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Accessibility requirements for ICT products and services

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Foreword

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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 and is now submitted for the combined Public Enquiry and Vote phase of the standards EN Approval Procedure.

EN 301 549 was originally produced under Mandate M 376 [i.3] and specified 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 procurement. The other deliverables prepared in response to the original Mandate M 376 were: ETSI TR 102 612 [i.9] "Human Factors (HF); European accessibility requirements for public procurement of products and services in the ICT domain (European Commission Mandate M 376, Phase 1)", TR 101 550 [i.7] "Documents relevant to EN 301 549 "Accessibility requirements suitable for public procurement of ICT products and services in Europe"", TR 101 551 [i.8] "Guidelines on the use of accessibility award criteria suitable for public procurement of ICT products and services in Europe", and TR 101 552 [i.30] "Guidance for the application of conformity assessment to accessibility requirements for public procurement of ICT products and services in Europe". These have not been updated to reflect any changes to the content or scope of the present document, made as a part of the M 554 revision effort.

This revision to EN 301 549 has been prepared under the Commission's standardisation request C(2017)2585 final [i.27] to provide, in additions to its other uses, one voluntary means of conforming to the essential requirements of Directive 2016/2102 on the accessibility of the websites and mobile applications of public sector bodies [i.28]. The minimum requirements of the European Web Accessibility Directive (Directive 2016/2102) are explicitly detailed in Annex A.

Once the present document is cited in the Official Journal of the European Union under Directive 2016/2102 [i.28], conformance 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 EN 301 549 [i.29] (V2.1.2) (08-2018).

The significant changes since EN 301 549 [i.29] (V2.1.2) are:

- the requirements related to Real-Time Text (RTT) in clause 6.2 have been revised and extended;
- the WCAG 2.1 AAA Success Criteria that were previously in an Annex D are now included in clause 9.5;

- a new Annex D, "Further resources for cognitive accessibility", has been added;
- a new Annex E "Guidance for users of the present document" has been added.
- a new Annex F "change history" has been added.

National transposition dates	
Date of adoption of this EN:	10 March 2021
Date of latest announcement of this EN (doa):	30 June 2021
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 December 2021
Date of withdrawal of any conflicting National Standard (dow):	31 December 2022

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

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The present document is developed in response to standardisation request M 554 [i.27] from the European Commission to CEN, CENELEC and ETSI. It is a revision of the European Standard (EN) that was initially prepared in response to Phase 2 of Mandate M 376 [i.3].

The present document covers a wide range of requirements for a variety of ICT solutions. It is relevant for all organizations who buy, develop or manufacture ICT products or services. It consists of fourteen clauses and six 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 statements that explain the functionality that is needed to enable users with different abilities to locate, identify and operate functions in technology. The user needs underlying the functional performance statements are the basis for the 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 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>'. Conformance is achieved when the pre-condition is true and the corresponding test (in Annex C) is passed. When the pre-condition is false the requirement is not applicable.
- Annex A has two tables with requirements related to Directive 2016/2102 on the accessibility of the websites and mobile applications of public sector bodies [i.28]. The first table applies to web pages and documents and the second 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 fulfill the Directive.
- 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 statements of clause 4.

- Annex C is a normative annex that sets out the means necessary 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, including an explanation of how it can be used.
- Annex F provides a change history table.

When the present document is used for most purposes, including when used in ICT procurement, all of the requirements in clauses 5 to 13, as well as the functional performance statements 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 2016/2102 on the accessibility of the websites and mobile applications of public sector bodies [i.28], Tables A.1 and A.2 in Annex A identify all the applicable requirements.

NOTE 1: The present document reflects the content of the W3C WCAG 2.1 Recommendation [5].

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 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 is intended to be used with web based technologies, non-web technologies and hybrids that use both. It covers both software and hardware as well as services. It is intended for use by both providers and procurers, but it is expected that it will also be of use to many others as well.

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.

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 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 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.

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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 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 TR 101 551: "Guidelines on the use of accessibility award criteria suitable for public procurement of 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)".
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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.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 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.

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

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): equipment, product system, hardware, software or service that is used to increase, maintain or improve capabilities of individuals (from ISO/IEC Guide 71:2014 [i.35])

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.

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. This is an additional note, not included in ISO/IEC Guide 71:2014 [i.35].

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