



# SLOVENSKI STANDARD SIST EN 17478:2022

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## Transportne storitve - Strankine komunikacije pri storitvah potniškega prometa - Pristop s splošno zasnovo

Transport Services - Customer communications for passenger transport services - A  
Universal Design approach

Dienstleistungen im Transportwesen - Kundenkommunikation für Dienstleistungen im  
Personenverkehr - Ein Universal Design-Ansatz

Services de transport - Communications destinées aux clients de services de transport  
collectif - Une approche de conception universelle

Ta slovenski standard je istoveten z: ~~EN 17478:2021~~

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## Transport Services - Customer communications for passenger transport services - A Universal Design approach

Services de transport - Communications destinées aux clients de services de transport collectif - Une approche de conception universelle

Dienstleistungen im Transportwesen - Kundenkommunikation für Dienstleistungen im Personenverkehr - Ein Universal Design-Ansatz

This European Standard was approved by CEN on 3 October 2021.

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<b>Contents</b>	<b>Page</b>
European foreword.....	5
Introduction .....	6
1 Scope .....	7
2 Normative references .....	7
3 Terms and definitions .....	7
4 Applying a Universal Design approach .....	9
4.1 General.....	9
4.2 Understanding Universal Design.....	10
4.3 Realizing an organisational commitment to a Universal Design approach.....	10
4.4 Using the Universal Design Principle and Guidelines.....	10
5 User characteristics, capabilities and preferences .....	11
6 Requirements for communication following a Universal Design approach.....	11
6.1 General.....	11
6.2 Written Communication .....	13
6.3 Verbal communication.....	13
6.4 Digital communication.....	14
6.4.1 General.....	14
6.4.2 Web-based communication.....	14
6.4.3 Non-web electronic documents .....	14
6.4.4 Text and Instant Messaging communications.....	14
6.4.5 Telephone-based systems.....	14
7 Evaluation of the application of a Universal Design approach.....	15
7.1 General.....	15
7.2 Monitoring and measuring .....	15
7.3 Analysis and evaluation.....	16
Annex A (informative) Business aspects of Universal Design.....	17
A.1 The demographic case.....	17
A.2 The legal case.....	17
A.3 The business case.....	17
Annex B (informative) The 7 Principles and 29 Guidelines of Universal Design.....	19
B.1 Principle 1: Equitable Use .....	19
B.2 Principle 2: Flexibility in Use .....	19
B.3 Principle 3: Simple and Intuitive Use.....	19
B.4 Principle 4: Perceptible Information .....	20
B.5 Principle 5: Tolerance for Error .....	20
B.6 Principle 6: Low Physical Effort .....	20
B.7 Principle 7: Size and Space for Approach and Use .....	21
Annex C (informative) User characteristics, capabilities and preferences.....	22

C.1	General .....	22
C.2	Resources about user characteristics and capabilities.....	22
C.3	Expert Knowledge .....	23
C.4	Direct engagement with users .....	23
Annex D (informative) Tables for using the Universal Design Principles and Guidelines in passenger transport services communication design.....		26
Annex E (informative) Tables mapping the Universal Design Principles and Guidelines to the design guidance in Annexes F, G and H.....		30
E.1	General .....	30
E.2	Purpose and structure of the tables.....	30
E.3	Content of the Tables.....	31
E.4	Order of the Tables .....	31
Annex F (informative) Written communication .....		47
F.1	General .....	47
F.2	Written communication content.....	47
F.2.1	Text.....	47
F.2.2	Dates, numbers and percentages.....	47
F.2.3	Graphics .....	48
F.3	Design, layout and formatting.....	48
F.4	Paper and binding .....	49
F.5	Form Design.....	49
F.6	Signage Guidance.....	49
F.6.1	Content .....	49
F.6.2	Design .....	50
F.6.3	Tactile markings .....	50
F.6.4	Positioning .....	50
F.6.5	Colours, images, graphs and visuals .....	50
Annex G (informative) Verbal communication .....		51
G.1	General .....	51
G.2	Personal conversation .....	51
G.3	Auditory announcements .....	52
Annex H (informative) Digital communication.....		53
H.1	General .....	53
H.2	Websites.....	53
H.2.1	General .....	53
H.2.2	Writing for the web.....	53
H.2.3	Design .....	54

H.2.4	Links.....	54
H.2.5	Structure.....	54
H.2.6	Website navigation.....	54
H.2.7	Online forms.....	54
H.2.8	Time-out messages.....	55
H.2.9	Search.....	55
H.2.10	Images and multimedia .....	55
H.3	Mobile web content and apps .....	56
H.4	Emails and newsletters .....	56
H.5	Electronic documents .....	56
H.6	Telephone Based Systems.....	57
H.7	Text and Instant Messaging Communication .....	57
H.8	Social Media Guidance.....	58
	Bibliography.....	59

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[SIST EN 17478:2022](https://standards.iteh.ai/catalog/standards/sist/a45e0669-dbe2-4e3e-9d18-2a315027af23/sist-en-17478-2022)

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## European foreword

This document (EN 17478:2021) has been prepared by Technical Committee CEN/TC 320 “Transport - Logistics and services”, the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2022, and conflicting national standards shall be withdrawn at the latest by June 2022.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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## Introduction

Transport is fundamental to our economy and society. Mobility is vital for the internal market and for the quality of life of citizens as they enjoy their freedom to travel. One of the critical success factors for mobility is the possibility that information relating to travel can be accessed, understood and used. This relies on the availability of accessible and usable, adequate and interoperable multi-modal trip information for planning and making a journey.

Ineffective user communications in many situations result in a number of users unable to travel independently. Providing services that can be easily accessed, understood and used benefits a wide range of users including young persons, persons with disabilities, older persons and persons who cannot read for various reasons (for example, due to not being a user of the language used, intellectual disability, or illiteracy) who are an important part of the users of the public transportation means. The rationale for Universal Design is that user communications are more accessible and usable by the widest range of users, without the need for additional adaptation or specialized design. It should be possible to use assistive devices when needed.

Procurement and in particular public procurement can play a key role in ensuring a sustainable and inclusive society. It is a requirement in the public procurement process to take into account accessibility criteria for persons with disabilities or design for all users in the transport sector<sup>1</sup>. Applying a Universal Design approach can support meeting these requirements and extend the range of users and support innovation and sustainable development.

The term 'user' is used throughout this document. A 'user', in the context of this document, is a person who interacts with communications provided by transport services providers. It includes; a person who avails of a transport service (a passenger or a customer); a person who will potentially avail of a transport service; a person acting on behalf of another person who will (potentially) avail of a transport service; and a person interacting with transport communications for other reasons (such as to determine when a person who is availing of a transport service arrives at a station). Therefore the term 'user' is broader than the term 'customer' – it could be any member of the public.

'User communications' does not include communications within a transport services provider's organization, nor communications between transport services providers and contractors or state agencies.

Communication, in the context of this document, includes one-way communication – (the provision of) information.

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<sup>1</sup> Directive 2014/25/EU of the European Parliament and of the Council of 26 February 2014 on procurement by entities operating in the water, energy, transport and postal services sectors and repealing Directive 2004/17/EC



## 1 Scope

This document specifies requirements and recommendations for the planning, design, development and provision of user communications related to passenger transport so that these communications can be accessed, understood and used by the widest range of users, including persons with disabilities and older persons.

These requirements and recommendations enable an organization to extend its range of users by identifying diverse characteristics, capabilities, and preferences.

The requirements specified in this standard are applicable to but not limited to passenger transport service providers including air-, bus, rail-, and waterborne passenger transport services.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 17161:2019, *Design for All - Accessibility following a Design for All approach in products, goods and services - Extending the range of users*

EN 301549:2021, *Accessibility requirements for ICT products and services*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

### 3.1

#### **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

Note 1 to entry: Context of use includes direct use or use supported by assistive technologies.

[SOURCE: EN ISO 9241-112:2017, 3.15]

### 3.2

#### **assistive technology**

equipment, product system, hardware, software or service that is used to increase, maintain or improve capabilities of individuals

Note 1 to entry: Assistive technology is an umbrella term that is broader than assistive products.

Note 2 to entry: Assistive technology can include assistive services, and professional services needed for assessment, recommendation and provision.

[SOURCE: CEN-CENELEC Guide 6:2014, 2.16]

## EN 17478:2021 (E)

**3.3 interoperable**  
ability of two or more systems or components to exchange information and then to be able to use the information that has been exchanged

[SOURCE: ISO 15784-2:2015, 4.8, Modified – Note 2 to entry deleted]

**3.4 organization**  
person or group of people that has its own functions with responsibilities, authorities and relationships to achieve its objectives

Note 1 to entry: The concept of organization includes but is not limited to sole-trader, company, corporation, firm, enterprise, authority, partnership, association, charity or institution, or part or combination thereof, whether incorporated or not, public or private.

[SOURCE: ISO 9000:2015, 3.2.1]

**3.5 pictogram**  
graphical symbol, diagram or figure with a particular meaning which directly represents or conveys its meaning independently of language through a pictorial representation of a physical object, action or character

Note 1 to entry: Refer to ISO 7001:2007, ISO 9186-1 and ISO 9186-2 for rules regarding graphical symbols and frames.

[SOURCE: EN 16584-2:2017, 3.16, Note 1 to entry modified]

**3.6 tactile**  
information that is understood through the physical sense of touch

Note 1 to entry: Tactile signs, controls, symbols, pictograms, guide path and Braille or raised characters are a physical means by which tactile information is provided.

[SOURCE: EN 16584-2:2017, 3.26]

**3.7 Universal Design**  
design of products, environments, programmes and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design

Note 1 to entry: Universal Design does not exclude assistive devices for particular groups or persons with disabilities where this is needed.

Note 2 to entry: Terms such as 'Universal Design', 'accessible design', 'Design for All', 'barrier-free design', 'inclusive design' and 'transgenerational design' are often used interchangeably with the same meaning.

[SOURCE: United Nations Convention on the Rights of Persons with Disabilities, Art. 2, modified — Note 2 to entry has been added]

[SOURCE: CEN-CENELEC Guide 6:2014, 2.18]

**3.8****usability**

extent to which a system, product or service can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use

[SOURCE: EN ISO 9241-11:2018, 3.1.1, modified – notes deleted]

**3.9****user**

person who interacts with a system, product or service

Note 1 to entry: The person who uses a service provided by a system, such as a customer in a shop or passenger on a train, can be considered a user.

[SOURCE: ISO 27500:2016, 2.12]

**3.10****written communication**

communication in which messages or information is exchanged or communicated through written words, letters, numerals, pictograms and markings

**4 Applying a Universal Design approach****4.1 General**

A Universal Design approach shall be applied as set out in EN 17161 to the planning, design, development and provision of user communications so that they can be accessed, understood and used by all users to the greatest extent possible, without the need for adaptation or specialized design.

A Universal Design approach is a process that focusses on accessibility and usability from the earliest possible time and throughout all stages in the life of products and services, and their interoperability with assistive technologies.

NOTE 'Accessed, understood and used' is about how people generally interact with a product or service: first, they access it (approach and perceive); secondly, they understand it (comprehend and decide); and thirdly, they use it (act or react).

In applying a Universal Design approach:

- it shall be ensured that the goal of Universal Design approach is understood;
- a commitment to a Universal Design approach shall be made and realized;
- the relevant Universal Design Principles and Guidelines shall be used in the planning, design, development and provision of transport services user communications;
- the user's characteristics and capabilities shall be known and considered during the planning, design, development and provision of the user communications;
- the application of a Universal Design approach to the user communications shall be evaluated.

## EN 17478:2021 (E)

## 4.2 Understanding Universal Design

Universal Design, as applied to user communications, is to ensure a product or service can be accessed, understood and used by all users to the greatest extent possible regardless of ambient conditions or the user's sensory abilities.

This can be achieved by:

- designing products and services that are easily accessed, understood and used without any modification;
- making product and service designs adaptable to different users;
- having standardized interfaces that are compatible with assistive technologies.

## 4.3 Realizing an organisational commitment to a Universal Design approach

Top management shall demonstrate leadership and commitment with respect to a Universal Design approach.

To demonstrate that leadership and commitment, top management, in relation to a Universal Design approach, shall:

- allocate resources;
- assign responsibilities, tasks and accountabilities;
- support and monitor internal planning, design, development and provision;
- identify recruitment and training needs;
- put in place an ongoing training programme to ensure that staff are competent to meet the requirements set out in Clause 6;
- define measurement and performance indicators;
- evaluate the effectiveness of the planning, design, development and provision activities;
- ensure that their contractors apply a Universal Design approach to the products and services supplied to meet the requirements set out in Clause 6.

NOTE Information on the advantages of applying a Universal Design approach is provided in Annex A (Universal Design makes good business sense).

## 4.4 Using the Universal Design Principle and Guidelines

Organisations shall identify the Universal Design Principles and Guidelines relevant to a design of communications and use them as criteria in the design activities.

NOTE 1 Annex B lists the 7 Principles and 29 Guidelines of Universal Design.

All of the Universal Design Principles and guidelines can be applicable; Universal Design principles 2, 3, 4, and 5 are most relevant to designs for customer communications.

NOTE 2 Guidance on using the Universal Design Principles and Guidelines in the design and provision of communications is provided in Annex D.

NOTE 3 Annex E contains tables that show examples of mapping of the alignment of the design guidance in Annexes F, G and H to Universal Design Principles 2–5 and their associated Guidelines.

NOTE 4 Annex F through to Annex H provide detailed information and design guidance on Universal Design of communications.

## 5 User characteristics, capabilities and preferences

In the planning, design, development and provision of communications:

- the characteristics, capabilities and preferences of the widest possible range of users shall be determined and considered in design and development activities and included as criteria in the procurement process;
- users with diverse characteristics and capabilities shall be involved early and throughout the design and development process;
- relevant resources and expertise on user characteristics, capabilities and preferences shall be used to inform design activities;
- feedback from current and potential users, including information about assistive technologies relevant to its communications shall be used.

NOTE 1 Guidance and resources on user characteristics, capabilities and preferences are provided in Annex C (User characteristics, capabilities and preferences).

NOTE 2 EN 17161:2019, Annex C provides information on design activities within projects.

NOTE 3 EN ISO 9241-210:2019 provides further information related to user characteristics and preferences.

In order to achieve a Universal Design approach, organisations should involve users, user representatives and relevant experts throughout the design and development processes, such as during concept stage, prototype evaluation, and current product or service testing.

## 6 Requirements for communication following a Universal Design approach

### 6.1 General

Transport services user communications shall be designed and provided so that they can be accessed, understood and used by the widest range of users including persons with disabilities and older persons.

The primary means of accessing communications are visual, auditory, tactile or combinations thereof. Transport services user communications shall be designed and provided so that they can be accessed, understood and used through each of these three means by users of these services

All communications shall be:

- in simple and clear language;
- relevant;
- provided in a sequence that is appropriate for users with a diverse range of characteristics and abilities;
- presented such that information provided can be accessed, understood and used by the users;

## EN 17478:2021 (E)

- provided to allow multiple means of information presentation and user interaction.

EXAMPLE 1 Multiple means of presentation of information on the approaching bus stop can be provided on board a bus through the simultaneous display of text showing the approaching bus stop name and the playing of an audio announcement of the approaching bus stop name. Multiple means of presentation allow the information to reach users with more diverse range of characteristics and capabilities, as the communication can be accessed in more than one way.

Notice of infrastructural outages shall be provided as soon as possible in order to minimise the impact on users. Up-to-date communications on outages shall be available via numerous means of communication.

NOTE 1 Infrastructural outages can include elevators, travellers, electronic communication boards or wheelchair ramps being out of operation.

User communications shall be acknowledged, and followed-up where appropriate. Responses to a user's communications shall be made using the same communication means used by the user, unless the user requests otherwise. Confirmation shall also be provided to users when they make a purchase, through communication means they have indicated appropriate.

Upon acceptance of a user's request for assistance, the user shall be provided with confirmation that their request has been actioned and with contact details to get further support regarding their request for assistance. These requests for further support should be handled in real-time.

NOTE 2 Provision by a user of particular contact information does not indicate their ability to communicate by a particular means. For example, a user may provide a telephone number, but not use it for text communications.

EXAMPLE 2 When a user requests, by post, information on the accessibility of a coach service, the user is sent confirmation of the receipt of their request for information, by post. The user is also sent information on the accessibility of the coach service, by post.

EXAMPLE 3 A user is sent confirmation of their online purchase of a ticket by text message where, during the purchasing process, they have provided a phone number and indicated that they would like to receive confirmation by text message.

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The design requirements are organised in the general categories of written, verbal and digital communication. These design requirements include requirements for ticketing, signage, symbols, pictograms, architectural wayfinding, visual displays, real-time passenger information (RTPI), routes, timetables and maps.

The environmental aspects where users interact with communications shall be taken into consideration.

NOTE 3 Environmental context, also referred to as 'context of use', includes technical, physical, social, cultural and organizational conditions. Examples of physical conditions include lighting, positioning, ambient noise and auditory levels.

NOTE 4 Positioning of the signage can include placement of the same signage at multiple heights.

NOTE 5 Each category of communication is supported by an annex that provides guidance to support the requirements.

In the context of this document:

- written communication encompasses written text, document design, form design and signage;
- verbal communication encompasses telephone-, loudspeaker-, face-to-face-, text relay-and video-communication, sign language and the ways in which the body communicates non-verbally;

- digital communication refers to all electronic communication and includes communication through websites, mobile apps, emails, newsletters, telephone-based systems, instant messaging and social media.

## 6.2 Written Communication

A Universal Design approach shall be applied to written communication for users.

Written communication encompasses written text, letters, numerals, pictograms, markings, document design, form design and signage.

Written communication shall:

- be presented in a legible font using a high contrast with a clear layout;
- be provided to describe maps, figures and images;
- include a means to get further information or clarification.

**NOTE** Further design guidance and resources on the Universal Design of written communication can be found in Annex F.

## 6.3 Verbal communication

In this document, verbal communication encompasses telephone-, loudspeaker-, face-to-face-, text relay- and video-communication, sign language and the ways in which the body communicates non-verbally.

A Universal Design approach shall be applied to verbal communication for users.

In the provision of verbal communication:

- In one-to-one communication it shall be confirmed that users have understood the information given;
- the ways in which the person communicates non-verbally shall be understood;
- awareness of communication needs of Deaf users and users that are hard of hearing shall be implemented;
- use of a text relay service shall be facilitated if it is available and its use is requested.

**EXAMPLE** A person communicates non-verbally through body movement, gesture, posture, appearance, eye and physical contact, facial expression, proximity and orientation.

**NOTE 1** A text relay service is a third-party system designed for use by people who are hard of hearing or deaf as a means of communication through telephone.

**NOTE 2** Further design guidance and resources on the Universal Design of verbal communication can be found in Annex G.