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Accessibility requirements for ICT products and services

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Foreword

This Harmonised European Standard (EN) has been produced by ETSI Technical Committee Human Factors (HF), and the eAccessibility Joint Working Group (JWG) of CEN/CENELEC/ETSI.

The present document has been prepared under the Commission's standardisation request C(2017) 2585 final [i.27] to provide one voluntary means of conforming to the essential requirements of Directive 2016/2102 [i.28] on the accessibility of the websites and mobile applications of public sector bodies.

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 tables A.1 and 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 ETSI EN 301 549 [i.29] V1.1.2 (2015-04). The changes are limited to those necessary to comply with the requirements of a Harmonised Standard, inclusion of requirements for mobile applications, updating to reflect the state of the art in W3C WCAG, updating of clause 6.1, and corrections of errors.

National transposition dates

Date of adoption of this EN:	24 August 2018
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Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 May 2019
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Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**may not**", "**need**", "**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 554 from the European Commission to CEN, CENELEC and ETSI. It is based on the European Standard (EN) that was one of several deliverables prepared in response to Phase 2 of Mandate M 376 [i.3].

NOTE: The present document reflects the content of the W3C WCAG 2.1 Proposed Recommendation [5], which is expected to become the formal W3C WCAG 2.1 Recommendation.

The primary objective of Mandate M 376 was to produce a European Standard that sets out in a single source, detailed, practical and quantifiable functional accessibility requirements that take note of global initiatives in that field and which are applicable to all Information and Communication Technology (ICT) products and services identified in Phase I of the Mandate (ETSI TR 102 612 [i.9]) and usable in public procurement.

The European Standard prepared in response to Mandate M 376 is supported by three Technical Reports. The first (ETSI TR 101 550 [i.7]) lists the standards and technical specifications used in the creation of the compliance requirements for accessibility set out in the European Standard. The second Technical Report (ETSI TR 101 551 [i.8]) gives guidance to procurers on the award criteria relevant to each of the accessibility-related needs of ICT users in the products and services under consideration. The third Technical Report (ETSI TR 101 552 [i.30]) incorporates all information and documentation needed in the framework of the procurement process in order to allow conveying the assessment of accessibility via conformity with the functional accessibility requirements contained in the present document and with award criteria.

<https://standards.iteh.ai/en/standards/EN-301-549-V2-1-2-2018-06>
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1 Scope

The present document specifies the functional 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 public procurement within Europe. The present document might be useful for other purposes such as procurement in the private sector.

The relationship between the present document and the essential requirements of Directive 2016/2102 on the accessibility of the websites and mobile applications of public sector bodies [i.28] is given in Annex A.

The present document contains the necessary functional 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.

All clauses except those in clause 12, related to documentation and support services, are self-scoping. This means they are introduced with the phrase 'Where ICT <pre-condition>'. Compliance is achieved either when the pre-condition is true and the corresponding test (in Annex C) is passed, or when the pre-condition is false (i.e. the pre-condition is not met or not valid).

NOTE 1: Compliance issues are covered in normative clause C.1.

The inherent nature of certain situations makes it impossible to make reliable and definitive statements that accessibility requirements have been met. In those situations therefore, the requirements in the present document are not applicable:

- when the product is in a failure, repair or maintenance state where the ordinary set of input or output functions are not available;
- during those parts of start-up, shutdown, and other state transitions that can be completed without user interaction.

NOTE 2: 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.

2 References

2.1 Normative references

References are specific, identified by date of publication and/or edition number or version number. Only the cited version applies.

Referenced documents which are not found to be publicly available in the expected location might be found at [ETSI References in 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] ETSI ETS 300 381 (Edition 1) (December 1994): "Telephony for hearing impaired people; Inductive coupling of telephone earphones to hearing aids".
- [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 (December 2008) /ISO/IEC 40500:2012: "Web Content Accessibility Guidelines (WCAG) 2.0".

NOTE: Available at [WCAG 2.0](#).

- [5] W3C Proposed Recommendation (June 2018): "Web Content Accessibility Guidelines (WCAG) 2.1".

NOTE: Available at [WCAG 2.1](#).

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 are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] ANSI/IEEE C63.19 (2011): "American National Standard Method of Measurement of Compatibility between Wireless Communication Devices and Hearing Aids".
- [i.2] ANSI/TIA-4965: "Receive volume control requirements for digital and analogue wireline terminals".
- [i.3] European Commission M 376-EN: "Standardization Mandate to CEN, CENELEC and ETSI in support of European accessibility requirements for public procurement of products and services in the ICT domain".
- [i.4] ETSI EG 201 013: "Human Factors (HF); Definitions, abbreviations and symbols".
- [i.5] ETSI ES 202 975: "Human Factors (HF); Requirements for relay services".
- [i.6] ETSI ETS 300 767: "Human Factors (HF); Telephone Prepayment Cards; Tactile Identifier".
- [i.7] ETSI CEN/CENELEC/ETSI TR 101 550: "Documents relevant to EN 301 549 "Accessibility requirements suitable for public procurement of ICT products and services in Europe"".
- [i.8] ETSI CEN/CENELEC/ETSI TR 101 551: "Guidelines on the use of accessibility award criteria suitable for publicly procured ICT products and services in Europe".
- [i.9] ETSI TR 102 612: "Human Factors (HF); European accessibility requirements for public procurement of products and services in the ICT domain (European Commission Mandate M 376, Phase 1)".
- [i.10] ETSI TS 126 114: "Universal Mobile Telecommunications System (UMTS); LTE; IP Multimedia Subsystem (IMS); Multimedia telephony; Media handling and interaction (3GPP TS 26.114)".
- [i.11] 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.12] ETSI TS 134 229: "Universal Mobile Telecommunications System (UMTS); LTE; Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); User Equipment (UE) conformance specification (3GPP TS 34.229)".
- [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 9241-11:1998: "Ergonomic requirements for office work with visual display terminals (VDTs) -- Part 11: Guidance on usability".
- [i.16] ISO 9241-110:2006: "Ergonomics of human-system interaction -- Part 110: Dialogue principles".
- [i.17] ISO 9241-171:2008: "Ergonomics of human-system interaction-Part 171: Guidance on software accessibility".
- [i.18] ISO 26800:2011: "Ergonomics - General approach, principles and concepts".
- [i.19] ISO/IEC 13066-1:2011: "Information technology - Interoperability with assistive technology (AT) - Part 1: Requirements and recommendations for interoperability".
- [i.20] 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.21] Recommendation ITU-T G.722 (1988): "7 kHz audio-coding within 64 kbit/s".
- [i.22] Recommendation ITU-T G.722.2 (2003): "Wideband coding of speech at around 16 kbit/s using Adaptive Multi-Rate Wideband (AMR-WB)".
- [i.23] Recommendation ITU-T V.18 (2000): "Operational and interworking requirements for DCEs operating in the text telephone mode".
- [i.24] TIA-1083-A (2010): "Telecommunications; Telephone Terminal equipment; Handset magnetic measurement procedures and performance requirements".
- [i.25] US Department of Justice: "2010 ADA Standards for Accessible Design".
- [i.26] W3C Working Group Note 5 September 2013: "Guidance on Applying WCAG 2.0 to Non-Web Information and Communications Technologies (WCAG2ICT)".
- NOTE: Available at <http://www.w3.org/TR/wcag2ict/>.
- [i.27] 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.28] 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.29] ETSI EN 301 549 (V1.1.2) (04-2015): "Accessibility requirements suitable for public procurement of ICT products and services in Europe".
- [i.30] ETSI TR 101 552: "Guidance for the application of conformity assessment to accessibility requirements for public procurement of ICT products and services in Europe".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ETSI EG 201 013 [i.4] and the following apply:

accessibility: extent to which products, systems, services, environments and facilities can be used by people from a population with the widest range of characteristics and capabilities, to achieve a specified goal in a specified context of use (from ISO 26800 [i.18])

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.

assistive technology: hardware or software added to or connected to a system that increases accessibility for an individual

NOTE 1: Examples are Braille displays, screen readers, screen magnification software and eye tracking devices that are added to the ICT.

NOTE 2: 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: additional audible narrative, interleaved with the dialogue, which describes the significant aspects of the visual content of audio-visual media that cannot be understood from the main soundtrack alone

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

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.

caption: synchronized visual and/or text alternative for both speech and non-speech audio information needed to understand the media content (after WCAG 2.1 [5])

NOTE: This is also variously described using terms such as "subtitles" or variants such as "subtitles for the deaf and hard-of-hearing".

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

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.26])

NOTE: Content occurs in three places: web pages, documents and software. When content occurs in a web page or a 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.

context of use: users, tasks, equipment (hardware, software and materials), and the physical and social environments in which a product is used (from ISO 9241-11 [i.15])