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**Človeški dejavniki (HF) - Strategija dostopnosti ETSI - Dostopnost dokumentov ETSI in izboljšanje postopka pridobivanja končnih rezultatov**

Human Factors (HF) - ETSI Accessibility Strategy - Accessibility of ETSI Deliverables and Improvement of the Development Process of Deliverables

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# ETSI EG 204 061 V1.1.1 (2025-10)



ETSI GUIDE

**Human Factors (HF);  
ETSI Accessibility Strategy;  
Accessibility of ETSI Deliverables and Improvement  
of the Development Process of Deliverables**

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# Foreword

This ETSI Guide (EG) has been produced by ETSI Technical Committee Human Factors (HF).

It is a contribution to the implementation of ETSI's Accessibility Strategy as endorsed by ETSI's General Assembly #81. The Accessibility Strategy calls for four projects to be carried out with the aim of making ETSI's products, environment, and meetings accessible to users and participants with a wide range of characteristics.

The objectives of these projects are to:

- 1) Review the accessibility of ETSI infrastructure (buildings, facilities); Define baseline requirements and guidelines.
- 2) Make ETSI published deliverables accessible, including improvement of their development process.
- 3) Make ETSI meetings accessible on demand, including online and hybrid meetings.
- 4) Make IT processes and tools accessible, possibly starting with an audit and recommendations for the future.

The present document reports the results of the second of the four projects, providing solutions that enable ETSI to publish accessible documents.

The work carried out for the creation of the present document has been conducted in an open collaboration with ETSI members (including authors of ETSI deliverables), user and accessibility representatives, and other relevant stakeholders. The present document is based upon desk research (documents and online sources), best practices, expert knowledge, and stakeholder consultation.

Intended readers of the present document include, but are not limited to:

- ETSI Technical Committee members including committee chairs;
- authors of documents published by ETSI;
- ETSI personnel involved in document processing and publishing.

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## Modal verbs terminology

In the present document "**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).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

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## Executive summary

The present document addresses the accessibility of ETSI deliverables for users with physical and/or cognitive disabilities. It contains recommendations that are based on the consultation of different sources:

- Expert judgement for the identification of improvements that are easily implemented and that can immediately improve the accessibility of ETSI deliverables (clause 5).
- Consultation of authors of ETSI deliverables with a focus on their requirements related to the creation of content for accessible deliverables (clause 6).
- Consultation of users of ETSI deliverables who have physical and/or cognitive disabilities (clause 7).

The results of the analysis are summed up in clause 8 in the form of a comprehensive set of guidelines recommendations to ensure accessible and usable ETSI deliverables, including recommendations for the needed modifications of the ETSI publication processes and specifications of most suitable tools for publication.

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## Introduction

The currently implemented processes for drafting, creating, and publishing ETSI deliverables are stable and state-of-the-art, and have allowed ETSI over the last decades to publish high-quality deliverables satisfying all quality criteria applicable to international standardization publications.

The one aspect in which ETSI deliverables (and those of all other standards bodies) may fall short is the accessibility of the deliverables, i.e. aspects of ETSI deliverables that make it difficult or impossible for people with physical or cognitive disabilities to use them.

The present document explores options to make ETSI deliverables fully accessible for users with disabilities. Based on expert judgement as well as on the consultation of both content creators of ETSI deliverables and of users with disabilities, the guidelines and recommendations offer many options to ensuring the accessibility of ETSI deliverables.

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# 1 Scope

The present document addresses the accessibility of ETSI deliverables for users with physical and/or cognitive disabilities. It contains recommendations that are based on the consultation of different sources: expert judgement for the identification of improvements that are easily implemented and that can immediately improve the accessibility of ETSI deliverables, the consultation of authors of ETSI deliverables with a focus on their requirements related to the creation of content for accessible deliverables, and the consultation of users of ETSI deliverables who have physical and/or cognitive disabilities.

The results of the analysis take the form of a comprehensive set of recommendations and guidelines to ensure accessible and usable ETSI deliverables, including recommendations for the needed modifications of the ETSI publication processes and specifications of most suitable tools for publication. For this task, short-term, mid-term and, long-term perspectives have been adopted, ranging from immediate changes to a strategic outlook of a future publication environment of ETSI deliverables.

---

## 2 References

### 2.1 Normative references

Normative references are not applicable in the present document.

### 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] ETSI EG 201 013: "Human Factors (HF); Definitions, abbreviations and symbols".
- [i.2] ISO 26800:2011: "Ergonomics — General approach, principles and concepts".
- [i.3] W3C® Recommendation (December 2024): "[Web Content Accessibility Guidelines \(WCAG\) 2.2](#)".
- [i.4] W3C®: "[Guidance on Applying WCAG 2 to Non-Web Information and Communications Technologies \(WCAG2ICT\)](#)".
- [i.5] Yale University: "[Usability & Web Accessibility: Types of Disabilities](#)".
- [i.6] ISO 32000-1:2008: "Document management — Portable document format".
- [i.7] ETSI EN 301 549 (V3.2.1): "Accessibility requirements for ICT products and services" (jointly produced by ETSI/CEN/CENELEC).
- [i.8] [CAN/ASC - EN 301 549:2024](#): "Accessibility requirements for ICT products and services (ETSI EN 301 549:2021, IDT)".
- [i.9] [ISO/IEC SMART](#): "Unleashing the digital power of international standards".
- [i.10] [Directive \(EU\) 2019/882](#) of the European Parliament and of the Council of 17 April 2019 on the accessibility requirements for products and services (Text with EEA relevance).

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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.1] 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

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.

NOTE 3: As defined in ISO 26800 [i.2].

**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.

**caption:** synchronized visual and/or text alternative for both speech and non-speech audio information needed to understand the media content

NOTE 1: This is also variously described using terms such as "subtitles" or variants such as "subtitles for the deaf and hard-of-hearing".

NOTE 2: As defined in WCAG 2.2 [i.3]

**content:** information and sensory experience to be communicated to the user by means of software, including code or markup that defines the content's structure, presentation, and interactions

NOTE 1: 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.

NOTE 2: As defined in WCAG2ICT [i.4].

**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

NOTE 1: Letters, email messages, spreadsheets, books, pictures, presentations, and movies are examples of documents.

NOTE 2: A single document may be composed of multiple files such as the video content, closed caption text etc. This fact is not usually apparent to the end-user consuming the document/content.

NOTE 3: As defined in WCAG2ICT [i.4].

**markdown:** lightweight markup language for creating formatted text using a plain-text editor

**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

**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

NOTE: As defined in WCAG 2.2 [i.3].

## 3.2 Symbols

Void.

## 3.3 Abbreviations

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

ACM	Association of Computing Machinery
ADHD	Attention Deficit Hyperactivity Disorder
ASC	Accessibility Standards Canada
CCMC	CEN/CENELEC Management Centre
CEN/CENELEC	European Committee for Standardization/European Committee for Electrotechnical Standardization
DIN	Deutsches Institut für Normung
HTML	HyperText Markup Language
HTTP	HyperText Transfer Protocol
ICT	Information and Communication Technologies
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
ISO	International Organization for Standardization
ITU	International Telecommunication Union
JSON	JavaScript Object Notation
NSB	National Standards Body
NSO	National Standards Organization
OCR	Optical Character Recognition
PDF	Portable Document Format
PDF/A	PDF Archivable
PDF/UA	PDF Universal Accessibility
RDF	Resource Description Framework
SDO	Standards Development Organization
TIES	Telecommunication Information Exchange Service

NOTE: An ITU service, offering access to ITU standards for ITU members.

UML	Unified Modeling Language
WCAG	Web Content Accessibility Guidelines
XML	Extensible Markup Language

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## 4 Basic assumptions

### 4.1 Characteristics and abilities of users and content creators of ETSI deliverables

Unless ETSI deliverables are developed and made available in an accessible format, they may present challenges to users and content creators with physical, sensory, or cognitive impairments.

Users and/or creators of ETSI deliverables may be experiencing varying degrees or combinations of visual, auditory, physical, speech or cognitive impairments (for more details see e.g. Usability and Web Accessibility: Types of Disabilities [i.5]):

- visual impairments: including any form of colour blindness, low vision, and blindness (substantial loss of vision in both eyes);
- auditory impairments: including mild to moderate hearing impairments in at least one ear up to deafness (hearing impairment that is substantial and non-correctable in both ears);
- physical impairments: including amputation (e.g. missing digits or limbs), arthritis (inflammation and damage to joints), paralysis (loss of control over a limb or other part of the body), and Repetitive Stress Injury;
- speech impairments: including muteness (the inability to speak due to a multitude of reasons), dysarthria (weakness or paralysis of the muscles required to speak), and stuttering; and
- cognitive, learning, and neurological impairments: including Attention Deficit Hyperactivity Disorder (ADHD), autism spectrum disorder, perceptual disabilities (also called "learning disabilities" such as dyslexia and dyscalculia), and seizure disorders.

The impairments may be due to a persistent health condition, being in-born or a result of illness or accident. But they may also be due to a temporary condition incurred by a short-term health condition (like a broken arm), or by current situational circumstances including specific environmental conditions, such as a very bright light or a very noisy environment, or other circumstances, like lack of access to specific technologies resulting in the need to access a document on a device with a smaller screen.

In all cases, it is assumed that users/creators who have any individual impairment or a combination thereof, deploy suitable assistive technologies to access digital documents.

NOTE 1: Users/creators of ETSI deliverables are expected to be able to understand written language.

NOTE 2: ETSI deliverables are written and published in English language. Users/creators of ETSI deliverables are expected to either have a sufficient command of the English language and/or have access to tools that represents the content of ETSI deliverables in a language they understand.

NOTE 3: Users/creators of ETSI deliverables are expected to have a relevant educational background, e.g. in the specific engineering domain of a given deliverable.

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## 5 Important recommendations to enhance the accessibility of ETSI deliverables

### 5.1 Overview

The recommendations and guidelines presented in this clause are based on the evaluation of several ETSI deliverables representing a range of document types. Those documents were evaluated (a) against a set of criteria extracted from EN 301 549 [i.7] and (b) against a set of testing tools for the accessibility of Microsoft Word and PDF files (the tools included Microsoft Word, Adobe Acrobat Pro and PDF accessibility checkers available as freeware).

This clause lists the accessibility issues found in the ETSI deliverables tested (in the document formats currently used by ETSI, i.e. Word and PDF). For each of the issues identified recommendations (guidelines) are presented on how to either resolve these issues in existing documents or to avoid these accessibility issues in future documents.

This clause contains guidelines which will help to make ETSI deliverables more accessible. These guidelines may be applied both to existing documents and to deliverables which are developed in the future.

The list of accessibility issues in this clause is by no means exhaustive as more issues may be identified in the future.

Many of the guidelines explain "low-hanging fruits". Both the ETSI Secretariat and the authors of documents can use them to ensure accessibility of their deliverables with reasonable additional effort. Many of these guidelines may be treated in future updates of the ETSI Drafting Rules or in a separate publication on accessibility.