focus not obscured (minimum)

Where ICT is, or includes, non-web software that provides a user interface, and that provides a keyboard or accepts input from a keyboard or keyboard interface,
the non-web software shall satisfy the WCAG 2.2 Success Criterion 2.4.11 Focus not obscured (minimum).

11.2.5 Input modalities

11.2.5.1 Pointer gestures

Where ICT is, or includes, non-web software that provides a user interface, and that provides a pointing mechanism or accepts input from pointing devices,
the non-web software shall satisfy the success criterion in Table 11.10.

Table 11.10: Non-web software success criterion: Pointer gestures

All functionality that uses multipoint or path-based gestures for operation can be operated with a single pointer without a path-based gesture, unless a multipoint or path-based gesture is essential.
NOTE 1: This requirement applies to non-web software that interprets pointer actions (i.e. this does not apply to actions that are required to operate the underlying platform software or assistive technology). NOTE 2: This requirement also applies to platform software, such as user agents, assistive technology software, and operating systems. Each layer is responsible for its own pointer actions only, not for those in an underlying layer. NOTE 3: This success criterion is identical to the WCAG 2.2 Success Criterion 2.5.1 Pointer Gestures, replacing "web content that interprets" with "non-web software that interprets" and "user agent" with "underlying platform software" in note 1, and adding note 2.

11.2.5.2 Pointer cancellation

Where ICT is, or includes, non-web software that provides a user interface, and that provides a pointing mechanism or accepts input from pointing devices,
the non-web software shall satisfy the success criterion in Table 11.11.

Table 11.11: Non-web software success criterion: Pointer cancellation

For functionality that can be operated using a single pointer, at least one of the following is true: • **No Down-Event:** The down-event of the pointer is not used to execute any part of the function. • **Abort or Undo:** Completion of the function is on the up-event, and a mechanism is available to abort the function before completion or to undo the function after completion. • **Up Reversal:** The up-event reverses any outcome of the preceding down-event. • **Essential:** Completing the function on the down-event is essential.
NOTE 1: Functions that emulate a keyboard or numeric keypad key press are considered essential. EXAMPLE: Examples of essential functionality for non-web software are features for meeting environmental energy usage requirements (like waking a device from sleep, power saver mode, and low power state). NOTE 2: This requirement applies to non-web software that interprets pointer actions (i.e. this does not apply to actions that are required to operate the underlying platform software or assistive technology). NOTE 3: This requirement also applies to platform software, such as user agents, assistive technology software, and operating systems. Each layer is responsible for its own pointer actions only, not for those in an underlying layer. NOTE 4: This success criterion is identical to the WCAG 2.2 Success Criterion 2.5.2 Pointer Cancellation replacing "web content that interprets" with "non-web software that interprets" and "user agent" with "underlying platform software" in note 2 and adding note 3.

11.2.5.3 Label in name

Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies, the functionality that is not closed shall satisfy WCAG 2.2 Success Criterion 2.5.3 Label in Name.

11.2.5.4 Motion actuation

Where ICT is, or includes, non-web software that provides a user interface, the non-web software shall satisfy WCAG 2.2 Success Criterion 2.5.4 Motion Actuation.

11.2.5.5 Void

11.2.5.6 Void

11.2.5.7 Dragging movements

Where ICT is, or includes, non-web software that provides a user interface, the non-web software shall satisfy the success criterion in Table 11.12.

Table 11.12: Non-web software success criterion: Dragging Movements

All functionality that uses a dragging movement for operation can be achieved by a single pointer without dragging, unless dragging is essential or the functionality is determined by the user agent or other platform software and not modified by the author.
NOTE 1: This requirement applies to software applications that interpret pointer actions (i.e. this does not apply to actions that are required to operate the underlying platform software or assistive technology). NOTE 2: This requirement also applies to platform software, such as user agents, assistive technology software, and operating systems. Each layer is responsible for its own pointer actions only, not for those in an underlying layer. NOTE 3: This success criterion is identical to the WCAG 2.2 Success Criterion 2.5.7 Dragging Movements, replacing "user agent" with "user agent or other platform software" in the success criterion, "web content that interprets" with "non-web software that interprets" and "user agent" with "underlying platform software" in note 1, and adding note 2.

11.2.5.8 Target size (minimum)

Where ICT is, or includes, non-web software that provides a user interface, the non-web software shall satisfy the success criterion in Table 11.13.

Table 11.13: Non-web software success criterion: Target size (minimum)

The size of the target for pointer inputs is at least 24 by 24 CSS pixels, except when: • **Spacing:** Undersized targets (those less than 24 by 24 CSS pixels) are positioned so that if a 24 CSS pixel diameter circle is centred on the bounding box of each, the circles do not intersect another target or the circle for another undersized target; • **Equivalent:** The function can be achieved through a different control in the same non-web software that meets this criterion; • **Inline:** The target is in a sentence or its size is otherwise constrained by the line-height of non-target text; • **User agent or other platform software control:** The size of the target is determined by the user agent or other platform software and is not modified by the author; • **Essential:** A particular presentation of the target is essential or is legally required for the information being conveyed.
NOTE 1: Targets that allow for values to be selected spatially based on position within the target are considered one target for the purpose of the success criterion. Examples include sliders, colour pickers displaying a gradient of colours, or editable areas where the cursor is positioned. NOTE 2: For inline targets the line-height should be interpreted as perpendicular to the flow of text. For example, in a language displayed vertically, the line-height would be horizontal. NOTE 3: In technologies where CSS is not used, the definition of 'CSS pixel' applies as described in Applying "CSS pixel" to Non-web documents and Non-web software. NOTE 4: This success criterion is identical to the WCAG 2.2 Success Criterion 2.5.8 Target Size (Minimum) replacing "user agent" with "user agent or other platform software", "on the same page" with "in the same non-web software", and adding note 3.

11.3 Understandable

11.3.1 Readable

11.3.1.1 Language of non-web software

Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies, the functionality that is not closed shall satisfy the success criterion in Table 11.14.

Table 11.14: Non-web software success criterion: Language of non-web software

The default human language of non-web software can be programmatically determined.
NOTE 1: Where software platforms provide a "locale / language" setting, applications that use that setting and render their interface in that "locale / language" would satisfy this success criterion. Applications that do not use the platform "locale / language" setting but instead use an accessibility-supported method for exposing the human language of the non-web software would also satisfy this success criterion. Applications implemented in technologies where assistive technologies cannot determine the human language and that do not support the platform "locale / language" setting may not be able to satisfy this success criterion in that locale / language. NOTE 2: This success criterion is identical to the WCAG 2.2 Success Criterion 3.1.1 Language of Page, replacing "each web page" with "non-web software" and with the addition of note 1 above.

11.3.1.2 Language of parts (Void)

NOTE: To apply WCAG 2.2 Success Criterion 3.1.2 "Language of parts" to non-web software would require the marking-up of all text in all locations within the non-web software. This would be impossible so an equivalent is not included in this clause on non-web software requirements.

11.3.2 Predictable

11.3.2.1 On focus

Where ICT is, or includes, non-web software that provides a user interface, the non-web software shall satisfy the WCAG 2.2 Success Criterion 3.2.1 On Focus.

NOTE: Some compound documents and their user agents are designed to provide significantly different viewing and editing functionality depending upon what portion of the compound document is being interacted with (e.g. a presentation that contains an embedded spreadsheet, where the menus and toolbars of the user agent change depending upon whether the user is interacting with the presentation content, or the embedded spreadsheet content). If the user uses a mechanism other than putting focus on that portion of the compound document with which they mean to interact (e.g. by a menu choice or special keyboard gesture), any resulting change of context would not be subject to this success criterion because it was not caused by a change of focus.

11.3.2.2 On input

Where ICT is, or includes, non-web software that provides a user interface,
the non-web software shall satisfy the WCAG 2.2 Success Criterion 3.2.2 On Input.

11.3.2.3 Consistent navigation (Void)

NOTE: WCAG 2.2 Success Criterion 3.2.3 "Consistent navigation" applies to "Sets" of web pages. While consistency within non-web software is desirable, "sets of non-web software" in the same sense as "sets of web pages", are extremely rare and an equivalent is not included in this clause on non-web software requirements.

11.3.2.4 Consistent identification

Where ICT is, or includes, non-web software that provides a user interface,
components that have the same functionality within the non-web software program shall be identified consistently, except where not doing so is essential to the function of the non-web software.

NOTE 1: Consistent does not mean identical, but that the characteristics of the identifiers (such as text and look) are as similar as practical to reflect the fact that they identify the same functionality.

NOTE 2: This requirement is based on WCAG 2.2 3.2.4 "Consistent identification", but replacing the scope from a "set of web pages" to "a non-web software program", in order to make it more relevant for non-web software.

11.3.2.5 Void

11.3.2.6 Consistent help (Void)

NOTE: WCAG 2.2 Success Criterion 3.2.6 for "Consistent help" applies to "Sets" of web pages. While consistency within non-web software is desirable, "sets of non-web software" in the same sense as "sets of web pages", are extremely rare and an equivalent is not included in this clause on non-web software requirements.

11.3.3 Input assistance

11.3.3.1 Error identification

Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies,
the functionality that is not closed shall satisfy the WCAG 2.2 Success Criterion 3.3.1 Error Identification.

11.3.3.2 Labels or instructions

Where ICT is, or includes, non-web software that provides a user interface,
the non-web software shall satisfy the WCAG 2.2 Success Criterion 3.3.2 Labels or Instructions.

11.3.3.3 Error suggestion

Where ICT is, or includes, non-web software that provides a user interface,
the non-web software shall satisfy the WCAG 2.2 Success Criterion 3.3.3 Error Suggestion.

11.3.3.4 Error prevention (legal, financial, data)

Where ICT is, or includes, non-web software that provides a user interface,
the non-web softwaree shall satisfy the success criterion in Table 11.15.

Table 11.15: Non-web software success criterion: Error prevention (legal, financial, data)

For non-web software that cause legal commitments or financial transactions for the user to occur, that modify or delete user-controllable data in data storage systems, or that submit user test responses, at least one of the following is true: 1) **Reversible:** Submissions are reversible. 2) **Checked:** Data entered by the user is checked for input errors and the user is provided an opportunity to correct them. 3) **Confirmed:** A mechanism is available for reviewing, confirming, and correcting information before finalizing the submission.
NOTE: This success criterion is identical to the WCAG 2.2 Success Criterion 3.3.4 Error Prevention (Legal, Financial, Data) replacing "web pages" with "non-web software".

11.3.3.5 Void

11.3.3.6 Void

11.3.3.7 Redundant entry

Where ICT is, or includes, non-web software that provides a user interface,
the non-web software shall satisfy WCAG 2.2 Success Criterion 3.3.7 Redundant Entry.

11.3.3.8 Accessible authentication (minimum)

Where ICT is, or includes, non-web software that provides a user interface,
the non-web software shall satisfy the success criterion in Table 11.16.

Table 11.16: Non-web software success criterion: Accessible authentication (minimum)

A cognitive function test (such as remembering a password or solving a puzzle) is not required for any step in an authentication process unless that step provides at least one of the following: • **Alternative:** Another authentication method that does not rely on a cognitive function test. • **Mechanism:** A mechanism is available to assist the user in completing the cognitive function test. • **Object Recognition:** The cognitive function test is to recognize objects. • **Personal Content:** The cognitive function test is to identify non-text content the user provided to a website, non-web document, or software.
NOTE 1: "Object recognition" and "Personal content" may be represented by images, video, or audio. NOTE 2: Examples of mechanisms that satisfy this criterion include: 1) support for password entry by password managers to reduce memory need; and 2) copy and paste to reduce the cognitive burden of re-typing. NOTE 3: Any passwords used to unlock underlying platform software (running below the non-web software) are out of scope for this requirement since these are not under control of the non-web software's author. NOTE 4: There are cases where non-web software has an authentication process and no alternative or assistance mechanism is feasible, for example when entering a password when starting, powering on / turning on an ICT (device or otherwise). In such situations, it may not be possible for the non-web software to meet this success criterion. NOTE 5: To achieve the same level of privacy for people with disabilities when entering pins or passwords, what is read aloud should be the same as what is shown. If the screen shows dots then what is read should be "dot, dot, dot". If the user chooses to show their password then it can be shown and read, which delivers equal privacy. NOTE 6: This success criterion is identical to the WCAG 2.2 Success Criterion 3.3.8 Accessible Authentication (Minimum) replacing "the website" with "a website, non-web document, or software" and adding notes 3 and 4.

11.4 Robust

11.4.1 Compatible

11.4.1.1 Void

NOTE: Earlier versions of the present document referenced the 4.1.1 Parsing success criterion from WCAG 2.0 [i.41] and WCAG 2.1 [i.42]. In WCAG 2.2 [4], this criterion has been removed, because the accessibility problems it was intended to prevent "either no longer exist or are addressed by other criteria".

11.4.1.2 Name, role, value

Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies,
the functionality that is not closed shall satisfy the success criterion in Table 11.17.

Table 11.17: Non-web software success criterion: Name, role, value

For all user interface components (including but not limited to: form elements, links and components generated by scripts), the name and role can be programmatically determined; states, properties, and values that can be set by the user can be programmatically set; and notification of changes to these items is available to assistive technologies and accessibility features of underlying software.
NOTE 1: This success criterion is primarily for software developers who develop or use custom user interface components. Standard user interface components on most accessibility-supported platforms already satisfy this success criterion when used according to specification. NOTE 2: For conforming to this success criterion, it is usually best practice for software user interfaces to use the accessibility services of platform software. These accessibility services enable interoperability between software user interfaces and both assistive technologies and accessibility features of software in standardized ways. Most platform accessibility services go beyond programmatic exposure of name and role, and programmatic setting of states, properties and values (and notification of same), and specify additional information that could or should be exposed and/or set (for instance, a list of the available actions for a given user interface component, and a means to programmatically execute one of the listed actions). NOTE 3: This success criterion is identical to the WCAG 2.2 Success Criterion 4.1.2 Name, Role, Value replacing "user agents, including assistive technologies" with "assistive technologies and accessibility features of underlying software", and replacing the original WCAG 2.2 note with: "This success criterion is primarily for software developers who develop or use custom user interface components. Standard user interface components on most accessibility-supported platforms already satisfy this success criterion when used according to specification.", and adding note 2.

11.4.1.3 Status messages

Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies, and the functionality that is not closed supports status message notifications,
status messages from the functionality that is not closed can be programmatically determined so that they can be presented to the user by assistive technologies without receiving focus.

NOTE 1: This clause is aligned with the Intent from Understanding Success Criterion 4.1.3. The WCAG success criterion is restricted to content implemented using markup languages, but the WCAG2ICT Task Force has concluded that even "where status messages are not implemented using markup languages, there is still a user need to have status messages be programmatically exposed so that they can be presented to the user by assistive technologies without receiving focus. This is typically enabled through the use of accessibility services of the user agent or platform software".

NOTE 2: The term "status messages" is defined in WCAG 2.2.

11.5 Interoperability with keyboards and assistive technology

11.5.1 Closed functionality (informative)

Some requirements in clauses 11.1 to 11.5 have a pre-condition that indicates that they do not apply to closed functionality, so these requirements only apply to the open functionality of the ICT.

Requirements that do not have a closed functionality pre-condition apply to both the open and closed functionality of the ICT. The requirements under clause 5.1 apply to the closed functionality of the ICT.

For non-web software that has functionality that is closed and other functionality that is not closed, the requirements in clause 11.1 to 11.5 will still need to be met for the functionality that is not closed.

11.5.2 Accessibility services

11.5.2.1 Platform interoperability with assistive technologies

Where ICT is, or includes, platform software,
the platform software shall provide a set of documented platform accessibility services that cover any user interface concept corresponding to clauses 11.5.2.5 to 11.5.2.17 supported within the platform software.

NOTE 1: Depending on the platform, the documented platform accessibility services addressed in this clause may be referred to by different names, such as accessibility services or accessibility API.

NOTE 2: Some platforms include services for user interface development that provide accessibility support by default (e.g. the service for creating a new user interface element provides role, state, boundary, name and description). These services are considered to be part of the services provided to meet this clause.

NOTE 3: To comply with this requirement, platform software can provide its own set of services or expose the services provided by its underlying platform layers, if those services meet this requirement.

NOTE 4: The definition of platform in clause 3.1 applies to software that provides services to other software, including but not limited to, operating systems, web browsers, virtual machines.

11.5.2.2 Void

NOTE: This clause from previous versions of EN 301 549 has been merged in with clause 11.5.2.1.

11.5.2.3 Use of accessibility services (recommendation)

Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies,
the functionality that is not closed should use the applicable documented platform accessibility services listed in clause 11.5.2.1. If the documented platform accessibility services do not allow the software to meet the applicable requirements of clauses 11.5.2.5 to 11.5.2.17, then the functionality that is not closed should use other documented platform services to interoperate with assistive technology.

NOTE: It is best practice to develop software using toolkits that automatically implement the underlying platform accessibility services.

11.5.2.4 Assistive technology

Where ICT is, or includes, non-web software that is assistive technology,
the assistive technology shall use the documented platform accessibility services corresponding to clauses 11.5.2.5 to 11.5.2.17.

NOTE: Assistive technology can also use other documented accessibility services.

11.5.2.5 Object information

Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies,
the functionality that is not closed shall, by using the services as described in clause 11.5.2.3, make the user interface elements' role, state(s), boundary, name, and description programmatically determinable by assistive technologies for all functionality that is not closed to programmatic access of information by assistive technologies.

NOTE: See clause 5 for requirements on functionality that is closed.

11.5.2.6 Row, column, and headers

Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies,
the functionality that is not closed shall, by using the services as described in clause 11.5.2.3, make the row and column of each cell in a data table, including headers of the row and column if present, programmatically determinable by assistive technologies for all functionality that is not closed to programmatic access of information by assistive technologies.

NOTE: See clause 5 for requirements on functionality that is closed.

11.5.2.7 Values

Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies, and there are user interface elements that can have values,
the functionality that is not closed shall, by using the services as described in clause 11.5.2.3, make the current value of a user interface element and any minimum or maximum values of the range, if the user interface element conveys information about a range of values, programmatically determinable by assistive technologies for all functionality that is not closed to programmatic access of information by assistive technologies.

NOTE: See clause 5 for requirements on functionality that is closed.

11.5.2.8 Label relationships

Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies, and there are user interface elements that are labels of other user interface elements,
the functionality that is not closed shall expose the relationship that a user interface element has as a label for another element, or of being labelled by another element, using the services as described in clause 11.5.2.3, so that this information is programmatically determinable by assistive technologies for all functionality that is not closed to programmatic access of information by assistive technologies.

NOTE: See clause 5 for requirements on functionality that is closed.

11.5.2.9 Parent-child relationships

Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies, and there are user interface elements that are parents of other user interface elements in a hierarchical structure,
the functionality that is not closed shall, by using the services as described in clause 11.5.2.3, make the relationship between a user interface element and any parent or children elements programmatically determinable by assistive technologies for all functionality that is not closed to programmatic access of information by assistive technologies.

NOTE: See clause 5 for requirements on functionality that is closed.

11.5.2.10 Text

Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies, and renders text to a screen,
the software shall, by using the services as described in clause 11.5.2.3, make the text contents, text attributes used or available for user generated content, and the boundary of text programmatically determinable by assistive technologies for all functionality that is not closed to programmatic access of information by assistive technologies.

NOTE 1: See clause 5 for requirements on functionality that is closed.

NOTE 2: Depending on the software, the attributes of text may include but are not limited to different visual features, such as size and colour, and style aspects such as boldness and underlining.

11.5.2.11 List of available actions

Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies,
the functionality that is not closed shall, by using the services as described in clause 11.5.2.3, make a list of available actions that can be executed on a user interface element, programmatically determinable by assistive technologies for all functionality that is not closed to programmatic access of information by assistive technologies.

NOTE: See clause 5 for requirements on functionality that is closed.

11.5.2.12 Execution of available actions

Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies, and there are user interface elements that have actions that can be executed by the user,
the functionality that is not closed shall, by using the services as described in clause 11.5.2.3, allow the programmatic execution of the actions exposed according to clause 11.5.2.11 by assistive technologies where permitted by security requirements for all functionality that is not closed to programmatic access of information by assistive technologies.

NOTE 1: See clause 5 for requirements on functionality that is closed.

NOTE 2: In some cases the security requirements imposed on a non-web software product may forbid external software from interfering with the ICT product and so this requirement would not apply. Examples of systems under strict security requirements are systems dealing with intelligence activities, cryptologic activities related to national security, command and control of military forces.

NOTE 3: Assistive technologies may be required to maintain the same level of security as the standard input mechanisms supported by the platform.

11.5.2.13 Tracking of focus and selection attributes

Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies,
the functionality that is not closed shall, by using the services as described in clause 11.5.2.3, make information and mechanisms necessary to track focus, text insertion point, and selection attributes of user interface elements programmatically determinable by assistive technologies for all functionality that is not closed to programmatic access of information by assistive technologies.

NOTE: See clause 5 for requirements on functionality that is closed.

11.5.2.14 Modification of focus and selection attributes

Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies, and there are user interface elements that can receive focus or that enable text editing,
the functionality that is not closed shall, by using the services as described in clause 11.5.2.3, allow assistive technologies to programmatically modify focus, text insertion point, and selection attributes of user interface elements where the user can modify these items where permitted by security requirements for all functionality that is not closed to programmatic access of information by assistive technologies.

NOTE 1: See clause 5 for requirements on functionality that is closed.

NOTE 2: In some cases the security requirements imposed on a non-web software product may forbid external software from interfering with the ICT product and so this requirement would not apply. Examples of systems under strict security requirements are systems dealing with intelligence activities, cryptologic activities related to national security, command and control of military forces.

NOTE 3: Assistive technologies may be required to maintain the same level of security as the standard input mechanisms supported by the platform.

11.5.2.15 Change notification

Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies,
the functionality that is not closed shall, by using the services as described in clause 11.5.2.3, notify assistive technologies about changes in those programmatically determinable attributes of user interface elements that are referenced in requirements 11.5.2.5 to 11.5.2.11 and 11.5.2.13, for all functionality that is not closed to programmatic access of information by assistive technologies.

NOTE: See clause 5 for requirements on functionality that is closed.

11.5.2.16 Modifications of states and properties

Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies, and there are user interface elements whose state or properties can be modified by a user without the use of assistive technology,
the functionality that is not closed shall, by using the services as described in clause 11.5.2.3, allow assistive technologies to programmatically modify states and properties of user interface elements, where the user can modify these items where permitted by security requirements for all functionality that is not closed to programmatic access of information by assistive technologies.

NOTE 1: See clause 5 for requirements on functionality that is closed.

NOTE 2: In some cases the security requirements imposed on a non-web software product may forbid external software from interfering with the ICT product and so this requirement would not apply. Examples of systems under strict security requirements are systems dealing with intelligence activities, cryptologic activities related to national security, command and control of military forces.

NOTE 3: Assistive technologies may be required to maintain the same level of security as the standard input mechanisms supported by the platform.

11.5.2.17 Modifications of values and text

Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies, and there are user interface elements whose values or text can be modified by a user without the use of assistive technology,
the functionality that is not closed shall, by using the services as described in clause 11.5.2.3, allow assistive technologies to modify values and text of user interface elements using the input methods of the platform, where a user can modify these items without the use of assistive technology where permitted by security requirements for all functionality that is not closed to programmatic access of information by assistive technologies.

NOTE 1: See clause 5 for requirements on functionality that is closed.

NOTE 2: In some cases the security requirements imposed on a non-web software product may forbid external software from interfering with the ICT product and so this requirement would not apply. Examples of systems under strict security requirements are systems dealing with intelligence activities, cryptologic activities related to national security, command and control of military forces.

NOTE 3: Assistive technologies may be required to maintain the same level of security as the standard input mechanisms supported by the platform.

11.6 Documented accessibility features

11.6.1 User control of accessibility features

Where ICT is, or includes, platform software,
the platform software shall provide sufficient modes of operation for user control over documented platform accessibility features.

NOTE: Clause 12.3 specifies that accessibility features of the ICT are to be documented either as part of the ICT or in a separate documentation.

11.6.2 No disruption of accessibility features

Where ICT is, or includes, non-web software,
the non-web software shall not disrupt documented platform accessibility features except when requested to do so by the user during the operation of the software.

NOTE: Clause 12.3 specifies that accessibility features of the ICT are to be documented either as part of the ICT or in a separate documentation.

11.7 User preferences

Where ICT is, or includes, non-web software that provides a user interface, and is not designed to be isolated from its platform,
that user interface shall follow the values of the user preference settings for documented platform accessibility features unless it is essential to the function of the non-web software to not follow a user preference settings.

NOTE 1: Clause 12.3 specifies that accessibility features of the ICT are to be documented either as part of the ICT or in a separate documentation.

NOTE 2: Non-web software that is isolated from its underlying platform has no access to user settings in the platform and thus cannot adhere to them.

NOTE 3: For non-web software, the underlying platform is usually the operating system.

NOTE 4: When ICT is a user agent (such as a web browser or non-web document viewing software), this clause implies that at least one mode of operation is offered that enforces a rendering of the content that follows the values of the user preferences.

NOTE 5: This does not preclude the non-web software from having additional values for a setting as long as there is one mode where the application will follow the system settings even if more restricted.

NOTE 6: Features that might be documented as accessibility features for a platform include, but are not limited to colour filters, contrast, text size, pointer size, and text cursor.

12 Information about products and services

12.1 Accessible information about products

Where ICT is, or includes, information about a product, made available in a digital form,
the presentation of the information shall conform to the requirements of clause 9 if it is available in a web format, clause 10 if it is available as a non-web document, and clause 11 if it is available as part of non-web software.

12.2 Accessible information about services

Where ICT is, or includes, information about a service, made available in a digital form,
the presentation of the information shall conform to the requirements of clause 9 if it is available in a web format, clause 10 if it is available as a non-web document, and clause 11 if it is available as part of non-web software.

NOTE: The term service in the precondition of this requirement includes support services.

12.3 Accessibility and compatibility features

Where ICT has documentation about the use of the ICT on the ICT or there is an official webpage that provides documentation about the use of the ICT,
this documentation about the use of the ICT on the ICT shall include directly or via a link to a web page that, directly or via further links, provides information on the accessibility features of the ICT, how to use the features, and how to get support for accessibility features.

NOTE 1: One mechanism for doing this is to provide a simple URL phrase in the footer of on any documentation, for example "Accessibility info at www.vendor.com/accessibility".

NOTE 2: The term "official web page" means any page provided by the vendor of the ICT and is used to distinguish a webpage from the vendor of the ICT from any other pages that might exist from 3rd parties about the ICT. The precondition for the existence of at least one web page from the vendor of the ICT is to prevent a product vendor who does not have any website from having to create a website just to meet this requirement.

NOTE 3: "On the ICT" is referring to documentation that is either physically on the ICT itself or that is made available through the use of the ICT.

12.4 Electronic program guides

Where ICT is an Electronic Programme Guide (EPG),
the EPG shall provide information on the availability of subtitles, audio description, spoken subtitles, and sign language interpretation of the media.

NOTE: Best practice is to include information about all accessibility features as they are developed and standard formats for including information are developed.

12.5 Electronic program guide display

Where ICT displays an Electronic Programme Guide (EPG) presenting media item(s), and information is available about the availability of subtitles, audio description, spoken subtitles, or sign language interpretation for the media item(s),
the ICT shall provide a mode of operation in which the availability of subtitles, audio description, spoken subtitles, sign language can be determined without activating the media item(s).

NOTE 1: The information about which accessibility features are available is needed when users are assessing which programs will be accessible to them. They will need this information to be available to them when they are viewing or scrolling through the EPG.

NOTE 2: Best practice is to display information about all accessibility features as they are developed.

13 ICT providing relay or emergency service access

13.1 Relay services requirements

13.1.1 General (informative)

Relay services enable users with speech or hearing disabilities to communicate with other users of services providing real-time bidirectional voice. The relay services convert communication modalities, allowing each user to communicate in their preferred way, using human assistance or automated translation or hybrids between these forms. Relay services also support users with cognitive and memory disabilities.

Users who use relay services because of a disability are here called "primary users", while others involved are called "secondary users".

If a primary user needs to communicate using media not supported by the secondary user's system, the primary user makes use of a system that offers that media. For instance, a sign language user communicating with a voice-only user might connect via a relay service handling sign language in video.

Even if it is unusual in practice, relay services can be interconnected to facilitate communication between primary users who cannot directly communicate. For example, a hard of hearing person using a text relay service can communicate with a deaf sign language user via a video relay service by connecting their respective services by voice.

Clause 13.1.2 of the present document addresses invocation and connection, while clause 13.1.3 of the present document addresses the media transmission and modality conversion, also including media transmission and relay service use in some special contexts.

The types of possible relay services include, but are not limited to the following types, which are more completely described in ETSI ES 202 975 [i.6]:

a) Text relay services which provide conversion between real-time text and voice. Text relay services can be divided in the following three subtypes regarding their mediation directions:

   - Bidirectional text relay service, which converts between speech and real-time text in both directions with the primary user both reading and sending text.
   - Text relay service with voice through. which convert speech towards the primary user to text and let speech through from the primary user.
   - Text relay service with hearing through, which convert text from the primary user to speech, and let speech through to the primary user.

b) Captioned telephony services which convert speech to real-time text towards the primary user while letting voice through in both directions.

c) Video relay services which convert between sign language in video to and from primary users and spoken language from and to secondary users.

d) Speech-to-speech relay services which convert between unclear speech from the primary user to clear speech to the secondary users, also letting speech through in both directions.

e) Lipspeaking relay services which convert from speech in a voice channel to lipspeaking in a video channel towards the primary user and let voice through in both directions.

f) Cognitive support services which provide support for memory and other cognitive functions in the voice channel in the direction towards the primary user and let voice through in both directions.

For detailed guidelines on how to develop and implement relay service, it is best practice to meet the applicable relay service requirements of ETSI ES 202 975 [i.6].

Relay service access is also essential in emergency communication cases. These aspects are elaborated in ETSI EN 303 919 [i.56].

The general accessibility requirements contained in the clauses 13.1.2 and 13.1.3 of the present document are based on the functional architecture and invocation of relay services described in ETSI ES 202 975 [i.6].

13.1.2 Relay service access

13.1.2.1 General remarks on access to relay services (informative)

To ensure that the primary users of the relay service have equivalent access to electronic communication, they need to have free choice of communicating with or without the support of relay services. For instance, primary users with hearing impairments who use an ICT communication system that includes alternatives to voice communication such as RTT or total conversation, and where these media are also used by the secondary users, should, if desired, be able to contact the secondary users using a common communication channel, without involvement of the relay services.

Clause 13.1.2 of the present document provides requirements for providing the access to relay services for the primary users that ensures their equivalent access to the communication services.

13.1.2.2 Use of the primary user destination address in relayed communications

Where ICT is intended to support relay service inclusion in communication, and is, or includes, relay service invocation functions,
the relay service invocation functions shall use destination addresses given to the primary users by their communication systems.

NOTE: For more details see clause 6.3 in ETSI ES 202 975 [i.6].

13.1.2.3 Conveying of caller identifier in relayed communications for primary relay users

Where ICT is intended to support relay service inclusion in communication, and is, or includes, relay service invocation functions,
the ICT shall convey the caller identifiers of primary users of relay services in their communication establishments to secondary users, unless the calling user equipment is set to anonymous communication mode.

NOTE: For more details see clause 6.3 in ETSI ES 202 975 [i.6].

13.1.2.4 Relay service invocation decision in outgoing communications

Where ICT is intended to support relay service inclusion in communication, and is, or includes, relay service invocation functions,
the ICT shall provide features that enable the primary user to decide by user action at the moment of initiating an outgoing communication if a relay service will be invoked in the communication or not.

NOTE: It is also good practice to provide automatic decision support and settings to tune the decision support to user needs.

13.1.2.5 Relay service invocation decision in incoming communications

Where ICT is intended to support relay service inclusion in communication, and is, or includes, relay service invocation functions,
the ICT shall provide features that enable the primary user to decide by user action at the moment of receiving an incoming communication if a relay service will be invoked in the communication or not.

NOTE: It is also good practice to provide automatic decision support and settings to tune the decision support to user needs.

13.1.2.6 Relay service support requested by the primary user for emergency communications

Where ICT is intended to support relay service inclusion in communication, and is, or includes, relay service invocation functions,
the ICT shall initiate and perform emergency communications on the request by the primary user and invoke relay service.

NOTE: The relay service invocation functions are expected to allow invocations of PSAPs in a three-party fashion and perform the relaying action in the ways specified in ETSI ES 202 975 [i.6], clauses 6.5.1.

13.1.3 Relay service requirements

13.1.3.1 Relaying action in real-time bidirectional voice communication

Where ICT is, or includes, a relay service,
the relay service shall allow primary users to participate in speech communication with secondary users by performing modality conversion or communication support functions according to the type and mode of operation of the relay service.

13.1.3.2 Media handling in relay service communication

Where ICT is intended to support relay service inclusion in communication, and is, or includes, relay service invocation functions,
the relay service invocation functions shall allow passing-through media not involved in the conversion but enabled by the communication clients of the primary and secondary users.

NOTE: Best practice is to allow the user to specify if they want the media being converted to also be passed on to the other user in addition to the conversion of its modality.

13.1.3.3 Relay service support in ICT based conferences

Where ICT is, or includes, a relay service,
the ICT shall support participation of primary users in conferences.

NOTE 1: The extra modality conversions required by each user may be conveyed via the conference system or directly between the relay service and the user of the relay service.

NOTE 2: In order for the relay service to have the best information to successfully convey the conference voice communications the relay service should not only be able to hear the voice channel of the conference but also view all contents of the conference.

NOTE 3: Access to conferences is commonly provided via web or app interface.

13.1.3.4 Relay service support during emergency communications initiated by the PSAP

Where ICT is, or includes, a relay service,
the relay service shall accept invocations by emergency communication PSAPs.

NOTE: The relay service is expected to allow invocations by PSAPs in a three-party fashion and perform the relaying action in the ways specified in ETSI EN 303 919 [i.56], clauses 9 and 10.

13.2 Void

NOTE: The previous topic "Access to relay services" is now addressed throughout clause 13.1 of the present document.

13.3 Access to emergency services (informative)

The present document addresses the accessibility of emergency communication by means of the emergency communication-specific scenarios of clauses 6.0.6 to 6.0.9 and by specific references to emergency communication in some of the clause C.6 conformance tests of the accessibility requirements.

14 Conformance

14.1 Achieving conformance (informative)

Conformance to the present document is achieved by meeting all the applicable requirements. Requirements are clauses containing the word "shall". Applicable requirements are requirements whose preconditions are true for an ICT. Those clauses containing the word "should" are recommendations and are not required for conformance.

All clauses containing requirements are self-scoping. This means they are introduced with the phrase 'Where ICT <pre condition>'. When one of the preconditions is false, the ICT is not within the scope of the requirement and the ICT does not need to comply with the text of the requirement in order to conform to the present document. If all of the preconditions are true for the ICT, then the requirement applies to that ICT.

Annex C provides tests that are considered sufficient for testing the ICT for conformance to each requirement. These tests are sufficient but other testing approaches can be used if justified. Annex C tests are structured to provide 4 possible results: Pass, Fail, Not applicable (the ICT is not in the scope of requirement), and Test assumptions are not met (not True) so this testing approach is not valid and another means of testing would need to be used.

ICT is often composed of an assembly of two or more items of ICT. In some cases, two or more interoperable items of ICT may together meet more requirements of the standard when one item complements the functionality of the other and the sum together meets more of the accessibility requirements. However, combining two items of ICT, both of which fail to meet any particular requirement, will not lead to a combined ICT system that meets that requirement.

The present document does not prioritize requirements.

NOTE 1: Conformance with the accessibility requirements could be affected by subsequent implementation or maintenance.

NOTE 2: Sampling is frequently required on complex ICT when there are too many instances of the object to be tested. The present document cannot recommend specific ICT evaluation sampling techniques as these are context specific.

NOTE 3: If websites or other ICT incorporate an add-on, overlay, or other as part of their pages or other ICT, then those additions become part of the ICT and it is this combination that is evaluated to see if it meets all the applicable requirements in the present document as they are written.

14.2 Special states

The inherent nature of certain situations makes it impossible to make reliable and definitive statements that accessibility requirements have been met. The requirements in the present document do not apply in the following situations:

a) when the product is in a failure, repair or professional maintenance state where the ordinary set of input or output functions are not available;

b) during those parts of start-up, shutdown, and other state transitions that can be completed without user interaction.

NOTE 1: Even in the above situations, it is best practice to apply requirements in the present document wherever it is feasible and safe to do so.

NOTE 2: Although devices are felt to not be under control during these periods, best practice is to still avoid and flashing or other behaviours that could affect users health or well being.

14.3 One mode

The requirements of the present document shall be considered met if all of the following are true:

a) they are satisfied in at least one mode of operation that provides all the same information and functionality; and

b) that mode can be reached through a path that fully meets the requirements of the present document; and

c) that mode is the default mode if either:

- the requirement is a safety or security requirement; or
- the requirement is an Assistive Technology non-interference requirement and the ICT is implemented in a way that not meeting the requirement could interfere with one or more types of assistive technology's ability to allow the user to choose the accessible mode.

NOTE 1: The safety and security requirements of the present document are:

4.2.9 Minimize photosensitive seizure triggers

4.2.11 Privacy

5.1.3.8 Masked entry

5.1.3.9 Private access to personal data

5.1.3.13 Volume reset

9.2.3.1, 10.2.3.1, 11.2.3.1 Three Flashes or below threshold

The Assistive Technology non-interference requirements of the present document are:

5.1.3.5 Speech output automatic interruption

5.1.3.10 Non-interfering audio output

5.1.6.2 Input focus

5.2 Activation of accessibility features

9.2.1.2, 10.2.1.2, & 11.2.1.2 No keyboard trap

9.2.2.2, 10.2.2.2, & 11.2.2.2 Pause, stop, hide

11.5.2.1 Platform interoperability with assistive technologies

11.6.1 User control of accessibility features

11.6.2 No disruption of accessibility features

13.1.3 Relay service requirements (all)

NOTE 2: The greatest accessibility is achieved if the mode of operation that conforms to the present document is the default mode, though this may not always be possible.

Annex A (informative): ICT conformance evaluation

A.1 Conformance with Directive (EU) 2016/2102 on the accessibility of the websites and mobile applications of public sector bodies

The present document has been prepared under the Commission's standardisation request C(2017)2585 final [i.26] to provide one voluntary means of conforming to the essential requirements of Directive (EU) 2016/2102 on the accessibility of the websites and mobile applications of public sector bodies [i.27].

Once the present document is cited in the Official Journal of the European Union under that Directive, conformance with the normative clauses of the present document given in Tables ZA.1 and ZA.2 (in Annex ZA) confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding essential requirements of that Directive and associated EFTA regulations.

Tables ZA.1 and ZA.2 can be used to evaluate whether a specific website or mobile application conforms with the requirements of Directive (EU) 2016/2102 [i.27].

NOTE: Annex ZA describes how the standard relates to the European Web Accessibility Directive. Apart from the minimum requirements in clauses 9 (for web content), 11 (for mobile applications) and 10 (for both), some of the requirements in clauses 5, 6, 7 and 12 can also be relevant to fulfil the Directive in specific situations. The tables in Annex ZA show which requirements are relevant.

A.2 Conformance with Directive (EU) 2019/882 on the accessibility requirements of products and services

A.2.0 The meaning of conformance with Directive (EU) 2019/882

The present document has been prepared under the Commission's standardisation request C(2022) 6456 final [i.28] to provide one voluntary means of conforming to the essential requirements of Directive (EU) 2019/882 on the accessibility requirements of products and services [i.29].

Once the present document is cited in the Official Journal of the European Union under that Directive, conformance with the normative clauses of the present document given in Tables A.1 to A.5 confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding essential requirements of that Directive and associated EFTA regulations.

Important:

Each of the clauses in clause A.2 shall be considered, **in sequential order**, to see whether the condition that is stated in the clause title, and in the introduction to the table within that clause, is applicable to the ICT being evaluated.

Where the condition stated in the clause title applies to the ICT being evaluated, then all of the requirements in the table within that clause shall be assessed to see if they apply to the ICT under evaluation. Table A.5 is applicable to all ICT.

When using the tables, each requirement shall be assessed using the test stated in the assessment column if the condition that appears in the "Condition" column applies to the ICT under evaluation.

Key to Tables A.1 to A.N columns:

Clause: The clause number that uniquely identifies a requirement.

Requirement: The title of the requirement

Condition: For conditional requirements this column describes the condition that has to be met for conformance with the clause to be a requirement.

Assessment: Indicates the clause of the present document that contains the relevant assessment method.

Presumption of conformity stays valid only as long as a reference to the present document is maintained in the list published in the Official Journal of the European Union. Users of the present document should consult frequently the latest list published in the Official Journal of the European Union.

Other Union legislation may be applicable to the product(s) falling within the scope of the present document.

A.2.1 Where the ICT is, or includes, a web page

Requirements in clause A.2.1 apply to ICT that is, or includes, a web page (as defined in clause 3.1) or web app including. If the ICT is not, and does not include a web page or web app, then disregard Table A.1 and consider each subsequent clause instead, beginning with clause A.2.2.

Table A.1: Where the ICT is, or includes, a web page

Clause	Requirement	Condition	Assessment
9.1.1.1	Non-text content	Where ICT is, or includes, a web page	C.9.1.1.1
9.1.2.1	Audio-only and video-only (pre-recorded)	Where ICT is, or includes, a web page	C.9.1.2.1
9.1.2.2	Subtitles (pre-recorded)	Where ICT is, or includes, a web page	C.9.1.2.2
9.1.2.3	Audio description or media alternative (pre-recorded)	Where ICT is, or includes, a web page	C.9.1.2.3
9.1.2.4	Subtitles (live)	Where ICT is, or includes, a web page	C.9.1.2.4
9.1.2.5	Audio description (pre-recorded)	Where ICT is, or includes, a web page	C.9.1.2.5
9.1.3.1	Info and relationships	Where ICT is, or includes, a web page	C.9.1.3.1
9.1.3.2	Meaningful sequence	Where ICT is, or includes, a web page	C.9.1.3.2
9.1.3.3	Sensory characteristics	Where ICT is, or includes, a web page	C.9.1.3.3
9.1.3.4	Orientation	Where ICT is, or includes, a web page	C.9.1.3.4
9.1.3.5	Identify input purpose	Where ICT is, or includes, a web page	C.9.1.3.5
9.1.4.1	Use of colour	Where ICT is, or includes, a web page	C.9.1.4.1
9.1.4.2	Audio control	Where ICT is, or includes, a web page	C.9.1.4.2
9.1.4.3	Contrast (minimum)	Where ICT is, or includes, a web page	C.9.1.4.3
9.1.4.4	Resize text	Where ICT is, or includes, a web page	C.9.1.4.4
9.1.4.5	Images of text	Where ICT is, or includes, a web page	C.9.1.4.5
9.1.4.10	Reflow	Where ICT is, or includes, a web page	C.9.1.4.10
9.1.4.11	Non-text contrast	Where ICT is, or includes, a web page	C.9.1.4.11
9.1.4.12	Text spacing	Where ICT is, or includes, a web page	C.9.1.4.12
9.1.4.13	Content on hover or focus	Where ICT is, or includes, a web page	C.9.1.4.13
9.2.1.1	Keyboard	Where ICT is, or includes, a web page	C.9.2.1.1
9.2.1.2	No keyboard trap	Where ICT is, or includes, a web page	C.9.2.1.2
9.2.1.4	Character key shortcuts	Where ICT is, or includes, a web page	C.9.2.1.4
9.2.2.1	Timing adjustable	Where ICT is, or includes, a web page	C.9.2.2.1
9.2.2.2	Pause, stop, hide	Where ICT is, or includes, a web page	C.9.2.2.2
9.2.3.1	Three flashes or below threshold	Where ICT is, or includes, a web page	C.9.2.3.1
9.2.4.1	Bypass blocks	Where ICT is, or includes, a web page	C.9.2.4.1
9.2.4.2	Page titled	Where ICT is, or includes, a web page	C.9.2.4.2
9.2.4.3	Focus order	Where ICT is, or includes, a web page	C.9.2.4.3
9.2.4.4	Link purpose (in context)	Where ICT is, or includes, a web page	C.9.2.4.4
9.2.4.5	Multiple ways	Where ICT is, or includes, a web page	C.9.2.4.5
9.2.4.6	Headings and labels	Where ICT is, or includes, a web page	C.9.2.4.6
9.2.4.7	Focus visible	Where ICT is, or includes, a web page	C.9.2.4.7
9.2.4.11	Focus not obscured (minimum)	Where ICT is, or includes, a web page	C.9.2.4.11
9.2.5.1	Pointer gestures	Where ICT is, or includes, a web page	C.9.2.5.1
9.2.5.2	Pointer cancellation	Where ICT is, or includes, a web page	C.9.2.5.2
9.2.5.3	Label in name	Where ICT is, or includes, a web page	C.9.2.5.3
9.2.5.4	Motion actuation	Where ICT is, or includes, a web page	C.9.2.5.4
9.2.5.7	Dragging movements	Where ICT is, or includes, a web page	C.9.2.5.7
9.2.5.8	Target size (minimum)	Where ICT is, or includes, a web page	C.9.2.5.8
9.3.1.1	Language of page	Where ICT is, or includes, a web page	C.9.3.1.1
9.3.1.2	Language of parts	Where ICT is, or includes, a web page	C.9.3.1.2
9.3.2.1	On focus	Where ICT is, or includes, a web page	C.9.3.2.1
9.3.2.2	On input	Where ICT is, or includes, a web page	C.9.3.2.2
9.3.2.3	Consistent navigation	Where ICT is, or includes, a web page	C.9.3.2.3
9.3.2.4	Consistent identification	Where ICT is, or includes, a web page	C.9.3.2.4

Clause	Requirement	Condition	Assessment
9.3.2.6	Consistent help	Where ICT is, or includes, a web page	C.9.3.2.6
9.3.3.1	Error identification	Where ICT is, or includes, a web page	C.9.3.3.1
9.3.3.2	Labels or instructions	Where ICT is, or includes, a web page	C.9.3.3.2
9.3.3.3	Error suggestion	Where ICT is, or includes, a web page	C.9.3.3.3
9.3.3.4	Error prevention (legal, financial, data)	Where ICT is, or includes, a web page	C.9.3.3.4
9.3.3.7	Redundant entry	Where ICT is, or includes, a web page	C.9.3.3.7
9.3.3.8	Accessible authentication (minimum)	Where ICT is, or includes, a web page	C.9.3.3.8
9.4.1.2	Name, role, value	Where ICT is, or includes, a web page	C.9.4.1.2
9.4.1.3	Status messages	Where ICT is, or includes, a web page	C.9.4.1.3
9.6	WCAG conformance requirements	Where ICT is, or includes, a web page	C.9.6
9.7	User preferences for web pages	Where ICT is, or includes, a web page	C.9.7

A.2.2 Where the ICT is, or includes, a non-web document

Requirements in clause A.2.2 apply to ICT that is, or includes, a non-web document. If the ICT is not, and does not include a non-web document, then disregard Table A.2 and consider each subsequent clause instead, beginning with clause A.2.3.

Table A.2: Where ICT is, or includes, a non-web document

Clause	Requirement	Condition	Assessment
10.1.1.1	Non-text content	Where ICT is, or includes, a non-web document	C.10.1.1.1
10.1.2.1	Audio-only and video-only (pre-recorded)	Where ICT is, or includes, a non-web document	C.10.1.2.1
10.1.2.2	Subtitles (pre-recorded)	Where ICT is, or includes, a non-web document	C.10.1.2.2
10.1.2.3	Audio description or media alternative (pre-recorded)	Where ICT is, or includes, a non-web document	C.10.1.2.3
10.1.2.4	Subtitles (live)	Where ICT is, or includes, a non-web document	C.10.1.2.4
10.1.2.5	Audio description (pre-recorded)	Where ICT is, or includes, a non-web document	C.10.1.2.5
10.1.3.1	Info and relationships	Where ICT is, or includes, a non-web document	C.10.1.3.1
10.1.3.2	Meaningful sequence	Where ICT is, or includes, a non-web document	C.10.1.3.2
10.1.3.3	Sensory characteristics	Where ICT is, or includes, a non-web document	C.10.1.3.3
10.1.3.4	Orientation	Where ICT is, or includes, a non-web document, and the non-web document is displayed on hardware that is designed to be reoriented in typical use	C.10.1.3.4
10.1.3.5	Identify input purpose	Where ICT is, or includes, a non-web document	C.10.1.3.5
10.1.4.1	Use of colour	Where ICT is, or includes, a non-web document	C.10.1.4.1
10.1.4.2	Audio control	Where ICT is, or includes, a non-web document	C.10.1.4.2
10.1.4.3	Contrast (minimum)	Where ICT is, or includes, a non-web document	C.10.1.4.3
10.1.4.4	Resize text	Where ICT is, or includes, a non-web document	C.10.1.4.4
10.1.4.5	Images of text	Where ICT is, or includes, a non-web document	C.10.1.4.5
10.1.4.10	Reflow	Where ICT is, or includes, a non-web document, and where underlying user agent or platform software can present content at a width equivalent to 320 CSS pixels or more for vertical scrolling content and a height equivalent to 256 CSS pixels or more for horizontal scrolling content	C.10.1.4.10

Clause	Requirement	Condition	Assessment
10.1.4.11	Non-text contrast	Where ICT is, or includes, a non-web document	C.10.1.4.11
10.1.4.12	Text spacing	Where ICT is, or includes, a non-web document, that is implemented using markup languages that allow users to modify text spacing properties	C.10.1.4.12
10.1.4.13	Content on hover or focus	Where ICT is, or includes, a non-web document	C.10.1.4.13
10.2.1.1	Keyboard	Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface	C.10.2.1.1
10.2.1.2	No keyboard trap	Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface	C.10.2.1.2
10.2.1.4	Character key shortcuts	Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface	C.10.2.1.4
10.2.2.1	Timing adjustable	Where ICT is, or includes, a non-web document	C.10.2.2.1
10.2.2.2	Pause, stop, hide	Where ICT is, or includes, a non-web document	C.10.2.2.2
10.2.3.1	Three flashes or below threshold	Where ICT is, or includes, a non-web document	C.10.2.3.1
10.2.4.2	Non-web document titled	Where ICT is, or includes, a non-web document implemented in a format that supports a programmatically determinable "Title" attribute that is editable using common authoring tools for that document format	C.10.2.4.2
10.2.4.3	Focus order	Where ICT is, or includes, a non-web document, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface	C.10.2.4.3
10.2.4.4	Link purpose (in context)	Where ICT is, or includes, a non-web document	C.10.2.4.4
10.2.4.6	Headings and labels	Where ICT is, or includes, a non-web document	C.10.2.4.6
10.2.4.7	Focus visible	Where ICT is, or includes, a non-web document, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface	C.10.2.4.7
10.2.4.11	Focus not obscured (minimum)	Where ICT is, or includes, a non-web document, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface	C.10.2.4.11
10.2.5.1	Pointer gestures	Where ICT is, or includes, a non-web document	C.10.2.5.1
10.2.5.2	Pointer cancellation	Where ICT is, or includes, a non-web document	C.10.2.5.2
10.2.5.3	Label in name	Where ICT is, or includes, a non-web document	C.10.2.5.3
10.2.5.4	Motion actuation	Where ICT is, or includes, a non-web document	C.10.2.5.4
10.2.5.7	Dragging movements	Where ICT is, or includes, a non-web document	C.10.2.5.7
10.2.5.8	Target size (minimum)	Where ICT is, or includes, a non-web document	C.10.2.5.8
10.3.1.1	Language of non-web document	Where ICT is, or includes, a non-web document	C.10.3.1.1

Clause	Requirement	Condition	Assessment
10.3.1.2	Language of parts	Where ICT is, or includes, a non-web document	C.10.3.1.2
10.3.2.1	On focus	Where ICT is, or includes, a non-web document	C.10.3.2.1
10.3.2.2	On input	Where ICT is, or includes, a non-web document	C.10.3.2.2
10.3.2.3	Consistent navigation	Where ICT is, or includes, a non-web document within a set of non-web documents	C.10.3.2.3
10.3.2.4	Consistent identification	Where ICT is, or includes, a non-web document within a set of non-web documents	C.10.3.2.4
10.3.2.6	Consistent help	Where ICT is, or includes, a non-web document	C.10.3.2.6
10.3.3.1	Error identification	Where ICT is, or includes, a non-web document	C.10.3.3.1
10.3.3.2	Labels or instructions	Where ICT is, or includes, a non-web document	C.10.3.3.2
10.3.3.3	Error suggestion	Where ICT is, or includes, a non-web document	C.10.3.3.3
10.3.3.4	Error prevention (legal, financial, data)	Where ICT is, or includes, a non-web document	C.10.3.3.4
10.3.3.7	Redundant entry	Where ICT is, or includes, a non-web document	C.10.3.3.7
10.3.3.8	Accessible authentication (minimum)	Where ICT is, or includes, a non-web document	C.10.3.3.8
10.4.1.2	Name, role, value	Where ICT is, or includes, a non-web document	C.10.4.1.2
10.4.1.3	Status messages	Where ICT is, or includes, a non-web document	C.10.4.1.3
10.7	User preferences for non-web documents	Where ICT is, or includes, a non-web document	C.10.7

A.2.3 Where the ICT is, or includes, non-web software that provides a user interface

Requirements in clause A.2.3 apply to ICT that is, or includes, non-web software that provides a user interface. If the ICT is not, and does not include non-web software that provides a user interface, then disregard Table A.3 and consider each subsequent clause instead, beginning with clause A.2.4.

Table A.3: Where ICT is, or includes, non-web software that provides a user interface

Clause	Requirement	Condition	Assessment
11.1.1.1	Non-text content	Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.1.1.1
11.1.2.1	Audio-only and video-only (pre-recorded)	Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.1.2.1
11.1.2.2	Subtitles (pre-recorded)	Where ICT is, or includes, non-web software that provides a user interface	C.11.1.2.2
11.1.2.3	Audio description or media alternative (pre-recorded)	Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.1.2.3
11.1.2.4	Subtitles (live)	Where ICT is, or includes, non-web software that provides a user interface	C.11.1.2.4
11.1.2.5	Audio description (pre-recorded)	Where ICT is, or includes, non-web software that provides a user interface	C.11.1.2.5

Clause	Requirement	Condition	Assessment
11.1.3.1	Info and relationships	Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.1.3.1
11.1.3.2	Meaningful sequence	Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.1.3.2
11.1.3.3	Sensory characteristics	Where ICT is, or includes, non-web software that provides a user interface	C.11.1.3.3
11.1.3.4	Orientation	Where ICT is, or includes, non-web software that provides a user interface, and the non-web software is displayed on hardware that is designed to be reoriented in typical use	C.11.1.3.4
11.1.3.5	Identify input purpose	Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies, and where the technology used supports attributes to identify the meaning of form input data	C.11.1.3.5
11.1.4.1	Use of colour	Where ICT is, or includes, non-web software that provides a user interface	C.11.1.4.1
11.1.4.2	Audio control	Where ICT is, or includes, non-web software that provides a user interface	C.11.1.4.2
11.1.4.3	Contrast (minimum)	Where ICT is, or includes, non-web software that provides a user interface	C.11.1.4.3
11.1.4.4	Resize text	Where ICT is, or includes, non-web software that provides a user interface, and is not closed to enlargement	C.11.1.4.4
11.1.4.5	Images of text	Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.1.4.5
11.1.4.10	Reflow	Where ICT is, or includes, non-web software that provides a user interface	C.11.1.4.10
11.1.4.11	Non-text contrast	Where ICT is, or includes, non-web software that provides a user interface	C.11.1.4.11
11.1.4.12	Text spacing	Where ICT is, or includes, non-web software that provides a user interface, that is implemented using markup languages that allow users to modify text spacing properties	C.11.1.4.12
11.1.4.13	Content on hover or focus	Where ICT is, or includes, non-web software that provides a user interface, and any visual presentation of the additional content caused by a hover or focus is not controlled by the user agent or platform software, and is not modified by the author	C.11.1.4.13
11.2.1.1	Keyboard	Where ICT is, or includes, non-web software that can be run on a software platform that provides a device-independent keyboard interface service	C.11.2.1.1
11.2.1.2	No keyboard trap	Where ICT is, or includes, non-web software that provides a user interface, and that provides a keyboard or accepts input from a keyboard or keyboard interface	C.11.2.1.2
11.2.1.4	Character key shortcuts	Where ICT is, or includes, non-web software that provides a user interface, and that provides a keyboard or accepts input from a keyboard or keyboard interface	C.11.2.1.4
11.2.2.1	Timing adjustable	Where ICT is, or includes, non-web software that provides a user interface	C.11.2.2.1

Clause	Requirement	Condition	Assessment
11.2.2.2	Pause, stop, hide	Where ICT is, or includes, non-web software that provides a user interface	C.11.2.2.2
11.2.3.1	Three flashes or below threshold	Where ICT is, or includes, non-web software that provides a user interface	C.11.2.3.1
11.2.4.2	Non-web software titled	Where ICT is, or includes, non-web software that provides a user interface, implemented on a platform that supports "Title" attributes for windows or screens	C.11.2.4.2
11.2.4.3	Focus order	Where ICT is, or includes, non-web software that provides a user interface, and that provides a keyboard or accepts input from a keyboard or keyboard interface	C.11.2.4.3
11.2.4.4	Link purpose (in context)	Where ICT is, or includes, non-web software that provides a user interface	C.11.2.4.4
11.2.4.6	Headings and labels	Where ICT is, or includes, non-web software that provides a user interface, and that provides a keyboard or accepts input from a keyboard or keyboard interface	C.11.2.4.6
11.2.4.7	Focus visible	Where ICT is, or includes, non-web software that provides a user interface	C.11.2.4.7
11.2.4.11	Focus not obscured (minimum)	Where ICT is, or includes, non-web software that provides a user interface, and that provides a keyboard or accepts input from a keyboard or keyboard interface	C.11.2.4.11
11.2.5.1	Pointer gestures	Where ICT is, or includes, non-web software that provides a user interface, and that provides a pointing mechanism or accepts input from pointing devices	C.11.2.5.1
11.2.5.2	Pointer cancellation	Where ICT is, or includes, non-web software that provides a user interface, and that provides a pointing mechanism or accepts input from pointing devices	C.11.2.5.2
11.2.5.3	Label in name	Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.2.5.3
11.2.5.4	Motion actuation	Where ICT is, or includes, non-web software that provides a user interface	C.11.2.5.4
11.2.5.7	Dragging movements	Where ICT is, or includes, non-web software that provides a user interface	C.11.2.5.7
11.2.5.8	Target size (minimum)	Where ICT is, or includes, non-web software that provides a user interface	C.11.2.5.8
11.3.1.1	Language of non-web software	Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.3.1.1
11.3.2.1	On focus	Where ICT is, or includes, non-web software that provides a user interface	C.11.3.2.1
11.3.2.2	On input	Where ICT is, or includes, non-web software that provides a user interface	C.11.3.2.2
11.3.2.4	Consistent identification	Where ICT is, or includes, non-web software that provides a user interface	C.11.3.2.4
11.3.3.1	Error identification	Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.3.3.1
11.3.3.2	Labels or instructions	Where ICT is, or includes, non-web software that provides a user interface	C.11.3.3.2
11.3.3.3	Error suggestion	Where ICT is, or includes, non-web software that provides a user interface	C.11.3.3.3
11.3.3.4	Error prevention (legal, financial, data)	Where ICT is, or includes, non-web software that provides a user interface	C.11.3.3.4

Clause	Requirement	Condition	Assessment
11.3.3.7	Redundant entry	Where ICT is, or includes, non-web software that provides a user interface	C.11.3.3.7
11.3.3.8	Accessible authentication (minimum)	Where ICT is, or includes, non-web software that provides a user interface	C.11.3.3.8
11.4.1.2	Name, role, value	Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.4.1.2
11.4.1.3	Status messages	Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies, and the functionality that is not closed supports status message notifications	C.11.4.1.3
11.5.2.1	Platform interoperability with assistive technologies	Where ICT is, or includes, platform software	C.11.5.2.1
11.5.2.4	Assistive technology	Where ICT is, or includes, assistive technology	C.11.5.2.4
11.5.2.5	Object information	Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.5
11.5.2.6	Row, column, and headers	Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.6
11.5.2.7	Values	Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.7
11.5.2.8	Label relationships	Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.8
11.5.2.9	Parent-child relationships	Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.9
11.5.2.10	Text	Where ICT is, or includes, non-web software that provides a user interface, and renders text to a screen	C.11.5.2.10
11.5.2.11	List of available actions	Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.11
11.5.2.12	Execution of available actions	Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.12
11.5.2.13	Tracking of focus and selection attributes	Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.13
11.5.2.14	Modification of focus and selection attributes	Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.14
11.5.2.15	Change notification	Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.15
11.5.2.16	Modifications of states and properties	Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.16
11.5.2.17	Modifications of values and text	Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.17
11.6.1	User control of accessibility features	Where ICT is, or includes, platform software	C.11.6.1
11.6.2	No disruption of accessibility features	Where ICT is, or includes, non-web software	C.11.6.2
11.7	User preferences	Where ICT is, or includes, non-web software that provides a user interface, and is not designed to be isolated from its platform	C.11.7

A.2.4 Where the ICT is, or includes, hardware

Requirements in clause A.2.4 apply to ICT that is, or includes, hardware. If the ICT is not, and does not include hardware, then disregard Table A.4 and consider clause A.2.5 next.

Table A.4: Where ICT is, or includes, hardware

Clause	Requirement	Condition	Assessment
5.5	Tactilely discernible operable parts	Where ICT includes functionality that requires manual operation and control	C.5.5
8.2.1.1	Speech volume gain	Where ICT is, or includes, hardware, and has speech output, and is a device that is typically held to the ear	C.8.2.1.1
8.2.1.2	Incremental volume control	Where ICT is, or includes, hardware, and has speech output, and is a device that is typically held to the ear, and its volume control is incremental	C.8.2.1.2
8.2.2.1	Fixed-line devices and handsets	Where ICT is, or includes, hardware, and has speech output, and is a fixed-line communication device or wired handset that is typically held to the ear	C.8.2.2.1
8.2.2.2	Wireless communication devices	Where ICT is, or includes, hardware, and has speech output, and is a wireless communication device that is typically held to the ear	C.8.2.2.2
8.3.2	Display location	Where ICT is stationary ICT	C.8.3.2
8.3.3.1	Display of information necessary for the operation of stationary ICT (no design restrictions)	Where ICT is stationary ICT and there are no functional or design requirements which do not allow to display necessary information below 1 600 mm above the floor space	C.8.3.3.1
8.3.3.2	Display of information necessary for the operation of stationary ICT (with design restrictions)	Where ICT is stationary ICT and there are functional or design requirements which do not allow to display necessary information below 1 600 mm above the floor space	C.8.3.3.2
8.3.5.1	Control location (vertical, no design restrictions)	Where ICT is stationary ICT and there are no functional or design requirements which do not allow to duplicate operable parts or locate them above 800 mm and below 1 100 mm	C.8.3.5.1
8.3.5.2	Control location (vertical, with design restrictions)	Where ICT is stationary ICT and there are functional or design requirements which do not allow duplication of operable parts or to locate them above 800 mm and below 1 100 mm	C.8.3.5.23
8.3.6	Control location (horizontal)	Where ICT is stationary ICT	C.8.3.6
8.3.7.1	Reach depth (no design restrictions)	Where ICT is stationary ICT, and there are no functional or design requirements which do not allow duplication of operable parts or locating them in an area that has a maximum distance of 300 mm from the edge of the ICT	C.8.3.7.1
8.3.7.2	Reach depth (with design restrictions)	Where ICT is stationary ICT, and there are functional or design requirements which do not allow duplication of operable parts or locating them in an area that has a maximum distance of 300 mm from the edge of the ICT	C.8.3.7.2
8.3.9.2	Obstructed forward reach (no design constraints)	Where ICT is stationary ICT, and has an obstruction that is an integral part of the ICT (this is called obstructed forward reach), and there are no functional or design constraints which require an obstruction deeper than 300 mm	C.8.3.9.2

Clause	Requirement	Condition	Assessment
8.3.9.3	Obstructed forward reach (with design constraints)	Where ICT is stationary ICT, and has an obstruction that is an integral part of the ICT (this is called obstructed forward reach), and there are functional or design constraints which require an obstruction deeper than 300 mm	C.8.3.9.3
8.3.10.1	Free space underneath stationary ICT with or without an obstruction (no design constraints)	Where ICT is stationary ICT and has an obstruction that is an integral part of the ICT, and the obstruction hinders the access to any type of operable part, and there are no functional or design requirements restricting the size of an open space below the obstruction	C.8.10.1
8.3.10.2	Free space underneath stationary ICT with or without an obstruction (with design constraints)	Where ICT is stationary ICT and has an obstruction that is an integral part of the ICT, and the obstruction hinders the access to any type of operable part, and there are functional or design requirements restricting the size of an open space below the obstruction	C.8.10.2
8.3.11.2	Obstructed side reach (no design constraints)	Where ICT is stationary ICT, and has an obstruction that is an integral part of the ICT (this is called obstructed side reach), and there are no functional or design constraints which require an obstruction deeper than 300 mm	C.8.3.11.2
8.3.11.3	Obstructed side reach (with design constraints)	Where ICT is stationary ICT, and has an obstruction that is an integral part of the ICT (this is called obstructed side reach), and there are functional or design constraints which require an obstruction deeper than 300 mm	C.8.3.11.3
8.3.14	Installation instructions	Where ICT is stationary hardware	C.8.3.14
8.4.1	Numeric keys	Where ICT is, or includes, hardware, and has physical numeric keys arranged in a rectangular keypad layout	C.8.4.1
8.4.2.1	Means of operation	Where ICT is, or includes, hardware, and has operable parts that require grasping, pinching, or twisting of the wrist to operate	C.8.4.2.1
8.4.2.2	Force of operation of operable parts	Where ICT is, or includes, hardware, and has a control that requires a force greater than 22,2 N to operate it	C.8.4.2.2
8.4.3	Keys, tickets and cards	Where ICT is, or includes, hardware, and has keys, tickets or cards, and the orientation of the keys, tickets or cards is important for further use	C.8.4.3
8.5	Tactile indication of speech mode	Where ICT is, or includes, hardware, and the ICT is intended for public shared use, and speech output is available	C.8.5
8.6	Standard connections	Where ICT is, or includes, hardware, and provides input or output device connection points	C.8.1.2
8.7	Colour on hardware	Where ICT is, or includes, hardware, and colour is used on the hardware to convey information	C.8.7
8.8	Contrast on hardware	Where ICT is, or includes, hardware	C.8.8

A.2.5 All ICT

Requirements in clause A.2.5 apply to all ICT and is the last table that needs to be considered.

Table A.5: All ICT

Clause	Requirement	Condition	Assessment
4.2.1	Usage without vision	Where ICT provides visual modes of operation	C.4.2.1
4.2.2	Usage with limited vision	Where ICT provides visual modes of operation	C.4.2.2
4.2.3	Usage without perception of colour	Where ICT provides visual modes of operation	C.4.2.3
4.2.4	Usage without hearing	Where ICT provides auditory modes of operation	C.4.2.4
4.2.5	Usage with limited hearing	Where ICT provides auditory modes of operation	C.4.2.5
4.2.6	Usage with no or limited vocal capability	Where ICT requires vocal input from users	C.4.2.6
4.2.7	Usage with limited manipulation or strength	Where ICT requires manual actions	C.4.2.7
4.2.8	Usage with limited reach	Where ICT is stationary, free-standing or installed	C.4.2.8
4.2.9	Minimize photosensitive seizure triggers	Where ICT provides visual modes of operation	C.4.2.9
4.2.10	Usage with limited cognition, language or learning	Where ICT provides information or requires user interaction	C.4.2.10
4.2.11	Privacy	Where ICT provides features for accessibility	C.4.2.11
5.1.2.1	Closed functionality	Where ICT includes closed functionality	C.5.1.2.1
5.1.2.2	Assistive technology and closed functionality	Where ICT includes closed functionality	C.5.1.2.2
5.1.3.1	Auditory output of visual information	Where ICT includes closed functionality, and visual information is needed to enable the use of the closed functionality of the ICT	C.5.1.3.1
5.1.3.2	Auditory output delivery including speech	Where ICT includes closed functionality, and auditory output is provided as non-visual access to closed functionality	C.5.1.3.2
5.1.3.3	Auditory output correlation	Where ICT includes closed functionality, and auditory output is provided as non-visual access to closed functionality, and information that is under the control of the ICT is displayed on the screen	C.5.1.3.3
5.1.3.4	Speech output user control	Where ICT includes closed functionality, and speech output is provided as non-visual access to closed functionality	C.5.1.3.4
5.1.3.5	Speech output automatic interruption	Where ICT includes closed functionality, and speech output is provided as non-visual access to closed functionality, and the speech output is generated locally in response to user actions	C.5.1.3.5
5.1.3.6	Auditory output for non-text content	Where ICT includes closed functionality that presents non-text content other than video	C.5.1.3.6
5.1.3.7	Auditory output for video information	Where ICT includes closed functionality, and pre-recorded video content is needed to enable the use of closed functionality of the ICT	C.5.1.3.7
5.1.3.8	Masked entry	Where ICT includes closed functionality, and auditory output is provided as non-visual access to closed functionality, and the characters displayed are masking characters	C.5.1.3.8

Clause	Requirement	Condition	Assessment
5.1.3.9	Private access to personal data	Where ICT includes closed functionality, and the ICT is intended for public shared use, and auditory output is provided by that ICT as non-visual access to closed functionality, and that output contains data that is considered to be private according to the applicable privacy policy	C.5.1.3.9
5.1.3.10	Non-interfering audio output	Where ICT includes closed functionality, and auditory output is provided as non-visual access to closed functionality	C.5.1.3.10
5.1.3.11	Private listening volume	Where ICT includes closed functionality, and auditory output is provided as non-visual access to closed functionality, and the auditory output is delivered through a mechanism for private listening	C.5.1.3.11
5.1.3.12	Speaker volume	Where ICT includes closed functionality, and auditory output is provided as non-visual access to closed functionality, and is delivered through speakers on the ICT	C.5.1.3.12
5.1.3.13	Volume reset	Where ICT includes closed functionality, and the ICT is intended for public shared use, and auditory output is provided as non-visual access to closed functionality through a device typically held to the ear	C.5.1.3.13
5.1.3.14	Spoken languages	Where ICT includes closed functionality, and speech output is provided as non-visual access to closed functionality	C.5.1.3.14
5.1.3.15	Non-visual error identification	Where ICT includes closed functionality, and speech output is provided as non-visual access to closed functionality, and an input error is automatically detected, and the error is indicated visually via text and/or other visual means	C.5.1.3.15
5.1.3.16	Receipts, tickets, and transactional outputs	Where ICT includes closed functionality, and provides physical receipts, tickets or other outputs as a result of a self-service transaction	C.5.1.3.16
5.1.4	Functionality closed to text enlargement	Where ICT includes closed functionality, and any functionality of the ICT is closed to the text enlargement features of platform or assistive technology	C.5.1.4
5.1.5	Visual output for auditory information	Where ICT includes closed functionality, and auditory output is needed to enable the use of closed functionality of the ICT	C.5.1.5
5.1.6.1	Functionality closed to keyboards	Where ICT includes closed functionality, and the functionality is closed to keyboards or keyboard interfaces	C.5.1.6.1
5.1.6.2	Input focus	Where ICT includes closed functionality, and the functionality is closed to keyboards or keyboard interfaces, and where input focus can be moved to a user interface element	C.5.1.6.2
5.1.7	Access without speech	Where ICT includes closed functionality, and speech is needed to operate closed functionality of the ICT	C.5.1.7
5.1.8	Identify input purpose (closed functionality)	Where ICT includes closed functionality, and input field(s) collecting information about the user are needed to enable the use of the closed functionality of the ICT, and the input field(s) serve a purpose identified in the WCAG 2.2 Input Purposes for User Interface Components section	C.5.1.8
5.2	Activation of accessibility features	Where ICT includes documented accessibility features	C.5.2
5.3	Biometrics	Where ICT uses biological characteristics	C.5.3

Clause	Requirement	Condition	Assessment
5.4	Preservation of accessibility information during conversion	Where ICT converts information or communication	C.5.4
5.6.1	Tactile or auditory status	Where ICT includes a locking or toggle control	C.5.6.1
5.6.2	Visual status	Where ICT includes a locking or toggle control	C.5.6.2
5.7	Key repeat	Where ICT includes a keyboard or keypad, and a key repeat function that cannot be turned off, and that key repeat will result in the generation of multiple entries of the same alphanumeric data into input fields or into documents:	C.5.7
5.8	Double-strike key acceptance	Where ICT includes a keyboard or keypad	C.5.8
5.9	Simultaneous user actions	Where ICT includes a mode of operation requiring simultaneous user actions for its operation	C.5.9
5.10.1	Content technology	Where ICT is, or includes, authoring tool functionality	C.5.10.1
5.10.2	Accessible content creation	Where ICT is, or includes, authoring tool functionality	C.5.10.2
5.10.3	Preservation of accessibility information in transformations	Where ICT is, or includes, authoring tool functionality, and provides restructuring transformations or re-coding transformations	C.5.10.3
5.10.4	Repair assistance	Where ICT is, or includes, authoring tool functionality, and is capable of detecting that content does not meet a requirement of clause 9 (Web), or clause 10 (Non-web documents), or clause 11 (Non-web software) as applicable	C.5.10.4
5.10.5	Templates	Where ICT is, or includes, authoring tool functionality, and provides templates	C.5.10.5
6.0.2	Communication client	Where ICT is, or includes, a communication client that supports real-time bidirectional voice communication with or within a communication system that provides real-time bidirectional voice communication	C.6.0.2
6.0.3	Communication system	Where ICT is, or includes, or is a part of, a communication system that provides real-time bidirectional voice communication with communication clients of the system	C.6.0.3
6.0.4	System connecting to another communication system	Where ICT is, or includes, a communication system that provides real-time bidirectional voice communication with one or more other communication systems that support real-time bidirectional voice communication	C.6.0.4
6.0.5	System with roaming visiting client	Where ICT is, or includes, a communication system that provides real-time bidirectional voice communication, and a communication client that supports real-time bidirectional voice communication with another compatible communication system, visits and connects to the communication system	C.6.0.5
6.0.6	Client in emergency communications	Where ICT is required to provide, or otherwise provides, emergency communications, and is, or includes, a communication client that supports real-time bidirectional voice communication with or within a communication system that provides real-time bidirectional voice emergency communication	C.6.0.6
6.0.7	Emergency communications	Where ICT is, or includes, a communication system that provides real-time bidirectional voice communication in emergency communications with PSAPs	C.6.0.7

Clause	Requirement	Condition	Assessment
6.0.8	System with roaming visiting client in an emergency	Where ICT is, or includes, a communication system that provides real-time bidirectional voice communication in emergency communications with PSAPs, and a communication client that supports real-time bidirectional voice communication with another compatible communication system, visits and connects to the communication system	C.6.0.8
6.0.9	System with client in emergency visiting another country	Where ICT is, or includes, a communication system that provides real-time bidirectional voice communication in emergency communications with PSAPs, and a communication client of the ICT that supports real-time bidirectional voice communication, visits another country than the home country	C.6.0.9
6.1.1	Voice communication interoperability	Where ICT provides functionality that allows real-time bidirectional voice communication, and connects to other ICT that allows real-time bidirectional voice communication	C.6.1.1
6.1.2	Audio bandwidth for capture and presentation for voice communication	Where ICT provides functionality that allows real-time bidirectional voice communication, and has a user interface for real-time bidirectional voice communication	C.6.1.2
6.2.1.1	RTT functionality	Where ICT provides functionality that allows real-time bidirectional voice communication	C.6.2.1.1
6.2.1.2	Concurrent voice and RTT	Where ICT provides real-time bidirectional voice communication, and supports RTT	C.6.2.1.2
6.2.1.3	Single user operations	Where ICT provides real-time bidirectional voice communication, and includes RTT capabilities	C.6.2.1.3
6.2.2.1	Distinguishable display	Where ICT provides real-time bidirectional voice communication, and includes RTT presentation capabilities	C.6.2.2.1
6.2.2.2	Active communicator indication	Where ICT provides real-time bidirectional voice communication, and includes RTT send and receive capabilities, and provides speaker indication for voice	C.6.2.2.2
6.2.2.3	Indication of audio with RTT	Where ICT provides real-time bidirectional voice communication, and supports RTT	C.6.2.2.3
6.2.2.4	Presentation of relative time order of text	Where ICT provides real-time bidirectional voice communication, and includes RTT presentation capabilities	C.6.2.2.4
6.2.2.5	Review of RTT communication contents	Where ICT provides real-time bidirectional voice communication, and includes RTT presentation capabilities	C.6.2.2.5
6.2.3	DTMF touch-tone generation during RTT operations	Where ICT is, or includes, a communication client, and provides functionality that allows real-time bidirectional voice communication, and supports the generation and transmission of touch-tone signals on voice calls	C.6.2.3
6.2.4	RTT responsiveness	Where ICT is, or includes, a communication client, and supports real-time bidirectional voice communication, and supports RTT	C.6.2.4
6.2.5	Adding and erasing of RTT input	Where ICT provides real-time bidirectional voice communication, and includes RTT capabilities, and supports RTT user input	C.6.2.5
6.2.6	Processing rate of RTT	Where ICT provides real-time bidirectional voice communication, and supports multiparty communication, and includes RTT capabilities	C.6.2.6
6.2.7	Character representation	Where ICT provides real-time bidirectional voice communication, and includes RTT capabilities	C.6.2.7

Clause	Requirement	Condition	Assessment
6.2.8	RTT input methods	Where ICT is, or includes, a communication client, and supports real-time bidirectional voice communication, and supports RTT	C.6.2.8
6.2.9	RTT media establishment and use	Where ICT provides real-time bidirectional voice communication, and includes RTT capabilities	C.6.2.9
6.2.10	RTT interoperability	Where ICT provides functionality that allows real-time bidirectional voice communication, and connects to other ICT that allows real-time bidirectional voice communication	C.6.2.10
6.3	Caller ID	Where ICT provides caller identification or other identification functions	C.6.3
6.4	Alternatives to voice-based services	Where ICT provides voice mail, auto-attendant, or interactive voice response facilities	C.6.4
6.5.2	Resolution	Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video communication	C.6.5.2
6.5.3	Frame rate	Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video communication	C.6.5.3
6.5.4	Synchronization between audio and video	Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video communication	C.6.5.4
6.5.5	Indicator of audio with video	Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video communication	C.6.5.5
6.5.6	Indication of all active communication participants	Where ICT provides real-time bidirectional voice communication, includes real-time bidirectional video communication, and provides speaker indication for voice users,	C.6.5.6
6.7.1	Total conversation provision	Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video functionality	C.6.7.1
6.7.2	Total conversation interoperability	Where ICT provides functionality that allows real-time bidirectional voice communication, including real-time bidirectional video functionality, and connects to other ICT that allows real-time bidirectional voice communication, including real-time bidirectional video functionality	C.6.7.2
7.1.1	Subtitle playback	Where ICT displays video with synchronized audio	C.7.1.1
7.1.2	Subtitle synchronization	Where ICT displays video with synchronized audio, and displays subtitles	C.7.1.2
7.1.3	Preservation of subtitles	Where ICT transmits, converts, or records video with synchronized audio	C.7.1.3
7.1.4	Subtitle characteristics	Where ICT displays video with synchronized audio, and has control over the presentation of its subtitles	C.7.1.4
7.1.5	Spoken subtitles	Where ICT displays video with synchronized audio	C.7.1.5
7.2.1	Audio description playback	Where ICT displays video with synchronized audio	C.7.2.1
7.2.2	Audio description synchronization	Where ICT displays video with synchronized audio, and has a mechanism to play audio description	C.7.2.2
7.2.3	Preservation of audio description	Where ICT transmits, converts, or records video with synchronized audio	C.7.2.3
7.3	User control of audiovisual accessibility features	Where ICT displays video with synchronized audio, and has control over the activation of subtitles and other accessibility features	C.7.3
12.1	Accessible information about products	Where ICT is, or includes, information about a product, made available in a digital form	C.12.1
12.2	Accessible information about services	Where ICT is, or includes, information about a service, made available in a digital form	C.12.2

Clause	Requirement	Condition	Assessment
12.3	Accessibility and compatibility features	Where ICT has documentation about the use of the ICT on the ICT or there is an official webpage that provides documentation about the use of the ICT	C.12.3
12.4	Electronic program guides	Where ICT is an Electronic Programme Guide (EPG)	C.12.4
12.5	Electronic program guide display	Where ICT displays an Electronic Programme Guide (EPG) presenting media item(s), and information about the availability of subtitles, audio description, spoken subtitles, or sign language interpretation for the media item(s) is available	C.12.5
13.1.2.2	Use of the primary user destination address in relayed communications	Where ICT is, or includes, a relay service invocation system	C.13.1.2.2
13.1.2.3	Conveying of caller identifier in relayed communications for primary relay users	Where ICT is, or includes, a relay service invocation system	C.13.1.2.3
13.1.2.4	Relay service invocation decision in outgoing communications	Where ICT is, or includes, a relay service invocation system	C.13.1.2.4
13.1.2.5	Relay service invocation decision in incoming communications	Where ICT is, or includes, a relay service invocation system	C.13.1.2.5
13.1.2.6	Relay service support requested by the primary user for emergency communications	Where ICT is, or includes, a relay service invocation system	C.13.1.2.6
13.1.3.1	Relaying action in relay service communication	Where ICT is, or includes, a relay service	C.13.1.3.1
13.1.3.2	Media handling in relay service communication	Where ICT is, or includes, a relay service	C.13.1.3.2
13.1.3.3	Relay service support in ICT based conferences	Where ICT is, or includes, a relay service	C.13.1.3.3
13.1.3.4	Relay service support during emergency communications initiated by the PSAP	Where ICT is, or includes, a relay service	C.13.1.3.4

Annex B (informative): Relationship between requirements and functional performance criteria

B.1 Relationships between clauses 5 to 13 and the functional performance criteria

Table B.2 shows which of the requirements set out in clauses 5 to 13 support each of the functional performance criteria set out in clause 4.2.

To allow Table B.2 to fit the page, the abbreviations shown in Table B.1 have been used in the column headers of Table B.2.

Table B.1: Key to the column header designations used in Table B.2

Column header abbreviation	Functional performance criterion	Clause number
WV	Usage without vision	4.2.1
LV	Usage with limited vision	4.2.2
WPC	Usage without perception of colour	4.2.3
WH	Usage without hearing	4.2.4
LH	Usage with limited hearing	4.2.5
WVC	Usage without vocal capability	4.2.6
LMS	Usage with limited manipulation or strength	4.2.7
LR	Usage with limited reach	4.2.8
PST	Minimize photosensitive seizure triggers	4.2.9
LC	Usage with limited cognition	4.2.10
PR	Privacy	4.2.11

The following abbreviations have been used to represent the relationship between the requirements in clauses 5 to 13 and the functional performance criteria:

- P = Primary relationship. The requirement supports the functional performance criterion.
- S = Secondary relationship. The requirement provides partial support for the functional performance criterion because some users may use the feature in specific situations.

Table B.2: Requirements in clauses 5 to 13 supporting the accessibility needs expressed in the functional performance criteria

Clause	Requirement	WV	LV	WPC	WH	LH	WVC	LMS	LR	PST	LC	PR
5.1.2.1	Closed functionality	P	P	P	P	P	P	P	P	P	P	P
5.1.2.2	Assistive technology and closed functionality	P	P	-	P	P	P	P	P	-	P	P
5.1.3.1	Auditory output of visual information	P	S	-	-	-	-	-	-	-	S	-
5.1.3.2	Auditory output delivery including speech	P	S	-	-	-	-	-	-	-	S	-
5.1.3.3	Auditory output correlation (recommendation)	P	P	-	-	-	-	-	-	-	S	-
5.1.3.4	Speech output user control	P	S	-	-	-	-	-	-	-	S	-
5.1.3.5	Speech output automatic interruption	P	S	-	-	-	-	-	-	-	S	-
5.1.3.6	Auditory output for non-text content	P	S	-	-	-	-	-	-	-	S	-

Clause	Requirement	WV	LV	WPC	WH	LH	WVC	LMS	LR	PST	LC	PR
5.1.3.7	Auditory output for video information	P	S	-	-	-	-	-	-	-	S	-
5.1.3.8	Masked entry	P	S	-	-	-	-	-	-	-	S	P
5.1.3.9	Private access to personal data	P	S	-	-	-	-	-	-	-	S	P
5.1.3.10	Non-interfering audio output	P	S	-	-	-	-	-	-	-	S	-
5.1.3.11	Private listening volume	P	S	-	-	-	-	-	-	-	S	-
5.1.3.12	Speaker volume	P	S	-	-	-	-	-	-	-	S	-
5.1.3.13	Volume reset	P	S	-	-	-	-	-	-	-	S	-
5.1.3.14	Spoken languages	P	S	-	-	-	-	-	-	-	S	-
5.1.3.15	Non-visual error identification	P	S	-	-	-	-	-	-	-	S	-
5.1.3.16	Receipts, tickets, and transactional outputs	P	S	-	-	-	-	-	-	-	S	-
5.1.4	Functionality closed to text enlargement	-	P	-	-	-	-	-	-	-	-	-
5.1.5	Visual output for auditory information	-	-	-	P	P	-	-	-	-	S	-
5.1.6.1	Functionality closed to keyboards	P	P	-	-	-	-	P	P	-	S	-
5.1.6.2	Input focus	P	P	-	-	-	P	P	P	-	-	-
5.1.7	Access without speech	-	-	-	S	S	P	-	-	-	S	-
5.1.8	Identify input purpose (closed functionality)	P	P	-	-	-	-	-	-	-	P	-
5.2	Activation of accessibility features	P	P	P	P	P	P	P	P	P	P	P
5.3	Biometrics	P	P	-	P	P	P	P	P	-	-	P
5.4	Preservation of accessibility information during conversion	P	P	P	P	P	P	P	P	P	P	P
5.5	Control using tactilely discernible operable parts	P	P	-	-	-	-	S	-	-	S	-
5.6.1	Tactile or auditory status	P	P	-	-	-	-	-	-	-	S	-
5.6.2	Visual status	-	-	-	P	P	-	P	P	-	S	-
5.7	Key repeat	-	-	-	-	-	-	P	S	-	S	-
5.8	Double-strike key acceptance	-	-	-	-	-	-	P	S	-	S	-
5.9	Simultaneous user actions	-	-	-	-	-	-	P	P	-	S	-
5.10.1	Content technology	P	P	P	P	P	P	P	P	P	P	P
5.10.2	Accessible content creation	P	P	P	P	P	P	P	P	P	P	P
5.10.3	Preservation of accessibility information in transformations	P	P	P	P	P	P	P	P	P	P	P
5.10.4	Repair assistance	P	P	P	P	P	P	P	P	P	P	P
5.10.5	Templates	P	P	P	P	P	P	P	P	P	P	P
6.0.2	Communication client	P	P	-	P	P	P	-	-	-	S	-
6.0.3	Communication system	P	P	-	P	P	P	-	-	-	S	-

Clause	Requirement	WV	LV	WPC	WH	LH	WVC	LMS	LR	PST	LC	PR
6.0.4	System connecting to another communication system	P	P	-	P	P	P	-	-	-	S	-
6.0.5	System with roaming visiting client	P	P	-	P	P	P	-	-	-	S	-
6.0.6	Client in emergency communications	P	P	-	P	P	P	-	-	-	S	-
6.0.7	Emergency communications	P	P	-	P	P	P	-	-	-	S	-
6.0.8	System with roaming visiting client in an emergency	P	P	-	P	P	P	-	-	-	S	-
6.0.9	System with client in emergency visiting another country	P	P	-	P	P	P	-	-	-	S	-
6.1.1	Voice communication interoperability	-	-	-	-	P	-	-	-	-	-	-
6.1.2	Audio bandwidth for capture and presentation for voice communication	-	-	-	-	P	-	-	-	-	-	-
6.1.3	Audio presentation in attached listening devices for voice communication (recommendation)	-	-	-	-	P	-	-	-	-	-	-
6.1.4	Synchronization of subtitles (recommendation)	-	-	-	P	P	-	-	-	-	-	-
6.2.1.1	RTT functionality	-	-	-	P	P	P	-	-	-	-	-
6.2.1.2	Concurrent voice and RTT	-	-	-	P	P	P	-	-	-	-	-
6.2.1.3	Single user operations	-	-	-	P	P	P	-	-	-	-	-
6.2.2.1	Distinguishable display	-	-	-	P	P	P	-	-	-	-	-
6.2.2.2	Active communicator indication	-	-	-	P	P	P	-	-	-	-	-
6.2.2.3	Indication of audio with RTT	-	-	-	P	P	P	-	-	-	-	-
6.2.2.4	Presentation of relative time order of text	-	-	-	P	P	P	-	-	-	-	-
6.2.2.5	Review of RTT communication contents	-	-	-	P	P	P	-	-	-	-	-
6.2.3	DTMF touch-tone generation during RTT operations	-	-	-	P	P	P	-	-	-	-	-
6.2.4	RTT responsiveness	-	-	-	P	P	P	-	-	-	-	-
6.2.5	Adding and erasing of RTT input	-	-	-	P	P	P	-	-	-	-	-
6.2.6	Processing rate of RTT	-	-	-	P	P	P	-	-	-	-	-

Clause	Requirement	WV	LV	WPC	WH	LH	WVC	LMS	LR	PST	LC	PR
6.2.7	Character representation	-	-	-	P	P	P	-	-	-	-	-
6.2.8	RTT input methods	-	-	-	P	P	P	P	S	-	S	-
6.2.9	RTT media establishment and use	-	-	-	P	P	P	-	-	-	-	-
6.2.10	RTT interoperability	-	-	-	P	P	P	-	-	-	-	-
6.3	Caller ID	P	P	-	-	-	-	-	-	-	S	-
6.4	Alternatives to voice-based services	-	-	-	P	P	P	-	-	-	-	-
6.5.2	Resolution	-	-	-	P	P	S	-	-	-	S	-
6.5.3	Frame rate	-	-	-	P	P	S	-	-	-	S	-
6.5.4	Synchronization between audio and video	-	-	-	P	P	S	-	-	-	S	-
6.5.5	Indicator of audio with video	-	-	-	P	P	S	-	-	-	S	-
6.5.6	Indication of all active communication participants	-	-	-	P	P	S	-	-	-	S	-
6.6	Alternatives to video-based services (recommendation)	P	P	-	P	P	P	-	-	-	S	-
6.7.1	Total conversation provision	-	-	-	P	P	P	-	-	-	S	-
6.7.2	Total conversation interoperability	-	-	-	P	P	P	-	-	-	S	-
7.1.1	Subtitle playback	-	-	-	P	P	-	-	-	-	S	-
7.1.2	Subtitle synchronization	-	-	-	P	P	-	-	-	-	S	-
7.1.3	Preservation of subtitles	-	-	-	P	P	-	-	-	-	S	-
7.1.4	Subtitle characteristics	-	-	-	P	P	-	-	-	-	P	-
7.1.5	Spoken subtitles	P	P	-	-	-	-	-	-	-	P	-
7.2.1	Audio description playback	P	P	-	-	-	-	-	-	-	P	-
7.2.2	Audio description synchronization	P	P	-	-	-	-	-	-	-	P	-
7.2.3	Preservation of audio description	P	P	-	-	-	-	-	-	-	P	-
7.3	User control of audiovisual accessibility features	P	P	-	P	P	-	-	-	-	P	-
8.2.1.1	Speech volume gain	-	-	-	-	P	-	-	-	-	-	-
8.2.1.2	Incremental volume control	-	-	-	-	P	-	-	-	-	-	-
8.2.2.1	Fixed-line devices and handsets	-	-	-	-	P	-	-	-	-	-	-
8.2.2.2	Wireless communication devices	-	-	-	-	P	-	-	-	-	-	-
8.3.2	Display location	-	-	-	-	-	-	P	P	-	-	-
8.3.3.1	Presentation of information necessary for the operation of stationary ICT (no design restrictions)							P	P			

Clause	Requirement	WV	LV	WPC	WH	LH	WVC	LMS	LR	PST	LC	PR
8.3.3.2	Presentation of information necessary for the operation of stationary ICT (no design restrictions)							P	P			
8.3.5.1	Control location (vertical, no design restrictions)	-	-	-	-	-	-	P	P	-	-	-
8.3.5.2	Control location (vertical, with design restrictions)	-	-	-	-	-	-	P	P	-	-	-
8.3.6	Control location (horizontal)	-	-	-	-	-	-	P	P	-	-	-
8.3.7.1	Reach depth (no design restrictions)	-	-	-	-	-	-	P	P	-	-	-
8.3.7.2	Reach depth (vertical, with design restrictions)	-	-	-	-	-	-	P	P	-	-	-
8.3.9.2	Obstructed forward reach (no design constraints)	-	-	-	-	-	-	P	P	-	-	-
8.3.9.3	Obstructed forward reach (with design constraints)	-	-	-	-	-	-	P	P	-	-	-
8.3.10.1	Free space underneath stationary ICT with or without an obstruction (no design constraints)	-	-	-	-	-	-	P	P	-	-	-
8.3.10.2	Free space underneath stationary ICT with or without an obstruction (with design constraints)	-	-	-	-	-	-	P	P	-	-	-
8.3.11.2	Obstructed side reach (no design constraints)	-	-	-	-	-	-	P	P	-	-	-
8.3.11.3	Obstructed side reach (with design constraints)	-	-	-	-	-	-	P	P	-	-	-
8.3.14	Installation instructions	-	-	-	-	-	-	P	P	-	-	-
8.4.1	Numeric keys	P	S	-	-	-	-	P	P	-	P	-
8.4.2.1	Means of operation	-	-	-	-	-	-	P	S	-	-	-
8.4.2.2	Force of operation of operable parts	-	-	-	-	-	-	P	S	-	-	-
8.4.3	Keys, tickets and cards	P	P	-	-	-	-	-	-	-	P	-
8.5	Tactile indication of speech mode	P	S	-	-	-	-	-	-	-	S	-
8.6	Standard connections	P	P	-	-	P	P	P	P	-	P	-
8.7	Colour on hardware	-	S	P	-	-	-	-	-	-	S	-
8.8	Contrast on hardware	-	P	P	-	-	-	-	-	-	S	-
9.1.1.1	Non-text content	P	P	-	P	P	-	S	S	-	S	-
9.1.2.1	Audio-only and video-only (pre-recorded)	P	P	-	P	P	-	-	-	-	S	-
9.1.2.2	Subtitles (pre-recorded)	-	-	-	P	P	-	-	-	-	S	-

Clause	Requirement	WV	LV	WPC	WH	LH	WVC	LMS	LR	PST	LC	PR
9.1.2.3	Audio description or media alternative (pre-recorded)	P	S	-	-	-	-	-	-	-	S	-
9.1.2.4	Subtitles (live)	-	-	-	P	P	-	-	-	-	P	-
9.1.2.5	Audio description (pre-recorded)	P	S	-	-	-	-	-	-	-	S	-
9.1.3.1	Info and relationships	P	S	-	-	-	-	S	S	-	S	-
9.1.3.2	Meaningful sequence	P	S	-	-	-	-	-	-	-	S	-
9.1.3.3	Sensory characteristics	P	P	P	P	P	-	-	-	-	S	-
9.1.3.4	Orientation	-	P	-	-	-	-	P	P	-	S	-
9.1.3.5	Identify input purpose	P	P	-	-	-	-	S	S	-	P	-
9.1.4.1	Use of colour	-	P	P	-	-	-	-	-	-	S	-
9.1.4.2	Audio control	P	S	-	-	P	-	-	-	-	P	-
9.1.4.3	Contrast (minimum)	-	P	-	-	-	-	-	-	-	P	-
9.1.4.4	Resize text	-	P	-	-	-	-	-	-	-	P	-
9.1.4.5	Images of text	-	P	P	-	-	-	-	-	-	P	-
9.1.4.10	Reflow	-	P	-	-	-	-	-	-	-	P	-
9.1.4.11	Non-text contrast	-	P	-	-	-	-	-	-	-	P	-
9.1.4.12	Text spacing	-	P	-	-	-	-	-	-	-	P	-
9.1.4.13	Content on hover or focus	-	P	-	-	-	-	P	-	-	P	-
9.2.1.1	Keyboard	P	P	-	-	-	-	P	P	-	-	-
9.2.1.2	No keyboard trap	P	P	-	-	-	-	P	P	-	-	-
9.2.1.4	Character key shortcuts	P	P	-	-	-	-	P	P	-	S	-
9.2.2.1	Timing adjustable	P	P	-	P	P	-	P	P	-	P	-
9.2.2.2	Pause, stop, hide	P	P	-	P	P	-	S	S	-	P	-
9.2.3.1	Three flashes or below threshold	-	-	-	-	-	-	-	-	P	-	-
9.2.4.1	Bypass blocks	P	P	-	-	-	-	P	P	-	P	-
9.2.4.2	Page titled	P	P	-	-	-	-	P	P	-	P	-
9.2.4.3	Focus order	P	P	-	-	-	-	P	P	-	P	-
9.2.4.4	Link purpose (in context)	P	P	-	-	-	-	P	P	-	P	-
9.2.4.5	Multiple ways	P	P	-	-	-	P	P	P	-	P	-
9.2.4.6	Headings and labels	P	P	-	S	-	P	P	P	-	P	-
9.2.4.7	Focus visible	-	P	-	-	-	P	P	P	-	P	-
9.2.4.11	Focus not obscured (minimum)	-	P	-	-	-	P	P	P	-	P	-
9.2.5.1	Pointer gestures	-	-	-	-	-	-	P	P	-	P	-
9.2.5.2	Pointer cancellation	-	P	-	-	-	-	P	P	-	P	-
9.2.5.3	Label in name	P	P	-	-	-	-	P	P	-	S	-
9.2.5.4	Motion actuation	S	S	-	-	-	-	P	P	-	S	-
9.2.5.7	Dragging movements	P	P	-	-	-	-	P	P	-	S	-
9.2.5.8	Target size (minimum)	-	P	-	-	-	-	P	P	-	S	-
9.3.1.1	Language of page	P	S	-	S	S	-	S	S	-	P	-
9.3.1.2	Language of parts	P	S	-	S	S	-	S	S	-	P	-
9.3.2.1	On focus	P	P	-	-	-	-	P	P	-	P	-
9.3.2.2	On input	P	P	-	-	-	-	P	P	-	P	-
9.3.2.3	Consistent navigation	P	P	-	-	-	-	S	S	-	P	-
9.3.2.4	Consistent identification	P	P	-	-	-	-	S	S	-	P	-
9.3.2.6	Consistent help	P	P	-	-	-		S	S	-	P	

Clause	Requirement	WV	LV	WPC	WH	LH	WVC	LMS	LR	PST	LC	PR
9.3.3.1	Error identification	P	P	P	S	S	S	S	S	S	P	-
9.3.3.2	Labels or instructions	S	S	S	S	S	S	S	S	S	P	-
9.3.3.3	Error suggestion	P	P	P	S	S	S	S	S	S	P	-
9.3.3.4	Error prevention (legal, financial, data)	P	P	P	S	S	S	S	S	P	P	P
9.3.3.7	Redundant entry	S	S	-	-	-	-	P	P	-	P	-
9.3.3.8	Accessible authentication (minimum)	P	P	P	P	P	P	P	P	P	P	P
9.4.1.2	Name, role, value	P	P	S	S	S	-	P	P	-	P	-
9.4.1.3	Status messages	P	P	-	-	-	P	P	-P	-	P	-
9.6	WCAG conformance requirements	P	P	P	P	P	S	P	P	P	P	P
9.7	User preferences for web pages	P	P	P	P	P	S	P	P	P	P	P
10.1.1.1	Non-text content	P	P	-	P	P	-	S	S	-	S	-
10.1.2.1	Audio-only and video-only (pre-recorded)	P	P	-	P	P	-	-	-	-	S	-
10.1.2.2	Subtitles (pre-recorded)	-	-	-	P	P	-	-	-	-	S	-
10.1.2.3	Audio description or media alternative (pre-recorded)	P	S	-	-	-	-	-	-	-	S	-
10.1.2.4	Subtitles (live)	-	-	-	P	P	-	-	-	-	P	-
10.1.2.5	Audio description (pre-recorded)	P	S	-	-	-	-	-	-	-	S	-
10.1.3.1	Info and relationships	P	S	-	-	-	-	S	S	-	S	-
10.1.3.2	Meaningful sequence	P	S	-	-	-	-	-	-	-	S	-
10.1.3.3	Sensory characteristics	P	P	P	P	P	-	-	-	-	S	-
10.1.3.4	Orientation	-	P	-	-	-	-	P	P	-	S	-
10.1.3.5	Identify input purpose	P	P	-	-	-	-	S	S	-	P	-
10.1.4.1	Use of colour	-	P	P	-	-	-	-	-	-	S	-
10.1.4.2	Audio control	P	S	-	-	P	-	-	-	-	P	-
10.1.4.3	Contrast (minimum)	-	P	-	-	-	-	-	-	-	P	-
10.1.4.4	Resize text	-	P	-	-	-	-	-	-	-	P	-
10.1.4.5	Images of text	-	P	P	-	-	-	-	-	-	P	-
10.1.4.10	Reflow	-	P	-	-	-	-	-	-	-	P	-
10.1.4.11	Non-text contrast	-	P	-	-		-	-	-	-	P	-
10.1.4.12	Text spacing	-	P	-	-	-	-	-	-	-	P	-
10.1.4.13	Content on hover or focus	-	P	-	-	-	-	P	-	-	P	-
10.2.1.1	Keyboard	P	P	-	-	-	-	P	P	-	-	-
10.2.1.2	No keyboard trap	P	P	-	-	-	-	P	P	-	-	-
10.2.1.4	Character key shortcuts	P	P	-	-	-	-	P	P	-	S	-
10.2.2.1	Timing adjustable	P	P	-	P	P	-	P	P	-	P	-
10.2.2.2	Pause, stop, hide	P	P	-	P	P	-	S	S	-	P	-
10.2.3.1	Three flashes or below threshold	-	-	-	-	-	-	-	-	P	-	-
10.2.4.2	Non-web document titled	P	P	-	-	-	-	P	P	-	P	-
10.2.4.3	Focus order	P	P	-	-	-	-	P	P	-	P	-
10.2.4.4	Link purpose (in context)	P	P	-	-	-	-	P	P	-	P	-
10.2.4.6	Headings and labels	P	P	-	S	-	P	P	P	-	P	-

Clause	Requirement	WV	LV	WPC	WH	LH	WVC	LMS	LR	PST	LC	PR
10.2.4.7	Focus visible	-	P	-	-	-	P	P	P	-	P	-
10.2.4.11	Focus not obscured (minimum)	-	P	-	-	-	P	P	P	-	P	-
10.2.5.1	Pointer gestures	-	-	-	-	-	-	P	P	-	P	-
10.2.5.2	Pointer cancellation	-	P	-	-	-	-	P	P	-	P	-
10.2.5.3	Label in name	P	P	-	-	-	-	P	P	-	S	-
10.2.5.4	Motion actuation	S	S	-	-	-	-	P	P	-	S	-
10.2.5.7	Dragging movements	P	P	-	-	-	-	P	P	-	S	-
10.2.5.8	Target size (minimum)		P	-	-	-	-	P	P	-	S	-
10.3.1.1	Language of non-web document	P	S	-	S	S	-	S	S	-	P	-
10.3.1.2	Language of parts	P	S	-	S	S	-	S	S	-	P	-
10.3.2.1	On focus	P	P	-	-	-	-	P	P	-	P	-
10.3.2.2	On input	P	P	-	-	-	-	P	P	-	P	-
10.3.2.3	Consistent navigation	P	P	-	-	-	-	S	S	-	P	-
10.3.2.4	Consistent identification	P	P	-	-	-	-	S	S	-	P	-
10.3.2.6	Consistent help	P	P	-	-	-		S	S	-	P	
10.3.3.1	Error identification	P	P	P	S	S	S	S	S	S	P	-
10.3.3.2	Labels or instructions	S	S	S	S	S	S	S	S	S	P	-
10.3.3.3	Error suggestion	P	P	P	S	S	S	S	S	S	P	-
10.3.3.4	Error prevention (legal, financial, data)	P	P	P	S	S	S	S	S	P	P	P
10.3.3.7	Redundant entry	S	S					P	P		P	
10.3.3.8	Accessible authentication (minimum)	P	P	P	P	P	P	P	P	P	P	P
10.4.1.2	Name, role, value	P	P	S	S	S	-	P	P	-	P	-
10.4.1.3	Status messages	P	P	-	-	-	P	P	-P	-	P	-
10.5	Subtitle positioning (recommendation)	-	-	-	P	P	-	-	-	-	S	-
10.6	Audio description timing (recommendation)	P	S	-	-	-	-	-	-	-	P	-
10.7	User preferences for non-web documents	P	P	P	P	P	P	P	P	P	P	P
11.1.1.1	Non-text content	P	P	-	P	P	-	S	S	-	S	-
11.1.2.1	Audio-only and video-only (pre-recorded)	P	P	-	P	P	-	-	-	-	S	-
11.1.2.2	Subtitles (pre-recorded)	-	-	-	P	P	-	-	-	-	S	-
11.1.2.3	Audio description or media alternative (pre-recorded)	P	S	-	-	-	-	-	-	-	S	-
11.1.2.4	Subtitles (live)	-	-	-	P	P	-	-	-	-	P	-
11.1.2.5	Audio description (pre-recorded)	P	S	-	-	-	-	-	-	-	S	-
11.1.3.1	Info and relationships	P	S	-	-	-	-	S	S	-	S	-
11.1.3.2	Meaningful sequence	P	S	-	-	-	-	-	-	-	S	-
11.1.3.3	Sensory characteristics	P	P	P	P	P	-	-	-	-	S	-
11.1.3.4	Orientation	-	P	-	-	-	-	P	P	-	S	-
11.1.3.5	Identify input purpose	P	P	-	-	-	-	S	S	-	P	-

Clause	Requirement	WV	LV	WPC	WH	LH	WVC	LMS	LR	PST	LC	PR
11.1.4.1	Use of colour	-	P	P	-	-	-	-	-	-	S	-
11.1.4.2	Audio control	P	S	-	-	P	-	-	-	-	P	-
11.1.4.3	Contrast (minimum)	-	P	-	-	-	-	-	-	-	P	-
11.1.4.4	Resize text	-	P	-	-	-	-	-	-	-	P	-
11.1.4.5	Images of text	-	P	P	-	-	-	-	-	-	P	-
11.1.4.10	Reflow	-	P	-	-	-	-	-	-	-	P	-
11.1.4.11	Non-text contrast	-	P	-	-		-	-	-	-	P	-
11.1.4.12	Text spacing	-	P	-	-	-	-	-	-	-	P	-
11.1.4.13	Content on hover or focus	-	P	-	-	-	-	P	-	-	P	-
11.2.1.1	Keyboard	P	P	-	-	-	-	P	P	-	-	-
11.2.1.2	No keyboard trap	P	P	-	-	-	-	P	P	-	-	-
11.2.1.4	Character key shortcuts	P	P	-	-	-	-	P	P	-	S	-
11.2.2.1	Timing adjustable	P	P	-	P	P	-	P	P	-	P	-
11.2.2.2	Pause, stop, hide	P	P	-	P	P	-	S	S	-	P	-
11.2.3.1	Three flashes or below threshold	-	-	-	-	-	-	-	-	P	-	-
11.2.4.2	Non-web software titled	P	P	-	-	-	-	P	P	-	P	-
11.2.4.3	Focus order	P	P	-	-	-	-	P	P	-	P	-
11.2.4.4	Link purpose (in context)	P	P	-	-	-	P	P	P	-	P	-
11.2.4.6	Headings and labels	P	P	-	S	-	P	P	P	-	P	-
11.2.4.7	Focus visible	-	P	-	-	-	P	P	P	-	P	-
11.2.4.11	Focus not obscured (minimum)	-	P	-	-	-	P	P	P	-	P	-
11.2.5.1	Pointer gestures	-	-	-	-	-	-	P	P	-	P	-
11.2.5.2	Pointer cancellation	-	P	-	-	-	-	P	P	-	P	-
11.2.5.3	Label in name	P	P	-	-	-	-	P	P	-	S	-
11.2.5.4	Motion actuation	S	S	-	-	-	-	P	P	-	S	-
11.2.5.7	Dragging movements	P	P	-	-	-	-	P	P	-	S	-
11.2.5.8	Target size (minimum)		P	-	-	-	-	P	P	-	S	-
11.3.1.1	Language of non-web software	P	S	-	S	S	-	S	S	-	P	-
11.3.2.1	On focus	P	P	-	-	-	-	P	P	-	P	-
11.3.2.2	On input	P	P	-	-	-	-	P	P	-	P	-
11.3.2.4	Consistent identification	P	P	-	-	-		S	S	-	P	
11.3.3.1	Error identification	P	P	P	S	S	S	S	S	S	P	-
11.3.3.2	Labels or instructions	S	S	S	S	S	S	S	S	S	P	-
11.3.3.3	Error suggestion	P	P	P	S	S	S	S	S	S	P	-
11.3.3.4	Error prevention (legal, financial, data)	P	P	P	S	S	S	S	S	P	P	P
11.3.3.7	Redundant entry	S	S					P	P		P	
11.3.3.8	Accessible authentication (minimum)	P	P	P	P	P	P	P	P	P	P	P
11.4.1.2	Name, role, value	P	P	S	S	S	-	P	P	-	P	-
11.4.1.3	Status messages	P	P	-	-	-	P	P	-P	-	P	-
11.5.2.1	Platform interoperability with assistive technologies	P	P	P	P	P	-	P	P	-	P	S
11.5.2.3	Use of accessibility services (recommendation)	P	P	P	P	P	P	P	P	P	P	S

Clause	Requirement	WV	LV	WPC	WH	LH	WVC	LMS	LR	PST	LC	PR
11.5.2.4	Assistive technology	P	P	P	P	P	P	P	P	P	P	P
11.5.2.5	Object information	P	P	P	P	P	-	P	P	-	P	S
11.5.2.6	Row, column, and headers	P	P	-	-	-	-	P	P	-	P	-
11.5.2.7	Values	P	P	-	-	-	-	P	P	-	P	-
11.5.2.8	Label relationships	P	P	-	-	-	-	P	P	-	P	-
11.5.2.9	Parent-child relationships	P	P	-	-	-	-	P	P	-	P	-
11.5.2.10	Text	P	P	-	-	-	-	P	P	-	P	-
11.5.2.11	List of available actions	P	P	-	-	-	-	P	P	-	P	-
11.5.2.12	Execution of available actions	P	P	-	-	-	-	P	P	-	P	-
11.5.2.13	Tracking of focus and selection attributes	P	P	-	-	-	-	P	P	-	P	-
11.5.2.14	Modification of focus and selection attributes	P	P	-	-	-	-	P	P	-	P	-
11.5.2.15	Change notification	P	P	-	-	-	-	P	P	-	P	-
11.5.2.16	Modifications of states and properties	P	P	-	-	-	-	P	P	-	P	-
11.5.2.17	Modifications of values and text	P	P	-	-	-	-	P	P	-	P	-
11.6.1	User control of accessibility features	P	P	P	P	P	P	P	P	P	P	P
11.6.2	No disruption of accessibility features	P	P	P	P	P	P	P	P	P	P	P
11.7	User preferences	P	P	P	P	P	P	P	P	P	P	P
12.1	Accessible information about products	P	P	P	P	P	P	P	P	P	P	P
12.2	Accessible information about services	P	P	P	P	P	P	P	P	P	P	P
12.3	Accessibility and compatibility features	P	P	P	P	P	P	P	P	P	P	P
12.4	Electronic program guides	P	P	P	P	P	P	P	P	P	P	P
12.5	Electronic program guide display	P	P	P	P	P	P	P	P	P	P	P
13.1.2.2	Use of the primary user destination address in relayed communications	-	-	-	P	P	P	-	-	-	S	-
13.1.2.3	Conveying of caller identifier in relayed communications for primary relay users	-	-	-	P	P	P	-	-	-	S	-
13.1.2.4	Relay service invocation decision in outgoing communications	-	-	-	P	P	P	-	-	-	S	-
13.1.2.5	Relay service invocation decision in incoming communications	-	-	-	P	P	P	-	-	-	S	-

Clause	Requirement	WV	LV	WPC	WH	LH	WVC	LMS	LR	PST	LC	PR
13.1.2.6	Relay service support requested by the primary user for emergency communications	-	-	-	P	P	P	-	-	-	S	-
13.1.3.1	Relaying action in relay service communication	-	-	-	P	P	P	-	-	-	S	-
13.1.3.2	Media handling in relay service communication	-	-	-	P	P	P	-	-	-	S	-
13.1.3.3	Relay service support in ICT based conferences	-	-	-	P	P	P	-	-	-	S	-
13.1.3.4	Relay service support during emergency communications initiated by the PSAP	-	-	-	P	P	P	-	-	-	S	-

B.2 Interpretation of Table B.2

B.2.0 General

Table B.2 illustrates the impact a specific accessibility issue might have on different users. It does this by mapping the technical requirements in the standard with the functional performance criteria in clause 4. A technical requirement can be Primary (P) or Secondary (S).

The technical requirements are listed in a vertical column and the functional performance criteria horizontally.

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 P

The table indicates which functional performance criteria, and corresponding user needs, are impacted by each technical requirement.

B.2.1 Example

B.2.1.1 Step 1

For requirement 5.1.3.11, which relates to the possibility of changing the volume when the user is listening in a private headset, the table can be read like this:

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 P
5.1.3.11 Private listening volume	P	S	–	–	S	–	–	–	–	S	S

The requirement for private listening volume has a "P" for primary support in the column "WV", which stands for "without vision".

Requirements	4.2.1 WV	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 P
5.1.3.11 Private listening volume	P	S	–	–	S	–	–	–	–	S	S

This means that private listening volume supports the functional performance criteria for users who cannot see. In other words, the possibility for the user to control the volume when listening via a private headset is necessary for blind users.

B.2.1.2 Step 2

The second column shows that, for users with low vision, the possibility to control the volume when listening via a private headset is not as necessary as for blind users, it has an S for Secondary, where the first column had a P for Primary.

Requirements	4.2.1 WV	**4.2.2 LV**	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 P
5.1.3.11 Private listening volume	P	S	–	–	S	–	–	–	–	S	S

Secondary support means that some users in this group may use the accessibility feature in specific situations.

B.2.1.3 Step 3

In this way it is possible to assess the impact on functional performance criteria if a particular requirement is not true.

Requirements	4.2.1 WV	4.2.2 LV	**4.2.3 WPC**	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 P
5.1.3.11 Private listening volume	P	S	–	–	S	–	–	–	–	S	S

The third column considers users who are colour blind; the requirement on private listening volume is not marked at all. Of course, the possibility of changing the volume when listening in private headset is nice to have for all users, no matter their ability to distinguish between colours, but the listening volume does not compensate for the colour blindness.

B.2.1.4 Step 4

The table can also be read the other way around:

Since blind users cannot see the screen, they need an alternative way to use the interface. If this alternative is audio via private headset, blind users need the possibility to change the volume.

Requirements	**4.2.1 WV**	4.2.2 LV	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 P
5.1.3.11 Private listening volume	P	S	–	–	S	–	–	–	–	S	S

Some users who can see, but not well, need or prefer to use audio as an alternative way to use the interface. If this alternative is audio via private headset, some low vision users will benefit from the possibility to change the volume.

Requirements	4.2.1 WV	**4.2.2 LV**	4.2.3 WPC	4.2.4 WH	4.2.5 LH	4.2.6 WVC	4.2.7 LMS	4.2.8 LR	4.2.9 PST	4.2.10 LC	4.2.11 P
5.1.3.11 Private listening volume	P	S	–	–	S	–	–	–	–	S	S

Annex C (normative): Determination of conformance

C.1 Introduction

This normative annex sets out sufficient means to determine conformance with the individual requirements set out in the body of the present document.

To assist the reader, empty clauses are inserted in order to make the numbering of the annex reflect the clause numbers in the requirements.

C.2 Empty clause

This clause is intentionally left empty.

C.3 Empty clause

This clause is intentionally left empty.

C.4 Functional performance

C.4.1 Meeting Functional Performance Criteria

Clause 4.1 is informative and contains no testable requirements.

C.4.2 Functional Performance Criteria

C.4.2.1 Usage without vision

Type of assessment	Inspection
Requirement Preconditions	The ICT provides visual modes of operation.
Procedure	1. **Check** if the ICT meets all requirements marked with a P or S in column WV of Annex B. 2. **Check** if there is evidence that the ICT provides at least one mode of operation that does not require vision.
Result	**Pass:** Check 1 or 2 is true **Fail:** Checks 1 and 2 are false

C.4.2.2 Usage with limited vision

Type of assessment	Inspection
Requirement Preconditions	The ICT provides visual modes of operation.
Procedure	1. **Check** if the ICT meets all requirements marked with a P or S in column LV of Annex B. 2. **Check** if there is evidence that the ICT provides features that enable users to make better use of their limited vision.
Result	**Pass:** Check 1 or 2 is true **Fail:** Checks 1 and 2 are false

C.4.2.3 Usage with perception of colour

Type of assessment	Inspection
Requirement Preconditions	The ICT provides visual modes of operation.
Procedure	1. **Check** if the ICT meets all requirements marked with a P or S in column WPC of Annex B. 2. **Check** if there is evidence that the ICT provides a visual mode of operation that does not require user perception of colour.
Result	**Pass:** Check 1 or 2 is true **Fail:** Checks 1 and 2 are false

C.4.2.4 Usage without hearing

Type of assessment	Inspection
Requirement Preconditions	The ICT provides auditory modes of operation.
Procedure	1. **Check** if the ICT meets all requirements marked with a P or S in column WH of Annex B. 2. **Check** if there is evidence that the ICT provides at least one mode of operation that does not require hearing.
Result	**Pass:** Check 1 or 2 is true **Fail:** Checks 1 and 2 are false

C.4.2.5 Usage with limited hearing

Type of assessment	Inspection
Requirement Preconditions	The ICT provides auditory modes of operation.
Procedure	1. **Check** if the ICT meets all requirements marked with a P or S in column LH of Annex B. 2. **Check** if there is evidence that the ICT provides enhanced audio features.
Result	**Pass:** Check 1 or 2 is true **Fail:** Checks 1 and 2 are false

C.4.2.6 Usage with no or limited vocal capability

Type of assessment	Inspection
Requirement Preconditions	(None)
Procedure	1. **Check** if the ICT meets all requirements marked with a P or S in column WVC of Annex B. 2. **Check** if there is evidence that the ICT provides at least one mode of operation that does not require them to generate vocal output.
Result	**Pass:** Check 1 or 2 is true **Fail:** Checks 1 and 2 are false

C.4.2.7 Usage with limited manipulation or strength

Type of assessment	Inspection
Requirement Preconditions	The ICT requires vocal input from users
Procedure	1. **Check** if the ICT meets all requirements marked with a P or S in column LMS of Annex B. 2. **Check** if there is evidence that the ICT provides features that enable users to make use of the ICT through alternative actions not requiring manipulation, simultaneous action or hand strength.
Result	**Pass:** Check 1 or 2 is true **Fail:** Checks 1 and 2 are false

C.4.2.8 Usage with limited reach

Type of assessment	Inspection
Requirement Preconditions	The ICT is stationary, free-standing or installed
Procedure	1. **Check** if the ICT meets all requirements marked with a P or S in column LR of Annex B. 2. **Check** if there is evidence that all the elements required for operation will need to be within reach of all users.
Result	**Pass:** Check 1 or 2 is true **Fail:** Checks 1 and 2 are false

C.4.2.9 Minimize photosensitive triggers

Type of assessment	Inspection
Requirement Preconditions	The ICT provides visual modes of operation.
Procedure	1. **Check** if the ICT meets all requirements marked with a P or S in column PST of Annex B. 2. **Check** whether the ICT is provided with evidence that the ICT provides at least one mode of operation that minimizes the potential for triggering photosensitive seizures.
Result	**Pass:** Check 1 or 2 is true **Fail:** Checks 1 and 2 are false

C.4.2.10 Usage with limited cognition, language, or learning

Type of assessment	Inspection
Requirement Preconditions	The ICT provides information or requires user interaction
Procedure	1. **Check** if the ICT meets all requirements marked with a P or S in column LC of Annex B. 2. **Check** if there is evidence that the ICT provides features and/or presentation that makes it simpler and easier to understand, operate and use.
Result	**Pass:** Check 1 or 2 is true **Fail:** Checks 1 and 2 are false

C.4.2.11 Privacy

Type of assessment	Inspection
Requirement Preconditions	The ICT provides features for accessibility
Procedure	1. **Check** if the ICT meets all requirements marked with a P or S in column PR of Annex B. 2. **Check** if there is evidence that the ICT ensures that the privacy of the users of the ICT is maintained irrespective of the use of these features for accessibility.
Result	**Pass:** Check 1 or 2 is true **Fail:** Checks 1 and 2 are false

C.5 Generic requirements

C.5.1 Closed functionality

C.5.1.1 Introduction (informative)

Clause 5.1.1 is informative only and contains no testable requirements.

C.5.1.2 General

C.5.1.2.1 Closed functionality

See clauses C.5.2 to C.13, as applicable.

C.5.1.2.2 Assistive technology

Type of assessment	Testing
Requirement Preconditions	1. The ICT includes closed functionality.
Procedure	1. Determine the functionality of the ICT that is closed. 2. **Check** that the tests C.5.1.3 to C.5.1.6 can be carried out without the attachment or installation of any assistive technology except personal headsets or inductive loops.
Result	**Pass:** Check 2 is true **Fail:** Check 2 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.3 Non-visual access

C.5.1.3.1 Audio output of visual information

Type of assessment	Testing
Requirement Preconditions	1. The ICT includes closed functionality. 2. Visual information is needed to enable the use of the closed functionality of the ICT.
Procedure	1. Determine the functionality of the ICT that is closed. 2. **Check** that they are all operable using audio output access.
Result	**Pass:** Check 2 is true **Fail:** Check 2 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.3.2 Auditory output delivery including speech

Type of assessment	Inspection
Requirement Preconditions	1. The ICT includes closed functionality. 2. Auditory output is provided as non-visual access to closed functionality.
Procedure	1. **Check** that the auditory output is delivered by a mechanism included in or provided with the ICT. 2. **Check** that the auditory output is delivered by a personal headset that can be connected through a 3,5 mm audio jack without requiring the use of vision.
Result	**Pass:** Check 1 or 2 is true **Fail:** Checks 1 and 2 are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.3.3 Auditory output correlation

Type of assessment	Inspection
Requirement Preconditions	1. The ICT includes closed functionality. 2. Auditory output is provided as non-visual access to closed functionality. 3. Information that is under the control of the ICT is displayed on the screen.
Procedure	1. **Check** that auditory information is provided. 2. **Check** that the information includes all the non-decorative information displayed on the current screen.
Result	**Pass:** All checks are true **Fail:** Any check is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.3.4 Speech output user control

Type of assessment	Inspection
Requirement Preconditions	1. The ICT includes closed functionality. 2. Speech output is provided as non-visual access to closed functionality.
Procedure	1. **Check** that the speech output is capable of being interrupted when requested by the user. 2. **Check** that the speech output is capable of being repeated when requested by the user.
Result	**Pass:** All checks are true **Fail:** Any check is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.3.5 Speech output automatic interruption

Type of assessment	Inspection
Requirement Preconditions	1. The ICT includes closed functionality. 2. Speech output is provided as non-visual access to closed functionality.
Procedure	1. Determine the closed functions of the ICT. 2. **Check** that the speech output for each single function is interrupted on a user action. 3. **Check** that the speech output for each single function is interrupted when new speech output begins.
Result	**Pass:** Check 2 and 3 are true **Fail:** Check 2 or 3 are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.3.6 Speech output for non-text content

Type of assessment	Testing
Requirement Preconditions	1. The ICT includes closed functionality. 2. Non-text content is presented to users.
Procedure	1. **Check** that audio output is provided as an alternative for non-text content. 2. **Check** that the non-text content is not pure decoration. 3. **Check** that the non-text content is not used only for visual formatting. 4. **Check** that the audio output follows the guidance for "text alternative" described in WCAG 2.1 2.2 Success Criterion 1.1.1.
Result	**Pass:** Checks 1 and 2 and 3 and 4 are true; or 1 and 2 are false; or 1 and 3 are false **Fail:** Checks 1 is true and 2 false; or 1 is true and 3 false; or 1 and 2 and 3 are true and 4 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.3.7 Speech output for video information

Type of assessment	Testing
Preconditions	1. The ICT includes closed functionality. 2. Pre-recorded video content is needed to enable the use of closed functionality of the ICT
Procedure	1. **Check** that an auditory equivalent is provided for any pre-recorded video content originating from the ICT. 2. **Check** that auditory equivalent provided from another source along with video content is also made available by the ICT.
Result	**Pass:** Check 1 and check 2 are true **Fail:** Check 1 or check 2 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.3.8 Masked entry

Type of assessment	Testing
Requirement Preconditions	1. The ICT includes closed functionality. 2. Auditory output is provided as non-visual access to closed functionality. 3. The characters displayed are masking characters.
Procedure	1. Make sure any option to allow non-private audio output is not on. 2. **Check** that the auditory output is not a spoken version of the characters entered if the output is not delivered only to a mechanism for private listening.
Result	**Pass:** Check is true **Fail:** Check is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.3.9 Private access to personal data

Type of assessment	Testing
Requirement Preconditions	1. The ICT includes closed functionality. 2. The ICT is intended for public shared use. 3. Auditory output is provided as non-visual access to closed functionality. 4. The output contains data that is considered to be private according to the applicable privacy policy.
Procedure	1. **Check** that the auditory output is only delivered through a mechanism for private listening. 2. **Check** that the mechanism for private listening can be connected without requiring the use of vision. 3. **Check** that the auditory output is delivered through all user-selectable mechanisms.
Result	**Pass:** Checks 1 and 2 are true (3 is a user option and not required) **Fail:** Checks 1 or 2 are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.3.10 Non-interfering audio output

Type of assessment	Testing
Requirement Preconditions	1. The ICT includes closed functionality. 2. Auditory output is provided as non-visual access to closed functionality.
Procedure	1. **Check** that any automatically playing interfering audible output lasts no longer than three seconds.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.3.11 Private listening volume

Type of assessment	Inspection
Requirement Preconditions	1. The ICT includes closed functionality. 2. The auditory output is provided as non-visual access to closed functionality. 3. The auditory output is delivered through a mechanism for private listening.
Procedure	1. **Check** that there is at least one non-visual mode of operation for controlling the volume.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.3.12 Speaker volume

Type of assessment	Inspection and measurement
Requirement Preconditions	1. The ICT includes closed functionality. 2. The auditory output is provided as non-visual access to closed functionality. 3. The auditory output is delivered through speakers on the ICT.
Procedure	1. **Check** that a non-visual incremental volume control is provided. 2. **Check** that output amplification up to a level of at least 65 dBA (-29 dBPaA) is available.
Result	**Pass:** Checks 1 and 2 are true **Fail:** Check 1 or 2 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.3.13 Volume reset

Type of assessment	Inspection and measurement
Requirement Preconditions	1. The ICT includes closed functionality. 2. The ICT is intended for public shared use. 3. The auditory output is provided as non-visual access to closed functionality through a mechanism for private listening.
Procedure	1. **Check** that a function is provided to automatically reset the volume to be at a level of 65 dBA or less after every use.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.3.14 Spoken languages

Type of assessment	Testing
Requirement Preconditions	1. The ICT includes closed functionality. 2. The speech output is provided as non-visual access to closed functionality.
Procedure	**Check** that the speech output is in the same human language of the displayed content provided, except except: a) for proper names, technical terms, words of indeterminate language, and words or phrases that have become part of the vernacular of the immediately surrounding text; b) where the content is generated externally and not under the control of the ICT vendor, the present clause shall not be required to apply for languages not supported by the ICT's speech synthesizer; c) for displayed languages that cannot be selected using non-visual access; d) where the user explicitly selects a speech language that is different from the language of the displayed content.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.3.15 Non-visual error identification

Type of assessment	Testing
Requirement Preconditions	1. The ICT includes closed functionality. 2. Speech output is provided as non-visual access to closed functionality. 3. An input error is automatically detected. 4. The error is indicated visually via text and/or other visual means.
Procedure	1. **Check** that speech output identifies the item that is in error. 2. **Check** that the speech output describes the item that is in error.
Result	**Pass:** Checks 1 and 2 are true **Fail:** Check 1 or check 2 false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.3.16 Receipts, tickets and transactional outputs

Type of assessment	Testing
Requirement Preconditions	1. The ICT includes closed functionality. 2. The ICT provides physical receipts, tickets, or other outputs as a result of a self-service transaction.
Procedure	1. **Check** that auditory output is provided which includes, all information necessary to complete or verify the transaction - except information that is printed and that is not needed to complete the transaction, such as receipts, itineraries, maps, etc.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.4 Functionality closed to text enlargement

Type of assessment	Inspection and measurement
Requirement Preconditions	1. The ICT includes closed functionality 2. A functionality of the ICT is closed to enlargement features of platform or assistive technology.
Procedure	1. **Measure** the physical height of a letter x on the screen - **x-height (mm)**. 2. **Calculate** the x-height in CSS px using the formula: **x-height (CSSpx) = 2 688 × x-height (mm) / D (mm)** where D is either a viewing distance specified for the ICT or 400 mm, whichever is the greater. 3. **Check** that the x-height in CSS px given by the calculation of step 2 is at least 16 CSS px.
Result	**Pass:** Check 3 is true **Fail:** Check 3 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.5 Visual output for auditory information

Type of assessment	Inspection
Requirement Preconditions	1. The ICT includes closed functionality 2. Auditory information is needed to enable the use of closed functionality of ICT.
Procedure	1. **Check** that the visual information is equivalent to the pre-recorded auditory output.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.6 Operation without keyboard interface

C.5.1.6.1 Closed functionality

Type of assessment	Inspection
Requirement Preconditions	1. The ICT includes closed functionality 2. ICT functionality is closed to keyboards or keyboard interfaces.
Procedure	1. **Check** that all functionality is operable without vision.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.6.2 Input focus

Type of assessment	Inspection
Requirement Preconditions	1. The ICT includes closed functionality 2. ICT functionality is closed to keyboards or keyboard interfaces. 3. Input focus can be moved to a user interface element.
Procedure	1. **Check** that it is possible to move the input focus away from that element using the same mechanism.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.7 Access without speech

Type of assessment	Inspection
Requirement Preconditions	1. The ICT includes closed functionality. 2. Speech is needed to enable the use of closed functionality of the ICT.
Procedure	1. **Check** that the closed functions can be enabled by an alternative input mechanism that does not require speech.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.1.8 Identify input purpose (closed functionality)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT includes closed functionality. 2. input field(s) collecting information about the user are needed to enable the use of the closed functionality of the ICT. 3. the input field(s) serve a purpose identified in the WCAG 2.2 Input Purposes for User Interface Components section.
Procedure	1. For each input field that collects information about a user check that it serves a purpose identified in the Input Purposes for User Interface Components section of WCAG 2.2. 2. **Check** that there is auditory output that conforms to clause 5.1.3.2. 3. **Check** that the auditory output describes the input purpose.
Result	**Pass:** Checks 2 and 3 are true **Fail:** Check 2 or Check 3 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.2 Activation of accessibility features

Type of assessment	Inspection
Requirement Preconditions	1. The ICT includes documented accessibility features.
Procedure	1. **Check** that it is possible to activate those accessibility features without relying on a method that does not support that need.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.).

C.5.3 Biometrics

Type of assessment	Testing
Requirement Preconditions	1. The ICT uses biological characteristic for user identification or for control of ICT.
Procedure	1. **Check** that another means that does not rely on a biological characteristic can be used for user identification or control of ICT.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.).

C.5.4 Preservation of accessibility information during conversion

Type of assessment	Inspection
Requirement Preconditions	1. The ICT converts information or communication.
Test Assumptions	1. One or more representative samples of non-proprietary information provided for accessibility that are documented and contains at least some parts that are supported by the destination format.
Procedure	1. **Check** that the non-proprietary information provided for accessibility is preserved when the ICT converts information or communication - except for any parts that cannot be supported by the destination format.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.). **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.5.5 Tactilely discernible operable parts

Type of assessment	Testing
Requirement Preconditions	1. The ICT includes functionality that requires manual operation and control.
Procedure	1. **Check** that there is a mode of operation that allows all the functionality of the ICT that requires manual operation and control to be controlled without requiring vision using only tactilely discernible operable parts.
Result	**Pass:** Checks 1 is true **Fail:** Checks 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.6 Locking or toggle controls

C.5.6.1 Tactile or auditory status

Type of assessment	Inspection
Requirement Preconditions	1. The ICT has a locking or toggle control.
Procedure	1. **Check** that there is at least one mode of operation where the status of all locking or toggle controls can be determined through touch without operating the control. 2. **Check** that there is at least one mode of operation where the status of all locking or toggle controls can be determined through sound without operating the control.
Result	**Pass:** Check 1 is true **Fail:** Checks 1 and 2 are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.6.2 Visual status

Type of assessment	Inspection
Requirement Preconditions	1. The ICT includes a locking or toggle control.
Procedure	1. **Check** that there is at least one mode of operation where the status of all locking or toggle controls can be visually determined when the control is presented.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.7 Key repeat

Type of assessment	Testing
Requirement Preconditions	1. The ICT includes a key repeat function that cannot be turned off. 2. The key repeat will result in the generation of multiple entries of the same alphanumeric data into input fields or into documents.
Procedure	1. **Check** that the delay before key repeat can be adjusted to at least 2 seconds. 2. **Check** that the key repeat rate can be adjusted to 2 seconds per character.
Result	**Pass:** Checks 1 and 2 are true **Fail:** Check 1 or 2 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.8 Double-strike key acceptance

Type of assessment	Testing
Requirement Preconditions	1. The ICT includes a keyboard or keypad.
Procedure	1. **Check** that there is a mechanism that allows adjustment of the delay after any keystroke, during which an additional key-press will not be accepted if it is identical to the previous keystroke. 2. Adjust that mechanism to its maximum setting. 3. Press any key. 4. After a delay of 0,5 seconds press the same key as that pressed in step 3. 5. **Check** whether the keystroke of step 4 has been accepted.
Result	**Pass:** Check 1 is true and check 5 is false **Fail:** Check 5 is true **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.9 Simultaneous user actions

Type of assessment	Inspection
Requirement Preconditions	1. ICT has a mode of operation requiring simultaneous user actions for its operation.
Procedure	1. Determine all the user controllable functions of the ICT. 2. **Check** that there is a mode of operation that does not require simultaneous user actions for each function identified in step 1.
Result	**Pass:** Check 2 is true **Fail:** Check 2 is false for all modes of operation **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.10 Authoring tools

C.5.10.0 General (informative)

Clause 5.10.0 is informative only and contains no testable requirements.

C.5.10.1 Content technology

Type of assessment	Inspection and Testing
Requirement Preconditions	1. The ICT is or includes, authoring tool functionality.
Procedure	1. **Check** if the authoring tool conforms to 5.10.2 to 5.10.5 to the extent that information required for accessibility is supported by the format used for the output of the authoring tool.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)
NOTE: Where the output format of the authoring tool does not support certain types of information required for accessibility, conformance with requirements that relate to that type of information is not required.	

C.5.10.2 Accessible content creation

Type of assessment	Inspection and Testing
Requirement Preconditions	1. The ICT is, or includes, authoring tool functionality.
Procedure	1. **Check** if the authoring tool has features that enable and guide the production of content that conforms to clause 9 (Web), or clause 10 (Non-web documents), or clause 11 (Non-web software) as applicable.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.10.3 Preservation of accessibility information in transformations

Type of assessment	Inspection and Testing
Requirement Preconditions	1. The ICT is, or includes, authoring tool functionality. 2. The authoring tool provides restructuring transformations or re-coding transformations.
Procedure	1. For a restructuring transformation, **check** if the accessibility information is preserved in the output. 2. For a restructuring transformation, **check** if the content technology supports accessibility information for the restructured form of the information. 3. For a re-coding transformation, **check** if the accessibility information is preserved in the output. 4. For a re-coding transformation, **check** if the accessibility information is supported by the technology of the re-coded output.
Result	**Pass:** (Check 1 is true or checks 1 and 2 are false) **and** (check 3 is true or checks 3 and 4 are false) **Fail:** (Check 1 is false and check 2 is true) **or** (check 3 is false and check 4 is true) **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.10.4 Repair assistance

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, authoring tool functionality. 2. The accessibility checking functionality of the authoring tool is capable of detecting that content does not meet a requirement of clause 9 (Web), or clause 10 (Non-web documents), or clause 11 (Non-web software) as applicable.
Procedure	1. **Check** that the authoring tool provides repair suggestions when content does not meet a requirement of clauses 9, or 10, or 11 (as applicable).
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.5.10.5 Templates

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, authoring tool functionality. 2. The authoring tool provides templates.
Procedure	1. **Check** that the authoring tool provides at least one template that supports the creation of content that conforms to requirements of clause 9 (Web), or clause 10 (Non-web documents), or clause 11 (Non-web software) as applicable. 2. **Check** that at least one template identified in step 1 is available and is identified as conforming to clauses 9, or clause 10, or clause 11 (as applicable).
Result	**Pass:** Checks 1 and 2 are true **Fail:** Check 1 or 2 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)
NOTE: The identification as conforming to the requirements of clause 9, or clause 10, or clause 11 (as applicable) described in check 2 may be described in terms such as "Conformant to WCAG 2.2". Where the identification does not explicitly state that all of the requirements identified in clauses 9, or 10, or 11 (as appropriate) are covered, it may be necessary to use the template to create a website, or document, or software and then test that website, or document, or software according to the requirements of clauses 9, or 10, or 11 to provide full assurance that the template behaves as required.	

C.6 ICT supporting real-time bidirectional communication

C.6.0 Accessible real-time bidirectional communication operational scenarios

C.6.0.1 Rationale for scenarios (informative)

Clause 6.0.1 is informative only and contains no testable requirements.

NOTE: Clauses C.6.0.2 to C.6.0.9 are not tests - but are sets of pre-requisites that are to be applied as appropriate when carrying out testing of other Clause 6 requirements where specified in the requirement testing procedure.

C.6.0.2 Communication client

Scenario Preconditions	1. The ICT under test is, or includes, a communication client, that supports real-time bidirectional voice communication with or within a communication system that supports real-time bidirectional voice communication.
Test assumptions	1. The ICT under test is a communication client C1 that is part of a terminal. without text handling capabilities. 2. Another ICT, communications client C2, that supports real-time bidirectional voice communication and the functionality under test with the same communication system is available. (If multiparty voice communication is supported by the ICT under test - then a communication client C3, with the same functionality as C2 will be needed).
Procedure	1. Perform all applicable C.6.1 and C6.3-C.6.5 tests when C1 is communicating with the communication system.
Test assumptions	1. The ICT under test is a communication client C1 that is part of a terminal. with text handling capabilities. 2. Another ICT, communications client C2, that supports real-time bidirectional voice communication and the functionality under test with the same communication system is available. (If multiparty voice communication is supported by the ICT under test - then a communication client C3, with the same functionality as C2 will be needed).
Procedure	2. Perform all applicable C.6.1-C.6.5 tests when C1 is communicating with the communication system.
NOTE: If the only communication system that is available that supports the feature under test has not yet been independently validated, it can still be useful to demonstrate that the client under test provides the functionality if a pass is achieved or to demonstrate the extent of support.	

C.6.0.3 Communication system

Scenario Preconditions	1. The ICT under test is, or includes, a communication system that supports real-time bidirectional voice communication with communication clients of the system.
Test assumptions	1. A communication client is available for each communication system, called C1 and C2 that support bidirectional voice communications with the ICT under test (the communication system under test), and support the functionality under test, are available. 2. If the system supports multiparty voice communication, then the communication clients in test assumption 1 will need to support multiparty RTT communication, and a third communication client C3, that meets the same test assumptions as C1 and C2, will also be needed.
Procedure	Perform all applicable C.6.1-C.6.5 tests when the communication system under test is communicating with the communication clients.
NOTE:	If the only communication client that is available that supports the feature under test has not yet been independently validated, it can still be useful to demonstrate that the system under test provides the functionality if a pass is achieved or to demonstrate the extent of support.

C.6.0.4 System connecting to another communication system

Scenario Preconditions	1. The ICT under test is, or includes, a communication system that supports real-time bidirectional voice communication with one or more other communication systems that support real-time bidirectional voice communication.
Test assumption	1. Another communication system that supports real-time bidirectional voice communication and the functionality under test is available. 2. A communication client is available for each communication system, called C1 and C2, that allows bidirectional voice communications and supports the functionality under test. 3. Each communication client is connected to its respective communication system.
Procedure	Perform all applicable C.6.1-C.6.5 tests when the communication system under test is communicating with the communication clients.
NOTE:	If the only communication client that is available that supports the feature under test has not yet been independently validated, it can still be useful to demonstrate that the system under test provides the functionality if a pass is achieved or to demonstrate the extent of support.

C.6.0.5 System with roaming visiting client

Scenario Preconditions	1. The ICT under test is, or includes, a communication system that supports real-time bidirectional voice communication.
Test assumption	1. A communication client C1 that supports real-time bidirectional voice communication with another compatible communication system, is available and is visiting and is connected to the system under test. 2. A communication client C2 that is qualified for bidirectional voice communication on the ICT under test and that supports the functionality under test, is available.
Procedure	Perform all applicable C.6.1-C.6.5 tests when the communication system under test is communicating with the visiting communication client C1.
NOTE:	This scenario is intended to cover a roaming case. In roaming, which is specific to mobile networks, whenever ICT is brought out of the reach of the home network it connects to (roams on) a visited network.

C.6.0.6 Client in emergency communications

Scenario Preconditions	1. The ICT under test is, or includes, a communication client C1, that supports real-time bidirectional voice emergency communication with or within a communication system that supports real-time bidirectional voice emergency communication. 2. Communication client C1 is part of a terminal with text handling capabilities.
Test assumption	1. A communication system that supports bi-directional voice emergency communication for a communication client C1 and supports the functionality under test, is available. 2. An agreement is in place for tests with the emergency communication PSAP or with test PSAP to which test communications are expected to be routed. The PSAP is called C2.
Procedure	Where preconditions 1-2 are met: 1. Perform all applicable C.6.1-C.6.5 tests when C1 under test is communicating with the communication system for emergency communication. Where preconditions 1 only is met: 1. Perform all applicable C.6.1 and C6.3-C.6.5 tests when C1 under test is communicating with the communication system for emergency communication.

C.6.0.7 Emergency communications

Scenario Preconditions	1. The ICT under test is, or includes, a communication system that supports real-time bidirectional voice communication and is specified to support emergency communications.
Test assumption	1. A communication client C1 that supports the functionality under test is available for use with the ICT under test. 2. An agreement is in place for tests with the emergency communication PSAP or test PSAP to which test communications are expected to be routed. The PSAP is called C2.
Procedure	Perform all applicable C.6.1-C.6.5 tests when the communication system under test is communicating with the communication client C1 for emergency communications.

C.6.0.8 System with roaming visiting client in an emergency

Scenario Preconditions	1. The ICT under test is, or includes, a communication system CS1 that supports real-time bidirectional voice communication and is specified to support emergency communications and roaming of communication clients from another communication system CS2
Test assumptions	1. A communication client C1 from communication system CS2 that supports real-time bidirectional voice communication, is visiting communication system CS1. 2. An agreement is in place for tests with the emergency communication PSAP or test PSAP to which test communications are expected to be routed. The PSAP is called C2.
Procedure	Perform all applicable C.6.1-C.6.5 tests for emergency communications when communication system CS1 is communicating with communication client C1 and the communication client C2.
NOTE: This scenario is intended to cover a roaming case. In roaming, which is specific to mobile networks, whenever ICT is brought out of the reach of the home network it connects to (roams on) a visited network.	

C.6.0.9 System with client in emergency visiting another country

Scenario Preconditions	The ICT under test is, or includes, a communication system that supports real-time bidirectional voice communication and is specified to support emergency communications.
Test assumptions	1. A communication client C1 visiting another country than the home country is available for use with the ICT under test. 2. An agreement is in place for tests with the emergency communication PSAP or test PSAP to which test communications are expected to be routed. The PSAP is called C2.
Procedure	Perform all applicable C.6.1-C.6.6 tests when communicating with the communication client C1 and a PSAP C2 in the visited country in emergency communications.
NOTE: For test with production PSAP the expected PSAP would be within the visited country or region.	

C.6.1 Real-time bidirectional voice communication

C.6.1.1 Voice communication interoperability

Type of assessment	**Inspection**
Requirement Preconditions	1. The ICT under test provides functionality that allows real-time bidirectional voice communication, and connects to other ICT that allows real-time bidirectional voice communication. 2. The preconditions for the scenario used for testing.
Test assumptions	1. The test assumptions for the scenario used for testing
Procedure	**1. Check** that the set of specifications documented for the ICT under test to be used for voice interoperability in the scenario used for testing matches the set of specifications to be used for voice interoperability documented for the other ICT used in the scenario for testing. **2. Check** that the set of specifications documented for the ICT under test to be used for voice interoperability in the scenario used for testing contains Recommendation ITU-T G.722 [i.20].
Result	**Pass:** Check 1 OR Check 2 is true **Fail:** Check 1 and check 2 are false **Not applicable:** If any requirement precondition false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.1.2 Audio bandwidth for capture and presentation for voice communication

Type of assessment	Inspection
Requirement Preconditions	1. The ICT under test provides functionality that allows real-time bidirectional voice communication. 2. has a user interface for real-time bidirectional voice communication. 3. The preconditions for the scenario used for testing.
Test Assumption	1. The test assumptions for the scenario used for testing 2. An audio source with a loudspeaker able to produce tones between 250 Hz and 7 000 Hz.
Procedure	**1.** Establish a communication between communications client C1 and C2. **2.** Play a 250 Hz tone by the audio source near the microphone of client C2 in another room than client C1 is. **3. Check** that the tone is heard in client C1. **4.** Play a 7 000 Hz tone by the audio source near the microphone of client C2. **5. Check** that the tone is heard in client C1. **6.** Play a 250 Hz tone by the audio source near the microphone of client C1 in another room than client C2 is. **7. Check** that the tone is heard in client C2. **8.** Play a 7 000 Hz tone by the audio source near the microphone of client C1. **9. Check** that the tone is heard in client C2.
Result	**Pass:** All checks are true **Fail:** At least one check is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.1.3 Audio presentation in attached listening devices for voice communication (recommendation)

Clause 6.1.3 only contains a recommendation and contains no testable requirements.

C.6.1.4 Synchronization of subtitles (recommendation)

Clause 6.1.4 only contains a recommendation and contains no testable requirements.

C.6.2 Real-Time Text (RTT)

C.6.2.1 RTT Provision

C.6.2.1.1 RTT Functionality

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test provides functionality that allows real-time bidirectional voice communication. 2. The preconditions for the scenario used for testing.
Test assumptions	1. The test assumptions for the scenario used for testing
Procedure	**1.** A communication session is established between two communication clients. **(for emergency communication the PSAP is considered as communication client C2 in this test)** **2.** Text is entered into communication client C1 in a steady flow without pauses for 10 seconds without send or return. **3. Check** that the text received by communication client C2 is presented without any pause longer than 1 second. **4.** Text is entered into the communication client C2 in a steady flow without pauses for 10 seconds without send or return. **5. Check** that the text received by communication client C1 is presented without any pause longer than 1 second.
Result	**Pass:** Checks 3 and Check 5 are true **Fail:** One or more checks are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.2.1.2 Concurrent voice and text

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test provides real-time bidirectional voice communication, and supports RTT. 2. The preconditions for the scenario used for testing.
Test assumptions	1. The test assumptions for the scenario used for testing
Procedure	**1. Initiation:** A communication session is established from communication client C1 to communication client C2 (and a communication client C3 if multiparty voice communication is supported). **(for emergency communication the PSAP is considered as communication client C2 in this test)** **2. C1 Activates RTT:** Communication client C1 requests establishment of RTT if not established initially in the communication. **3. 10 seconds typing out:** Text is entered on Communication client C1 in a steady human-like flow real-timely for 10 seconds without any return or send key, while the communicator is also speaking the text aloud. (If multiparty then communication client C3 should speak instead.) **4. Check** that while the text is entered on communication client C1 characters appears on communication client C2. **5. Check** that all communicators can be clearly heard simultaneously with text appearing. **6. 10 seconds typing back:** Text is entered on Communication client C2 in a steady human-like flow real-timely for 10 seconds without any return or send key, while the communicator on Communication client C2 is also speaking the text aloud. (If multiparty - Communication client C3 should be talking and typing) **7. Check** that while the text is entered on communication client C2 characters appears on communication client C1. **8. Check** that all communicators can be clearly heard simultaneously with text appearing.
Result	**Pass:** All checks are true **Fail:** One or more checks are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.2.1.3 Single user operations

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test provides bidirectional voice communication, and ICT includes RTT capabilities. 2. A communications client C4 with no RTT capabilities (e.g. a plain voice phone with no text capabilities). 3. The preconditions for the scenario used for testing.
Test assumptions	1. The test assumptions for the scenario used for testing
Procedure	NOTE 1: Steps 1 through 10 test single user operations on communications with ICT including RTT capabilities. **1. Initiation:** A communication session is requested from communication client C1 to communication client C2 including a request to get RTT and all other available media. **(for emergency communication the PSAP is considered as communication client C2 in this test)** 2. C2 answers the communication request accepting all requested media that C2 supports. 3. If the ICT supports multiparty voice communication, add a communication client C3 to the communication session by a request including all media (voice, RTT and video, if video is supported by the ICT) from communication client C1 to communication client C3. 4. If C3 is used, C3 answers the communication request accepting all requested media that C3 supports. **5. Check** that communication in RTT and all other requested media, supported by C2, was established by the same single user operation. **6. If C3 is used, Check** that communication in RTT and all other requested media, supported by C3, was established by the same single user operation and can be used. 7. C1 disconnects the communication with C2 (and C3 if C3 is used). **8. Check** that all enabled media were disconnected by the same single user action. 9. Call back from communication client C2 to communication client C1 requesting the same media to be established as in step 1.

Type of assessment	Inspection
	10. **Check** that the call back request is received and can be answered and that communication in same media as were provided in the initial communication are established and can be used. 11. Disconnect the communication. NOTE 2: Steps 12 through 16 test single user operations on communications with ICT including RTT capabilities. 12. Assign a communication client C4 without RTT capabilities, e.g. a plain voice phone without text capabilities. 13. Request a communication session from communications client C1 to communication media client C4 with voice and RTT media establishment request included but no specific indication that RTT communications media establishment is explicitly required for the communication to be established. NOTE 3: The specific indication to require RTT media in step 13 is an option mentioned in call control protocol standards but not mentioned elsewhere in the present document. **14. Check** that communication in voice only is established with communications client C4. **15. Check** that C1 is informed about the limited availability of communication media, i.e. that only voice is established. 16. Disconnect the communication. **17. Check** that all enabled media were disconnected by the same single user operation. NOTE 4: Steps 18 to 20 are testing that all media are by default affected by communication modification requests. 18. **New incoming Communication:** Communication is terminated and communication client C2 initiates a communications session request to communication client C1 including both voice and RTT media. C1 answers the communication and communication in both media is established. 19. C1 requests a communication transfer of the session with all established media to another communications client C3, if transfer is supported by the communications system. C3 answers. **20. Check** that if transfers are supported in the communications system, both voice and RTT media gets established and can be used in communication between C2 and C3.
Result	**Pass:** All checks are true **Fail:** One or more checks are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.2.2 Display of RTT

C.6.2.2.1 Distinguishable display

Type of assessment	Inspection
Requirement Preconditions	1. ICT supports real-time bidirectional voice communication, and includes RTT presentation capabilities. 2. The preconditions for the scenario used for testing.
Test assumptions	1. The test assumptions for the scenario used for testing
Procedure	**1. Initiation:** A communication session is established from communication client C1 to communication client C2 (and a communication client C3 if multiparty voice communication is supported). **(for emergency communication the PSAP is considered as communication client C2 in this test)** **2. C1 Activates RTT:** Communication client 1 requests establishment of RTT if not established initially in the communication. **3. 10 seconds typing out:** Text is entered into communication client C1 in a steady human-like flow real-timely for 10 seconds without any return or send key. **4. 10 seconds typing back**: Text is entered into communication client C2 in a steady human-like flow real-timely for 10 seconds without any return or send key. **5.** (If multiparty - text should also be entered into Communication client C3). **6. Check** that all text streams are separate from each other and the source is indicated **7.** All parties generate a send or return and enter text for 5 seconds. **8. Check** that all past utterances and current text streams are separate from each other and the source is indicated.
Result	**Pass:** All checks are true **Fail:** One or more checks are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.2.2.2 Active communicator indication

Type of assessment	Inspection
Requirement Preconditions	1. The ICT under test supports real-time bidirectional voice communication. 2. The ICT includes RTT send and receive capabilities. 3 The ICT provides speaker indication for voice. 4. The preconditions for the scenario used for testing.
Test assumptions	1. The test assumptions for the scenario used for testing
Procedure	**1. Initiation:** A communication session is established from communication client C1 to communication client C2. (If multiparty - a communication client C3 should also be included) (for emergency communication the PSAP is considered as communication client C2 in this test) **2. C1 Activates RTT:** Communication client C1 establishes RTT with the other party/parties if not established initially in the communication. **3. C2 sends RTT:** text is sent from communication client C2. **4. C3 sends RTT:** If multiparty speech is supported text is sent from C3. **5. Check** that at any time when C2 or C3 are sending RTT there is an indication showing who is sending RTT.
Result	**Pass:** All Checks are true **Fail:** One or more Checks are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.2.2.3 Indicator of audio with RTT

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test provides bidirectional voice communication, and supports RTT. 2. The preconditions for the scenario used for testing.
Test assumptions	1. The test assumptions for the scenario used for testing
Procedure	**1. Initiation:** A communication session is established from communication client C1 to communication client C2. (If multiparty - a communication client C3 should also be included) **(for emergency communication the PSAP is considered as communication client C2 in this test)** **2. C1 Activates RTT:** Communication client C1 requests establishment of RTT if not established initially in the communication. **3. C2 Speaks:** text and speech are sent from communication client C2 intermittently both separately and simultaneously. **4. C3 Speaks:** If multiparty speech is supported then C3 should take turns sending speech as well. **5. Check** that any time that C2 or C3 are speaking there is a visual indication of audio activity on the line.
Result	**Pass:** All Checks are true **Fail:** One or more Checks are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.2.2.4 Presentation of relative time order

Type of assessment	Inspection
Requirement Preconditions	1. The ICT supports real-time bidirectional voice communication, 2. The ICT includes RTT presentation capabilities. 3. The preconditions for the scenario used for testing.
Test assumptions	1. The test assumptions for the scenario used for testing
Procedure	**1.** A communication session is established from communication client device C1 to communication client C2 including RTT (and a communication client C3 if multiparty voice communication is supported). **(for emergency communication the PSAP is considered as communication client C2 in this test)** **2.** Text is entered on the communication clients simultaneously in natural human communication style with occasional commas, full stops and returns or new line keys for 30 seconds. **3. Check** that the sent and received text are displayed collected in readable blocks and positioned separated so that a relative order can be perceived. **4.** Each communication client sends text again simultaneously for 10 characters or more and a return or new line key is hit first on C1 and later on C2 and typing continues for a few seconds on the clients. **5. Check** that on C1 the order of the entered new lines is visually indicated to be earlier from C1 than from C2 (and C3).
Result	**Pass:** All Checks are true **Fail:** One or more Checks are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.2.2.5 Review of RTT communication contents

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test supports real-time bidirectional voice communication, and has RTT presentation capabilities. 2. The preconditions for the scenario used for testing.
Test assumptions	1. The test assumptions for the scenario used for testing
Procedure	**1. Initiation:** A communication session is established from communication client device C1 to communication client(s) C2 (and a communication client C3 if multiparty voice communication is supported). **(for emergency communication the PSAP is considered as communication client C2 in this test)** **2. C1 Activates RTT:** Communication client C1 requests establishment of RTT if not established initially in the communication. **3. Text sent from all clients until scroll:** Text is entered real-timely on communication clients C1 and C2 typing real sentences and sometimes pressing Enter or Return until the text on C1 scrolls. (If multiparty - a communication client C3 should included and be typing too). **4. C2 Continue typing while C1 views:** Once enough text is sent to cause the display to scroll on C1, C2 (can C3 if one is involved) continues to send text while C1 makes user interface actions needed to view what has been scrolled off screen (usually a page-up request or some other command for scroll back). **5. Check** that C1 can view text that has been scrolled off screen and with the approximate time order presented. **6. Check** that the presentation view of earlier text is stable even as new text arrives. **7. Restart typing:** Type a sentence on C1. **8. Check** that the display on C1 changes to show the latest received text as well as the latest text sent, and that real-time presentation of new incoming text is re-gained. **9. End communication session:** Terminate the current communication. **10. Check** that the RTT text communication in the latest session can be reviewed after the communication is terminated.
Result	**Pass:** All 4 checks are true **Fail:** One or more checks are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.2.3 DTMF touch-tone generation during RTT operations

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test is, or includes, a communication client and provides functionality that allows real-time bidirectional voice communication. 2. The ICT under test supports the generation and transmission of touch-tone signal on voice calls. 3. The preconditions for the scenario used for testing.
Test assumptions	1. The test assumptions for the scenario used for testing
Procedure	**1. Initiation:** A communication session is established from communication client C1 to communication client C2. **(for emergency communication the PSAP is considered as communication client C2 in this test)** **2. C1 Activates RTT:** Communication client C1 requests establishment of RTT if not established initially in the communication. **3. C2 next to decoder:** Communication client C2's speaker is put next to microphone on device running touchtone decoder app. **4. Tones sent:** Touch-Tones are sent from C1 while in RTT mode. **5.** Text is entered on Communication client C1 in a steady human-like flow real-timely for 10 seconds without any return or send key, while the communicator is also speaking the text aloud. (If multiparty then communication client C3 should speak instead.) **6. Check:** That the tones are successfully sent and received on Communication client C2 with enough clarity to properly decode them.
Result	**Pass:** Check is true **Fail:** Check is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.2.4 RTT responsiveness

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test is, or includes, a communication client. 2. and supports real-time bidirectional voice communication 3. and supports RTT. 4. The preconditions for the scenario used for testing.
Test assumptions	1. The test assumptions for the scenario used for testing
Procedure	**OPTION 1 - Preferred Testing Method** **1. Setup:** Arrange test equipment to measure the time between when a key is pressed and when the character is transmitted from the device NOTE 1: In case of encrypted communication, it may be sufficient to observe when the first packet likely containing the character is sent. **2. Initiate communication session:** A communication session is established from communication client C1 to communication client C2. **3. 5 seconds typing:** Text is entered on Communication client C1 in a steady human-like flow for 5 seconds to ensure RTT is working. **4. 5 seconds pause:** Wait 5 seconds to make it easy to identify the first packet containing the character entered in step 5. **5. Type 1 character:** Enter one character on communication client C1. **6. Check** Using the test equipment, check that the time between when the character was entered on communication client C1 and when the character was transmitted from the communication client C1 device to the network is not more than 500 ms. **OPTION 2 - Indirect Test when Method 1 is not easily carried out** **1. Initiation:** A communication session is established from communication client C1 to communication client C2. **(for emergency communication the PSAP is considered as communication client 2 in this test)** **2. 10 seconds typing:** Text is entered on Communication client C1 in a steady human-like flow for 10 seconds without any return or send key. **3. Check** if while the text is entered on communication client C1 each character appears on communication client C2 within 1 second of when it was entered on communication client C1. NOTE 2: One method for doing this would be by recording a side-by-side video of communication clients C1 and C2 adjacent to a clock with 1/10ths second display to analyse the time difference between characters appearing on the communication clients.
Result	**Pass:** Check in Option 1 is true or Check in Option 2 is true (only one option needs to be run) **Fail:** Neither Check is true **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach. NOTE 3: See clause 6.2.4 note 4 for motivation for Option 2 being sufficient for compliance.

C.6.2.5 Adding and erasing of RTT input

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test supports real-time bidirectional voice communication. 2. includes RTT capabilities. 3. and supports user input. 4. The preconditions for the scenario used for testing.
Test assumptions	1. The test assumptions for the scenario used for testing
Procedure	**1. Initiation:** A communication session is established from communication client C1 to communication client C2. **(for emergency communication the PSAP is considered as communication client C2 in this test)** **2. C1 Activates RTT:** Communication client C1 requests establishment of RTT if not established initially in the communication. **3. 10 numbers sent - 5 deleted:** The characters 0 through 7 are entered on Communication client C2. Then the enter key is typed, then the characters 8 & 9 key are typed, then the delete key is pressed 6 times (the return is counted as one character). **4. Check** that the 10 characters appear on communication client C1 (8 in one message and 2 in a second message and then all disappear except for 01234. **5. 10 numbers back - 5 deleted:** The characters 0 through 7 are entered on Communication client C2. Then the enter key is typed, then the characters 8 & 9 key are typed, then the delete key is pressed 6 times (the return is counted as one character). **6.** (if multiparty - Communication client 3 does the same simultaneously). **7. Check** that the 10 characters appear on communication client C1 (8 in one message and 2 in a second message and then all disappear except for 01234. **8. Delete all sent** - Press the delete key on Communication client C1 a sufficient number of times to delete not only the 5 numerals in the last sequence, but also all of the characters entered in the original 10 seconds of typing. **9. Check** that all characters entered from communication client C1 are deleted including both the latter numerals and all of the text from the original 10 seconds of typing. The screen on communication client C2 should be clear of all text entered on communication client 1. **10. All Received deleted** - Press the delete key on communication client C2 a sufficient number of times to delete all of the text entered on communication client C2 up to this point. **11. Check** that all of the text from communication client C2 is now missing from communication client C1.
Result	**Pass:** Check is true **Fail:** Check is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.2.6 Processing rate of RTT

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test supports real-time bidirectional voice communication. 2. includes RTT capabilities. 3. The preconditions for the scenario used for testing.
Test Assumptions	1. At least 3 communication clients are available for the test. 2. The test assumptions for the scenario used for testing
Procedure	**1. 90 CPS test:** connect communication client 1 with at least three communication clients (possibly including test software operating the user interface of the terminal) through a bridge in a three-party communication. **(for emergency communication the PSAP is considered as communication client C2 in this test)** **2. Send text simultaneously** - have each of the software communication clients send a sustained 30 CPS stream of text to communication client C1 at the same time for 10 seconds. NOTE: This can be done by test software applied to a communication client, or possibly, but less reliably, by copy-paste of 300 characters of test text. **3. Check** that the text is received and displayed as sent.
Result	**Pass:** All checks are true **Fail:** One or more checks are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.2.7 Character representation

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test supports real-time bidirectional voice communication. 2. and includes RTT capabilities. 3. The preconditions for the scenario used for testing.
Test assumptions	1. The test assumptions for the scenario used for testing
Procedure	**1. Initiation:** A communication session is established from communication client C1 to communication client C2. **(for emergency communication the PSAP is considered as communication client C2 in this test)** **2. Character test:** a block of test text is sent from communications client C1 that includes 50 different characters from the Latin-1 part of the ISO/IEC 10646 [i.53] that represent the variety of characters in the set including those with diacritical marks: • a similar sample representing the writing direction(s) and the characters for the languages of the regions in which the ICT is intended to be used and; • 15 emojis characters supported by the underlying platform of the receiving Communication client(s); and • 5 instances of a character that is not a recognized character such as HEX:2140. NOTE 1: If receiving communication client does not support emojis, then any emojis can be sent and the "replacement character" should show in their place on the receiving communication client. **3. Check** that the received and displayed text matches the sent text except that the last 5 characters should be 5 instances of the ISO 10646 [i.53] "replacement character" (Code HEX:FFFD). **4. Disconnect.** **5. Initiation:** A communication session is established from communication client C2 to communication client C1. **6. Character test:** a block of test text is sent from communications client C2 that includes 50 different characters from the Latin-1 part of the ISO/IEC 10646 [i.53] that represent the variety of characters in the set including those with diacritical marks: • a similar sample representing the writing direction(s) and the characters for the languages of the regions in which the ICT is intended to be used; and • 15 emojis characters supported by the underlying platform of the receiving Communication client(s); and • 5 instances of a character that is not a recognized character such as HEX:2140. NOTE 2: If receiving communication client does not support emojis, then any emojis can be sent and the "replacement character" should show in their place on the receiving communication client. **7. Check** that the received and displayed text matches the sent text except that the last 5 characters should be 5 instances of the ISO 10646 [i.53] "replacement character" (Code HEX:FFFD).
Result	**Pass:** All checks are true **Fail:** One or more checks are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.2.8 RTT Input Methods

Type of assessment	Inspection
Requirement Preconditions	1. ICT is, or includes, a communication client. 2. supports real-time bidirectional voice communication. 3. and supports RTT. 4. The preconditions for the scenario used for testing.
Test assumptions	1. The test assumptions for the scenario used for testing
Procedure	**1. Initiation:** A communication session is established from communication client C1 to communication client C2. **(for emergency communication the PSAP is considered as communication client C2 in this test)** **2. Try all input options:** Each option for generating text available on the device is tried (e.g. physical or on-screen keyboard, speech, alternate keyboards, keyboards attached via connector, Wi-Fi®, Bluetooth®, etc.). **3. Check** that each mode of character input results in text being entered into the RTT function and sent to the other terminal device.
Result	**Pass:** Check is true **Fail:** Check is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.2.9 RTT media establishment and use

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test under test supports real-time bidirectional voice communication, 2. includes RTT capabilities. 3. The preconditions for the scenario used for testing.
Test assumptions	1. The test assumptions for the scenario used for testing
Procedure	NOTE 1: Steps 1 to 6 are testing that voice and RTT can be requested simultaneously regardless of any system or client settings. **1. Initiation:** A communication session is requested to be established from communication client C1 to communication client C2 including requests for voice and RTT media communication establishment, regardless of any system or client settings for C1 when voice communication is supported. 2. C2 answers the communication request (and a communication client C3 is included in the session if multiparty voice communication is supported). (for emergency communication the PSAP is considered as communication client C2 in this test) **3. Check** that it was possible to request on C1 both voice and RTT in one user action without any additional operations regardless of any system or client settings for C1. **4. Speech from Communication client 2:** Speech is sent from Communication client C2 (and C3 if multiparty supported). **5. 10 seconds typing out:** Text is entered on Communication client C1 in a steady human-like flow in real-time for 10 seconds without any return or send key. (If multiparty then communication client C3 should speak) **6. Check** if while the text is entered on communication client C1 the character appear on communication client C2 (and C3 if multiparty call) in accordance with clause 6.2.4 and that communication client C2 (and C3, if multiparty) was alerted on the incoming communication and is able to handle RTT. 7. Disconnect the communication. NOTE 2: Steps 8 to 13 are testing that the answer action by the user can include a request for RTT even if RTT was not included in the outgoing request. **8. New Outgoing Communication:** Communication client C1 initiates a communication session with Communication client C2 and only voice media establishment is requested. (and a communication client C3 is included in the session if multiparty voice communication is supported) (for emergency communication the PSAP is considered as communication client C2 in this test) **9. Check** that it is possible to answer the communication request on communication client C2 (and on C3, if multiparty voice is supported) and, in the answer, request establishment of RTT media communication to be added. **10. C1 Talks:** Speech is sent from C1. **11. 10 seconds typing in:** Text is entered on Communication client 2 in a normal fashion.

Type of assessment	Inspection
	12. Check that text is appearing on communication client C1 in accordance with clause 6.2.4 and that communication client C1 is alerted and able to handle RTT, and the RTT communication can be answered by C2 (and C3, if multiparty voice is supported). 13. Disconnect the communication. NOTE 3: Steps 14 to 20 are testing that RTT can be added by any party during an ongoing communication. **14. New incoming Communication:** Communication client C2 initiates a communication session with Communication client C1, including only voice. **15. C2 talks:** Speech is sent from C2. **16. C1 talks:** Speech is sent from C1. 17. C1 requests RTT media communication to be established in the ongoing session. **18. Check** that the request can be answered by C2 so that RTT media communication is established. **19. 10 seconds typing in:** Text is entered on communication client C1 in a normal fashion. **20. Check** that text is appearing on Communication client C2.
Result	**Pass:** All checks are true **Fail:** One or more checks are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.2.10 RTT interoperability

Type of assessment	Inspection
Requirement Preconditions	1. The ICT provides functionality that allows real-time bidirectional voice communication and connects to other ICT that allows real-time bidirectional voice communication. 2. The preconditions for the scenario used for testing.
Procedure	**1. Check** that the set of specifications documented for the ICT under test to be used for RTT interoperability in the scenario used for testing matches the set of specifications to be used for RTT interoperability documented for the other ICT used in the scenario for testing. **2. Check** that the set of specifications documented for the ICT under test to be used for RTT interoperability is Recommendation ITU-T T.140 [i.37] for functions including coding and presentation and IETF RFC 4103 [i.13] updated by IETF RFC 9071 [i.52] for other aspects of RTT communication.
Result	**Pass:** Check 1 OR check 2 is true **Fail:** Both Check 1 and Check 2 are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.6.3 Caller ID

Type of assessment	Inspection
Requirement Preconditions	1. The ICT provides caller identification, or other identification functions. 2. The preconditions for the scenario used for testing.
Test assumptions	1. The test assumptions for the scenario used for testing
Procedure	**1. Check** that the information delivered by each function is available in text form. **2. Check** that the information delivered by each function is programmatically determinable.
Result	**Pass:** Check 1 is true and either check 2 is true or the functionality is closed **Fail:** Check 1 is false or check 2 is false when the functionality is not closed **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.4 Alternatives to voice-based services

Type of assessment	Inspection
Requirement Preconditions	1. The ICT provides voice mail, auto-attendant, or interactive voice response facilities. 2. The preconditions for the scenario used for testing.
Test assumptions	1. The test assumptions for the scenario used for testing
Procedure	1. **Check** that the ICT offers users a means to access the information without the use of hearing or speech. 2. **Check** that a user can carry out the tasks provided by the system without the use of hearing or speech.
Result	**Pass:** All checks are true **Fail:** One or more checks are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.5 Video communication

C.6.5.1 General (informative)

Clause 6.5.1 is informative only and contains no testable requirements.

NOTE: Practical test procedures are described in ETSI ES 204 009 [i.77], Annex C.

C.6.5.2 Resolution

Type of assessment	Inspection
Requirement Preconditions	1. The ICT under test provides real-time bidirectional voice communication. 2. The ICT under test include real-time bidirectional video functionality. 3. The preconditions for the scenario used for testing.
Test Assumptions	1. An assistant is available. 2. The test assumptions for the scenario used for testing
Procedure	1. Initiate communication with video between communications client C1 and C2. 2. The assistant stands in front of C2 with arms extended horizontally backing off until the hands are visible in C1. 3. The assistant moves the left hand in circles in front of the body about one turn per second, and during that motion places the right hand upright, still, besides the face, palm aiming frontwards, fingers slightly separated. 4. **Check** in C1 that the fingers of the assistant's right hand are clearly seen as separated fingers which implies QVGA (320x240 pixel) resolution or better with load equal to sign language. 5. Shift the clients and repeat the procedure with the assistant in front of C1 and the observations made at C2. 6. **Check** in C2 that the fingers of the assistant's right hand are clearly seen as separated fingers which implies QVGA (340x280 pixel) resolution or better with load equal to sign language.
Result	**Pass:** All checks are true **Fail:** At least one check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.
NOTE: A practical test procedure is described in ETSI ES 204 009 [i.77], clause C.3.1.	

C.6.5.3 Frame rate

Type of assessment	Inspection
Requirement Preconditions	1. The ICT under test provides real-time bidirectional voice communication. 2. The ICT under test includes real-time bidirectional video functionality. 3. The preconditions for the scenario used for testing.
Test Assumptions	1. An assistant is available. 2. A camera capable of recording video. 3. Video editing software able to single step video frames and showing relative time of each video frame. 4. The test assumptions for the scenario used for testing
Procedure	1. Arrange for video recording of the screen of communications client C1. 2. Initiate communication including video between C1 and C2 and start video recording at C1. 3. The assistant, in front of C2, with view from top of skull to waist moves a hand evenly in circles in front of the stomach with about one turn per second. 4. Repeat the procedure (steps 1 to 3) with the roles of C1 and C2 swapped. 5. Analyse the recorded video with a video editing software which can show video with single frame stepping and a time for each frame (picture). 6. Count during single stepping through one second of video from step 3 at how many separate positions the hand is shown during one second. 7. **Check** that the count is 20 or higher. 8. Repeat steps 5 to 7 with the video recorded in step 4. 9. **Check** that the count is 20 or higher.
Result	**Pass:** All checks are true **Fail:** At least one check is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.
NOTE: A practical test procedure is described in ETSI ES 204 009 [i.77], clause C.3.2.	

C.6.5.4 Synchronization between audio and video

Type of assessment	Measurement
Requirement Preconditions	1. The ICT under test provides real-time bidirectional voice communication. 2. The ICT under test includes real-time bidirectional video functionality. 3. The preconditions for the scenario used for testing.
Test Assumptions	1. An assistant is available. 2. A camera capable of recording video. 3. Video editing software able to single step video frames and showing relative time of each video frame. 4. The test assumptions for the scenario used for testing
Procedure	1. Arrange for video recording of the screen of communications client C1. 2. Initiate communication including video between C1 and C2 with C1 and C2 in separate rooms and start video recording at C1. 3. The assistant, in front of C2, claps the hands once with a big quite rapid horizontal movement that continues with arms crossed after the clap. 4. Repeat the procedure (steps 1 to 3) with the roles of C1 and C2 swapped. 5. Analyse the recorded video with a video editing software which can show video with single frame stepping and a relative time for each frame (picture), and a graphic representation of audio for each frame. 6. Note during single stepping through the video from step 3 at what time the hands are closest to clapping, and the time when the audio from the clap is strongest. Evaluate the time difference. 7. **Check** that the time difference is 100 ms or less. (audio may be before or after video). 8. Repeat steps 5-7 but with the video recorded in step 4. 9. **Check** that the time difference is 100 ms or less.
Result	**Pass:** All checks are true **Fail:** At least one check is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.
NOTE: A practical test procedure is described in ETSI ES 204 009 [i.77], clause C.3.3.	

C.6.5.5 Indicator of audio with video

Type of assessment	Inspection
Requirement Preconditions	1. ICT provides real-time bidirectional voice communication. 2. ICT has real-time bidirectional video capabilities. 3. The preconditions for the scenario used for testing.
Test assumptions	1. The test assumptions for the scenario used for testing
Procedure	**1.** ICT under test is connected to another ICT providing real-time bidirectional voice communication that is compatible with the voice communication on the ICT under test. **2.** A person speaks into the communications client C2 in the other ICT. **3. Check** by observation whether there is a real-time indicator of audio activity in the communications client C1.
Result	**Pass:** Check 3 is true **Fail:** Check 3 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.
NOTE: The indicator should pulse in real time in a way that reflects the audio activity.	

C.6.5.6 Indication of all active communication participants

Type of assessment	Measurement
Requirement Preconditions	1. The ICT provides real-time bidirectional voice communication. 2. The ICT includes real-time bidirectional video communication. 3. The ICT provides speaker indication for voice users. 4. The preconditions for the scenario used for testing.
Test assumption s	1. The test assumptions for the scenario used for testing
Procedure	**1.** The ICT under test is connected to a compatible ICT that supports video and a person communicates in sign language. **2. Check** by observation whether the ICT under test provides a means for the indication of all active communicators including those signing.
Result	**Pass:** Check 2 is true **Fail:** Check 2 is false **Not:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any test assumption is not true. Need to use a different test approach.

C.6.6 Alternatives to video-based services (recommendation)

Clause 6.6 is a recommendation and contains no testable requirements.

C.6.7 Total conversation

C.6.7.1 Total conversation provision

Type of assessment	Check Inspection
Requirement Preconditions	1. The ICT provides real-time bidirectional voice communication. 2. The ICT includes real-time bidirectional video communication. 3. The preconditions for the scenario used for testing.
Test Assumptions	1. All tests in C.6.1, C.6.2, C.6.3, C.6.4 and C.6.5 have been performed and the results are available.
Procedure	1. **Check** that the result of all checks in C.6.1, C.6.2, C.6.2.3, C.6.2.4 and C.6.5 did pass.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.6.7.2 Total conversation interoperability

Type of assessment	Inspection
Requirement Preconditions	1. The ICT provides functionality that allows real-time bidirectional voice communication, and includes real-time bidirectional video functionality, and connects to other ICT that allows real-time bidirectional voice communication, and includes real-time bidirectional video functionality. 2. The preconditions for the scenario used for testing.
Procedure	1. **Check** that the set of specifications documented for the ICT under test to be used for video interoperability in the scenario used for testing matches the set of specifications to be used for video interoperability documented for the other ICT used in the scenario for testing. 2. **Check** that the set of specifications documented for the ICT under test to be used for video interoperability is Recommendation ITU-T H.264 [i.74] at least version 10 and at least constrained baseline level 3 for functions including coding and presentation, or, where codec negotiation is implemented, Recommendation ITU-T H.265 [i.75] and IETF RFC 6386 VP8 [i.76] to avoid transcoding.
Result	**Pass:** Check 1 OR Check 2 is true **Fail:** Both Check 1 and Check 2 are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.7 ICT with video capabilities

C.7.1 Subtitle processing technology

C.7.1.1 Subtitle playback

Type of assessment	Inspection
Requirement Preconditions	1. The ICT displays video with synchronized audio.
Test Assumptions	A video source that includes open subtitles is available.
Procedure	1. **Check** that there is a mode of operation that allows the available subtitles to be displayed.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.
Type of assessment	**Test 2**
Requirement Preconditions	1. The ICT displays video with synchronized audio. 2. A video source that contains closed subtitles is available.
Procedure	**1. Check** that there is a mechanism that provides an ability to choose to display the subtitles.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.7.1.2 Subtitle synchronization

Type of assessment	Measurement
Requirement Preconditions	1. ICT displays video with synchronized audio. 2. The ICT has a mechanism to display subtitles. 3. Subtitles are available with timecodes. 4. The time s identified by the start timecode of a subtitle can be determined. 5. The time t when a subtitle appears can be determined.
Procedure	For a minimum of 10 subtitles: 1. **Note** the point in time t when a subtitle is supposed to be presented. 2. **Note** the point in time s when a subtitle is actually presented. 3. **Note** the Values m = (t - s) for each of the 10 instances. 4. **Check** that the Average(AbsoluteValue(mValues)) </= 100 ms.
Result	**Pass:** Check 4 is true **Fail:** Check 4 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.7.1.3 Preservation of subtitle

Type of assessment	Inspection
Requirement Preconditions	1. The ICT transmits converts or records video with synchronized audio.
Procedure	**1. Check** that the ICT preserves subtitle data such that it can be displayed in a manner consistent with clauses 7.1.1 and 7.1.2.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.7.1.4 Subtitle characteristics

Type of assessment	Inspection
Requirement Preconditions	1. The ICT displays video with synchronized audio. 2. The ICT has control over the presentation of subtitles.
Test Assumptions	The subtitles under test are displayed as modifiable characters.
Procedure	**1. Check** that the ICT provides a way for the user to adapt the displayed characteristics of subtitles to their individual requirements.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.7.1.5 Spoken subtitles

Type of assessment	Inspection
Requirement Preconditions	1. The ICT displays video with synchronized audio.
Test Assumptions	Spoken subtitles are available for the test video content.
Procedure	**1. Check** that there is a mode of operation that provides a spoken output of the available spoken subtitles.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.7.2 Audio description technology

C.7.2.1 Audio description playback

Type of assessment	Inspection
Requirement Preconditions	1. The ICT displays video with synchronized audio.
Test Assumptions	1. A video source that includes audio description is available.
Procedure	**1. Check** that there is an explicit and separate mechanism for audio description. **2. Check** that there is a mechanism to select and play the audio description to the default audio channel. **3. Check** that the ICT enables the user to select and play one of several audio tracks.
Result	**Pass:** Checks 1 and 2 are true or 1 is false and 3 is true **Fail:** Check 1 is true and 2 is false or 1 is false and 3 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.7.2.2 Audio description synchronization

Type of assessment	Inspection
Requirement Preconditions	1. The ICT displays video with synchronized audio. 2. The ICT has a mechanism to play audio description.
Procedure	**1. Check** that the synchronization between the audio/visual content and the corresponding audio description is preserved.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.7.2.3 Preservation of audio description

Type of assessment	Inspection
Requirement Preconditions	1. The ICT transmits converts or records video with synchronized audio.
Procedure	**1. Check** that the ICT preserves audio description data such that it can be played in a manner consistent with clauses 7.2.1 and 7.2.2.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.7.3 User control of audiovisual accessibility features

Type of assessment	Inspection
Requirement Preconditions	1. The ICT displays video with synchronized audio. 2. The ICT has control over the presentation of subtitles and other accessibility features.
Procedure	**1. Check** that there is at least one mode of operation to activate and deactivate the presentation of those subtitles and other accessibility features that meets the requirements of the present document.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8 Hardware

C.8.1 General

Clause 8.1 is informative only and contains no testable requirements.

C.8.2 Hardware products with speech output

C.8.2.1 Speech volume gain

C.8.2.1.1 Speech volume gain

Type of assessment	Inspection based on measurement data
Requirement Preconditions	1. The ICTs, or includes, hardware. 2. The ICT has speech output. 3. The ICT is a device that is typically held to the ear.
Test Assumptions	**1. The ICT is a mobile wireless handset** 2. Test equipment and an environment suitable to perform the test in step 2 is available.
Procedure	1. **Check** that the ICT is certified to meet ANSI/TIA-5050 [i.3]. If Check 1 is false: **2**. Check that the ICT meets the High-Volume Threshold requirement defined in ANSI/TIA-5050 [i.3]. 3. **Check** that the test in step 2 is passed.
Test Assumptions	**1. The ICT is a fixed-line handset** 2. Test equipment and an environment suitable to perform the test in step 2 is available.
Procedure	1. **Check** that the ICT is certified to meet ANSI/TIA-4965 [i.2]. If Check 1 is false: 2. Perform the test specified in ANSI/TIA-5965 [i.2]. 3. **Check** that the test in step 2 is passed.
Result	**Pass:** Check 1 or 3 is true **Fail:** Check 1 and 3 are false **Not applicable:** Preconditions 1 or 2 or Test Assumption 1 is not met. **Test approach cannot be used:** If Check 1 is false and Test Assumption 2 is not true. Need to use a different test approach.

C.8.2.1.2 Incremental volume control

Type of assessment	Inspection based on measurement data
Requirement Preconditions	1. The ICT is, or includes, hardware. 2. The ICT has speech output. 3. and is a device that is typically held to the ear. 4. The volume control is incremental.
Procedure	1. Measure the level (in dB) of the speech output at the lowest volume setting. 2. **Check** if there is at least one intermediate step that provides a level 12 dB above the lowest volume level measured in step 1.
Result	**Pass:** Check 2 is true **Fail:** Check 2 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.2.2 Magnetic coupling

C.8.2.2.1 Fixed-line devices and handsets

Type of assessment	Inspection based on measurement data
Requirement Preconditions	1. The ICT is, or includes, hardware. 2. The ICT has speech output. 3. The ICT is a fixed-line communication device or wired handset that is typically held to the ear.
Procedure	1. **Check** that the ICT is certified to meet the magnetic coupling, interference, and labelling requirements of TIA-1083-B [i.23]. 2. **Check** that measurements made according to ETSI ES 200 381-1 [2] prove that the requirements defined in that standard are fulfilled. 3. **Check** that the ICT carries the "T" symbol specified in ETSI ETS 300 381 [i.80].
Result	**Pass:** Check 1 or 2 is true and check 3 is true **Fail:** Checks 1 and 2 are false or check 3 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.2.2.2 Wireless communication devices

Type of assessment	Inspection based on measurement data
Requirement Preconditions	1. The ICT is, or includes, hardware. 2. and has speech output. 3. The ICT is a wireless communication device which is typically held to the ear.
Procedure	1. **Check** that the ICT is certified to meet ANSI/IEEE C63.19 [i.1]. 2. **Check** that the ICT provide a means of magnetic coupling to hearing technologies which meets the requirements of ETSI ES 200 381-2 [3].
Result	**Pass:** Check 1 or 2 is true **Fail:** Checks 1 and 2 are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.3 Stationary ICT

C.8.3.1 General (informative)

Clause 8.3.1 is informative only and contains no testable requirements.

C.8.3.2 Display screen location

Type of assessment	Inspection and measurement
Requirement Preconditions	1. The ICT is stationary ICT. 2. One or more display screens are part of the ICT.
Procedure	1. **Check** whether the ICT conforms to clause 8.3.2
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.3.3 Control location (vertical)

C.8.3.3.1 Control location (vertical, no design restrictions)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is stationary ICT. 2. There are no functional or design requirements which do not allow to display necessary information below 1 600 mm above the floor space.
Procedure	1. **Check** whether the ICT conforms to clause 8.3.3.1
Result	**Pass:** Check 1 is true **Fail:** Checks 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.3.3.2 Control location (vertical, no design restrictions)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is stationary ICT. 2. There are functional or design requirements which do not allow to display necessary information below 1 600 mm above the floor space.
Procedure	1. **Check** whether the ICT conforms to clause 8.3.3.2
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.3.4 Legibility of displays screens (informative)

Clause 8.3.4 contains no testable requirements.

C.8.3.5 Control location (vertical)

C.8.3.5.1 Control location (vertical, no design restrictions)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is stationary ICT. 2. There are no functional or design requirements which do not allow to copy operable parts or locate them above 800 mm and below 1 100 mm
Procedure	1. **Check** whether the ICT conforms to clause 8.3.5.1
Result	**Pass:** Check 1 is true **Fail:** Checks 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.3.5.2 Control location (vertical, with design restrictions)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is stationary ICT. 2. There are functional or design requirements which do not allow to copy operable parts or locate them above 800 mm and below 1 100 mm
Procedure	1. **Check** whether the ICT conforms to clause 8.3.5.2
Result	**Pass:** Check 1 is true **Fail:** Checks 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.3.6 Control location (horizontal)

Type of assessment	Inspection and measurement
Requirement Preconditions	1. The ICT is stationary ICT.
Procedure	1. **Check** whether the ICT conforms to clause 8.3.6
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.3.7 Reach depth

C.8.3.7.1 Reach depth (no design constraints)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is stationary ICT. 2. There are no functional or design constraints which require an obstruction deeper than 300 mm.
Procedure	1. **Check** whether the ICT conforms to clause 8.3.7.1
Result	**Pass:** Check 1 is true **Fail:** Checks 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.3.7.2 Reach depth (with design constraints)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is stationary ICT. 2. There are functional or design constraints which require an obstruction deeper than 300 mm.
Procedure	1. **Check** whether the ICT conforms to clause 8.3.7.2
Result	**Pass:** Check 1 is true **Fail:** Checks 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.3.8 Forward or side reach (informative)

Clause 8.3.8 only contains recommendations and contains no testable requirements.

C.8.3.9 Forward reach

C.8.3.9.1 Unobstructed forward reach (informative)

Clause 8.3.9.1 only contains no testable requirements.

C.8.3.9.2 Obstructed forward reach (no design constraints)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is stationary ICT. 2. There are no functional or design constraints which require an obstruction deeper than 300 mm.
Procedure	1. **Check** whether the ICT conforms to clause 8.3.9.2.
Result	**Pass:** Check 1 is true **Fail:** Checks 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.3.9.3 Obstructed forward reach (with design constraints)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is stationary ICT. 2. There are functional or design constraints which require an obstruction deeper than 300 mm.
Procedure	1. **Check** whether the ICT conforms to clause 8.3.9.3.
Result	**Pass:** Check 1 is true **Fail:** Checks 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.3.10 Side reach

C.8.3.10.1 Unobstructed side reach (informative)

Clause 8.3.10.1 contains no testable requirements.

C.8.3.10.2 Obstructed side reach (no design constraints)

Type of assessment	Inspection and measurement
Requirement Preconditions	1. The ICT is stationary ICT. 2. There is an obstruction that is an integral part of the ICT. 3. There are no functional or design constraints which require an obstruction deeper than 300 mm
Procedure	1. **Check** that all values specified in the clause 8.3.10.2 are met.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.3.10.3 Obstructed side reach (with design constraints)

Type of assessment	Inspection and measurement
Requirement Preconditions	1. The ICT is stationary ICT. 2. There is an obstruction that is an integral part of the ICT. 3. There are functional or design constraints which require an obstruction deeper than 300 mm
Procedure	1. **Check** that all values specified in clause 8.3.10.3 are met.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.3.11 Free space underneath a stationary ICT with or without an obstruction

C.8.3.11.1 Free space underneath a stationary ICT with or without an obstruction (no design constraints)

Type of assessment	Inspection and measurement
Requirement Preconditions	1. The ICT is stationary ICT. 2. The ICT has an obstruction that is an integral part of the ICT, and the obstruction hinders the access to any type of operable part. 3. There are no functional or design requirements restricting the size of an open space below the obstruction.
Procedure	1. **Check** whether the values requested in clause 8.3.11.1 are met.
Result	**Pass:** Check 1 is true **Fail:** Checks 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.3.11.2 Free space underneath a stationary ICT with or without an obstruction (with design constraints)

Type of assessment	Inspection and measurement
Requirement Preconditions	1. The ICT is stationary ICT. 2. The ICT has an obstruction that is an integral part of the ICT, and the obstruction hinders the access to any type of operable part. 3. There are functional or design requirements restricting the size of an open space below the obstruction.
Procedure	1. **Check** whether that values requested in clause 8.3.11.2 are met.
Result	**Pass:** Check 1 is true **Fail:** Checks 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.3.12 Floor characteristics (informative)

Clause 8.3.12 contains no testable requirements.

C.8.3.13 Approach (informative)

Clause 8.3.13 contains no testable requirements.

C.8.3.14 Installation instructions

Type of assessment	Inspection and measurement
Requirement Preconditions	1. The ICT is stationary ICT.
Procedure	1. **Check** that installation instructions are made available. **2**. **Check** that the installation instructions give guidance on how to install the stationary ICT in compliance with the applicable requirements of clause 8.3. **3**. **Check** that the instructions take into account applicable requirements for accessibility of the built environment as they apply to the installation of the ICT.
Result	**Pass:** Checks 1, 2 and 3 are true. **Fail:** Checks 1 is false or Check 2 is false or Check 3 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)
NOTE: EN 17210 [i.64] is the European standard that defines applicable requirements for accessibility of the built environment in Europe.	

C.8.4 Operable parts

C.8.4.1 Numeric keys

Type of assessment	Inspection
Requirement Preconditions	1. Where ICT is, or includes, hardware. 2. The ICT has physical numeric keys arranged in a 12-key telephone keypad layout.
Procedure	1. **Check** that the number five key is tactilely distinct from the other keys of the keypad.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.4.2 Operation of operable parts

C.8.4.2.1 Means of operation

Type of assessment	Inspection
Requirement Preconditions	1. Where ICT is, or includes, hardware. 2. The ICT has operable parts that requires grasping, pinching, or twisting of the wrist to operate.
Procedure	1. **Check** that there is an accessible alternative means of operation that does not require these actions.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.4.2.2 Force of operation of operable parts

Type of assessment	Inspection and measurement
Requirement Preconditions	1. Where ICT is, or includes, hardware. 2. The ICT has a control which requires a force greater than 22,2 N to operate it.
Procedure	1. **Check** that an accessible alternative means of operation is provided that requires a force less than or equal to 22,2 N.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.4.3 Keys, tickets and cards

Type of assessment	Inspection and measurement
Requirement Preconditions	1. Where ICT is, or includes, hardware. 2. The ICT provides keys, tickets or cards, and their orientation is important for further use.
Procedure	1. **Check** that keys, tickets or cards have an orientation that is tactilely discernible.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.5 Tactile indication of speech mode

Type of assessment	Inspection and measurement
Requirement Preconditions	1. Where ICT is, or includes, hardware. 2. The ICT is intended for public shared use. 3. Speech output is available.
Procedure	1. **Check** that a tactile indication of the means to initiate the speech mode of operation is provided.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.6 Standard connections

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, hardware. 2. It provides user input or output device connection points.
Procedure	1. **Check** that one type of connection conforms to an industry standard non-proprietary format. 2. **Check** that one type of connection conforms to an industry standard non-proprietary format through the use of commercially available adapters.
Result	**Pass:** Check 1 or 2 is true **Fail:** Checks 1 and 2 are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)
NOTE: The connections may be physical or wireless connections.	

C.8.7 Colour on hardware

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, hardware. 2. Colour is used on the hardware to convey information.
Procedure	1. **Check** that an alternative form of visual coding is provided.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.8.8 Contrast on hardware

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, hardware.
Procedure	1. **Check** 1 that any non-digitally displayed characters or symbols required for use, contrast visually from their background as either light on a dark background or dark on a light background. 2. **Check** 2 that any hardware operable parts without labels on them that do not protrude from their background or vice versa, contrast visually from their background as either light on a dark background or dark on a light background.
Result	**Pass:** Check 1 is true AND Check 2 is true **Fail:** Check 1 or Check 2 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.9 Web

C.9.0 General (informative)

Clause 9.0 is informative only and contains no testable requirements.

C.9.1 Perceivable

C.9.1.1 Text alternatives

C.9.1.1.1 Non-text content

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.1.1 Non-text content according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.1.1 Non-text content (Do not need to meet or test.)

C.9.1.2 Time-based media

C.9.1.2.1 Audio-only and video-only (pre-recorded)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.2.1 Audio-only and Video-only (Prerecorded) according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.2.1 Audio-only and Video-only (Prerecorded) (Do not need to meet or test.)

C.9.1.2.2 Subtitles (pre-recorded)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.2.2 Captions (Prerecorded) according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.2.2 Captions (Prerecorded) (Do not need to meet or test.)

C.9.1.2.3 Audio description or media alternative (pre-recorded)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.2.3 Audio Description or Media Alternative (Prerecorded) according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.2.3 Audio Description or Media Alternative (Prerecorded) (Do not need to meet or test.)

C.9.1.2.4 Subtitles (live)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.2.4 Captions (Live) according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.2.4 Captions (Live) (Do not need to meet or test.)

C.9.1.2.5 Audio description (pre-recorded)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.2.5 Audio Description (Prerecorded) according to WCAG Conformance Requirements stated in clause 9.6 according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.2.5 Audio Description (Prerecorded) (Do not need to meet or test.)

C.9.1.3 Adaptable

C.9.1.3.1 Info and relationships

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.3.1 Info and Relationships according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.3.1 Info and Relationships (Do not need to meet or test.)

C.9.1.3.2 Meaningful sequence

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.3.2 Meaningful Sequence according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.3.2 Meaningful Sequence (Do not need to meet or test.)

C.9.1.3.3 Sensory characteristics

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.3.3 Sensory Characteristics according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.3.3 Sensory Characteristics (Do not need to meet or test.)

C.9.1.3.4 Orientation

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.3.4 Orientation according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.3.4 Orientation (Do not need to meet or test.)

C.9.1.3.5 Identify input purpose

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.3.5 Identify Input Purpose according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.3.5 Identify Input Purpose (Do not need to meet or test.)

C.9.1.4 Distinguishable

C.9.1.4.1 Use of colour

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.4.1 Use of Color according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.4.1 Use of Color (Do not need to meet or test.)

C.9.1.4.2 Audio control

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.4.2 Audio Control according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.4.2 Audio Control (Do not need to meet or test.)

C.9.1.4.3 Contrast (minimum)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.4.3 Contrast (Minimum) according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.4.3 Contrast (Minimum) (Do not need to meet or test.)

C.9.1.4.4 Resize text

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.4.4 Resize text according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.4.4 Resize text (Do not need to meet or test.)

C.9.1.4.5 Images of text

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.4.5 Images of Text according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.4.5 Images of Text (Do not need to meet or test.)

C.9.1.4.6 Void

C.9.1.4.7 Void

C.9.1.4.8 Void

C.9.1.4.9 Void

C.9.1.4.10 Reflow

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.4.10 Reflow according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.4.10 Reflow (Do not need to meet or test.)

C.9.1.4.11 Non-text contrast

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.4.11 Non-text Contrast according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.4.11 Non-text Contrast (Do not need to meet or test.)

C.9.1.4.12 Text spacing

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.4.12 Text spacing according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.4.12 Text spacing (Do not need to meet or test.)

C.9.1.4.13 Content on hover or focus

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 1.4.13 Content on Hover or Focus according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 1.4.13 Content on Hover or Focus (Do not need to meet or test.)

C.9.2 Operable

C.9.2.1 Keyboard accessible

C.9.2.1.1 Keyboard

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.1.1 Keyboard according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.1.1 Keyboard (Do not need to meet or test.)

C.9.2.1.2 No keyboard trap

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.1.2 No Keyboard Trap according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.1.2 No Keyboard Trap (Do not need to meet or test.)

C.9.2.1.3 Void

C.9.2.1.4 Character key shortcuts

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.1.4 Character Key Shortcuts according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.1.4 Character Key Shortcuts (Do not need to meet or test.)

C.9.2.2 Enough time

C.9.2.2.1 Timing adjustable

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.2.1 Timing Adjustable according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.2.1 Timing Adjustable (Do not need to meet or test.)

C.9.2.2.2 Pause, stop, hide

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.2.2 Pause, Stop, Hide according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.2.2 Pause, Stop, Hide (Do not need to meet or test.)

C.9.2.3 Seizures and physical reactions

C.9.2.3.1 Three flashes or below threshold

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.3.1 Three Flashes or Below Threshold according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.3.1 Three Flashes or Below Threshold (Do not need to meet or test.)

C.9.2.4 Navigable

C.9.2.4.1 Bypass blocks

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.4.1 Bypass Blocks according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass: Check** 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.4.1 Bypass Blocks (Do not need to meet or test.)

C.9.2.4.2 Page titled

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.4.2 Page Titled according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.4.2 Page Titled (Do not need to meet or test.)

C.9.2.4.3 Focus Order

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.4.3 Focus Order according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.4.3 Focus Order (Do not need to meet or test.)

C.9.2.4.4 Link purpose (in context)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.4.4 Link Purpose (In Context) according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.4.4 Link Purpose (In Context) (Do not need to meet or test.)

C.9.2.4.5 Multiple ways

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.4.5 Multiple Ways according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.4.5 Multiple Ways (Do not need to meet or test.)

C.9.2.4.6 Headings and labels

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.4.6 Headings and Labels according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.4.6 Headings and Labels (Do not need to meet or test.)

C.9.2.4.7 Focus visible

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.4.7 Focus Visible according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.4.7 Focus Visible (Do not need to meet or test.)

C.9.2.4.8 Void

C.9.2.4.9 Void

C.9.2.4.10 Void

C.9.2.4.11 Focus not obscured (minimum)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.4.11 Focus Not Obscured (Minimum) according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 2.4.11 Focus Not Obscured (Minimum) (Do not need to meet or test.)

C.9.2.5 Input modalities

C.9.2.5.1 Pointer gestures

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.5.1 Pointer Gestures according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.5.1 Pointer Gestures (Do not need to meet or test.)

C.9.2.5.2 Pointer cancellation

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.5.2 Pointer Cancellation according to WCAG Conformance Requirements stated in clause 9.6 .
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.5.2 Pointer Cancellation (Do not need to meet or test.)

C.9.2.5.3 Label in name

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.5.3 Label in Name according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.5.3 Label in Name (Do not need to meet or test.)

C.9.2.5.4 Motion actuation

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.5.4 Motion Actuation according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.5.4 Motion Actuation (Do not need to meet or test.)

C.9.2.5.5 Void

C.9.2.5.6 Void

C.9.2.5.7 Dragging movements

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.5.7 Dragging Movements. according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.5.7 Dragging movements (Do not need to meet or test.)

C.9.2.5.8 Target size (minimum)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 2.5.8 Target Size (Minimum). according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 2.5.8 Target size (minimum) (Do not need to meet or test.)

C.9.3 Understandable

C.9.3.1 Readable

C.9.3.1.1 Language of page

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 3.1.1 Language of Page according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 3.1.1 Language of Page (Do not need to meet or test.)

C.9.3.1.2 Language of parts

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 3.1.2 Language of Parts according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 3.1.2 Language of Parts (Do not need to meet or test.)

C.9.3.2 Predictable

C.9.3.2.1 On focus

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 3.2.1 On Focus according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 3.2.1 On Focus (Do not need to meet or test.)

C.9.3.2.2 On input

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 3.2.2 On Input according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 3.2.2 On Input (Do not need to meet or test.)

C.9.3.2.3 Consistent navigation

Type of assessment	**Inspection**
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 3.2.3 Consistent Navigation according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 3.2.3 Consistent Navigation (Do not need to meet or test.)

C.9.3.2.4 Consistent identification

Type of assessment	**Inspection**
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 3.2.4 Consistent Identification according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 3.2.4 Consistent Identification (Do not need to meet or test.)

C.9.3.2.5 Void

C.9.3.2.6 Consistent help

Type of assessment	**Inspection**
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 3.2.6 Consistent Help according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 3.2.6 Consistent Help (Do not need to meet or test.)

C.9.3.3 Input assistance

C.9.3.3.1 Error identification

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 3.3.1 Error Identification according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 3.3.1 Error Identification (Do not need to meet or test.)

C.9.3.3.2 Labels or instructions

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 3.3.2 Labels or Instructions according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 3.3.2 Labels or Instructions (Do not need to meet or test.)

C.9.3.3.3 Error suggestion

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 3.3.3 Error Suggestion according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 3.3.3 Error Suggestion (Do not need to meet or test.)

C.9.3.3.4 Error prevention (legal, financial, data)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 3.3.4 Error Prevention (Legal, Financial, Data) according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 3.3.4 Error Prevention (Legal, Financial, Data) (Do not need to meet or test.)

C.9.3.3.5 Void

C.9.3.3.6 Void

C.9.3.3.7 Redundant entry

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 3.3.7 Redundant Entry according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG.2 Success Criterion 3.3.7 Redundant Entry (Do not need to meet or test.)

C.9.3.3.8 Accessible authentication (minimum)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 3.3.8 Accessible Authentication (Minimum) according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 3.3.8 Accessible Authentication (Minimum) (Do not need to meet or test.)

C.9.4 Robust

C.9.4.1 Compatible

C.9.4.1.1 Void

C.9.4.1.2 Name, role, value

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 4.1.2 Name, Role, Value according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 4.1.2 Name, Role, Value (Do not need to meet or test.)

C.9.4.1.3 Status messages

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not fail WCAG 2.2 Success Criterion 4.1.3 Status Messages according to WCAG Conformance Requirements stated in clause 9.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the web page does not contain content relevant to WCAG 2.2 Success Criterion 4.1.3 Status Messages (Do not need to meet or test.)

C.9.5 WCAG 2.2 AAA Success Criteria (informative)

Clause 9.5 is informative only and contains no testable requirements.

C.9.6 WCAG 2.2 conformance requirements

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page satisfies WCAG 2.2 [4] conformance requirement "1: Conformance level" at Level AA. 2. **Check** that the web page satisfies WCAG 2.2 [4] conformance requirement "2: Full pages". 3. **Check** that the web page satisfies WCAG 2.2 [4] conformance requirement "3: Complete processes". 4. **Check** that the web page satisfies WCAG 2.2 [4] conformance requirement "4: Only Accessibility-Supported Ways of Using Technologies". 5. **Check** that the web page satisfies WCAG 2.2 [4] conformance requirement "5: Non-interference".
Result	**Pass:** All checks are true **Fail:** Any check is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.9.7 User preferences for web pages

Type of assessment	**Inspection**
Requirement Preconditions	1. The ICT is, or includes, a web page.
Procedure	1. **Check** that the web page does not block the user agents mode(s) of operation that present the web page according to user preference settings. 2. **Check** that the web page does not explicitly override user preferences for documented platform accessibility features in these modes of operation. 3. **Check** each case where a user preference is explicitly overridden to identify whether meeting the user preference would fundamentally alter the information or function of the web page.
Result	**Pass:** Check 1 is true AND (check 2 Or check 3 are true) **Fail:** Check 1 is false OR (check 2 is false AND check 3 is false) **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10 Non-web documents

C.10.0 General (informative)

Clause 10.0 is informative only and contains no testable requirements.

C.10.1 Perceivable

C.10.1.1 Text alternatives

C.10.1.1.1 Non-text content

Type of assessment	**Inspection**
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 1.1.1 Non-text content.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 1.1.1 Non-text content (Do not need to meet or test.)

C.10.1.2 Time-based media

C.10.1.2.1 Audio-only and video-only (pre-recorded)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 1.2.1 Audio-only and Video-only (Prerecorded).
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 1.2.1 Audio-only and Video-only (Prerecorded) (Do not need to meet or test.)

C.10.1.2.2 Subtitles (pre-recorded)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 1.2.2 Captions (Prerecorded).
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 1.2.2 Captions (Prerecorded) (Do not need to meet or test.)

C.10.1.2.3 Audio description or media alternative (pre-recorded)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 1.2.3 Audio Description or Media Alternative (Prerecorded).
Result	**Pass: Check** 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 1.2.3 Audio Description or Media Alternative (Prerecorded) (Do not need to meet or test.)

C.10.1.2.4 Subtitles (live)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. Check that the document does not fail WCAG 2.2 Success Criterion 1.2.4 Captions (Live).
Result	**Pass: Check** 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 1.2.4 Captions (Live) (Do not need to meet or test.)

C.10.1.2.5 Audio description (pre-recorded)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 1.2.5 Audio Description (Prerecorded).
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 1.2.5 Audio Description (Prerecorded) (Do not need to meet or test.)

C.10.1.3 Adaptable

C.10.1.3.1 Info and relationships

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 1.3.1 Info and Relationships.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 1.3.1 Info and Relationships (Do not need to meet or test.)

C.10.1.3.2 Meaningful sequence

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 1.3.2 Meaningful Sequence.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 1.3.2 Meaningful Sequence (Do not need to meet or test.)

C.10.1.3.3 Sensory characteristics

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 1.3.3 Sensory Characteristics.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 1.3.3 Sensory Characteristics (Do not need to meet or test.)

C.10.1.3.4 Orientation

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document. 2. The non-web document is displayed on hardware that is designed to be reoriented in typical use.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 1.3.4 Orientation.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 1.3.4 Orientation (Do not need to meet or test.)

C.10.1.3.5 Identify input purpose

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 1.3.5 Identify Input Purpose.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 1.3.5 Identify Input Purpose (Do not need to meet or test.)

C.10.1.4 Distinguishable

C.10.1.4.1 Use of colour

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 1.4.1 Use of Color.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 1.4.1 Use of Color (Do not need to meet or test.)

C.10.1.4.2 Audio control

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail the Success Criterion in Table 10.1.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.1.4.3 Contrast (minimum)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 1.4.3 Contrast (Minimum).
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 1.4.3 Contrast (Minimum) (Do not need to meet or test.)

C.10.1.4.4 Resize text

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 1.4.4 Resize text.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 1.4.4 Resize text (Do not need to meet or test.)

C.10.1.4.5 Images of text

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 1.4.5 Images of Text.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 1.4.5 Images of Text (Do not need to meet or test.)

C.10.1.4.6 Void

C.10.1.4.7 Void

C.10.1.4.8 Void

C.10.1.4.9 Void

C.10.1.4.10 Reflow

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document. 2. the underlying user agent or platform software can present content at a width equivalent to 320 CSS pixels or more for vertical scrolling content, and a height equivalent to 256 CSS pixels or more for horizontal scrolling content.
Procedure	1. **Check** that the document does not fail the Success Criterion in Table 10.2.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.1.4.11 Non-text contrast

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document that does not have a fixed-size content layout area that is essential to the information being conveyed.
Procedure	1. **Check** that the document does not fail the Success Criterion in Table 10.3
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.1.4.12 Text spacing

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document. 2. That is implemented using markup languages that allow users to modify text spacing properties.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 1.4.12 Text spacing.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 1.4.12 Text spacing (Do not need to meet or test.)

C.10.1.4.13 Content on hover or focus

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail the Success Criterion in Table 10.4.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.2 Operable

C.10.2.1 Keyboard accessible

C.10.2.1.1 Keyboard

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 2.1.1 Keyboard.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 2.1.1 Keyboard (Do not need to meet or test.)

C.10.2.1.2 No keyboard trap

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail the Success Criterion in Table 10.5.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.2.1.3 Void

C.10.2.1.4 Character key shortcuts

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 2.1.4 Character Key Shortcuts.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 2.1.4 Character Key Shortcuts (Do not need to meet or test.)

C.10.2.2 Enough time

C.10.2.2.1 Timing adjustable

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail the Success Criterion in Table 10.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.2.2.2 Pause, stop, hide

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail the Success Criterion in Table 10.7.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.2.3 Seizures and physical reactions

C.10.2.3.1 Three flashes or below threshold

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail the Success Criterion in Table 10.8.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.2.4 Navigable

C.10.2.4.1 Void

C.10.2.4.2 Non-web document titled

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document. 2. The non-web document is implemented in a format that supports a programmatically determinable "Title" attribute that is editable using common authoring tools for that document format.
Procedure	1. **Check** that the non-web document has a title that describes the name, topic, or purpose.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.2.4.3 Focus order

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail the Success Criterion in Table 10.9.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.2.4.4 Link purpose (in context)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 2.4.4 Link Purpose (In Context).
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 2.4.4 Link Purpose (In Context) (Do not need to meet or test.)

C.10.2.4.5 Void

C.10.2.4.6 Headings and labels

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 2.4.6 Headings and Labels.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 2.4.6 Headings and Labels (Do not need to meet or test.)

C.10.2.4.7 Focus visible

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document that accepts input from a keyboard of keyboard interface.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 2.4.7 Focus Visible.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 2.4.7 Focus Visible (Do not need to meet or test.)

C.10.2.4.8 Void

C.10.2.4.9 Void

C.10.2.4.10 Void

C.10.2.4.11 Focus not obscured (minimum)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 2.4.11 Focus Not Obscured (Minimum).
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 2.4.11 Focus Not Obscured (Minimum) (Do not need to meet or test.)

C.10.2.5 Input modalities

C.10.2.5.1 Pointer gestures

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail the Success Criterion in Table 10.10.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.2.5.2 Pointer cancellation

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail the success criterion in Table 10.11.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.2.5.3 Label in name

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 2.5.3 Label in Name.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 2.5.3 Label in Name (Do not need to meet or test.)

C.10.2.5.4 Motion actuation

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 2.5.4 Motion Actuation.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 2.5.4 Motion Actuation (Do not need to meet or test.)

C.10.2.5.5 Void

C.10.2.5.6 Void

C.10.2.5.7 Dragging movements

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail the success criterion in Table 10.12.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.2.5.8 Target size (minimum)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail the success criterion in Table 10.13.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.3 Understandable

C.10.3.1 Readable

C.10.3.1.1 Language of non-web document

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail the Success Criterion in Table 10.14.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.3.1.2 Language of parts

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail the Success Criterion in Table 10.15.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.3.2 Predictable

C.10.3.2.1 On focus

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 3.2.1 On Focus.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 3.2.1 On Focus (Do not need to meet or test.)

C.10.3.2.2 On input

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 3.2.2 On Input.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 3.2.2 On Input (Do not need to meet or test.)

C.10.3.2.3 Consistent navigation

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document within a set of non-web documents.
Procedure	1. **Check** that the document does not fail the Success Criterion in Table 10.16.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.3.2.4 Consistent identification

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document within a set of non-web documents.
Procedure	1. **Check** that the document does not fail the Success Criterion in Table 10.17.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.3.2.5 Void

C.10.3.2.6 Consistent help

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail the Success Criterion in Table 10.18.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.3.3 Input assistance

C.10.3.3.1 Error identification

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 3.3.1 Error Identification.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 3.3.1 Error Identification (Do not need to meet or test.)

C.10.3.3.2 Labels or instructions

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 3.3.2 Labels or Instructions.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 3.3.2 Labels or Instructions (Do not need to meet or test.)

C.10.3.3.3 Error suggestion

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 3.3.3 Error Suggestion.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 3.3.3 Error Suggestion (Do not need to meet or test.)

C.10.3.3.4 Error prevention (legal, financial, data)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail the Success Criterion in Table 10.19
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.3.3.5 Void

C.10.3.3.6 Void

C.10.3.3.7 Redundant entry

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 3.3.7 Redundant Entry.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG.2 Success Criterion 3.3.7 Redundant Entry (Do not need to meet or test.)

C.10.3.3.8 Accessible authentication (minimum)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail the Success Criterion in Table 10.20
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.4 Robust

C.10.4.1 Compatible

C.10.4.1.1 Void

Earlier versions of the present document referenced the 4.1.1 Parsing success criterion from WCAG 2.0 [i.41] and WCAG 2.1 [i.42]. In WCAG 2.2 [4], this criterion has been removed, because the accessibility problems it was intended to prevent "either no longer exist or are addressed by other criteria".

C.10.4.1.2 Name, role, value

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail the Success Criterion in Table 10.21.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.10.4.1.3 Status messages

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the document does not fail WCAG 2.2 Success Criterion 4.1.3 Status Messages.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web document does not contain content relevant to WCAG 2.2 Success Criterion 4.1.3 Status Messages (Do not need to meet or test.)

C.10.5 Subtitle positioning (recommendation)

Clause 10.5 is informative only and contains no testable requirements.

C.10.6 Audio description timing (recommendation)

Clause 10.6 is informative only and contains no testable requirements.

C.10.7 User preferences for non-web documents

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, a non-web document.
Procedure	1. **Check** that the non-web document does not block the user agent's mode(s) of operation that present the non-web document according to user preference settings. 2. **Check** that the non-web document does not explicitly override user preferences for documented platform accessibility features in these modes of operation. 3. **Check** each case where a user preference is explicitly overridden to identify whether meeting the user preference would fundamentally alter the information or function of the non-web document.
Result	**Pass:** Check 1 is true AND (check 2 Or check 3 are true) **Fail:** Check 1 is false OR (check 2 is false AND check 3 is false) **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11 Software

C.11.0 General (informative)

Clause 11.0 is informative only and contains no testable requirements.

C.11.1 Perceivable

C.11.1.1 Text alternatives

C.11.1.1.1 Non-text content

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The non-web software includes functionality that is not closed to programmatic access of information by assistive technologies.
Procedure	1. **Check** that the functionality that is not closed does not fail WCAG 2.2 Success Criterion 1.1.1 Non-text Content.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.1.2 Time-based media

C.11.1.2.1 Audio-only and video-only (pre-recorded)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The non-web software includes functionality that is not closed to programmatic access of information by assistive technologies.
Procedure	1. **Check** that functionality that is not closed does not fail WCAG 2.2 Success Criterion 1.2.1 Audio-only and Video-only (Prerecorded).
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.1.2.2 Subtitles (pre-recorded)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 1.2.2 Captions (Prerecorded).
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 1.2.2 Captions (Prerecorded) (Do not need to meet or test.)

C.11.1.2.3 Audio description or media alternative (pre-recorded)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The non-web software includes functionality that is not closed to programmatic access of information by assistive technologies.
Procedure	1. **Check** that functionality that is not closed does not fail WCAG 2.2 Success Criterion 1.2.3 Audio Description or Media Alternative (Prerecorded).
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 1.2.3 Audio Description or Media Alternative (Prerecorded) (Do not need to meet or test.)

C.11.1.2.4 Subtitles (live)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 1.2.4 Captions (Live).
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 1.2.4 Captions (Live). (Do not need to meet or test)

C.11.1.2.5 Audio description (pre-recorded)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 1.2.5 Audio Description (Prerecorded).
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 1.2.5 Audio Description (Prerecorded) (Do not need to meet or test.)

C.11.1.3 Adaptable

C.11.1.3.1 Info and relationships

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The non-web software includes functionality that is not closed to programmatic access of information by assistive technologies.
Procedure	1. **Check** that the functionality that is not closed does not fail WCAG 2.2 Success Criterion 1.3.1 Info and Relationships.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)
NOTE: There are a number of tests that address different aspects of a user interface object and their relationships. Any of these will also cause C.11.1.3.1 to fail. It is recommended therefore to evaluate them first (or as part of the C.11.1.3.1 evaluation) to save time. The requirements are C.11.5.2.6, C.11.5.2.8, C.11.5.2.9, and C.11.5.2.15.	

C.11.1.3.2 Meaningful sequence

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The non-web software includes functionality that is not closed to programmatic access of information by assistive technologies.
Procedure	1. **Check** that functionality that is not closed does not fail WCAG 2.2 Success Criterion 1.3.2 Meaningful Sequence.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.1.3.3 Sensory characteristics

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 1.3.3 Sensory Characteristics.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 1.3.3 Sensory Characteristics (Do not need to meet or test.)

C.11.1.3.4 Orientation

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The non-web software is displayed on hardware that is designed to be reoriented in typical use.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 1.3.4 Orientation.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 1.3.4 Orientation (Do not need to meet or test.)

C.11.1.3.5 Identify input purpose

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The non-web software includes functionality that is not closed to programmatic access of information by assistive technologies.
Procedure	1. **Check** that the functionality that is not closed does not fail WCAG 2.2 Success Criterion 1.3.5 Identify Input Purpose.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 1.3.5 Identify Input Purpose (Do not need to meet or test.)

C.11.1.4 Distinguishable

C.11.1.4.1 Use of colour

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 1.4.1 Use of Color.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 1.4.1 Use of Color (Do not need to meet or test.)

C.11.1.4.2 Audio control

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail the Success Criterion in Table 11.1.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.1.4.3 Contrast (minimum)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 1.4.3 Contrast (Minimum).
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 1.4.3 Contrast (Minimum) (Do not need to meet or test.)

C.11.1.4.4 Resize text

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The non-web software is not closed to enlargement.
Procedure	1. **Check** that the non-web software does not fail Success Criterion in Table 11.2.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 1.4.4 Resize text (Do not need to meet or test.)

C.11.1.4.5 Images of text

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The non-web software is not closed to programmatic access of information by assistive technologies.
Procedure	1. **Check** that the functionality that is not closed does not fail WCAG 2.2 Success Criterion 1.4.5 Images of Text.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 1.4.5 Images of Text (Do not need to meet or test.)

C.11.1.4.6 Void

C.11.1.4.7 Void

C.11.1.4.8 Void

C.11.1.4.9 Void

C.11.1.4.10 Reflow

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail the Success Criterion in Table 11.3.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.1.4.11 Non-text contrast

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail the Success Criterion WCAG 2.2 Success Criterion 1.4.11 Non-text Contrast.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 1.4.11 Non-text Contrast (Do not need to meet or test.)

C.11.1.4.12 Text spacing

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. That is implemented using markup languages that allow users to modify text spacing properties.
Procedure	1. **Check** that the non-web software does not fail the Success Criterion WCAG 2.2 Success Criterion 1.4.12 Text spacing.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 1.4.12 Text spacing (Do not need to meet or test.)

C.11.1.4.13 Content on hover or focus

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. Any visual presentation of the additional content caused by a hover or focus is not controlled by the user agent or platform software. 3. Any visual presentation of the additional content caused by a hover or focus is not modified by the author.
Procedure	1. **Check** that the non-web software does not fail the Success Criterion in Table 11.4.
Result	**Pass:** Checks 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.2 Operable

C.11.2.1 Keyboard accessible

C.11.2.1.1 Keyboard

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The ICT provides a keyboard or accepts input from a keyboard or keyboard interface.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 2.1.1 Keyboard.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 2.1.1 Keyboard (Do not need to meet or test.)

C.11.2.1.2 No keyboard trap

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The ICT provides a keyboard or accepts input from a keyboard or keyboard interface.
Procedure	1. **Check** that the non-web software does not fail the Success Criterion in Table 11.5.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.2.1.3 Void

C.11.2.1.4 Character key shortcuts

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The ICT provides a keyboard or accepts input from a keyboard or keyboard interface.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 2.1.4 Character Key Shortcuts.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 2.1.4 Character Key Shortcuts (Do not need to meet or test.)

C.11.2.2 Enough time

C.11.2.2.1 Timing adjustable

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail the Success Criterion in Table 11.6.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.2.2.2 Pause, stop, hide

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail the Success Criterion in Table 11.7.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.2.3 Seizures and physical reactions

C.11.2.3.1 Three flashes or below threshold

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail the Success Criterion in Table 11.8.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.2.4 Navigable

C.11.2.4.1 Bypass blocks (Void)

C.11.2.4.2 Non-web software titled

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The non-web software is implemented on a platform that supports "Title" attributes for windows or screens.
Procedure	1. **Check** that the non-web software provides titles that describe the name, topic or purpose of each window or screen.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.2.4.3 Focus order

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The ICT provides a keyboard or accepts input from a keyboard or keyboard interface.
Procedure	1. **Check** that the non-web software does not fail the Success Criterion in Table 11.9.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.2.4.4 Link purpose (in context)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 2.4.4 Link Purpose (In Context).
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 2.4.4 Link Purpose (In Context) (Do not need to meet or test.)

C.11.2.4.5 Multiple ways (Void)

C.11.2.4.6 Headings and labels

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 2.4.6 Headings and Labels.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 2.4.6 Headings and Labels (Do not need to meet or test.)

C.11.2.4.7 Focus visible

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 2.4.7 Focus Visible.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 2.4.7 Focus Visible (Do not need to meet or test.)

C.11.2.4.8 Void

C.11.2.4.9 Void

C.11.2.4.10 Void

C.11.2.4.11 Focus not obscured (minimum)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 2.4.11 Focus not obscured (minimum).
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 2.4.11 Focus Not Obscured (Minimum) (Do not need to meet or test.)

C.11.2.5 Input modalities

C.11.2.5.1 Pointer gestures

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The non-web software provides a pointing mechanism or accepts input from pointing devices.
Procedure	1. **Check** that the non-web software does not fail the Success Criterion in Table 11.10.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.2.5.2 Pointer cancellation

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The non-web software provides a pointing mechanism or accepts input from pointing devices.
Procedure	1. **Check** that the non-web software does not fail the Success Criterion in Table 11.11.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.2.5.3 Label in name

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The non-web software includes functionality that is not closed to programmatic access of information by assistive technologies.
Procedure	1. **Check** that the functionality that is not closed to programmatic access of information by assistive technologies does not fail WCAG 2.2 Success Criterion 2.5.3 Label in Name.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 2.5.3 Label in Name (Do not need to meet or test.)

C.11.2.5.4 Motion actuation

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 2.5.4 Motion Actuation.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 2.5.4 Motion Actuation (Do not need to meet or test.)

C.11.2.5.5 Void

C.11.2.5.6 Void

C.11.2.5.7 Dragging movements

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail the Success Criterion in Table 11.12.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.2.5.8 Target size (minimum)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail the Success Criterion in Table 11.13.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.3 Understandable

C.11.3.1 Readable

C.11.3.1.1 Language of non-web software

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The non-web software includes functionality that is not closed to programmatic access of information by assistive technologies.
Procedure	1. **Check** that the functionality that is not closed to programmatic access of information by assistive technologies does not fail the Success Criterion in Table 11.14.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.3.1.2 Language of parts (Void)

C.11.3.2 Predictable

C.11.3.2.1 On focus

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 3.2.1 On Focus.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 3.2.1 On Focus (Do not need to meet or test.)

C.11.3.2.2 On input

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 3.2.2 On Input.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 3.2.2 On Input (Do not need to meet or test.)

C.11.3.2.3 Consistent navigation (Void)

C.11.3.2.4 Consistent identification

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that components that have the same functionality within the non-web software are identified consistently. 2. Where inconsistent identification of components is detected, check that this is because the inconsistency is essential to the function of the non-web software.
Result	**Pass:** Check 1 is true and check 2 is true where inconsistencies are detected **Fail:** Check 1 is false or check 2 is false where inconsistencies are detected **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.3.2.5 Void

C.11.3.2.6 Void

C.11.3.3 Input assistance

C.11.3.3.1 Error identification

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The non-web software includes functionality that is not closed to programmatic access of information by assistive technologies.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 3.3.1 Error Identification.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 3.3.1 Error Identification (Do not need to meet or test.)

C.11.3.3.2 Labels or instructions

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 3.3.2 Labels or Instructions.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 3.3.2 Labels or Instructions (Do not need to meet or test.)

C.11.3.3.3 Error suggestion

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 3.3.3 Error Suggestion.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG 2.2 Success Criterion 3.3.3 Error Suggestion (Do not need to meet or test.)

C.11.3.3.4 Error prevention (legal, financial, data)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail the Success Criterion in Table 11.15.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.3.3.5 Void

C.11.3.3.6 Void

C.11.3.3.7 Redundant entry

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail WCAG 2.2 Success Criterion 3.3.7 Redundant Entry.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false or the non-web software does not contain content relevant to WCAG.2 Success Criterion 3.3.7 Redundant Entry (Do not need to meet or test.)

C.11.3.3.8 Accessible authentication (minimum)

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface.
Procedure	1. **Check** that the non-web software does not fail the Success Criterion in Table 11.16.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.4 Robust

C.11.4.1 Compatible

C.11.4.1.1 Void

Earlier versions of the present document referenced the 4.1.1 Parsing success criterion from WCAG 2.0 [i.41] and WCAG 2.1 [i.42]. In WCAG 2.2 [4], this criterion has been removed, because the accessibility problems it was intended to prevent "either no longer exist or are addressed by other criteria".

C.11.4.1.2 Name, role, value

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The software includes functionality that is not closed to programmatic access of information by assistive technologies
Procedure	1. **Check** that the non-web software does not fail the Success Criterion in Table 11.17.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)
NOTE: There are a number of tests that address different aspects of a user interface object accessibility. Any of these will also cause C.11.4.1.2 to fail. It is recommended therefore to evaluate them first (or as part of the C.11.4.1.2 evaluation) to save time. The requirements are 11.5.2.5, 11.5.2.7, 11.5.2.10, 11.5.2.11, 11.5.2.13, and 11.5.2.15.	

C.11.4.1.3 Status messages

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The non-web software includes functionality that is not closed to programmatic access of information by assistive technologies. 3. The functionality that is not closed supports status message notifications.
Procedure	1. **Check** that when status messages are presented they do not receive focus.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.5 Interoperability with assistive technology

C.11.5.1 Closed functionality

Clause 11.5.1 is informative only and contains no testable requirements.

C.11.5.2 Accessibility services

C.11.5.2.1 Platform interoperability with assistive technologies

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, platform software.
Procedure	1. **Check** that the platform provides a set of documented platform accessibility services. 2. For each user interface concept corresponding to the clauses 11.5.2.5 to 11.5.2.17 supported within the platform software. 2.1 **Check** that the platform software documentation includes information about platform services that enable assistive technology to interoperate with software running on the platform.
Result	**Pass:** Check 1 and all checks 2.1 are true **Fail:** Check 1 is false or any check 2.1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.5.2.2 Void

NOTE: This clause from previous versions of EN 301 549 has been merged in with clause 11.5.2.1.

C.11.5.2.3 Use of accessibility services (recommendation)

Clause 11.5.2.3 is informative only and contains no testable requirements.

C.11.5.2.4 Assistive technology

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that is assistive technology.
Procedure	1. **Check** that the assistive technology uses the documented platform accessibility services.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.5.2.5 Object information

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The software includes functionality that is not closed to programmatic access of information by assistive technologies.
Procedure	Using an appropriate accessibility inspection tool for platforms: 1. **Check** that the user interface element's role is programmatically determinable. 2. **Check** that the user interface element's state(s) is programmatically determinable. 3. **Check** that the user interface element's boundary is programmatically. 4. **Check** that the user interface element's name is programmatically determinable. 5. **Check** that the user interface element's description is programmatically determinable.
Result	**Pass:** Checks 1, 2, 3, 4 and 5 are true **Fail:** Check 1 or 2 or 3 or 4 or 5 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.5.2.6 Row, column, and headers

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The software includes functionality that is not closed to programmatic access of information by assistive technologies.
Test Assumptions	There are data tables in the user interface.
Procedure	Using an appropriate accessibility inspection tool for platforms: 1. Select a data table in which the tests are to be performed. 2. **Check** that each cell's row is programmatically determinable by the tool. 3. **Check** that each cell's column is programmatically determinable by the tool. 4. **Check** that each cell's row header, if the row header exists, is programmatically determinable by the tool. 5. **Check** that each cell's column header, if the column header exists, is programmatically determinable by the tool.
Result	**Pass:** Checks 2, 3, 4 and 5 are true **Fail:** Check 2 or 3 or 4 or 5 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.11.5.2.7 Values

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The software includes functionality that is not closed to programmatic access of information by assistive technologies. 3. There are user interface elements that can have values.
Procedure	Using an appropriate accessibility inspection tool for platforms: 1. Select a user interface element that can have a value. 2. **Check** that the current value is programmatically determinable by the tool. 3. If the user interface element conveys information about a range of values, check that the minimum value is programmatically determinable by the tool. 4. If the user interface element conveys information about a range of values, check that the maximum value is programmatically determinable by the tool.
Result	**Pass:** Checks 2, 3 and 4 are true **Fail:** Check 2 or 3 or 4 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.5.2.8 Label relationships

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The software includes functionality that is not closed to programmatic access of information by assistive technologies. 3. There are user interface elements that are labels of other user interface elements.
Procedure	Using an appropriate accessibility inspection tool for platforms: 1. Obtain the information of each user interface element. 2. **Check** that the user interface element's information includes the relationship with the user interface element that is its label, if the current user interface element has a label, and that this relationship is programmatically determinable by the tool. 3. **Check** that the user interface element's information includes the relationship with the user interface element that it is labelling, if the current user interface element is a label, and that this relationship is programmatically determinable by the tool.
Result	**Pass:** Checks 2 or 3 are true **Fail:** Check 2 and 3 are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.5.2.9 Parent-child relationships

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The software includes functionality that is not closed to programmatic access of information by assistive technologies. 3. There are user interface elements that are parents of other user interface elements in a hierarchical structure.
Procedure	Using an appropriate accessibility inspection tool for platforms: 1. For user interface elements that have a parent, check that the user interface element's information includes the relationship with the user interface element that is its parent. 2. **Check** that the user interface elements that are parents of the user interface element selected in check 1, include the relationship with the user interface elements that are its children in their information, and that this relationship is programmatically determinable by the tool. 3. For user interface elements that are a parent of other user interface elements, check that the user interface element's information includes the relationship with the user interface elements that are its children, and that this relationship is programmatically determinable by the tool. 4. **Check** that the user interface elements that are a child of the user interface element selected in check 3, include the relationship with the user interface elements that are its parents in their information, and that this relationship is programmatically determinable by the tool.
Result	**Pass:** Checks 1 or 2 is true and check 3 or 4 is true **Fail:** Checks 1 and 2 are false or check 3 and 4 are false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)
NOTE: For this requirement it is enough that one of the two directions of a parent-child relationship is programmatically determinable. This is the reason why the requirement checks are in pairs and why the requirement is met if one member of each pair is true.	

C.11.5.2.10 Text

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The software includes functionality that is not closed to programmatic access of information by assistive technologies. 3. The ICT renders to the screen.
Procedure	Using an appropriate accessibility inspection tool for platforms: 1. For instances of text rendered to the screen, check that the text's information includes its text content, and that this information is programmatically determinable by the tool. 2. For instances of text rendered to the screen, check that the text's information includes its attributes, and that this information is programmatically determinable by the tool. 3. For instances of text rendered to the screen, check that the text's information includes its boundary, and that this information is programmatically determinable by the tool.
Result	**Pass:** Checks 1, 2 and 3 are true **Fail:** Check 1 or 2 or 3 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.5.2.11 List of available actions

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The software includes functionality that is not closed to programmatic access of information by assistive technologies.
Procedure	Using an appropriate accessibility inspection tool for platforms: 1. For all user interface elements that have executable actions. 1.1 **Check** that the list of actions of the user interface element is programmatically determinable by the tool.
Result	**Pass:** All checks 1.1 are true **Fail:** Any check 1.1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.5.2.12 Execution of available actions

Type of assessment	Inspection and testing
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The software includes functionality that is not closed to programmatic access of information by assistive technologies. 3. There are user interface elements that have actions that can be executed by the user.
Procedure	Using an appropriate accessibility inspection tool for platforms: 1. **Check** that the user interface element's information includes the list of actions that can be executed by assistive technologies according to 11.5.2.11. where the security requirements permit assistive technology to programmatically execute user actions. 2. **Check** that all the actions in the list can successfully be executed by the tool where the security requirements permit assistive technology to programmatically execute user actions.
Result	**Pass:** Checks 1 and 2 are true **Fail:** Check 1 or 2 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.5.2.13 Tracking of focus and selection attributes

Type of assessment	Inspection and testing
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The software includes functionality that is not closed to programmatic access of information by assistive technologies.
Procedure	Using an appropriate accessibility inspection tool for platforms: 1. **Check** by using the tool that each of the focus, text insertion point, and selection attributes is programmatically determinable if it is present in the interface. 2. **Check** that this information is programmatically determinable by the tool. 3. Activate those tracking mechanisms using the tool. 4. As a user, use the text editing functionality in the evaluated non-web software product. 5. **Check** that the tracking of focus, text insertion point and selection attributes work.
Result	**Pass:** Checks 2 and 5 are true **Fail:** Check 1 or 5 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.5.2.14 Modification of focus and selection attributes

Type of assessment	Testing
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The software includes functionality that is not closed to programmatic access of information by assistive technologies. 3. There are user interface elements that can receive focus or that enable text editing.
Procedure	Using an appropriate accessibility inspection tool for platforms: 1. For user interface elements that can receive focus and where the focus can be modified by a user without the use of assistive technology, check that the focus can be programmatically modified by the tool - where the security requirements permit platform software to programmatically modify focus. 2. For user interface elements that enable text editing by a user without the use of assistive technology, check that the position of the text insertion point can be programmatically modified by the tool - where the security requirements permit platform software to programmatically modify, text insertion point. 3. For user interface elements that enable text editing, check that the selection attributes can be programmatically modified by the tool where they can be modified by user without the use of assistive technology - where the security requirements permit platform software to programmatically modify selection attributes of user interface elements.
Result	**Pass:** All checks are true **Fail:** Any check is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.5.2.15 Change notification

Type of assessment	Inspection and testing
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The software includes functionality that is not closed to programmatic access of information by assistive technologies.
Procedure	Using an appropriate accessibility inspection tool for platforms: 1. Activate notifications of changes in the user interface elements. 2. **Check** that notifications about changes in object information (role, state, boundary, name and description) are sent to the tool, if this information changes in the software user interface. 3. **Check** that notifications about changes in row, column and headers of data tables are sent to the tool, if this information changes in the software. 4. **Check** that notifications about changes in values (current value, minimum value and maximum value) are sent to the tool, if this information changes in the software. 5. **Check** that notifications about changes in label relationships are sent to the tool, if this information changes in the software. 6. **Check** that notifications about changes in parent-child relationships are sent to the tool, if this information changes in the software. 7. **Check** notifications about changes in text (text contents, text attributes and the boundary of text rendered to the screen) are sent to the tool, if this information changes in the software. 8. **Check** that notifications about changes in the list of available actions are sent to the tool, if this information changes in the software. 9. **Check** that notifications about changes in focus, text insertion point and selection attributes are sent to the tool, if this information changes in the software.
Result	**Pass:** Checks 2, 3, 4, 5, 6, 7, 8 and 9 are true **Fail:** Check 2, 3, 4, 5, 6, 7, 8 or 9 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

NOTE: C.11.5.2.15 evaluates whether software notifies assistive technologies about changes in those attributes of user interface elements that are referenced in requirements 11.5.2.5 to 11.5.2.11 and 11.5.2.13. It is recommended to evaluate notifications of changes in the attributes addressed respectively by C.11.5.2.5 to C.11.5.2.11 and C.11.5.2.13, and while testing respective changes, pay attention to corresponding notifications to collect the necessary evidence to build evidence to determine the conformance of 11.5.2.15 checks.

C.11.5.2.16 Modifications of states and properties

Type of assessment	Testing
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The software includes functionality that is not closed to programmatic access of information by assistive technologies. 3. There are user interface elements whose state or properties can be modified by a user without the use of assistive technology.
Procedure	Using an appropriate accessibility inspection tool for platforms: 1. **Check** that the state of user interface elements, whose state can be modified by a user without the use of assistive technology, can be programmatically modified using the tool - wherever the security requirements permit assistive technology to programmatically modify states of user interface elements. 2. **Check** the properties of user interface elements, whose properties can be modified by a user without the use of assistive technologies, can be programmatically modified using the tool - wherever the security requirements permit assistive technology to programmatically modify properties of user interface elements.
Result	**Pass:** All checks are true **Fail:** Any check is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.5.2.17 Modifications of values and text

Type of assessment	Testing
Requirement Preconditions	1. The ICT is, or includes, non-web software that provides a user interface. 2. The software includes functionality that is not closed to programmatic access of information by assistive technologies. 3. There are user interface elements whose values or text can be modified by a user without the use of assistive technology.
Procedure	Using an appropriate accessibility inspection tool for platforms: 1. **Check** that the values of user interface elements, whose values can be modified by a user without the use of assistive technology, can be modified by the tool using the input methods of the platform - wherever the security requirements permit assistive technology to programmatically modify values of user interface elements. 2. **Check** that the text of user interface elements, whose text can be modified by a user without the use of assistive technology, can be modified by the tool using the input methods of the platform - wherever the security requirements permit assistive technology to programmatically modify text of user interface elements.
Result	**Pass:** all checks are true **Fail:** any check is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.6 Documented accessibility usage

C.11.6.1 User control of accessibility features

Type of assessment	Testing
Requirement Preconditions	1. The ICT is, or includes, platform software.
Procedure	1. **Check** that sufficient modes of operation exist in which user control over documented platform accessibility features is possible.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.6.2 No disruption of accessibility features

Type of assessment	Testing
Requirement Preconditions	1. The ICT is, or includes, non-web software.
Procedure	1. **Check** if the non-web software disrupts normal operation of documented platform accessibility features. **2. Check** if the disruption was specifically requested or confirmed by the user.
Result	**Pass:** Check 1 is false or both checks are true **Fail:** Check 1 is true and check 2 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.11.7 User preferences

Type of assessment	Inspection and Testing
Requirement Preconditions	1. The non-web software is software that provides a user interface. 2. The non-web software is not designed to be isolated from underlying platforms.
Procedure	1. **Check** that the user interface follows the preferences that users have set for the documented platform accessibility features. 2. **Check** each case where a user preference setting is not followed by the user interface whether following that user preference setting would fundamentally alter the information or function of the non-web software.
Result	**Pass:** Check 1 is true or Check 2 is true **Fail:** Check 1 is false AND Check 2 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.12 Information about products and services

C.12.1 Accessible information about products

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, information about a product. 2. The information is made available in a digital format.
Procedure	1. **Check** that the presentation of the information conforms to the requirements of clause 9 if it is available in a web format, clause 10 if it is available as a non-web document, and clause 11 if it is available as part of software.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.12.2 Accessible information about services

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is, or includes, information about a service. 2. The information is made available in a digital format.
Procedure	1. **Check** that the presentation of the information conforms to the requirements of clause 9 if it is available in a web format, clause 10 if it is available as a non-web document, and clause 11 if it is available as part of software.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.12.3 Accessibility and compatibility features

Type of assessment	Inspection
Requirement Preconditions	1. The ICT has documentation about the use of the ICT on the ICT or there is an official webpage that provides documentation about the use of the ICT.
Procedure	1. **Check** that the information lists and explains how to use the accessibility features of the ICT and its compatibility features with assistive technology.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.12.4 Electronic program guides

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is an Electronic Programme Guide (EPG).
Procedure	1. **Check** that the EPG provides information on the availability of subtitles, audio description, spoken subtitles, and sign language interpretation of the media.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.12.5 Electronic program guide display

Type of assessment	Inspection
Requirement Preconditions	1. The ICT is an Electronic Programme Guide (EPG) presenting media item(s). 2. Information about the availability of subtitles, audio description, spoken subtitles, or sign language interpretation for the media item(s) is available.
Procedure	1. **Check** that there is a mode of operation in which the availability of subtitles, audio description, spoken subtitles, sign language can be determined without activating the media item(s).
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.)

C.13 ICT providing relay or emergency service access

C.13.1 Relay services

C.13.1.1 General (informative)

Clause 13.1.1 is informative only and contains no testable requirements.

C.13.1.2 Relay service access

C.13.1.2.1 General remarks on access to relay services (informational)

Clause 13.1.2.1 is informative only and contains no testable requirements.

C.13.1.2.2 Use of the primary user destination address in relayed communication

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test is intended to support relayed communication 2.ICT under test is, or includes, relay service invocation functions.
Test Assumptions	1. A primary user has a destination address given by the communication system that is intended to support relayed communication.
Procedure	1. **Check** that the ICT under test is confirmed to use the destination address given by the communication system of the primary user.
Result	**Pass:** Check 1 is true **Fail:** Check 1 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.13.1.2.3 Conveying of caller identifier in relayed communications for primary relay users

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test is intended to support relayed communication 2. ICT under test is, or includes, relay service invocation functions.
Test Assumptions	1. A specific relay service is available and operational. 2. A primary user communication client C1 is available that has the rights and means for use of the relay service. 3. Another communication client C2 for use by a secondary user is available.
Procedure	1. C1 is set to non-anonymous communications mode. 2. A communication session is established using the communication system from communication client C1 to communication client C2 via the ICT under test. 3. **Check** that the specified relay service is included in the communication and can be used, and that the caller identifier of C1 is indicated in the incoming communication in C2. 4. The communication is ended and C2 makes use of the caller identifier of C1 as the destination address for initiating a communication to C1. 5. **Check** that the communication is established with C1 and a relay service is or can be invoked in the communication depending on options for C1. 6. The communication is ended. 7. C1 is set to anonymous communication option if that setting is available in the ICT. If so, continue with steps 8 and 9. 8. A communication session is established using the communication system from communication client C1 to communication client C2 with an indication that relay service is wanted in the communication. 9. **Check** that no caller identifier is presented in C2
Result	**Pass:** Check 3 and Check 5 are true, and Check 9 is true if anonymous communication mode is available in the ICT **Fail:** Any of Check 3 or Check 5 or Check 9 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.13.1.2.4 Relay service invocation decision in outgoing communications

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test is intended to support relayed communication 2. ICT under test is, or includes, relay service invocation functions.
Test Assumptions	1. A specific relay service is available and operational. 2. A primary user communication client C1 is available and has the rights and means for use of the relay service. 3. Another communication client C2 for use by a secondary user is available.
Procedure	1. A communication session is established from communication client C1 to communication client C2 with a manual indication that relay service is wanted in the communication. 2. **Check** that the specified relay service is included in the communication and can be used C2. 3. The communication is ended. 4. A communication session is established from communication client C1 to communication client C2 with a manual indication that relay service is not wanted in the communication. 5. **Check** that communication is enabled between C1 and C2 without relay service and that common media can be used. NOTE: If the communication system is specified to connect to a number of available relay services, the test needs to be repeated separately for each of the available relay services.
Result	**Pass:** Check 2 and Check 5 are true **Fail:** Any of Check 2 or Check 5 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.13.1.2.5 Relay service invocation decision in incoming communications

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test is intended to support relayed communication 2. ICT under test is, or includes, relay service invocation functions.
Test Assumptions	1. A specific relay service is available and operational. 2. A primary user communication client C1 is available and has the rights and means and an identifier for use of the relay service. 3. Another communication client C2 for use by a secondary user is available.
Procedure	1. A communication session is initiated from communication client C2 to communication client C1. 2. An indication is provided by manual action in C1 indicating that relay service is wanted in the communication. 3. **Check** that the specified relay service is included in the communication and can be used between C1 and C2. 4. The communication is ended. 5. A communication session is initiated from communication client C2 to communication client C1. 6. An indication is provided by manual action in C1 indicating that relay service is not wanted in the communication. 7. **Check** that communication is enabled between C1 and C2 without relay service and that common media can be used.
Result	**Pass:** Check 3 and Check 7 are true **Fail:** Any of Check 3 or Check 7 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.
NOTE: If the communication system is specified to connect to a number of available relay services, the test needs to be repeated separately for each of the available relay services.	

C.13.1.2.6 Relay service support requested by the primary user for emergency communications

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test is intended to support relayed communication 2. ICT under test is, or includes, relay service invocation functions.
Test Assumptions	1. A specific relay service is available and operational. 2. A primary user communication client C1 is available that has the rights and means for use of the relay service. 3. A test emergency communication PSAP is available.
Procedure	1. An emergency communication session is established using the communication client C1 and the test emergency communication PSAP. 2. **Check** that the relay service invocation functions (ICT under test) invoke the relay service and the emergency communication via a multi-party bridge. 3. **Check** that specified relay service enables interaction by providing conversion between the communication modalities provided by the relay service and that all parties can view all communication between the parties.
Result	**Pass:** Check 2 and 3 is true **Fail:** Check 2 or 3 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.13.1.3 Relay service requirements

C.13.1.3.1 Relaying action in relay service communication

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test is, or includes, a relay service.
Test Assumptions	1. A communication client C1 is available that has the rights and means to be used by a primary user for access to the ICT under test. 2. Another communication client C2 is available for use by a secondary user. NOTE: C2 may be from another communication system that interoperates with the one that C1 is linked to.
Procedure	1. A communication session is established using the communication system from communication client C1 to communication client C2 with an indication that relay service is wanted in the communication (by default or by specific action). 2. **Check** that the specified relay service (the ICT under test) enables interaction by providing the requested conversion between the communication modalities or communications support. 3. **Check** that the specified relay service (the ICT under test) connection carries through media which are specified to be carried through, and that the media are carried through in the specified directions.
Result	**Pass:** Both Checks are true **Fail:** At least one Check is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.13.1.3.2 Media handling in relay service communication

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test is intended to support relayed communication 2. ICT under test is, or includes, relay service invocation functions.
Test Assumptions	1. A communication client C1 that supports total conversation is available, and has the rights and means to be used by a primary user with a specific relay service. 2. The conversion delivered by the specific relay service does not involve at least one of the three total conversation media. 3. Another communication client C2 that supports total conversation is available for use by a secondary user. NOTE: C2 may be from another communication system that interoperates with the one that C1 is linked to.
Procedure	1. A communication session is established using the communication system from communication client C1 to communication client C2 with an indication that relay service is wanted in the communication. 2. **Check** that the relay service invocation functions (ICT under test) allow all media to be involved in the connection by verifying that all the media not involved in the conversion are carried through between C1 and C2.
Result	**Pass:** Check 2 is true **Fail:** Check 2 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.
NOTE: If the communication system is specified to connect to a number of available relay services, the test needs to be repeated separately for each of the available relay services.	

C.13.1.3.3 Relay service support in ICT based conferences

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test is, or includes, a relay service.
Test Assumptions	1. A communication client C1 is available that can be used by a primary user for accessing the ICT under test and for taking part in a conference.
Procedure	1. The primary user of the relay service communicates prior to the conference with the relay service and asks the relay service to connect to the conference. 2. The relay service connects to the conference. 3. The primary user of the relay service connects C1 to the conference. 4. The media channels required for the relay service and the user of the relay service to communicate in real time are established via the conference system or directly whichever is feasible for the type of conference. 5. **Check** that the communication is established and the specified relay service (the ICT under test) has enabled the primary user to receive the conference contents and to contribute. NOTE: In order for the relay service to have the best information to successfully convey the conference voice communications the relay service should not only be able to hear the voice channel of the conference but also to view all contents of the conference.
Result	**Pass:** Check 5 is true **Fail:** Check 5 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.13.1.3.4 Relay service support during emergency communications initiated by the PSAP

Type of assessment	Inspection
Requirement Preconditions	1. ICT under test is, or includes, a relay service.
Test Assumptions	1. A communication client C1 that has the rights and means to be used by a primary user with a specific relay service and has the rights and means to be used in emergency communications is available. 2. A test emergency communications PSAP is available.
Procedure	1. An emergency communications session is established using the communication client C1 and the test emergency communications PSAP. 2. It is detected by manual or automatic means that a relay service is needed in the communication. The PSAP call-taker invokes the relay service via a multi-party bridge. 3. **Check** that, the specified relay service (the ICT under test) enables interaction by providing conversion between the communication modalities provided by the relay service, and that all parties can take part in all communications between the parties.
Result	**Pass:** Check 3 is true **Fail:** Check 3 is false **Not applicable:** If any requirement precondition is false (Do not need to meet or test.) **Test approach cannot be used:** If any Test Assumption is not true. Need to use a different test approach.

C.13.2 Void

NOTE: Was access to relay services which is now integrated in clause 13.1 of the present document.

C.13.3 Access to emergency services (informative)

Clause 13.3 is informative only and contains no testable requirements.

C.14 Conformance

C.14.1 Achieving conformance (informative)

Clause 14.1 is informative only and contains no testable requirements.

C.14.2 Inoperative or semi-operative states

Clause 14.2 provides times or situations where products do not need to meet accessibility requirements. As such there are no tests.

C.14.3 One mode

Clause 14.3 provides clarification of when products do not need to meet guidelines in all modes but only in one mode - and the constraints on that option. As such, it modifies how other tests need to be run but does not have any tests itself.

Annex D (informative): Further resources for cognitive accessibility

It is evident that people with limited cognitive, language and learning abilities have diverse accessibility needs and preferences and that there is a need for further guidelines and standards. Research in this area is ongoing. Relevant standardization work is currently being undertaken by the W3C® Web Accessibility Initiative (WAI). WAI are working to improve the requirements and technical guidance for developers, to better address web accessibility for people with limited cognitive, language and learning abilities. Current W3C activity in this area can be found at https://www.w3.org/WAI/cognitive/.

Ensuring that information is both easy-to-read and uses easy-to-understand language is an important way to support the needs of users with cognitive and learning disabilities. ISO/IEC 23859:2023 [i.60]: "Information technology - User interfaces - Requirements and recommendations on making written text easy to read and understand" is a valuable source of requirements and recommendations in this area.

Annex E (informative): Guidance and additional resources for users of the present document

E.1 Introduction

This explanatory annex is designed to enable users of the present document to make best use of it.

Versions 1.x and 2.x of EN 301 549 were originally intended for procurement purposes. The scope is now changed and the current version also contains the minimum requirements of the European Web Accessibility Directive (Directive (EU) 2016/2102 [i.27]) and of the European Accessibility Act (Directive (EU) 2019/882 [i.29]).

EN 301 549 contains a wide range of requirements to cover a variety of ICT solutions. There are for example requirements on function, physical characteristics and software. No matter if you are responsible for procuring, testing, planning, manufacturing, maintaining or reporting on accessibility, it is necessary to understand which requirements are relevant for a specific product or service in a specific situation or context.

Testing for accessibility requirements does not always result in a yes or no. Sometimes, you end up in a grey zone where it is equally important to understand the prerequisites and potential alternatives for different end user groups. Remember that accessibility has to do with humans.

The examples mentioned in this annex are only inspirational and the standard can of course be used in many different ways and settings.

E.2 Overview

The present document consists of fourteen clauses (equivalent to chapters in a book) and six annexes.

Clauses 0 to 3 contain background information, the scope of the standard, links to references, definitions of terminology and explanations of abbreviations. These clauses have a lot of valuable information, but it can be hard to read the standard from A to Z.

Clause 4 covers functional performance criteria, which are directly related to end-user needs. The clause explains what functionality is needed to enable end users to locate, identify and operate functions in technology, no matter of their abilities. This is an important clause where you can learn about what challenges accessibility requirements aim to solve.

Clauses 5 to 13 are the actual technical requirements. Most readers start here, but clause 4 can possibly be a better place to begin, to really understand how to use the detailed technical parts.

The technical requirements cover many different kinds of ICT divided into separate clauses, but it is always a good idea to have a look at clause 5, since this is where the general requirements are.

Clauses 9, 10 and 11 are the ones that are most relevant to the European Web Accessibility Directive [i.27]. They cover websites, documents and apps. However, requirements from other clauses apply, as listed in the tables in Annex A.

Clause 14 deals with conformance to EN 301 549 as a whole and to the individual requirements.

Annex A describes how the standard relates to the European Web Accessibility Directive [i.27]. Apart from the minimum requirements in clauses 9, 10 and 11, some of the requirements in clauses 5, 6, 7 and 12 can also be relevant to fulfil the Directive, in specific situations. The tables in Annex A show which of the requirements are important to look at.

Annex B describes how the functional performance criteria of clause 4 relate to the technical requirements in clauses 5 to 13. This is a useful tool that will, for example, help you to use the standard in procurement to identify the impact that specific requirements have on end users when comparing proposals.

Annex C describes how you can test that each requirement of the standard is met. The annex does not provide a testing methodology and you still have to know quite a lot about functional performance criteria and testing procedures to make use of it.

Annex D provides a link to further resources for cognitive accessibility.

Annex E is what you are reading right now.

Annex F provides a change history table.

E.3 Clause 4

Clause 4 is in a sense the heart of the standard. The end users, with their different needs, are the reason accessibility matters. The user needs behind each functional performance criterion are also the reason for each of the requirements in the present document.

Clause 4 does not include technical requirements, only functional performance requirements to meet user needs. This may make it seem less important but, in reality, it is the other way around. The aim of the whole standard is to ensure that end users with the varying abilities described in this clause can use products and services.

In this clause, ten functional performance criteria based on variations of impairments are described, plus privacy. The impairments can be permanent, temporary or situational. End users with multiple impairments might need specific combinations of accessibility solutions. Therefore, it is necessary to consider all different functional performance criteria as well as a combination of them.

The concept behind the standard is to let technology help compensate the challenges that end users can have. You can also look at accessibility as alternative ways to use technology. For example: if the end user cannot see, technology can provide sound. If the end user cannot hear, the technology can provide text. This is what clause 4 is describing for each user group, in detail.

After reading clause 4, you will understand the logic of the requirements in the standard much better.

E.4 How to use the standard

E.4.1 Self scoping requirements

The requirements in the present document are called self-scoping. This means that they consist of two parts; the first part is a precondition for the second part, which holds the actual requirement. If the first part is true, you need to meet the second part of the requirement. If the first part is **not** true, this means that the requirement is not applicable.

For example, a requirement saying "Where ICT hardware has speech output, it shall provide […]" can be met in two ways:

- If your product or service provides speech, you need to fulfil the second part of the requirement.
- If your product or service does not provide speech, you do not need to think about the second part of the requirement. The requirement is not applicable.

To meet the standard means that all applicable requirements in the standard are met.

To get an overview of the requirements in scope of your product or service, you can focus on the requirements with the same scoping statements. There are online tools that can help you filter out requirements that are automatically met.

E.4.2 Connection between requirements and functional performance criteria

Table B.2 in Annex B helps you understand the connection between the technical requirements and the functional performance criteria. There is an instruction on how to use the table given in clause B.2.

Before making a decision about the most suitable solution, you also need to think about the context. Here are some examples:

- In what situation is the solution going to be used?
- Which failed requirements are possible to compensate with other alternatives, like for example a service desk?

- What would it cost to solve an issue with an alternative like that?
- Will the failed requirements be possible to fix in the next version of the solution?

The documentation of a product or service may show how the product or service addresses the functional performance criteria in clause 4 in addition to meeting the technical requirements in clauses 5 to 13. This can help the choice of which product or service is most suitable.

E.5 The European Web Accessibility Directive

The European Web Accessibility Directive (Directive (EU) 2016/2102 [i.27]) is a minimum harmonisation Directive. This means that all EU member states and EFTA countries are required to at least comply with the minimum requirements referred to in the Directive. Each country can choose to go beyond these requirements in their national legislation when it comes to both requirements and scope.

The Directive covers, as a minimum, public sector bodies and some government owned, funded or led organizations.

NOTE: The definition of public sector body is referring to the Procurement Directive (Directive 2014/24/EU [i.40]) article 2(1) point 4, which defines "bodies governed by public law" as bodies that have all of the following characteristics:

- they are established for the specific purpose of meeting needs in the general interest, not having an industrial or commercial character;
- they have legal personality; and
- they are financed, for the most part, by the State, regional or local authorities, or by other bodies governed by public law; or are subject to management supervision by those authorities or bodies; or have an administrative, managerial or supervisory board, more than half of whose members are appointed by the State, regional or local authorities, or by other bodies governed by public law.

Most of the requirements that relate to the European Web Accessibility Directive are found in clauses 9, 10 and 11, which cover websites, documents and software. The complete list of requirements are listed in the tables in Annex A. The Directive also covers intranets and extranets, which are to meet the requirements of clause 9 for web content and clause 10 for documents.

There are different grace periods for different kinds of content and there are also exceptions to what content is covered by the Directive. For example, live video is not covered by the Directive. This means that requirements 9.1.2.4 for websites, 10.1.2.4 for documents and 11.1.2.4 for apps are not relevant to meeting the requirements of the Directive.

There are also other requirements in the Directive, for example on monitoring and accessibility statements. These are not covered in EN 301 549.

E.6 Annex D: Further resources for cognitive accessibility

Annex D provides a link to W3C® resources that can be used as guidance to improve the inclusion of accessibility for people with limited cognitive, language and learning abilities when using ICT products and services.

E.7 Additional resources applicable to specific product and service categories

E.7.1 Web technologies

There is some very comprehensive guidance on the intent, benefits, examples, and techniques related to the use of WCAG 2.2 Success Criteria provided by W3C in its WCAG 2.2 "Understanding Docs". This is valuable in the context of the present document as clause 9 of the present document WCAG 2.2 is entirely compatible with WCAG 2.2 and both clauses 10 on non-web documents and clause 11 on non-web software are both very strongly related to WCAG 2.2.

E.7.2 Digital television-related ICT

ETSI TR 104 060 [i.66] has been developed with the involvement of companies with a diverse range of involvement in the digital television sector. It is targeted at manufacturers and providers of digital television products, and intended to clarify and explain how EN 301 549 accessibility requirements should be applied for televisions and to provide consistency of interpretation.

Annex ZA (informative): Relationship between the present document and the essential requirements of Directive (EU) 2016/2102

The present document has been prepared under the Commission's standardisation request C(2017)2585 final [i.26] to provide one voluntary means of conforming to the essential requirements of Directive (EU) 2016/2102 on the accessibility of the websites and mobile applications of public sector bodies [i.27].

Once the present document is cited in the Official Journal of the European Union under that Directive, conformance with the normative clauses of the present document given in Tables ZA.1 and ZA.2 confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding essential requirements of that Directive and associated EFTA regulations.

The requirements listed in Table ZA.1 apply to:

- web pages (as defined in clause 3.1);
- documents that are web pages;
- documents that are embedded in web pages and that are used in the rendering or that are intended to be rendered together with the web page in which they are embedded;
- documents, including forms, that are downloadable from web pages but are neither embedded nor rendered together with the web page from which they are provided;
- software that is a web page; or
- software that is embedded in web pages and that is used in the rendering or that is intended to be rendered together with the web page in which it is embedded.

The requirements listed in Table ZA.2 apply to mobile applications that provide a user interface, including content (such as documents and forms) that is in the software or provided by the software.

NOTE 1: According to Directive (EU) 2016/2102 [i.27]: "Content of websites and mobile applications includes textual as well as non-textual information, downloadable documents and forms, and two-way interaction such as the processing of digital forms and the completion of authentication, identification and payment processes".

NOTE 2: Annex ZA is a required element in all Harmonised standards. Its purpose is to explain how the essential requirements of a Directive can be met. Tables ZA.1 and ZA.2 are therefore restricted to those elements that relate to the essential requirements of Directive (EU) 2016/2102 [i.27].

NOTE 3: Annex ZA describes how the standard relates to the European Web Accessibility Directive. Apart from the minimum requirements in clauses 9, 10 and 11, some of the requirements in clauses 5, 6, 7 and 12 can also be relevant to fulfil the Directive in specific situations. The tables in Annex ZA show which requirements are relevant.

NOTE 4: Because the Web Accessibility Directive (EU) 2016/2102 "does not apply to live time-based media", the following requirements are not listed in Tables ZA.1 and ZA.2. They are, however, necessary requirements for making live streaming media accessible:

- 9.1.2.4 Subtitles (live)
- 10.1.2.4 Subtitles (live)
- 11.1.2.4 Subtitles (live).

Key to Tables ZA.1 and ZA.2 columns:

Clause + Requirement: Clause number and title of clause(s) defining the requirement in the present document.

P, O, U, R: Identification of article(s) defining the requirement in the Directive, with P meaning "Perceivable", O meaning "Operable", U meaning "Understandable, and R meaning "Robust".

Condition: For conditional requirements this column describes the condition that has to be met for conformance with the clause to be a requirement.

Assessment: Indicates the clause of the present document that contains the relevant assessment method.

Presumption of conformity stays valid only as long as a reference to the present document is maintained in the list published in the Official Journal of the European Union. Users of the present document should consult frequently the latest list published in the Official Journal of the European Union.

Other Union legislation may be applicable to the product(s) falling within the scope of the present document.

Table ZA.1: Web Content - relationship between the present document and the essential requirements of Directive (EU) 2016/2102/EU

Clause	Requirement	P	O	U	R	Condition	Assessment
5.2	Activation of accessibility features	✓	✓	✓		Where ICT includes documented accessibility features	C.5.2
5.3	Biometrics		✓			Where ICT uses biological characteristics	C.5.3
5.4	Preservation of accessibility information during conversion	✓		✓	✓	Where ICT converts information or communication	C.5.4
5.6.1	Tactile or auditory status	✓	✓			Where ICT includes a locking or toggle control	C.5.6.1
5.6.2	Visual status	✓	✓			Where ICT includes a locking or toggle control	C.5.6.2
5.7	Key repeat		✓			Where ICT includes a keyboard or keypad, and a key repeat function that cannot be turned off, and that key repeat will result in the generation of multiple entries of the same alphanumeric data into input fields or into documents:	C.5.7
5.8	Double-strike key acceptance		✓			Where ICT includes a keyboard or keypad	C.5.8
5.9	Simultaneous user actions		✓			Where ICT includes a mode of operation requiring simultaneous user actions for its operation	C.5.9
5.10.1	Content technology	✓	✓	✓	✓	Where ICT is, or includes, authoring tool functionality	C.5.10.1
5.10.2	Accessible content creation	✓	✓	✓	✓	Where ICT is, or includes, authoring tool functionality	C.5.10.2
5.10.3	Preservation of accessibility information in transformations	✓	✓	✓	✓	Where ICT is, or includes, authoring tool functionality, and provides restructuring transformations or re-coding transformations	C.5.10.3
5.10.4	Repair assistance	✓	✓	✓	✓	Where ICT is, or includes, authoring tool functionality, and is capable of detecting that content does not meet a requirement of clause 9 (Web), or clause 10 (Non-web documents), or clause 11 (Non-web software) as applicable	C.5.10.4

Clause	Requirement	P	O	U	R	Condition	Assessment
5.10.5	Templates	✓	✓	✓	✓	Where ICT is, or includes, authoring tool functionality, and provides templates	C.5.10.5
6.0.2	Communication client	✓				Where ICT is, or includes, a communication client that supports real-time bidirectional voice communication with or within a communication system that supports real-time bidirectional voice communication	C.6.0.2
6.0.3	Communication system	✓				Where ICT is, or includes, or is a part of, a communication system that supports real-time bidirectional voice communication with communication clients of the system	C.6.0.3
6.0.4	System connecting to another communication system	✓				Where ICT is, or includes, a communication system that supports real-time bidirectional voice communication with one or more other communication systems that support real-time bidirectional voice communication	C.6.0.4
6.0.5	System with roaming visiting client	✓				Where ICT is, or includes, a communication system that supports real-time bidirectional voice communication, and a communication client that supports real-time bidirectional voice communication with another compatible communication system, visits and connects to the communication system	C.6.0.5
6.0.6	Client in emergency communications	✓				Where ICT is required to provide, or otherwise provides, emergency communications, and is, or includes, a communication client that supports real-time bidirectional voice communication with or within a communication system that supports real-time bidirectional voice emergency communication	C.6.0.6
6.0.7	Emergency communications	✓				Where ICT is, or includes, a communication system that supports real-time bidirectional voice communication in emergency communications with PSAPs	C.6.0.7
6.0.8	System with roaming visiting client in an emergency	✓				Where ICT is, or includes, a communication system that supports real-time bidirectional voice communication in emergency communications with PSAPs, and a communication client that supports real-time bidirectional voice communication with another compatible communication system, visits and connects to the communication system	C.6.0.8

Clause	Requirement	P	O	U	R	Condition	Assessment
6.0.9	System with client in emergency visiting another country	✓				Where ICT is, or includes, a communication system that supports real-time bidirectional voice communication in emergency communications with PSAPs, and a communication client of the ICT that supports real-time bidirectional voice communication, visits another country than the home country	C.6.0.9
6.1.1	Voice communication interoperability	✓				Where ICT provides functionality that allows real-time bidirectional voice communication, and connects to other ICT that allows real-time bidirectional voice communication	C.6.1.1
6.1.2	Audio bandwidth for capture and presentation for voice communication	✓				Where ICT provides functionality that allows real-time bidirectional voice communication, and has a user interface for real-time bidirectional voice communication	C.6.1.2
6.2.1.1	RTT functionality	✓				Where ICT provides functionality that allows real-time bidirectional voice communication	C.6.2.1.1
6.2.1.2	Concurrent voice and RTT	✓				Where ICT provides real-time bidirectional voice communication, and supports RTT	C.6.2.1.2
6.2.1.3	Single user operations	✓				Where ICT provides real-time bidirectional voice communication, and includes RTT capabilities	C.6.2.1.3
6.2.2.1	Distinguishable display	✓				Where ICT provides real-time bidirectional voice communication, and includes RTT presentation capabilities	C.6.2.2.1
6.2.2.2	Active communicator indication	✓				Where ICT provides real-time bidirectional voice communication, and includes RTT send and receive capabilities, and provides speaker indication for voice	C.6.2.2.2
6.2.2.3	Indication of audio with RTT	✓				Where ICT provides real-time bidirectional voice communication, and supports RTT	C.6.2.2.3
6.2.2.4	Presentation of relative time order of text	✓				Where ICT provides real-time bidirectional voice communication, and includes RTT presentation capabilities	C.6.2.2.4
6.2.2.5	Review of RTT communication contents	✓				Where ICT provides real-time bidirectional voice communication, and includes RTT presentation capabilities	C.6.2.2.5
6.2.3	DTMF touch-tone generation during RTT operations	✓				Where ICT is, or includes, a communication client, and provides functionality that allows real-time bidirectional voice communication, and supports the generation and transmission of touch-tone signals on voice calls	C.6.2.3

Clause	Requirement	P	O	U	R	Condition	Assessment
6.2.4	RTT responsiveness	✓				Where ICT is, or includes, a communication client, and supports real-time bidirectional voice communication, and supports RTT	C.6.2.4
6.2.5	Adding and erasing of RTT input	✓				Where ICT provides real-time bidirectional voice communication, and includes RTT capabilities, and supports RTT user input	C.6.2.5
6.2.6	Processing rate of RTT	✓				Where ICT provides real-time bidirectional voice communication, and supports multiparty communication, and includes RTT capabilities	C.6.2.6
6.2.7	Character representation	✓				Where ICT provides real-time bidirectional voice communication, and includes RTT capabilities	C.6.2.7
6.2.8	RTT input methods	✓	✓			Where ICT is, or includes, a communication client, and supports real-time bidirectional voice communication, and supports RTT	C.6.2.8
6.2.9	RTT media establishment and use	✓				Where ICT provides real-time bidirectional voice communication, and includes RTT capabilities	C.6.2.9
6.2.10	RTT interoperability	✓				Where ICT provides functionality that allows real-time bidirectional voice communication, and connects to other ICT that allows real-time bidirectional voice communication	C.6.2.10
6.3	Caller ID	✓	✓	✓	✓	Where ICT provides caller identification or other identification functions	C.6.3
6.4	Alternatives to voice-based services	✓	✓	✓		Where ICT provides voice mail, auto-attendant, or interactive voice response facilities	C.6.4
6.5.2	Resolution	✓		✓		Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video communication	C.6.5.2
6.5.3	Frame rate	✓		✓		Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video communication	C.6.5.3
6.5.4	Synchronization between audio and video	✓		✓		Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video communication	C.6.5.4
6.5.5	Indicator of audio with video	✓		✓		Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video communication	C.6.5.5

Clause	Requirement	P	O	U	R	Condition	Assessment
6.5.6	Indication of all active communication participants	✓		✓		Where ICT provides real-time bidirectional voice communication, includes real-time bidirectional video communication, and provides speaker indication for voice users,	C.6.5.6
6.7.1	Total conversation provision	✓				Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video functionality	C.6.7.1
6.7.2	Total conversation interoperability	✓			✓	Where ICT provides functionality that allows real-time bidirectional voice communication, including real-time bidirectional video functionality, and connects to other ICT that allows real-time bidirectional voice communication, including real-time bidirectional video functionality	C.6.7.2
7.1.1	Subtitle playback	✓		✓		Where ICT displays video with synchronized audio	C.7.1.1
7.1.2	Subtitle synchronization	✓				Where ICT displays video with synchronized audio, and displays subtitles	C.7.1.2
7.1.3	Preservation of subtitles	✓		✓		Where ICT transmits, converts, or records video with synchronized audio	C.7.1.3
7.1.4	Subtitle characteristics	✓				Where ICT displays video with synchronized audio, and has control over the presentation of its subtitles	C.7.1.4
7.1.5	Spoken subtitles	✓		✓		Where ICT displays video with synchronized audio	C.7.1.5
7.2.1	Audio description playback	✓		✓		Where ICT displays video with synchronized audio	C.7.2.1
7.2.2	Audio description synchronization	✓				Where ICT displays video with synchronized audio, and has a mechanism to play audio description	C.7.2.2
7.2.3	Preservation of audio description	✓		✓		Where ICT transmits, converts, or records video with synchronized audio	C.7.2.3
7.3	User control of audiovisual accessibility features	✓	✓			Where ICT displays video with synchronized audio, and has control over the activation of subtitles and other accessibility features	C.7.3
9.1.1.1	Non-text content	✓				Where ICT is, or includes, a web page	C.9.1.1.1
9.1.2.1	Audio-only and video-only (pre-recorded)	✓				Where ICT is, or includes, a web page	C.9.1.2.1
9.1.2.2	Subtitles (pre-recorded)	✓				Where ICT is, or includes, a web page	C.9.1.2.2
9.1.2.3	Audio description or media alternative (pre-recorded)	✓				Where ICT is, or includes, a web page	C.9.1.2.3
9.1.2.5	Audio description (pre-recorded)	✓				Where ICT is, or includes, a web page	C.9.1.2.5
9.1.3.1	Info and relationships	✓				Where ICT is, or includes, a web page	C.9.1.3.1
9.1.3.2	Meaningful sequence	✓				Where ICT is, or includes, a web page	C.9.1.3.2

Clause	Requirement	P	O	U	R	Condition	Assessment
9.1.3.3	Sensory characteristics	✓				Where ICT is, or includes, a web page	C.9.1.3.3
9.1.3.4	Orientation	✓	✓			Where ICT is, or includes, a web page	C.9.1.3.4
9.1.3.5	Identify input purpose	✓	✓			Where ICT is, or includes, a web page	C.9.1.3.5
9.1.4.1	Use of colour	✓				Where ICT is, or includes, a web page	C.9.1.4.1
9.1.4.2	Audio control	✓				Where ICT is, or includes, a web page	C.9.1.4.2
9.1.4.3	Contrast (minimum)	✓				Where ICT is, or includes, a web page	C.9.1.4.3
9.1.4.4	Resize text	✓				Where ICT is, or includes, a web page	C.9.1.4.4
9.1.4.5	Images of text	✓				Where ICT is, or includes, a web page	C.9.1.4.5
9.1.4.10	Reflow	✓				Where ICT is, or includes, a web page	C.9.1.4.10
9.1.4.11	Non-text contrast	✓				Where ICT is, or includes, a web page	C.9.1.4.11
9.1.4.12	Text spacing	✓	✓			Where ICT is, or includes, a web page	C.9.1.4.12
9.1.4.13	Content on hover or focus	✓	✓			Where ICT is, or includes, a web page	C.9.1.4.13
9.2.1.1	Keyboard		✓			Where ICT is, or includes, a web page	C.9.2.1.1
9.2.1.2	No keyboard trap		✓			Where ICT is, or includes, a web page	C.9.2.1.2
9.2.1.4	Character key shortcuts		✓			Where ICT is, or includes, a web page	C.9.2.1.4
9.2.2.1	Timing adjustable		✓			Where ICT is, or includes, a web page	C.9.2.2.1
9.2.2.2	Pause, stop, hide	✓	✓			Where ICT is, or includes, a web page	C.9.2.2.2
9.2.3.1	Three flashes or below threshold		✓			Where ICT is, or includes, a web page	C.9.2.3.1
9.2.4.1	Bypass blocks		✓			Where ICT is, or includes, a web page	C.9.2.4.1
9.2.4.2	Page titled		✓			Where ICT is, or includes, a web page	C.9.2.4.2
9.2.4.3	Focus order		✓			Where ICT is, or includes, a web page	C.9.2.4.3
9.2.4.4	Link purpose (in context)		✓			Where ICT is, or includes, a web page	C.9.2.4.4
9.2.4.5	Multiple ways		✓			Where ICT is, or includes, a web page	C.9.2.4.5
9.2.4.6	Headings and labels		✓			Where ICT is, or includes, a web page	C.9.2.4.6
9.2.4.7	Focus visible		✓			Where ICT is, or includes, a web page	C.9.2.4.7
9.2.4.11	Focus not obscured (minimum)	✓	✓			Where ICT is, or includes, a web page	C.9.2.4.11
9.2.5.1	Pointer gestures		✓			Where ICT is, or includes, a web page	C.9.2.5.1
9.2.5.2	Pointer cancellation		✓			Where ICT is, or includes, a web page	C.9.2.5.2
9.2.5.3	Label in name		✓			Where ICT is, or includes, a web page	C.9.2.5.3
9.2.5.4	Motion actuation		✓			Where ICT is, or includes, a web page	C.9.2.5.4
9.2.5.7	Dragging movements		✓			Where ICT is, or includes, a web page	C.9.2.5.7
9.2.5.8	Target size (minimum)		✓			Where ICT is, or includes, a web page	C.9.2.5.8
9.3.1.1	Language of page			✓		Where ICT is, or includes, a web page	C.9.3.1.1

Clause	Requirement	P	O	U	R	Condition	Assessment
9.3.1.2	Language of parts			✓		Where ICT is, or includes, a web page	C.9.3.1.2
9.3.2.1	On focus			✓		Where ICT is, or includes, a web page	C.9.3.2.1
9.3.2.2	On input			✓		Where ICT is, or includes, a web page	C.9.3.2.2
9.3.2.3	Consistent navigation			✓		Where ICT is, or includes, a web page	C.9.3.2.3
9.3.2.4	Consistent identification			✓		Where ICT is, or includes, a web page	C.9.3.2.4
9.3.2.6	Consistent help			✓		Where ICT is, or includes, a web page	C.9.3.2.6
9.3.3.1	Error identification			✓		Where ICT is, or includes, a web page	C.9.3.3.1
9.3.3.2	Labels or instructions			✓		Where ICT is, or includes, a web page	C.9.3.3.2
9.3.3.3	Error suggestion			✓		Where ICT is, or includes, a web page	C.9.3.3.3
9.3.3.4	Error prevention (legal, financial, data)			✓		Where ICT is, or includes, a web page	C.9.3.3.4
9.3.3.7	Redundant entry			✓		Where ICT is, or includes, a web page	C.9.3.3.7
9.3.3.8	Accessible authentication (minimum)			✓		Where ICT is, or includes, a web page	C.9.3.3.8
9.4.1.2	Name, role, value				✓	Where ICT is, or includes, a web page	C.9.4.1.2
9.4.1.3	Status messages	✓	✓	✓	✓	Where ICT is, or includes, a web page	C.9.4.1.3
9.6	WCAG conformance requirements	✓	✓	✓	✓	Where ICT is, or includes, a web page	C.9.6
9.7	User preferences for web pages	✓	✓	✓	✓	Where ICT is, or includes, a web page	C.9.7
10.1.1.1	Non-text content	✓				Where ICT is, or includes, a non-web document	C.10.1.1.1
10.1.2.1	Audio-only and video-only (pre-recorded)	✓				Where ICT is, or includes, a non-web document	C.10.1.2.1
10.1.2.2	Subtitles (pre-recorded)	✓				Where ICT is, or includes, a non-web document	C.10.1.2.2
10.1.2.3	Audio description or media alternative (pre-recorded)	✓				Where ICT is, or includes, a non-web document	C.10.1.2.3
10.1.2.5	Audio description (pre-recorded)	✓				Where ICT is, or includes, a non-web document	C.10.1.2.5
10.1.3.1	Info and relationships	✓				Where ICT is, or includes, a non-web document	C.10.1.3.1
10.1.3.2	Meaningful sequence	✓				Where ICT is, or includes, a non-web document	C.10.1.3.2
10.1.3.3	Sensory characteristics	✓				Where ICT is, or includes, a non-web document	C.10.1.3.3
10.1.3.4	Orientation	✓	✓			Where ICT is, or includes, a non-web document, and the non-web document is displayed on hardware that is designed to be reoriented in typical use	C.10.1.3.4
10.1.3.5	Identify input purpose	✓	✓			Where ICT is, or includes, a non-web document	C.10.1.3.5
10.1.4.1	Use of colour	✓				Where ICT is, or includes, a non-web document	C.10.1.4.1
10.1.4.2	Audio control	✓				Where ICT is, or includes, a non-web document	C.10.1.4.2
10.1.4.3	Contrast (minimum)	✓				Where ICT is, or includes, a non-web document	C.10.1.4.3
10.1.4.4	Resize text	✓				Where ICT is, or includes, a non-web document	C.10.1.4.4

Clause	Requirement	P	O	U	R	Condition	Assessment
10.1.4.5	Images of text	✓				Where ICT is, or includes, a non-web document	C.10.1.4.5
10.1.4.10	Reflow	✓				Where ICT is, or includes, a non-web document, and where underlying user agent or platform software can present content at a width equivalent to 320 CSS pixels or more for vertical scrolling content and a height equivalent to 256 CSS pixels or more for horizontal scrolling content	C.10.1.4.10
10.1.4.11	Non-text contrast	✓				Where ICT is, or includes, a non-web document	C.10.1.4.11
10.1.4.12	Text spacing	✓	✓			Where ICT is, or includes, a non-web document, that is implemented using markup languages that allow users to modify text spacing properties	C.10.1.4.12
10.1.4.13	Content on hover or focus	✓	✓			Where ICT is, or includes, a non-web document	C.10.1.4.13
10.2.1.1	Keyboard		✓			Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface	C.10.2.1.1
10.2.1.2	No keyboard trap		✓			Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface	C.10.2.1.2
10.2.1.4	Character key shortcuts		✓			Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface	C.10.2.1.4
10.2.2.1	Timing adjustable		✓			Where ICT is, or includes, a non-web document	C.10.2.2.1
10.2.2.2	Pause, stop, hide		✓			Where ICT is, or includes, a non-web document	C.10.2.2.2
10.2.3.1	Three flashes or below threshold		✓			Where ICT is, or includes, a non-web document	C.10.2.3.1
10.2.4.2	Non-web document titled		✓			Where ICT is, or includes, a non-web document implemented in a format that supports a programmatically determinable "Title" attribute that is editable using common authoring tools for that document format	C.10.2.4.2
10.2.4.3	Focus order		✓			Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface	C.10.2.4.3
10.2.4.4	Link purpose (in context)		✓			Where ICT is, or includes, a non-web document	C.10.2.4.4
10.2.4.6	Headings and labels		✓			Where ICT is, or includes, a non-web document	C.10.2.4.6
10.2.4.7	Focus visible		✓			Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface	C.10.2.4.7

Clause	Requirement	P	O	U	R	Condition	Assessment
10.2.4.11	Focus not obscured (minimum)		✓			Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface	C.10.2.4.11
10.2.5.1	Pointer gestures		✓			Where ICT is, or includes, a non-web document	C.10.2.5.1
10.2.5.2	Pointer cancellation		✓			Where ICT is, or includes, a non-web document	C.10.2.5.2
10.2.5.3	Label in name		✓			Where ICT is, or includes, a non-web document	C.10.2.5.3
10.2.5.4	Motion actuation		✓			Where ICT is, or includes, a non-web document	C.10.2.5.4
10.2.5.7	Dragging movements		✓			Where ICT is, or includes, a non-web document	C.10.2.5.7
10.2.5.8	Target size (minimum)		✓			Where ICT is, or includes, a non-web document	C.10.2.5.8
10.3.1.1	Language of non-web document			✓		Where ICT is, or includes, a non-web document	C.10.3.1.1
10.3.1.2	Language of parts			✓		Where ICT is, or includes, a non-web document	C.10.3.1.2
10.3.2.1	On focus			✓		Where ICT is, or includes, a non-web document	C.10.3.2.1
10.3.2.2	On input			✓		Where ICT is, or includes, a non-web document	C.10.3.2.2
10.3.2.3	Consistent navigation			✓		Where ICT is, or includes, a non-web document within a set of non-web documents	C.10.3.2.3
10.3.2.4	Consistent identification			✓		Where ICT is, or includes, a non-web document within a set of non-web documents	C.10.3.2.4
10.3.2.6	Consistent help			✓		Where ICT is, or includes, a non-web document	C.10.3.2.6
10.3.3.1	Error identification			✓		Where ICT is, or includes, a non-web document	C.10.3.3.1
10.3.3.2	Labels or instructions			✓		Where ICT is, or includes, a non-web document	C.10.3.3.2
10.3.3.3	Error suggestion			✓		Where ICT is, or includes, a non-web document	C.10.3.3.3
10.3.3.4	Error prevention (legal, financial, data)			✓		Where ICT is, or includes, a non-web document	C.10.3.3.4
10.3.3.7	Redundant entry		✓	✓		Where ICT is, or includes, a non-web document	C.10.3.3.7
10.3.3.8	Accessible authentication (minimum)		✓		✓	Where ICT is, or includes, a non-web document	C.10.3.3.8
10.4.1.2	Name, role, value				✓	Where ICT is, or includes, a non-web document	C.10.4.1.2
10.4.1.3	Status messages	✓	✓	✓	✓	Where ICT is, or includes, a non-web document	C.10.4.1.3
10.7	User preferences for non-web documents	✓	✓	✓	✓	Where ICT is, or includes, a non-web document	C.10.7
12.1	Accessible information about products	✓	✓	✓	✓	Where ICT is, or includes, information about a product, made available in a digital form	C.12.1
12.2	Accessible information about services	✓	✓	✓	✓	Where ICT is, or includes, information about a service, made available in a digital form	C.12.2
12.3	Accessibility and compatibility features	✓	✓	✓	✓	Where ICT includes product or service information, whether provided separately or integrated within the ICT	C.12.3
12.4	Electronic program guides	✓	✓			Where ICT is an Electronic Programme Guide (EPG)	C.12.4

Clause	Requirement	P	O	U	R	Condition	Assessment
12.5	Electronic program guide display	✓	✓			Where ICT displays an Electronic Programme Guide (EPG) presenting media item(s), and information about the availability of subtitles, audio description, spoken subtitles, or sign language interpretation for the media item(s) is available	C.12.5
13.1.2.2	Use of the primary user destination address in relayed communications	✓	✓			Where ICT is, or includes, a relay service invocation system	C.13.1.2.2
13.1.2.3	Conveying of caller identifier in relayed communications for primary relay users	✓	✓			Where ICT is, or includes, a relay service invocation system	C.13.1.2.3
13.1.2.4	Relay service invocation decision in outgoing communications	✓	✓			Where ICT is, or includes, a relay service invocation system	C.13.1.2.4
13.1.2.5	Relay service invocation decision in incoming communications	✓	✓			Where ICT is, or includes, a relay service invocation system	C.13.1.2.5
13.1.2.6	Relay service support requested by the primary user for emergency communications	✓	✓			Where ICT is, or includes, a relay service invocation system	C.13.1.2.6
13.1.3.1	Relaying action in relay service communication	✓	✓			Where ICT is, or includes, a relay service	C.13.1.3.1
13.1.3.2	Media handling in relay service communication	✓	✓			Where ICT is, or includes, a relay service	C.13.1.3.2
13.1.3.3	Relay service support in ICT based conferences	✓	✓			Where ICT is, or includes, a relay service	C.13.1.3.3
13.1.3.4	Relay service support during emergency communications initiated by the PSAP	✓	✓			Where ICT is, or includes, a relay service	C.13.1.3.4

Table ZA.2: Mobile Applications - relationship between the present document and the essential requirements of Directive (EU) 2016/2102/EU

Clause	Requirement	P	O	U	R	Condition	Assessment
5.1.2.1	Closed functionality	✓	✓	✓	✓	Where ICT includes closed functionality	C.5.1.2.1
5.1.2.2	Assistive technology and closed functionality	✓	✓	✓		Where ICT includes closed functionality	C.5.1.2.2
5.1.3.1	Auditory output of visual information	✓		✓		Where ICT includes closed functionality, and visual information is needed to enable the use of the closed functionality of the ICT	C.5.1.3.1
5.1.3.2	Auditory output delivery including speech	✓		✓		Where ICT includes closed functionality, and auditory output is provided as non-visual access to closed functionality	C.5.1.3.2
5.1.3.3	Auditory output correlation	✓		✓		Where ICT includes closed functionality, and auditory output is provided as non-visual access to closed functionality, and information that is under the control of the ICT is displayed on the screen	C.5.1.3.3
5.1.3.4	Speech output user control	✓		✓		Where ICT includes closed functionality, and speech output is provided as non-visual access to closed functionality	C.5.1.3.4

Clause	Requirement	P	O	U	R	Condition	Assessment
5.1.3.5	Speech output automatic interruption	✓		✓		Where ICT includes closed functionality, and speech output is provided as non-visual access to closed functionality, and the speech output is generated locally in response to user actions	C.5.1.3.5
5.1.3.6	Auditory output for non-text content	✓		✓		Where ICT includes closed functionality that presents non-text content other than video	C.5.1.3.6
5.1.3.7	Auditory output for video information	✓		✓		Where ICT includes closed functionality, and pre-recorded video content is needed to enable the use of closed functionality of the ICT	C.5.1.3.7
5.1.3.8	Masked entry	✓		✓		Where ICT includes closed functionality, and auditory output is provided as non-visual access to closed functionality, and the characters displayed are masking characters	C.5.1.3.8
5.1.3.9	Private access to personal data	✓		✓		Where ICT includes closed functionality, and the ICT is intended for public shared use, and auditory output is provided by that ICT as non-visual access to closed functionality, and that output contains data that is considered to be private according to the applicable privacy policy	C.5.1.3.9
5.1.3.10	Non-interfering audio output	✓		✓		Where ICT includes closed functionality, and auditory output is provided as non-visual access to closed functionality	C.5.1.3.10
5.1.3.11	Private listening volume	✓		✓		Where ICT includes closed functionality, and auditory output is provided as non-visual access to closed functionality, and the auditory output is delivered through a mechanism for private listening	C.5.1.3.11
5.1.3.12	Speaker volume	✓		✓		Where ICT includes closed functionality, and auditory output is provided as non-visual access to closed functionality, and is delivered through speakers on the ICT	C.5.1.3.12
5.1.3.13	Volume reset	✓		✓		Where ICT includes closed functionality, and the ICT is intended for public shared use, and auditory output is provided as non-visual access to closed functionality through a device typically held to the ear	C.5.1.3.13
5.1.3.14	Spoken languages	✓		✓		Where ICT includes closed functionality, and speech output is provided as non-visual access to closed functionality	C.5.1.3.14

Clause	Requirement	P	O	U	R	Condition	Assessment
5.1.3.15	Non-visual error identification	✓		✓		Where ICT includes closed functionality, and speech output is provided as non-visual access to closed functionality, and an input error is automatically detected, and the error is indicated visually via text and/or other visual means	C.5.1.3.15
5.1.3.16	Receipts, tickets, and transactional outputs	✓		✓		Where ICT includes closed functionality, and provides physical receipts, tickets or other outputs as a result of a self-service transaction	C.5.1.3.16
5.1.4	Functionality closed to text enlargement	✓		✓		Where ICT includes closed functionality, and any functionality of the ICT is closed to the text enlargement features of platform or assistive technology	C.5.1.4
5.1.5	Visual output for auditory information	✓		✓		Where ICT includes closed functionality, and auditory output is needed to enable the use of closed functionality of the ICT	C.5.1.5
5.1.6.1	Functionality closed to keyboards		✓			Where ICT includes closed functionality, and the functionality is closed to keyboards or keyboard interfaces	C.5.1.6.1
5.1.6.2	Input focus		✓			Where ICT includes closed functionality, and the functionality is closed to keyboards or keyboard interfaces, and where input focus can be moved to a user interface element	C.5.1.6.2
5.1.7	Access without speech		✓	✓		Where ICT includes closed functionality, and speech is needed to operate closed functionality of the ICT	C.5.1.7
5.1.8	Identify input purpose (closed functionality)	✓		✓		Where ICT includes closed functionality, and input field(s) collecting information about the user are needed to enable the use of the closed functionality of the ICT, and the input field(s) serve a purpose identified in the WCAG 2.2 Input Purposes for User Interface Components section	C.5.1.8
5.2	Activation of accessibility features	✓	✓	✓		Where ICT includes documented accessibility features	C.5.2
5.3	Biometrics		✓			Where ICT uses biological characteristics	C.5.3
5.4	Preservation of accessibility information during conversion	✓		✓	✓	Where ICT converts information or communication	C.5.4
5.6.1	Tactile or auditory status	✓	✓			Where ICT includes a locking or toggle control	C.5.6.1
5.6.2	Visual status	✓	✓			Where ICT includes a locking or toggle control	C.5.6.2

Clause	Requirement	P	O	U	R	Condition	Assessment
5.7	Key repeat		✓			Where ICT includes a keyboard or keypad, and a key repeat function that cannot be turned off, and that key repeat will result in the generation of multiple entries of the same alphanumeric data into input fields or into documents:	C.5.7
5.8	Double-strike key acceptance		✓			Where ICT includes a keyboard or keypad	C.5.8
5.9	Simultaneous user actions		✓			Where ICT includes a mode of operation requiring simultaneous user actions for its operation	C.5.9
5.10.1	Content technology	✓	✓	✓	✓	Where ICT is, or includes, authoring tool functionality	C.5.10.1
5.10.2	Accessible content creation	✓	✓	✓	✓	Where ICT is, or includes, authoring tool functionality	C.5.10.2
5.10.3	Preservation of accessibility information in transformations	✓	✓	✓	✓	Where ICT is, or includes, authoring tool functionality, and provides restructuring transformations or re-coding transformations	C.5.10.3
5.10.4	Repair assistance	✓	✓	✓	✓	Where ICT is, or includes, authoring tool functionality, and is capable of detecting that content does not meet a requirement of clause 9 (Web), or clause 10 (Non-web documents), or clause 11 (Non-web software) as applicable	C.5.10.4
5.10.5	Templates	✓	✓	✓	✓	Where ICT is, or includes, authoring tool functionality, and provides templates	C.5.10.5
6.0.2	Communication client	✓				Where ICT is, or includes, a communication client that supports real-time bidirectional voice communication with or within a communication system that supports real-time bidirectional voice communication	C.6.0.2
6.0.3	Communication system	✓				Where ICT is, or includes, or is a part of, a communication system that supports real-time bidirectional voice communication with communication clients of the system	C.6.0.3
6.0.4	System connecting to another communication system	✓				Where ICT is, or includes, a communication system that supports real-time bidirectional voice communication with one or more other communication systems that support real-time bidirectional voice communication	C.6.0.4

Clause	Requirement	P	O	U	R	Condition	Assessment
6.0.5	System with roaming visiting client	✓				Where ICT is, or includes, a communication system that supports real-time bidirectional voice communication, and a communication client that supports real-time bidirectional voice communication with another compatible communication system, visits and connects to the communication system	C.6.0.5
6.0.6	Client in emergency communications	✓				Where ICT is required to provide, or otherwise provides, emergency communications, and is, or includes, a communication client that supports real-time bidirectional voice communication with or within a communication system that supports real-time bidirectional voice emergency communication	C.6.0.6
6.0.7	Emergency communications	✓				Where ICT is, or includes, a communication system that supports real-time bidirectional voice communication in emergency communications with PSAPs	C.6.0.7
6.0.8	System with roaming visiting client in an emergency	✓				Where ICT is, or includes, a communication system that supports real-time bidirectional voice communication in emergency communications with PSAPs, and a communication client that supports real-time bidirectional voice communication with another compatible communication system, visits and connects to the communication system	C.6.0.8
6.0.9	System with client in emergency visiting another country	✓				Where ICT is, or includes, a communication system that supports real-time bidirectional voice communication in emergency communications with PSAPs, and a communication client of the ICT that supports real-time bidirectional voice communication, visits another country than the home country	C.6.0.9
6.1.1	Voice communication interoperability	✓				Where ICT provides functionality that allows real-time bidirectional voice communication, and connects to other ICT that allows real-time bidirectional voice communication	C.6.1.1
6.1.2	Audio bandwidth for capture and presentation for voice communication	✓				Where ICT provides functionality that allows real-time bidirectional voice communication, and has a user interface for real-time bidirectional voice communication	C.6.1.2

Clause	Requirement	P	O	U	R	Condition	Assessment
6.2.1.1	RTT functionality	✓				Where ICT provides functionality that allows real-time bidirectional voice communication	C.6.2.1.1
6.2.1.2	Concurrent voice and RTT	✓				Where ICT provides real-time bidirectional voice communication, and supports RTT	C.6.2.1.2
6.2.1.3	Single user action	✓				Where ICT provides real-time bidirectional voice communication, and includes RTT capabilities	C.6.2.1.3
6.2.2.1	Distinguishable display	✓				Where ICT provides real-time bidirectional voice communication, and includes RTT presentation capabilities	C.6.2.2.1
6.2.2.2	Active communicator indication	✓				Where ICT provides real-time bidirectional voice communication, and includes RTT send and receive capabilities, and provides speaker indication for voice	C.6.2.2.2
6.2.2.3	Indication of audio with RTT	✓				Where ICT provides real-time bidirectional voice communication, and supports RTT	C.6.2.2.3
6.2.2.4	Presentation of relative time order of text	✓				Where ICT provides real-time bidirectional voice communication, and includes RTT presentation capabilities	C.6.2.2.4
6.2.2.5	Review of RTT communication contents	✓				Where ICT provides real-time bidirectional voice communication, and includes RTT presentation capabilities	C.6.2.2.5
6.2.3	DTMF touch-tone generation during RTT operations	✓				Where ICT is, or includes, a communication client, and provides functionality that allows real-time bidirectional voice communication, and supports the generation and transmission of touch-tone signals on voice calls	C.6.2.3
6.2.4	RTT responsiveness	✓				Where ICT is, or includes, a communication client, and supports real-time bidirectional voice communication, and supports RTT	C.6.2.4
6.2.5	Adding and erasing of RTT input	✓				Where ICT provides real-time bidirectional voice communication, and includes RTT capabilities, and supports RTT user input	C.6.2.5
6.2.6	Processing rate of RTT	✓				Where ICT provides real-time bidirectional voice communication, and supports multiparty communication, and includes RTT capabilities	C.6.2.6
6.2.7	Character representation	✓				Where ICT provides real-time bidirectional voice communication, and includes RTT capabilities	C.6.2.7
6.2.8	RTT input methods	✓	✓			Where ICT is, or includes, a communication client, and supports real-time bidirectional voice communication, and supports RTT	C.6.2.8

Clause	Requirement	P	O	U	R	Condition	Assessment
6.2.9	RTT activation	✓				Where ICT provides real-time bidirectional voice communication, and includes RTT capabilities	C.6.2.9
6.2.10	RTT interoperability	✓				Where ICT provides functionality that allows real-time bidirectional voice communication, and connects to other ICT that allows real-time bidirectional voice communication	C.6.2.10
6.3	Caller ID	✓	✓	✓	✓	Where ICT provides caller identification or other identification functions	C.6.3
6.4	Alternatives to voice-based services	✓	✓	✓		Where ICT provides voice mail, auto-attendant, or interactive voice response facilities	C.6.4
6.5.2	Resolution	✓		✓		Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video communication	C.6.5.2
6.5.3	Frame rate	✓		✓		Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video communication	C.6.5.3
6.5.4	Synchronization between audio and video	✓		✓		Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video communication	C.6.5.4
6.5.5	Indicator of audio with video	✓		✓		Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video communication	C.6.5.5
6.5.6	Indication of all active communication participants	✓		✓		Where ICT provides real-time bidirectional voice communication, includes real-time bidirectional video communication, and provides speaker indication for voice users,	C.6.5.6
6.7.1	Total conversation provision	✓				Where ICT provides real-time bidirectional voice communication, and includes real-time bidirectional video functionality	C.6.7.1
6.7.2	Total conversation interoperability	✓			✓	Where ICT provides functionality that allows real-time bidirectional voice communication, including real-time bidirectional video functionality, and connects to other ICT that allows real-time bidirectional voice communication, including real-time bidirectional video functionality	C.6.7.2
7.1.1	Subtitle playback	✓		✓		Where ICT displays video with synchronized audio	C.7.1.1
7.1.2	Subtitle synchronization	✓				Where ICT displays video with synchronized audio, and displays subtitles	C.7.1.2

Clause	Requirement	P	O	U	R	Condition	Assessment
7.1.3	Preservation of subtitles	✓		✓		Where ICT transmits, converts, or records video with synchronized audio	C.7.1.3
7.1.4	Subtitle characteristics	✓				Where ICT displays video with synchronized audio, and has control over the presentation of its subtitles	C.7.1.4
7.1.5	Spoken subtitles	✓		✓		Where ICT displays video with synchronized audio	C.7.1.5
7.2.1	Audio description playback	✓		✓		Where ICT displays video with synchronized audio	C.7.2.1
7.2.2	Audio description synchronization	✓				Where ICT displays video with synchronized audio, and has a mechanism to play audio description	C.7.2.2
7.2.3	Preservation of audio description	✓		✓		Where ICT transmits, converts, or records video with synchronized audio	C.7.2.3
7.3	User control of audiovisual accessibility features	✓	✓			Where ICT displays video with synchronized audio, and has control over the activation of subtitles and other accessibility features	C.7.3
9.1.1.1	Non-text content	✓				Where ICT is, or includes, a web page	C.9.1.1.1
9.1.2.1	Audio-only and video-only (pre-recorded)	✓				Where ICT is, or includes, a web page	C.9.1.2.1
9.1.2.2	Subtitles (pre-recorded)	✓				Where ICT is, or includes, a web page	C.9.1.2.2
9.1.2.3	Audio description or media alternative (pre-recorded)	✓				Where ICT is, or includes, a web page	C.9.1.2.3
9.1.2.5	Audio description (pre-recorded)	✓				Where ICT is, or includes, a web page	C.9.1.2.5
9.1.3.1	Info and relationships	✓				Where ICT is, or includes, a web page	C.9.1.3.1
9.1.3.2	Meaningful sequence	✓				Where ICT is, or includes, a web page	C.9.1.3.2
9.1.3.3	Sensory characteristics	✓				Where ICT is, or includes, a web page	C.9.1.3.3
9.1.3.4	Orientation	✓	✓			Where ICT is, or includes, a web page	C.9.1.3.4
9.1.3.5	Identify input purpose	✓	✓			Where ICT is, or includes, a web page	C.9.1.3.5
9.1.4.1	Use of colour	✓				Where ICT is, or includes, a web page	C.9.1.4.1
9.1.4.2	Audio control	✓				Where ICT is, or includes, a web page	C.9.1.4.2
9.1.4.3	Contrast (minimum)	✓				Where ICT is, or includes, a web page	C.9.1.4.3
9.1.4.4	Resize text	✓				Where ICT is, or includes, a web page	C.9.1.4.4
9.1.4.5	Images of text	✓				Where ICT is, or includes, a web page	C.9.1.4.5
9.1.4.10	Reflow	✓				Where ICT is, or includes, a web page	C.9.1.4.10
9.1.4.11	Non-text contrast	✓				Where ICT is, or includes, a web page	C.9.1.4.11
9.1.4.12	Text spacing	✓	✓			Where ICT is, or includes, a web page	C.9.1.4.12
9.1.4.13	Content on hover or focus	✓	✓			Where ICT is, or includes, a web page	C.9.1.4.13
9.2.1.1	Keyboard		✓			Where ICT is, or includes, a web page	C.9.2.1.1
9.2.1.2	No keyboard trap		✓			Where ICT is, or includes, a web page	C.9.2.1.2

Clause	Requirement	P	O	U	R	Condition	Assessment
9.2.1.4	Character key shortcuts		✓			Where ICT is, or includes, a web page	C.9.2.1.4
9.2.2.1	Timing adjustable		✓			Where ICT is, or includes, a web page	C.9.2.2.1
9.2.2.2	Pause, stop, hide	✓	✓			Where ICT is, or includes, a web page	C.9.2.2.2
9.2.3.1	Three flashes or below threshold		✓			Where ICT is, or includes, a web page	C.9.2.3.1
9.2.4.1	Bypass blocks		✓			Where ICT is, or includes, a web page	C.9.2.4.1
9.2.4.2	Page titled		✓			Where ICT is, or includes, a web page	C.9.2.4.2
9.2.4.3	Focus order		✓			Where ICT is, or includes, a web page	C.9.2.4.3
9.2.4.4	Link purpose (in context)		✓			Where ICT is, or includes, a web page	C.9.2.4.4
9.2.4.5	Multiple ways		✓			Where ICT is, or includes, a web page	C.9.2.4.5
9.2.4.6	Headings and labels		✓			Where ICT is, or includes, a web page	C.9.2.4.6
9.2.4.7	Focus visible		✓			Where ICT is, or includes, a web page	C.9.2.4.7
9.2.4.11	Focus not obscured (minimum)	✓	✓			Where ICT is, or includes, a web page	C.9.2.4.11
9.2.5.1	Pointer gestures		✓			Where ICT is, or includes, a web page	C.9.2.5.1
9.2.5.2	Pointer cancellation		✓			Where ICT is, or includes, a web page	C.9.2.5.2
9.2.5.3	Label in name		✓			Where ICT is, or includes, a web page	C.9.2.5.3
9.2.5.4	Motion actuation		✓			Where ICT is, or includes, a web page	C.9.2.5.4
9.2.5.7	Dragging movements		✓			Where ICT is, or includes, a web page	C.9.2.5.7
9.2.5.8	Target size (minimum)		✓			Where ICT is, or includes, a web page	C.9.2.5.8
9.3.1.1	Language of page			✓		Where ICT is, or includes, a web page	C.9.3.1.1
9.3.1.2	Language of parts			✓		Where ICT is, or includes, a web page	C.9.3.1.2
9.3.2.1	On focus			✓		Where ICT is, or includes, a web page	C.9.3.2.1
9.3.2.2	On input			✓		Where ICT is, or includes, a web page	C.9.3.2.2
9.3.2.3	Consistent navigation			✓		Where ICT is, or includes, a web page	C.9.3.2.3
9.3.2.4	Consistent identification			✓		Where ICT is, or includes, a web page	C.9.3.2.4
9.3.2.6	Consistent help			✓		Where ICT is, or includes, a web page	C.9.3.2.6
9.3.3.1	Error identification			✓		Where ICT is, or includes, a web page	C.9.3.3.1
9.3.3.2	Labels or instructions			✓		Where ICT is, or includes, a web page	C.9.3.3.2
9.3.3.3	Error suggestion			✓		Where ICT is, or includes, a web page	C.9.3.3.3
9.3.3.4	Error prevention (legal, financial, data)			✓		Where ICT is, or includes, a web page	C.9.3.3.4
9.3.3.7	Redundant entry			✓		Where ICT is, or includes, a web page	C.9.3.3.7
9.3.3.8	Accessible authentication (minimum)			✓		Where ICT is, or includes, a web page	C.9.3.3.8
9.4.1.2	Name, role, value				✓	Where ICT is, or includes, a web page	C.9.4.1.2

Clause	Requirement	P	O	U	R	Condition	Assessment
9.4.1.3	Status messages	✓	✓	✓	✓	Where ICT is, or includes, a web page	C.9.4.1.3
9.6	WCAG conformance requirements	✓	✓	✓	✓	Where ICT is, or includes, a web page	C.9.6
9.7	User preferences for web pages	✓	✓	✓	✓	Where ICT is, or includes, a web page	C.9.7
10.1.1.1	Non-text content	✓				Where ICT is, or includes, a non-web document	C.10.1.1.1
10.1.2.1	Audio-only and video-only (pre-recorded)	✓				Where ICT is, or includes, a non-web document	C.10.1.2.1
10.1.2.2	Subtitles (pre-recorded)	✓				Where ICT is, or includes, a non-web document	C.10.1.2.2
10.1.2.3	Audio description or media alternative (pre-recorded)	✓				Where ICT is, or includes, a non-web document	C.10.1.2.3
10.1.2.5	Audio description (pre-recorded)	✓				Where ICT is, or includes, a non-web document	C.10.1.2.5
10.1.3.1	Info and relationships	✓				Where ICT is, or includes, a non-web document	C.10.1.3.1
10.1.3.2	Meaningful sequence	✓				Where ICT is, or includes, a non-web document	C.10.1.3.2
10.1.3.3	Sensory characteristics	✓				Where ICT is, or includes, a non-web document	C.10.1.3.3
10.1.3.4	Orientation	✓	✓			Where ICT is, or includes, a non-web document, and the non-web document is displayed on hardware that is designed to be reoriented in typical use	C.10.1.3.4
10.1.3.5	Identify input purpose	✓	✓			Where ICT is, or includes, a non-web document	C.10.1.3.5
10.1.4.1	Use of colour	✓				Where ICT is, or includes, a non-web document	C.10.1.4.1
10.1.4.2	Audio control	✓				Where ICT is, or includes, a non-web document	C.10.1.4.2
10.1.4.3	Contrast (minimum)	✓				Where ICT is, or includes, a non-web document	C.10.1.4.3
10.1.4.4	Resize text	✓				Where ICT is, or includes, a non-web document	C.10.1.4.4
10.1.4.5	Images of text	✓				Where ICT is, or includes, a non-web document	C.10.1.4.5
10.1.4.10	Reflow	✓				Where ICT is, or includes, a non-web document, and where underlying user agent or platform software can present content at a width equivalent to 320 CSS pixels or more for vertical scrolling content and a height equivalent to 256 CSS pixels or more for horizontal scrolling content	C.10.1.4.10
10.1.4.11	Non-text contrast	✓				Where ICT is, or includes, a non-web document	C.10.1.4.11
10.1.4.12	Text spacing	✓	✓			Where ICT is, or includes, a non-web document, that is implemented using markup languages that allow users to modify text spacing properties	C.10.1.4.12
10.1.4.13	Content on hover or focus	✓	✓			Where ICT is, or includes, a non-web document	C.10.1.4.13
10.2.1.1	Keyboard		✓			Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface	C.10.2.1.1

Clause	Requirement	P	O	U	R	Condition	Assessment
10.2.1.2	No keyboard trap		✓			Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface	C.10.2.1.2
10.2.1.4	Character key shortcuts		✓			Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface	C.10.2.1.4
10.2.2.1	Timing adjustable		✓			Where ICT is, or includes, a non-web document	C.10.2.2.1
10.2.2.2	Pause, stop, hide		✓			Where ICT is, or includes, a non-web document	C.10.2.2.2
10.2.3.1	Three flashes or below threshold		✓			Where ICT is, or includes, a non-web document	C.10.2.3.1
10.2.4.2	Non-web document titled		✓			Where ICT is, or includes, a non-web document implemented in a format that supports a programmatically determinable "Title" attribute that is editable using common authoring tools for that document format	C.10.2.4.2
10.2.4.3	Focus order		✓			Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface	C.10.2.4.3
10.2.4.4	Link purpose (in context)		✓			Where ICT is, or includes, a non-web document	C.10.2.4.4
10.2.4.6	Headings and labels		✓			Where ICT is, or includes, a non-web document	C.10.2.4.6
10.2.4.7	Focus visible		✓			Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface	C.10.2.4.7
10.2.4.11	Focus not obscured (minimum)		✓			Where ICT is, or includes, a non-web document, and the document provides a keyboard or accepts input from a keyboard or keyboard interface	C.10.2.4.11
10.2.5.1	Pointer gestures		✓			Where ICT is, or includes, a non-web document	C.10.2.5.1
10.2.5.2	Pointer cancellation		✓			Where ICT is, or includes, a non-web document	C.10.2.5.2
10.2.5.3	Label in name		✓			Where ICT is, or includes, a non-web document	C.10.2.5.3
10.2.5.4	Motion actuation		✓			Where ICT is, or includes, a non-web document	C.10.2.5.4
10.2.5.7	Dragging movements		✓			Where ICT is, or includes, a non-web document	C.10.2.5.7
10.2.5.8	Target size (minimum)		✓			Where ICT is, or includes, a non-web document	C.10.2.5.8
10.3.1.1	Language of non-web document			✓		Where ICT is, or includes, a non-web document	C.10.3.1.1
10.3.1.2	Language of parts			✓		Where ICT is, or includes, a non-web document	C.10.3.1.2
10.3.2.1	On focus			✓		Where ICT is, or includes, a non-web document	C.10.3.2.1
10.3.2.2	On input			✓		Where ICT is, or includes, a non-web document	C.10.3.2.2
10.3.2.3	Consistent navigation			✓		Where ICT is, or includes, a non-web document within a set of non-web documents	C.10.3.2.3

Clause	Requirement	P	O	U	R	Condition	Assessment
10.3.2.4	Consistent identification			✓		Where ICT is, or includes, a non-web document within a set of non-web documents	C.10.3.2.4
10.3.2.6	Consistent help			✓		Where ICT is, or includes, a non-web document	C.10.3.2.6
10.3.3.1	Error identification			✓		Where ICT is, or includes, a non-web document	C.10.3.3.1
10.3.3.2	Labels or instructions			✓		Where ICT is, or includes, a non-web document	C.10.3.3.2
10.3.3.3	Error suggestion			✓		Where ICT is, or includes, a non-web document	C.10.3.3.3
10.3.3.4	Error prevention (legal, financial, data)			✓		Where ICT is, or includes, a non-web document	C.10.3.3.4
10.3.3.7	Redundant entry		✓	✓		Where ICT is, or includes, a non-web document	C.10.3.3.7
10.3.3.8	Accessible authentication (minimum)		✓		✓	Where ICT is, or includes, a non-web document	C.10.3.3.8
10.4.1.2	Name, role, value				✓	Where ICT is, or includes, a non-web document	C.10.4.1.2
10.4.1.3	Status messages	✓	✓	✓	✓	Where ICT is, or includes, a non-web document	C.10.4.1.3
10.7	User preferences for non-web documents	✓	✓	✓	✓	Where ICT is, or includes, a non-web document	C.10.7
11.1.1.1	Non-text content	✓				Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.1.1.1
11.1.2.1	Audio-only and video-only (pre-recorded)	✓				Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.1.2.1
11.1.2.2	Subtitles (pre-recorded)	✓				Where ICT is, or includes, non-web software that provides a user interface	C.11.1.2.2
11.1.2.3	Audio description or media alternative (pre-recorded)	✓				Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.1.2.3
11.1.2.5	Audio description (pre-recorded)	✓				Where ICT is, or includes, non-web software that provides a user interface	C.11.1.2.5
11.1.3.1	Info and relationships	✓				Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.1.3.1

Clause	Requirement	P	O	U	R	Condition	Assessment
11.1.3.2	Meaningful sequence	✓				Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.1.3.2
11.1.3.3	Sensory characteristics	✓				Where ICT is, or includes, non-web software that provides a user interface	C.11.1.3.3
11.1.3.4	Orientation	✓	✓			Where ICT is, or includes, non-web software that provides a user interface, and the non-web software is displayed on hardware that is designed to be reoriented in typical use	C.11.1.3.4
11.1.3.5	Identify input purpose	✓				Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies, and where the technology used supports attributes to identify the meaning of form input data	C.11.1.3.5
11.1.4.1	Use of colour	✓				Where ICT is, or includes, non-web software that provides a user interface	C.11.1.4.1
11.1.4.2	Audio control	✓				Where ICT is, or includes, non-web software that provides a user interface	C.11.1.4.2
11.1.4.3	Contrast (minimum)	✓				Where ICT is, or includes, non-web software that provides a user interface	C.11.1.4.3
11.1.4.4	Resize text	✓				Where ICT is, or includes, non-web software that provides a user interface, and is not closed to enlargement	C.11.1.4.4
11.1.4.5	Images of text	✓				Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.1.4.5
11.1.4.10	Reflow	✓				Where ICT is, or includes, non-web software that provides a user interface	C.11.1.4.10
11.1.4.11	Non-text contrast	✓				Where ICT is, or includes, non-web software that provides a user interface	C.11.1.4.11
11.1.4.12	Text spacing	✓	✓			Where ICT is, or includes, non-web software that provides a user interface, that is implemented using markup languages that allow users to modify text spacing properties	C.11.1.4.12

Clause	Requirement	P	O	U	R	Condition	Assessment
11.1.4.13	Content on hover or focus	✓	✓			Where ICT is, or includes, non-web software that provides a user interface, and any visual presentation of the additional content caused by a hover or focus is not controlled by the user agent or platform software, and is not modified by the author	C.11.1.4.13
11.2.1.1	Keyboard		✓			Where ICT is, or includes, non-web software that can be run on a software platform that provides a device-independent keyboard interface service	C.11.2.1.1
11.2.1.2	No keyboard trap		✓			Where ICT is, or includes, non-web software that provides a user interface, and that provides a keyboard or accepts input from a keyboard or keyboard interface	C.11.2.1.2
11.2.1.4	Character key shortcuts		✓			Where ICT is, or includes, non-web software that provides a user interface, and that provides a keyboard or accepts input from a keyboard or keyboard interface	C.11.2.1.4
11.2.2.1	Timing adjustable		✓			Where ICT is, or includes, non-web software that provides a user interface	C.11.2.2.1
11.2.2.2	Pause, stop, hide		✓			Where ICT is, or includes, non-web software that provides a user interface	C.11.2.2.2
11.2.3.1	Three flashes or below threshold		✓			Where ICT is, or includes, non-web software that provides a user interface	C.11.2.3.1
11.2.4.2	Non-web software titled		✓			Where ICT is, or includes, non-web software that provides a user interface, implemented on a platform that supports "Title" attributes for windows or screens	C.11.2.4.2
11.2.4.3	Focus order		✓			Where ICT is, or includes, non-web software that provides a user interface, and that provides a keyboard or accepts input from a keyboard or keyboard interface	C.11.2.4.3
11.2.4.4	Link purpose (in context)		✓			Where ICT is, or includes, non-web software that provides a user interface	C.11.2.4.4
11.2.4.6	Headings and labels		✓			Where ICT is, or includes, non-web software that provides a user interface, and that provides a keyboard or accepts input from a keyboard or keyboard interface	C.11.2.4.6
11.2.4.7	Focus visible		✓			Where ICT is, or includes, non-web software that provides a user interface	C.11.2.4.7
11.2.4.11	Focus not obscured (minimum)		✓			Where ICT is, or includes, non-web software that provides a user interface, and that provides a keyboard or accepts input from a keyboard or keyboard interface	C.11.2.4.11

Clause	Requirement	P	O	U	R	Condition	Assessment
11.2.5.1	Pointer gestures		✓			Where ICT is, or includes, non-web software that provides a user interface, and that provides a pointing mechanism or accepts input from pointing devices	C.11.2.5.1
11.2.5.2	Pointer cancellation		✓			Where ICT is, or includes, non-web software that provides a user interface, and that provides a pointing mechanism or accepts input from pointing devices	C.11.2.5.2
11.2.5.3	Label in name		✓			Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.2.5.3
11.2.5.4	Motion actuation		✓			Where ICT is, or includes, non-web software that provides a user interface	C.11.2.5.4
11.2.5.7	Dragging movements		✓			Where ICT is, or includes, non-web software that provides a user interface	C.11.2.5.7
11.2.5.8	Target size (minimum)		✓			Where ICT is, or includes, non-web software that provides a user interface	C.11.2.5.8
11.3.1.1	Language of non-web software			✓		Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.3.1.1
11.3.2.1	On focus			✓		Where ICT is, or includes, non-web software that provides a user interface	C.11.3.2.1
11.3.2.2	On input			✓		Where ICT is, or includes, non-web software that provides a user interface	C.11.3.2.2
11.3.2.4	Consistent identification			✓		Where ICT is, or includes, non-web software that provides a user interface	C.11.3.2.4
11.3.3.1	Error identification			✓		Where ICT is, or includes, non-web software that provides a user interface, and the non-web software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.3.3.1
11.3.3.2	Labels or instructions			✓		Where ICT is, or includes, non-web software that provides a user interface	C.11.3.3.2
11.3.3.3	Error suggestion			✓		Where ICT is, or includes, non-web software that provides a user interface	C.11.3.3.3
11.3.3.4	Error prevention (legal, financial, data)			✓		Where ICT is, or includes, non-web software that provides a user interface	C.11.3.3.4
11.3.3.7	Redundant entry			✓		Where ICT is, or includes, non-web software that provides a user interface	C.11.3.3.7

Clause	Requirement	P	O	U	R	Condition	Assessment
11.3.3.8	Accessible authentication (minimum)		✓	✓	✓	Where ICT is, or includes, non-web software that provides a user interface	C.11.3.3.8
11.4.1.2	Name, role, value				✓	Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies	C.11.4.1.2
11.4.1.3	Status messages				✓	Where ICT is, or includes, non-web software that provides a user interface, and the software includes functionality that is not closed to programmatic access of information by assistive technologies, and the functionality that is not closed supports status message notifications	C.11.4.1.3
11.5.2.1	Platform interoperability with assistive technologies	✓	✓	✓	✓	Where ICT is, or includes, platform software	C.11.5.2.1
11.5.2.4	Assistive technology				✓	Where ICT is, or includes, assistive technology	C.11.5.2.4
11.5.2.5	Object information	✓		✓		Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.5
11.5.2.6	Row, column, and headers	✓		✓		Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.6
11.5.2.7	Values	✓		✓		Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.7
11.5.2.8	Label relationships	✓		✓		Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.8
11.5.2.9	Parent-child relationships	✓		✓		Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.9
11.5.2.10	Text	✓		✓		Where ICT is, or includes, non-web software that provides a user interface, and renders text to a screen	C.11.5.2.10
11.5.2.11	List of available actions		✓			Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.11
11.5.2.12	Execution of available actions		✓			Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.12
11.5.2.13	Tracking of focus and selection attributes		✓			Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.13
11.5.2.14	Modification of focus and selection attributes		✓			Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.14
11.5.2.15	Change notification		✓	✓		Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.15
11.5.2.16	Modifications of states and properties		✓			Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.16
11.5.2.17	Modifications of values and text		✓			Where ICT is, or includes, non-web software that provides a user interface	C.11.5.2.17

Clause	Requirement	P	O	U	R	Condition	Assessment
11.6.1	User control of accessibility features	✓	✓	✓	✓	Where ICT is, or includes, platform software	C.11.6.1
11.6.2	No disruption of accessibility features	✓	✓	✓	✓	Where ICT is, or includes, non-web software	C.11.6.2
11.7	User preferences	✓	✓	✓	✓	Where ICT is, or includes, non-web software that provides a user interface, and is not designed to be isolated from its platform	C.11.7
12.1	Accessible information about products	✓	✓	✓	✓	Where ICT is, or includes, information about a product, made available in a digital form	C.12.1
12.2	Accessible information about services	✓	✓	✓	✓	Where ICT is, or includes, information about a service, made available in a digital form	C.12.2
12.3	Accessibility and compatibility features	✓	✓	✓	✓	Where ICT includes product or service information, whether provided separately or integrated within the ICT	C.12.3
12.4	Electronic program guides	✓	✓			Where ICT is an Electronic Programme Guide (EPG)	C.12.4
12.5	Electronic program guide display	✓	✓			Where ICT displays an Electronic Programme Guide (EPG) presenting media item(s), and information about the availability of subtitles, audio description, spoken subtitles, or sign language interpretation for the media item(s) is available	C.12.5
13.1.2.2	Use of the primary user destination address in relayed communications	✓	✓			Where ICT is, or includes, a relay service invocation system	C.13.1.2.2
13.1.2.3	Conveying of caller identifier in relayed communications for primary relay users	✓	✓			Where ICT is, or includes, a relay service invocation system	C.13.1.2.3
13.1.2.4	Relay service invocation decision in outgoing communications	✓	✓			Where ICT is, or includes, a relay service invocation system	C.13.1.2.4
13.1.2.5	Relay service invocation decision in incoming communications	✓	✓			Where ICT is, or includes, a relay service invocation system	C.13.1.2.5
13.1.2.6	Relay service support requested by the primary user for emergency communications	✓	✓			Where ICT is, or includes, a relay service invocation system	C.13.1.2.6
13.1.3.1	Relaying action in relay service communication	✓	✓			Where ICT is, or includes, a relay service	C.13.1.3.1
13.1.3.2	Media handling in relay service communication	✓	✓			Where ICT is, or includes, a relay service	C.13.1.3.2
13.1.3.3	Relay service support in ICT based conferences	✓	✓			Where ICT is, or includes, a relay service	C.13.1.3.3
13.1.3.4	Relay service support during emergency communications initiated by the PSAP	✓	✓			Where ICT is, or includes, a relay service	C.13.1.3.4

Annex ZB (informative): Relationship between the present document and the essential requirements of Directive (EU) 2019/882

ZB.0 Context

The present document has been prepared under the Commission's standardisation request C(2022) 6456 final [i.28] to provide one voluntary means of conforming to the essential requirements of Directive (EU) 2019/882 on the accessibility requirements of products and services [i.29].

Once the present document is cited in the Official Journal of the European Union under that Directive, conformance with the normative clauses of the present document given in Tables ZB.1 through ZB.5 confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding essential requirements of that Directive and associated EFTA regulations.

NOTE: Because an ICT product or service could have features and functions that belong to several of the categories identified of Directive (EU) 2019/882 [i.29] it might need to meet the essential requirements that are listed in several rows of multiple tables in Annex ZB. This makes the tables in Annex ZB impractical for use in assessing whether a specific ICT product or service meets all the applicable requirements in the present document. The tables in clause A.2 offer the most appropriate way to assess the conformance of a specific ICT to the essential requirements of Directive (EU) 2019/882 [i.29].

ZB.1 Provision of information on products

The requirements listed in Table ZB.1 and Table ZB.2 apply to all products within the scope of the Directive. These Products are specified in the Article 2 point 1 of the Directive and include:

a) consumer general purpose computer hardware systems and operating systems for those hardware systems;

b) the following self-service terminals:

   (i) payment terminals;

   (ii) the following self-service terminals dedicated to the provision of services covered by this Directive:

   - automated teller machines;
   - ticketing machines;
   - check-in machines;
   - interactive self-service terminals providing information, excluding terminals installed as integrated parts of vehicles, aircrafts, ships or rolling stock;

c) consumer terminal equipment with interactive computing capability, used for electronic communications services;

d) consumer terminal equipment with interactive computing capability, used for accessing audiovisual media services; and

e) e-readers.

NOTE 1: Exceptions may apply. For details see Directive (EU) 2019/882/EU [i.29].

NOTE 2: When applied by reference from Annex ZC of the present document, the information in the title and rows of Tables ZB.1 and ZB.2 is valid inter alia for the range of products and services covered in the other Directive referring to Annex ZC of the present document.

The first set of requirements for products in Directive (EU) 2019/882/EU [i.29] is: **1. Requirements on the provision of information**. The specific requirements of the Directive and their relationship with clauses of the present document are shown in Table ZB.1.

Table ZB.1: Relationship between the present document and the general accessibility requirements related to all products covered by Directive (EU) 2019/882/EU [i.29] in accordance with Article 2(1) (Directive (EU) 2019/882/EU [i.29], Annex I, Section I, Point 1)

No	ZB1: Essential requirements of Directive 2019/882/EU [i.29] Annex I, Section I, Point 1	Conditions on product (from EAA)	Description (from EAA)	Clause(s) of the present document
1	1(a) (i-iv) "the information on the use of the product provided on the product itself (labelling, instructions and warning)". … "shall be accompanied where possible in or on the product by accessible information on their functioning and on their accessibility features."	All products in the introduction of the present table.	"(i) shall be made available via more than one sensory channel" (ii) "shall be presented in an understandable way (iii) shall be presented to users in ways they can perceive (iv) "shall be presented in fonts of adequate size and suitable shape, taking into account foreseeable conditions of use, and using sufficient contrast, as well as adjustable spacing between letters, lines and paragraphs."	12.1 covers the accessibility of the presentation of information when provided in digital forms. It requires following all of clause 9 for web documents and clause 10 for non-web documents and clause 11 for information in software. EN 301 549 requirements address the accessible presentation of any information available in digital forms. Other standards harmonised with Directive (EU) 2019/882/EU may include additional accessibility requirements that are applicable to the specific categories of information about products and services identified in Directive (EU) 2019/882/EU Annex I.

No	ZB1: Essential requirements of Directive 2019/882/EU [i.29] Annex I, Section I, Point 1	Conditions on product (from EAA)	Description (from EAA)	Clause(s) of the present document
2	1(b)(i-ix) "the instructions for use of a product, where not provided on the product itself but made available through the use of the product or through other means such as a website, including the accessibility functions of the product, how to activate them and their interoperability with assistive solutions"	All products in the introduction of the present table.	"(i)shall be publicly available when the product is placed on the market and shall be made available via more than one sensory channel" (ii) shall be publicly available when the product is placed on the market and shall be presented in an understandable way (iii) shall be publicly available when the product is placed on the market and shall presented to users in ways they can perceive (iv) shall be publicly available when the product is placed on the market and shall be presented in fonts of adequate size and suitable shape, taking into account foreseeable conditions of use and using sufficient contrast, as well as adjustable spacing between letters, lines and paragraphs. (v) shall be publicly available when the product is placed on the market and shall with regard to content, be made available in text formats that can be used for generating alternative assistive formats to be presented in different ways and via more than one sensory channel. (vi) shall be publicly available when the product is placed on the market and shall be accompanied by an alternative presentation of any non-textual content (vii) shall be publicly available when the product is placed on the market and shall include a description of the user interface of the product" (handling, control and feedback, input and output) which is provided in accordance with (EAA, Annex I, Section I) point 2; "the description shall indicate for each of the points in point 2 whether the product provides those features (viii) shall be publicly available when the product is placed on the market and shall include a description of the functionality of the product which is provided by functions aiming to address the needs of persons with disabilities in accordance with (Annex I, Section I) point 2; the description shall indicate for each of the points in point 2 whether the product provides those features (ix) shall be publicly available when the product is placed on the market and shall include a description of the software and hardware interfacing of the product with assistive devices; the description shall include a list of those assistive devices which have been tested together with the product"	12.1 covers the accessibility of the presentation of information when provided in digital forms. It requires following all of clause 9 for web documents, clause 10 for non-web documents and clause 11 for non-web software. 12.3 covers the requirements on what information is to be provided about accessibility and compatibility features of the product. EN 301 549 requirements address the accessible presentation of any information available in digital forms. Other standards harmonised with Directive (EU) 2019/882/EU may include additional accessibility requirements that are applicable to the specific categories of information about products and services identified in Directive (EU) 2019/882/EU Annex I.

ZB.2 User interface and functionality of products and provision of related support services

The second set of requirements for products are related to: **2. User interface and functionality design**, and **3. Support services**. These requirements apply to the same set of products as listed in clause ZB.1. The specific requirements on user interface and functionality design of the Directive and their relationship with clauses of the present document as well as requirements on support services related to the products are shown in Table ZB.2.

NOTE: When applied by reference from Annex ZC of the present document, the information in the title and rows of Table ZB.2 is valid inter alia for the range of products and services covered in the other Directive referring to Annex ZC of the present document.

Table ZB.2: Relationship between the present document and the general accessibility requirements related to all products covered by Directive (EU) 2019/882/EU [i.29] in accordance with Article 2(1) (Directive (EU) 2019/882/EU, Annex I, Section I, Point 2) and related support services in accordance with Directive (EU) 2019/882/EU [i.29], Annex I, Section I, Point 3

No	ZB2: Essential requirements of Directive: 2019/882/EU [i.29] Annex I, Section I, Point 2 and Point 3	Conditions on product (from EAA)	Description (from EAA)	Clause(s) of the present document
1	2(a)	Products that provide communication including interpersonal communication operation, information, control and orientation	"do so via more than one sensory channel; this shall include providing alternatives to vision, auditory, speech and tactile elements"	4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.2.5, 4.2.9, 5.1.3, 5.1.4, 5.1.5, 5.1.8, 5.4, 5.5, 5.6, 8.2, 8.4.1, 8.5, 8.6, 8.7, 8.8, 9.1, 9.4 10.1, 10.4, 11.1, 11.4, 11.5.2
2	2(b)	Products that use speech	"provide alternatives to speech and vocal input for communication, operation control and orientation"	4.2.6, 5.1.7, 5.3, 6.2, 6.4, 6.6, 6.7, 9.2, 10.2, 11.2
3	2(c)	Products that use visual elements	"provide for flexible magnification, brightness and contrast for communication, information and operation, as well as ensure interoperability with programmes and assistive devices to navigate the interface"	4.2.2, 4.2.3, 5.1.4, 8.7, 8.8 9.1.4, 9.4, 10.1.4, 10.4, 11.1.4, 11.4, 11.5.2
4	2(d)	Products that use colour to convey information, indicate an action, require a response or identify elements	"provide an alternative to colour"	4.2.3, 8.7, 9.1.4.1, 10.1.4.1, 11.1.4.1

No	ZB2: Essential requirements of Directive: 2019/882/EU [i.29] Annex I, Section I, Point 2 and Point 3	Conditions on product (from EAA)	Description (from EAA)	Clause(s) of the present document
5	2(e)	Products that use audible signals to convey information, indicate an action, require a response or identify elements	"provide an alternative to audible signals"	4.2.4, 4.2.5, 5.1.5, 5.6.2, 6.2.2.3, 6.5.5, 7.1, 7.3, 9.1.2.1, 9.1.2.2, 9.1.2.4, 10.1.2.1, 10.1.2.2, 10.1.2.4, 11.1.2.1, 11.1.2.2, 11.1.2.4
6	2(f)	Products that use visual elements	"provide for flexible ways of improving vision clarity"	4.2.2, 5.1.4, 8.7, 8.8, 9.1.4 (except 9.1.4.2), 10.1.4 (except 10.1.4.2), 11.1.4 (except 11.1.4.2), 11.7
7	2(g)	Products that use audio	"provide for user control of volume and speed, and enhanced audio features including the reduction of interfering audio signals from surrounding products and audio clarity"	4.2.1, 4.2.2, 4.2.5, 4.2.10, 5.1.3.4, 5.1.3.5, 5.1.3.11, 5.1.3.12, 5.1.3.13, 6.1.2, 6.1.3, 8.2.1, 9.1.4.2, 10.1.4.2, 11.1.4.2
8	2(h)	When the product requires manual operation and control	"provide for sequential control and alternatives to fine motor control, avoiding the need for simultaneous controls for manipulation, and shall use tactile discernible parts"	4.2.1, 4.2.2, 4.2.7, 4.2.8, 5.1.6, 5.5, 5.6. 5.7, 5.8, 5.9, 8.4.2, 9.2.1, 9.2.5, 10.2.1. 10.2.5, 11.2.1, 11.2.5
9	2(i)	All products	"avoid modes of operation requiring extensive reach and great strength"	4.2.7, 4.2.8, 8.3, 8.4.2.2
10	2(j)	All products	"avoid triggering photosensitive seizures"	4.2.9, 9.2.3.1, 10.2.3.1, 11.2.3.1
11	2(k)	All products	"protect the user's privacy when he or she uses the accessibility features"	4.2.11, 5.1.3.8, 5.1.3.9, 8.6, 9.3.3.4, 9.3.3.7, 9.3.3.8, 10.3.3.4, 10.3.3.7, 10.3.3.8, 11.3.3.4, 11.3.3.7, 11.3.3.8
12	2(l)	Products providing biometrics identification	"provide an alternative to biometrics identification and control"	4.2.1, 4.2.2, 4.2.4, 4.2.5, 4.2.6, 4.2.7, 5.3

No	ZB2: Essential requirements of Directive: 2019/882/EU [i.29] Annex I, Section I, Point 2 and Point 3	Conditions on product (from EAA)	Description (from EAA)	Clause(s) of the present document
13	2(m)	All products	"ensure the consistency of the functionality and shall provide enough, and flexible amounts of, time for interaction"	4.2.7, 4.2.10, 5.7, 9.2.2, 10.2.2, 11.2.2, 9.3.2.3, 10.3.2.3, 11.3.2.3, 9.3.2.4, 10.3.2.4, 11.3.2.4
14	2(n)	All products	"provide software and hardware for interfacing with the assistive technologies"	4.2.2, 4.2.3, 5.1.4, 8.2.2, 8.6, 8.7, 8.8, 9.1.4, 9.4, 10.1.4, 10.4, 11.1.4, 11.4, 11.5.2
15	2(o)(i) Self-service terminals	All	"provide for text-to-speech technology"	4.2.1, 4.2.2, 4.2.10, 5.1.3, 8.2,9.2.2, 10.2.2, 11.2.2, 9.3.2.3, 10.3.2.3, 11.3.2.3, 9.3.2.4, 10.3.2.4, 11.3.2.4
16	2(o)(i) Self-service terminals	All	"allow for the use of personal headsets"	4.2.1, 4.2.2, 4.2.10, 5.1.3.2, 8.2
17	2(o)(i) Self-service terminals	where a timed response is required	"alert the user via more than one sensory channel"	4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.2.5, 5.1.3.1, 5.1.3.6, 5.1.3.7
18	2(o)(i) Self service terminal	where a timed response is required	"give the possibility to extend the time given"	4.2.7, 4.2.10, 9.2.2, 10.2.2, 11.2.2
19	2(o)(i) Self service terminal	when keys and controls are available	"have an adequate contrast and tactilely discernible keys and controls when keys and controls are available"	4.2.1, 4.2.2, 5.5, 5.6, 8.8, 9.1.4.3, 10.1.4.3, 11.1.4.3, 9.1.4.11, 10.1.4.11, 11.1.4.11
20	2(o)(i) Self service terminal	All	"not require an accessibility feature to be activated in order to enable a user who needs the feature to turn it on"	4.2, 5.2
21	2(o)(i) Self service terminal	when the product uses audio or audible signals,	"be compatible with assistive devices and technologies available at Union level, including hearing technologies such as hearing aids, telecoils, cochlear implants and assistive listening devices"	4.2, 5.1, 8.2, 11.5.2
22	2(o)(ii) e-readers	All	"provide for text-to-speech technology"	4.2.4, 4.2.5, 5.1.3.1, 5.1.3.2, 11.5.2

No	ZB2: Essential requirements of Directive: 2019/882/EU [i.29] Annex I, Section I, Point 2 and Point 3	Conditions on product (from EAA)	Description (from EAA)	Clause(s) of the present document
23	2(o)(iii) consumer terminal equipment with interactive computing capability, used for the provision of electronic communications services:	when such products have text capability in addition to voice,	"provide for the handling of real time text and support high fidelity audio"	4.2.4, 4.2.5, 4.2.6, 6.0, 6.1, 6.2, 6.3, 6.4, 8.2, 13.1
24	2(o)(iii) consumer terminal equipment with interactive computing capability, used for the provision of electronic communications services:	when they have video capabilities in addition to or in combination with text and voice,	"provide for the handling of total conversation including synchronised voice, real time text, and video with a resolution enabling sign language communication"	4.2.4, 4.2.5, 4.2.6, 4.2.10, 6.0, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 8.2, 13.1
25	2(o)(iii) consumer terminal equipment with interactive computing capability, used for the provision of electronic communications services:	All	"ensure effective wireless coupling to hearing technologies"	4.2.4, 4.2.5, 8.2.2
26	2(o)(iii) consumer terminal equipment with interactive computing capability, used for the provision of electronic communications services:	All	"shall avoid interferences with assistive devices"	4.2.4, 4.2.5, 8.2.2
27	2(o)(iv) consumer terminal equipment with interactive computing capability, used for accessing audio visual media services	All	"make available to persons with disabilities the accessibility components provided by the audiovisual media service provider, for user access, selection, control, and personalisation and for transmission to assistive devices"	4.2.1, 4.2.2, 4.2.4, 4.2.5, 4.2.10, 5.4, 7, 11.1.2, 11.5 9.4, 10.4, 11.4, 11.5.2

No	ZB2: Essential requirements of Directive: 2019/882/EU [i.29] Annex I, Section I, Point 2 and Point 3	Conditions on product (from EAA)	Description (from EAA)	Clause(s) of the present document
28	3. Support services		"provide information on the accessibility of the product and its compatibility with assistive technologies, in accessible modes of communication"	4.2, 9.4, 10.4, 11.4, 11.5.2, 12.2, 12.3, 13.1 EN 301 549 requirements address the accessible presentation of any information available in digital forms. Other standards harmonised with Directive (EU) 2019/882/EU may include additional accessibility requirements that are applicable to the specific categories of information about products and services identified in Directive (EU) 2019/882/EU Annex I.

ZB.3 Provision of information about specific products

The third set of requirements for products are: **Accessibility requirements related to products in Article 2(1), except for the self service terminals referred to in Article 2(1) (b)** The specific requirements on the provision of information are shown in Table ZB.3 and apply to the following subset of products:

a) consumer general purpose computer hardware systems and operating systems for those hardware systems;

b) consumer terminal equipment with interactive computing capability, used for electronic communications services;

c) consumer terminal equipment with interactive computing capability, used for accessing audiovisual media services; and

d) e-readers.

NOTE 1: Exceptions may apply. For details see Directive (EU) 2019/882/EU [i.29].

NOTE 2: When applied by reference from Annex ZC of the present document, the information in the title and rows of Table ZB.3 is valid inter alia for the range of products covered in the other Directive referring to Annex ZC of the present document.

Table ZB.3: Relationship between the present document and the general accessibility requirements related to products in Article 2(1), except for the self-service terminals referred to in Article 2(1)(b) covered by Directive (EU) 2019/882/EU [i.29], Annex I, Section II

No	ZB3: Essential requirements of Directive 2029/882/EU [i.29] Annex I, Section II	Conditions on product (from EAA)	Description (from EAA)	Clause(s) of the present document
1	(a) the packaging of the product including the information provided in it (e.g. about opening, closing, use, disposal), including,	when information about the accessibility characteristics of the product is provided,	"be made accessible; and, when feasible, that accessible information shall be provided on the package"	4.2, 12.1 covers the accessibility of the presentation of information when provided in digital forms. It requires following all of clause 9 for web documents and clause 10 for non-web documents and clause 11 for software. EN 301 549 requirements address the accessible presentation of any information available in digital forms. Other standards harmonised with Directive (EU) 2019/882/EU may include additional accessibility requirements that are applicable to the specific categories of information about products and services identified in Directive (EU) 2019/882/EU Annex I.

No	ZB3: Essential requirements of Directive 2029/882/EU [i.29] Annex I, Section II	Conditions on product (from EAA)	Description (from EAA)	Clause(s) of the present document
2	(b) "the instructions for the installation and maintenance, storage and disposal of the product not provided on the product itself but made available through other means, such as a website, shall be publicly available when the product is placed on the market"		"(i) be available via more than one sensory channel (ii) be presented in an understandable way; (iii) be presented to users in ways they can perceive; (iv) be presented in fonts of adequate size and suitable shape, taking into account foreseeable conditions of use, and using sufficient contrast, as well as adjustable spacing between letters, lines and paragraphs; (v) content of instructions shall be made available in text formats that can be used for generating alternative assistive formats to be presented in different ways and via more than one sensory channel; (vi) instructions containing any non-textual content shall be accompanied by an alternative presentation of that content"	4.2, 12.1 covers the accessibility of the presentation of information when provided in digital forms. It requires following all of clause 9 for web documents and clause 10 for non-web documents and clause 11 for software. EN 301 549 requirements address the accessible presentation of any information available in digital forms. Other standards harmonised with Directive (EU) 2019/882/EU may include additional accessibility requirements that are applicable to the specific categories of information about products and services identified in Directive (EU) 2019/882/EU Annex I.

ZB.4 Accessibility of services

The first set of requirements for services are: **General accessibility requirements related to all services covered by Directive (EU) 2019/882/EU Article 2(2).** The specific requirements on the provision of information are shown in Table ZB.4 and apply to the following subset of services: provided to consumers after 28 June 2025:

a) electronic communications services with the exception of transmission services used for the provision of machine-to machine services;

b) services providing access to audiovisual media services;

c) the following elements of air, bus, rail and waterborne passenger transport services, except for urban, suburban and regional transport services for which only the elements under point (v) apply:

   (i) websites;

   (ii) mobile device-based services including mobile applications;

(iii) electronic tickets and electronic ticketing services

(iv) "delivery of transport service information, including real-time travel information; this shall, with regard to information screens, be limited to interactive screens located within the territory of the Union"; and

(v) interactive self-service terminals located within the territory of the Union, except those installed as integrated parts of vehicles, aircrafts, ships and rolling stock used in the provision of any part of such passenger transport services;

d) consumer banking services;

e) e-books and dedicated software; and

f) e-commerce services.

NOTE: When applied by reference from Annex ZC of the present document, the information in the title and rows of Table ZB.4 is valid inter alia for the range of services covered in the other Directive referring to Annex ZC of the present document.

Table ZB.4: Relationship between the present document and the general accessibility requirements related to all services covered by Directive (EU) 2019/882/EU [i.29] in accordance with Article 2(2) (Directive (EU) 2019/882/EU [i.29], Annex I, Section III)

No	ZB.4: Essential requirements of Directive 2019/882/EU [i.29] Annex I, Section III	Conditions on service (from EAA)	Description (from EAA)	Clause(s) of the present document
1	(a) "The provision of services in order to maximise their foreseeable use by persons with disabilities, shall be achieved by"	All services in the introduction of the present table	"ensuring the accessibility of the products used in the provision of the service, in accordance with Section I of EAA Annex I and, where applicable, Section II thereof"	All the clauses referenced in Tables ZB.1, ZB.2 and ZB.3 for products, services, and information that falls under definition of ICT which includes electronic media and documents. EN 301 549 requirements address the accessible presentation of any information available in digital forms. Other standards harmonised with Directive (EU) 2019/882/EU may include additional accessibility requirements that are applicable to the specific categories of information about products and services identified in Directive (EU) 2019/882/EU Annex I.
2	(b)(i) "The provision of services in order to maximise their foreseeable use by persons with disabilities, shall be achieved by"	All services in the introduction of the present table	"be available via more than one sensory channel"	4.2, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 6, 7, 9.1, 10.1, 11.1, 12.3, 13.1
3	(b)(ii) "The provision of services in order to maximise their foreseeable use by persons with disabilities, shall be achieved by"	All services in the introduction of the present table	"be presented in an understandable way"	4.2.10, 9.3, 10.3, 11.3, 12.3

No	ZB.4: Essential requirements of Directive 2019/882/EU [i.29] Annex I, Section III	Conditions on service (from EAA)	Description (from EAA)	Clause(s) of the present document
4	(b)(iii) "The provision of services in order to maximise their foreseeable use by persons with disabilities, shall be achieved by"	All services in the introduction of the present table	"be presented to users in ways they can perceive"	4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.2.5, 5.1.3, 5.1.4, 5.1.5, 5.4, 6, 7, 9.1, 10.1, 11.1, 12.3, 13.1
5	(b)(iv) "The provision of services in order to maximise their foreseeable use by persons with disabilities, shall be achieved by"	All services in the introduction of the present table	"making the information content available in text formats that can be used to generate alternative assistive formats to be presented in different ways by the users and via more than one sensory channel"	4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.2.5, 5.4, 5.10, 9.1.1, 10.1,1. 11.1.1, 11.5.2.10
6	(b)(v) "The provision of services in order to maximise their foreseeable use by persons with disabilities, shall be achieved by"	All services in the introduction of the present table	"presenting in fonts of adequate size and suitable shape, taking into account foreseeable conditions of use and using sufficient contrast, as well as adjustable spacing between letters, lines and paragraphs"	4.2.2, 9.1.4.3, 10.1.4.3, 11.1.4.3 9.1.4.4, 10.1.4.4, 11.1.4.4, 9.1.4.12, 10.1.4.12, 11.1.4.12, 11.5.2.10, 9.7, 10.7, 11.7
7	(b)(vi) "The provision of services in order to maximise their foreseeable use by persons with disabilities, shall be achieved by"	All services in the introduction of the present table	"supplementing any non-textual content with an alternative presentation of that content"	4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.2.5, 5.1.3, 5.1.5, 5.10, 9.1, 10.1, 11.1, 9.2, 10.2, 11.2, 9.1.4.1, 10.1.4.1, 11.1.4.1, 9.1.4.3, 10.1.4.3, 11.1.4.3, 9.1.4.5, 10.1.4.5, 11.1.4.5
8	(b)(vii) "The provision of services in order to maximise their foreseeable use by persons with disabilities, shall be achieved by"	All services in the introduction of the present table	"providing electronic information needed in the provision of the service in a consistent and adequate way by making it perceivable, operable, understandable and robust"	4.2, 12.2, provides a link to the applicability of clause 9 (for web), clause 10 (for docs), & clauses 11 (for software) to information within the scope of this requirement.

No	ZB.4: Essential requirements of Directive 2019/882/EU [i.29] Annex I, Section III	Conditions on service (from EAA)	Description (from EAA)	Clause(s) of the present document
9	(c) "The provision of services in order to maximise their foreseeable use by persons with disabilities, shall be achieved by"	All services in the introduction of the present table	"making websites, including the related online applications, and mobile device-based services, including mobile applications, accessible in a consistent and adequate way by making them perceivable, operable, understandable and robust"	4.2, 9, 11
10	(d) making websites, including the related online applications, and mobile device-based services, including mobile applications, accessible in a consistent and adequate way by making them perceivable, operable, understandable and robust	All services in the introduction of the present table	"where available, support services (help desks, call centres, technical support, relay services and training services) providing information on the accessibility of the service and its compatibility with assistive technologies, in accessible modes of communication"	4.2, 11.5.2, 12.3, 13.1

ZB.5 Functionality of specific services

The second set of requirements for services defined in [i.29], Annex I, Section IV are: **Additional accessibility requirements related to specific services.** The specific requirements are shown in Table ZB.5 and require that "The provision of services in order to maximise their foreseeable use by persons with disabilities, shall be achieved by including functions, practices, policies and procedures and alterations in the operation of the service targeted to address the needs of persons with disabilities and ensure interoperability with assistive technologies". The requirements are valid for the following services:

a) Electronic communications services, including emergency communications referred to in Article 109(2) of Directive (EU) 2018/1972 [i.81];

b) Services providing access to audiovisual media services;

c) Air, bus, rail and waterborne passenger transport services except for urban and suburban transport services and regional transport services;

d) Urban and suburban transport services and regional transport services;

e) Consumer banking services;

f) E-Books;

g) E-Commerce services.

NOTE 1: When applied by reference from Annex ZC of the present document, the information in the title and rows of Table ZB.5 is valid inter alia for the range of services covered in the other Directive referring to Annex ZC of the present document.

NOTE 2: Item f) in the list above mentions E-Books which are out of scope of the present document.

Table ZB.5: Relationship between the present document and the general accessibility requirements related to specific services (Directive (EU) 2019/882/EU [i.29], Annex I, Section IV)

No	ZB.5: Essential requirements of Directive (EU) 2019/882/EU [i.29] Annex I, Section IV	Conditions on service (from EAA)	Description (from EAA)	Clause(s) of the present document
1	(a)(i) address the needs of persons with disabilities	Electronic communications services, including emergency communications referred to in Article 109(2) of Directive (EU) 2018/1972	"providing real time text (in addition to voice communication)"	4.2.4, 4.2.5, 4.2.6, 6.0, 6.1, 6.2, 6.3, 6.4, 13.1
2	(a)(ii) address the needs of persons with disabilities	Electronic communications services, including emergency communications referred to in Article 109(2) of Directive (EU) 2018/1972	"providing total conversation where video is provided in addition to voice communication"	4.2.4, 4.2.5, 4.2.6, 6, 13.1
3	(a)(iii) address the needs of persons with disabilities	emergency communications referred to in Article 109(2) of Directive (EU) 2018/1972	"ensuring that emergency communications using voice, text (including real time text) is synchronised and where video is provided is also synchronised as total conversation and is transmitted by the electronic communications service providers to the most appropriate PSAP"	4.2.4, 4.2.5, 4.2.6, 6.0.6, 6.0.7, 6.0.8, 6.0.9, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 13.1
4	(b)(i) address the needs of persons with disabilities	Services providing access to audiovisual media services	"providing Electronic Programme Guides (EPGs) which are perceivable, operable, understandable and robust and provide information about the availability of accessibility"	4.2, 9, 10, 11, 12.2, 12.3, 12.4, 12.5
5	(b)(ii) address the needs of persons with disabilities	Services providing access to audiovisual media services	"ensuring that the accessibility components (access services) of the audiovisual media services such as subtitles for the deaf and hard of hearing, audio description, spoken subtitles and sign language interpretation are fully transmitted with adequate quality for accurate display, and synchronised with sound and video, while allowing for user control of their display and use"	4.2.1, 4.2.2, 4.2.4. 4.2.5, 5.1.3.7, 5.1.5, 5.4, 5.5, 5.10, 7, 9.1.2, 10.1.2, 11.1.2 (and all requirements in 5, 6, 7, 8, 9, 10, and 11 related to operating and understanding controls)

No	ZB.5: Essential requirements of Directive (EU) 2019/882/EU [i.29] Annex I, Section IV	Conditions on service (from EAA)	Description (from EAA)	Clause(s) of the present document
6	(c)(i) address the needs of persons with disabilities	Air, bus, rail and waterborne passenger transport services except for urban and suburban transport services and regional transport services:	"ensuring the provision of information on the accessibility of vehicles, the surrounding infrastructure and the built environment and on assistance for persons with disabilities"	4.2 12.1 covers the accessibility of the presentation of information of products when the information is provided in digital forms. Requires following all of clause 9 for web documents and clause 10 for non-web documents) EN 301 549 requirements address the accessible presentation of any information available in digital forms. Other standards harmonised with Directive (EU) 2019/882/EU may include additional accessibility requirements that are applicable to the specific categories of information about products and services identified in Directive (EU) 2019/882/EU Annex I.

No	ZB.5: Essential requirements of Directive (EU) 2019/882/EU [i.29] Annex I, Section IV	Conditions on service (from EAA)	Description (from EAA)	Clause(s) of the present document
7	(c) (ii) address the needs of persons with disabilities	Air, bus, rail and waterborne passenger transport services except for urban and suburban transport services and regional transport services:	"ensuring the provision of information about smart ticketing (electronic reservation, booking of tickets, etc.), realtime travel information (timetables, information about traffic disruptions, connecting services, onwards travel with other transport modes, etc.), and additional service information (e.g. staffing of stations, lifts that are out of order or services that are temporarily unavailable)"	4.2 12.2 covers the accessibility of the presentation of information on services when the information is provided in digital forms. Requires following all of clause 9 for web documents, Clause 10 for non-web documents and clause 11 for software.) EN 301 549 requirements address the accessible presentation of any information available in digital forms. Other standards harmonised with Directive (EU) 2019/882/EU may include additional accessibility requirements that are applicable to the specific categories of information about products and services identified in Directive (EU) 2019/882/EU Annex I.
8	(d) address the needs of persons with disabilities	Urban and suburban transport services and regional transport services:	"ensuring the accessibility of self-service terminals used in the provision of the service in accordance with Section I of EAA Annex I"	4.2, 5, especially 5.1.3.16, 6, 7, 8, especially 8.4.3, 9, 10, 11
9	(e)(i) address the needs of persons with disabilities and ensure interoperability with assistive technologies:	Consumer banking services	"providing identification methods, electronic signatures, security, and payment services which are perceivable, operable, understandable and robust"	4.2, especially 4.2.12, 5, especially 5.1, 5.2, 9, 10, 11

No	ZB.5: Essential requirements of Directive (EU) 2019/882/EU [i.29] Annex I, Section IV	Conditions on service (from EAA)	Description (from EAA)	Clause(s) of the present document
10	(g) (i) address the needs of persons with disabilities and ensure interoperability with assistive technologies:	E-Commerce services	"providing the information concerning accessibility of the products and services being sold when this information is provided by the responsible economic operator"	4.2 5.4 12.1, 12.2, 12.3 cover the accessibility of the presentation of information when provided in digital forms. EN 301 549 requirements address the accessible presentation of any information available in digital forms. Other standards harmonised with Directive (EU) 2019/882/EU may include additional accessibility requirements that are applicable to the specific categories of information about products and services identified in Directive (EU) 2019/882/EU Annex I.
11	(g) (ii) address the needs of persons with disabilities and ensure interoperability with assistive technologies:	E-Commerce services	"ensuring the accessibility of the functionality for identification, security and payment when delivered as part of a service instead of a product by making it perceivable, operable, understandable and robust"	4.2, 5, especially 5.1, 9, 10, 11
12	(g) (iii) address the needs of persons with disabilities and ensure interoperability with assistive technologies:	E-Commerce services	"providing identification methods, electronic signatures, and payment services which are perceivable, operable, understandable and robust"	4.2, especially 4.2.12, 5, especially 5.1, 5.2, 9, 10, 11

Annex ZC (informative): Relationship between the present document and the essential requirements of other Directives according to Directive (EU) 2019/882, Section VI of Annex I

The present document has been prepared under the Commission's standardisation request C(2022) 6456 final [i.28] to provide one voluntary means of conforming to the essential requirements of Directive (EU) 2019/882 on the accessibility requirements of products and services [i.29].

Once the present document is cited in the Official Journal of the European Union under that Directive, conformance with the normative clauses of the present document given in Table ZC.1 confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding essential requirements of other Directives and associated EFTA regulations according to Directive (EU) 2019/882, Section VI of Annex I.

The presumption to fulfil the relevant obligations set out in other Union acts concerning features, elements or functions of products and services requires the following requirements that are listed in Table ZC.1 apply to all products and services within the scope of that other Directive.

When applying the references to Table ZB.1 to ZB.5 from Table ZC.1, the expressions about for which products and services the tables and rows are valid are intended to be read as replaced inter alia with the products and services covered by the other Directive.

Table ZC.1: Relationship between the present document and the additional accessibility requirements related to other Directives (Directive (EU) 2019/882/EU, Annex I, Section VI)

Essential requirements of Directive: Annex I, Section VI	Conditions (from EAA)	Description (from EAA)	Clause(s) of the present document
1(a)	Information about products	"the accessibility of the information concerning the functioning and accessibility features related to products complies with the corresponding elements set out in point 1 of Section I of EAA Annex I, namely information on the use of the product provided on the product itself and the instructions for use of a product, not provided in the product itself but made available through the use of the product or other means such as a website"	Clauses referenced from Table ZB.1
1(b)	Accessibility of products	"the accessibility of features, elements and functions of the user interface and the functionality design of products complies with the corresponding accessibility requirements of such user interface or functionality design set out in point 2 of Section I of EAA Annex I"	Clauses referenced from Table ZB.2 except row 28
1(c)	Products	"the accessibility of the packaging, including the information provided in it and instructions for the installation and maintenance, storage and disposal of the product not provided in the product itself but made available through other means such as a website, except for self-service terminals complies with the corresponding accessibility requirements set out in Section II of EAA Annex I"	Clauses referenced from Table ZB.3
2	Services	"the accessibility of the features, elements and functions of services complies with the corresponding accessibility requirements for those features, elements and functions set out in the services-related Sections of EAA Annex I"	Clauses referenced from Tables ZB.4 and ZB.5

Annex F (informative): Change history

Version	Information about changes
V2.1.2	First publication as a harmonised standard
V3.1.1	The requirements related to Real-Time Text (RTT) in clause 6.2 have been revised and extended
V3.1.1	The WCAG 2.1 AAA Success Criteria that were previously in an Annex D are now included in clause 9.5
V3.1.1	A new Annex D, "Further resources for cognitive accessibility", has been added
V3.1.1	A new Annex E, "Guidance for users of the present document" has been added
V3.2.1	A new Annex F, "Change history" (this annex) has been added
V4.1.1	The entire document has been revised to become a harmonised standard for Directive (EU) 2019/882/EU [i.29] and for Directive (EU) 2016/2102 [i.27]

History

Version	Date	Status	
V1.1.1	February 2014	Publication	
V1.1.2	April 2015	Publication	
V2.1.2	August 2018	Publication	
V3.1.1	November 2019	Publication	
V3.2.1	March 2021	Publication	
V4.1.0	November 2025	SRdAP process	EV 20260211: 2025-11-13 to 2026-02-11
V4.1.0	June 2026	SRdAP process	VA 20260824: 2026-06-25 to 2026-08-24