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SERVICES

Audiovisual services

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## **Accessibility terms and definitions**

Recommendation ITU-T F.791

ITU-T



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# Recommendation ITU-T F.791

## Accessibility terms and definitions

### Summary

Recommendation ITU-T F.791 defines words describing accessibility, disability, and technical terms to be used for improving the writing in relation to standardization, and to facilitate accurately the needs and the mainstreaming of accessibility in standards that will include persons with disabilities (PWDs), older persons with age related disabilities and persons with specific needs. See WTDC Res. 58, WTDC AD and ITU-T F.790, listed in the Bibliography.

With the advent of the United Nations Convention on the Rights of Persons with Disabilities (see UNCRPD in the Bibliography) its passage in 2006, and its ratification by numerous countries, many new terms and definitions were created. Some of these terms and definitions were created at the behest of PWDs themselves to eradicate terms that were demeaning, insulting, and inaccurate.

Standard writers are able to mainstream accessibility features into standards, as well as to write specific standards for accessibility. To design products and services successfully, there needs to be a common language. This document is intended to give definitions so that it will make it easier for industries to implement these accessibility features and accessibility standards if everyone is using the same language and vocabulary. It is also important that governments, government agencies, non-government organizations (NGOs), the UN, and its respective agencies be "normalized" in mainstream everyday language.

The UN Convention on the Rights of Persons with Disabilities (UNCRPD), article 9, made clear the need to include PWDs, older persons with age related disabilities, and persons with specific needs by mainstreaming them into all aspects of modern life. This can only be done by including them in the design of modern technology and information and communication technologies (ICTs) using universal design as defined in the UNCRPD and using a common language and vocabulary.

### History

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Closed Captioning, Open Captioning, Persons with Disabilities, Persons with Specific Needs, UNCRPD, Universal Design and other keywords defined within.

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

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# Recommendation ITU-T F.791

## Accessibility terms and definitions

### 1 Scope

This Recommendation contains a list of currently used terminology to describe accessibility and terms that standard writers need when writing and designing international standards. It is necessary to standardize and define a recognized list of the terms already used and in existing ITU Recommendations and Resolutions, along with those in the UN Convention on the Rights of Persons with Disabilities (UNCRPD). Without such a list, there could be confusion not only on the part of standard writers and implementers, but also by the public at large. It is also important to eliminate terminology that is no longer used, offensive, and demeaning to persons with disabilities (PWD) and others.

The terminology in this Recommendation is for use in international work when English is used to refer to telecommunication/ICT accessibility matters. This Recommendation is also applicable to everyday life and all usages, including web design and other writings, as well as ICT, telecommunications, and broadcasting standardization. It should also be mainstreamed into future policy, regulatory, and academic documents as to be consistent with global compatibility and understanding. In the future, work that is yet to be created, written, or approved may have new terms that can be later added as appropriate by consensus in a revision.

### 2 References

This Recommendation does not make normative reference to any other ITU-T Recommendations or other references. See the bibliography for a list of non-normative references used in this Recommendation.

### 3 Terms and definitions

It is recommended that the following terms and definitions be used within the context of accessibility to audiovisual media.

**3.1 access service or accessibility service:** Provision of features intended to make primary audiovisual content accessible to users with specific needs, preferences, or in specific environmental contexts.

**3.2 accessibility:** The degree to which a product, device, service, or environment (virtual or real) is available to as many people as possible.

**3.3 accessibility content:** The accessibility of the content delivered by an audiovisual media solution, i.e., captions, subtitles, audio description, audio subtitles, etc., and differentiated from the solution's interface accessibility. Access services are a primary means of delivering content so that it will be accessible to PWDs as well as persons with specific needs.

**3.4 accessibility feature:** An additional content component that is intended to assist people hindered in their ability to perceive an aspect of the main content.

**3.5 assistive listening devices (ALD):** These devices enable persons who are hard of hearing to hear sounds on an improved basis.

**3.6 assistive listening system (ALS):** These are assistive technology (AT) systems utilizing electromagnetic, radio or light waves, or a combination of the two, enabling transmission of the acoustic signal from the sound source (a loudspeaker or a person talking) directly to the hard of hearing person's ALD.

**3.7 assistive technology (AT):** Is an umbrella term that includes assistive, adaptive, and rehabilitative devices used by a person with disabilities to prevent, compensate, relieve, or neutralize any resulting impairment.

**3.8 audio and spoken subtitles:** Subtitle text is rendered into speech by a human voice artist or a synthetic voice with a text to speech software programme.

**3.9 audio captions/captioning:** Are captions that are read aloud and reflected as speech. Audio captioning may also be called "audio subtitles" or "spoken subtitles" in the case of foreign language dialogue. It can also be used to designate the audio content of an audiovisual work or sequence in any language along with action. It is read aloud by a human or a specific apparatus that converts the text into speech.

**3.10 audio description:** Is an additional audio track to aid persons with visual impairments who cannot follow the visual content. It is also known as "video description", "visual description", and "described video".

**3.11 captions/captioning:** Captions are a real-time transcription of spoken words, sound effects, relevant musical cues, and other relevant audio information in live or pre-recorded events. They can be open, not adjustable by the user, or closed where they can be turned on and off by the users at will. See clause 3.13 for further explanation of open and closed accessible services.

**3.12 clean audio:** This is an enhanced audio signal by means of signal processing, with improved intelligibility of the dialogue with respect to ambient noise, background noise, music, etc. This can also apply to the quality of the audio used for audio captioning (see clause 3.9), audio description (see clause 3.10), and subtitles (see clause 3.40).

**3.13 closed/open accessibility services:** All accessibility services –audio description, audio subtitling, captioning, and sign language – may have the possibility of being elective by the end user. If this is the case, it is closed. If cannot be selected, or turned off, by the user it is an open service, i.e., open caption.

**3.14 design for all:** The design of mainstream products and/or services that are accessible to, and usable by all persons, especially including persons with disabilities (PWD), and persons who were born with specific needs.

**3.15 disability:** Any restriction or inability to perform a function or activity in the manner or the range considered average or accepted functionality, resulting from an impairment or reduction of ability, which can either be permanent or temporary.

**3.16 human factors or ergonomics:** This term deals with usability and proper interaction between persons for products and devices; services, systems; and environments, both real and virtual.

**3.17 impairment:** Any loss or abnormality of psychological, physiological, or anatomical structure or function.

**3.18 inclusive design:** This term is usually used as a synonym to universal design. The use of the term "inclusive design" is deprecated.

**3.19 interface accessibility:** The accessibility of the set of provisions that allow a user to operate and control audiovisual media solutions.

**3.20 keyboard emulator:** Hardware/software input device that emulates the key press outputs of an alphanumeric keyboard.

**3.21 lip-reading and lip-reading interpretation:** A form of communication and interpretation used by persons who are hard of hearing, or persons who are deaf who may or may not use sign language.

**3.22 lip speaking or oral interpreters:** The technique of interpretation for persons who are deaf and hard of hearing, where a trained interpreter speaks silently the dialogue in the audio visual content

or in any other event in real time, so that the speech is clearly discernible for persons with hearing disabilities who can lip-read the words from the interpreter's mouth without the use of sign language.

**3.23 mainstreaming:** The term used to designate the inclusion of persons with disabilities (PWD) in everyday life without segregation from the environment, education, technology, i.e., access to telephones, the Internet, the web, and all ICTs.

**3.24 persons with age related disabilities:** Persons when they age, often develop cognitive and physical disabilities that are caused by the aging process itself. Examples are diminished eyesight, deafness in varying degrees, reduced mobility, or cognitive abilities.

**3.25 persons with disabilities (PWD):** The correct way to refer to a person with a disability [b-UNCRPD].

**3.26 persons with specific needs:** Includes persons with disabilities (PWD), persons who are not literate, those with learning disabilities, children, indigenous people, older persons with age related disabilities, and anyone who has a temporary disability.

**3.27 pixelation:** The display of a bitmap or a section of a bitmap at such a large size that individual pixels become visible, making the image "jagged" and more difficult to decipher.

**3.28 platform accessibility features:** Accessibility functionality provided as standard on a particular hardware/software platform.

**3.29 profile settings:** This is the ability for the users to store and retrieve multiple profiles containing sets of user interface preference settings without having to reset them each time, including accessibility settings.

**3.30 real time:** Data or services (e.g., broadcasting) that are transmitted with virtually no delay.

**3.31 relay service:** is a telephone service that enables a person who is deaf or hard of hearing or whose speech is not clearly understood to place and receive telephone calls in real time.

**3.32 remote participation:** [b-ITU-T A-Sup. 4]: Participation in a meeting from a separate geographical location, using communication technologies.

**3.33 respeaking:** A technique to produce captions where a person ("the respeaker") listens to the speech and re-speaks it, such that the respeaker's vocal input is processed by a speech recognition software which transcribes it and produces the captions.

**3.34 screen magnification software:** A software application used by a person with low vision to magnify a portion of the text and/or graphics displayed on a video screen sufficiently to enable reading and comprehension.

**3.35 screen reader software:** Software application used by a person who is blind or otherwise "print impaired" to identify and interpret what is being displayed on a video display and read aloud using speech synthesis.

**3.36 sign language:** A sign language (also called signed language or simply visual signing) is a natural language which, instead of acoustically conveyed sound patterns, uses manual communication with the hands, facial expressions, and body language to convey meaning.

**3.37 sign language interpretation:** Synchronized showing of an interpreter who uses sign language to convey the main audio content and dialogue to people who use sign language and also to some lip readers who can combine lip-reading with sign language. This is also done live when an interpreter is physically present.

NOTE – In certain cases, a synthetic construct can be used in place of an interpreter.

**3.38 special needs:** In the context of accessibility, this term can be used to identify in forms or signs any accessibility accommodation that a person with disabilities or a person with specific needs may require to help them be able to participate. Not to be used to refer to persons (see clauses 3.39,

6.38, and Appendix I). This term has a different usage when referring to countries, see [b-WTDC Res.58], and [b-WTDC AP].

**3.39 specific needs:** This replaces the use of the term ‘special needs’. This term refers to a wide range of categories including women, children, youth, indigenous people, older persons with age related disabilities, persons with illiteracy, as well as persons with disabilities (PWD), see [b-ITU PP Res.175], [b-WTDC Res.58], and [b-WTDC AP]. See also clause 6.39.

**3.40 subtitles:** On-screen text translation between languages of the dialogue in any audiovisual content.

**3.41 supplementary audio services:** An additional audio soundtrack that provides additional features or function over and above that provided by the main audio stream.

**3.42 universal design:** To design, from the beginning, mainstream products and/or services that are accessible to, and usable by, as many people as reasonably possible without the need for special adaptation or specialized design.

## 4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

ALD	Assistive Listening Devices
ALS	Assistive Listening System
AT	Assistive Technology
CART	Communication Access Real-Time Translation, i.e., Real-Time Captioning
EPG	Electronic Program Guide
G3ict	Global Initiative for Inclusive ICTs
HD	High Definition
IFHOH	International Federation of Hard of Hearing People
IPTV	Internet Protocol Television
PWD	Persons with Disabilities
SA	Supplementary Audio
UNCRPD	UN Convention on the Rights of Persons with Disabilities
WFD	World Federation of the Deaf
WTDC	World Telecommunications Development Conference

## 5 Conventions

The terms and definitions in this Recommendation are matched in numbering across clauses 3 and 6, for easier reference to the reader. The essential definitions are provided in clause 3, while more nuanced considerations on the use of different terms associated with the definitions are provided in clause 6.

## 6 Terminology

### 6.1 Access service or accessibility service

See clause 3.1 for a concise definition.

Examples related to impairments include users who are deaf, hard of hearing, blind, or partially sighted. Examples related to preferences include people who turn down the sound on a TV when others are trying to sleep. Examples related to environmental contexts of use include being unable to hear a phone in a loud environment or see a screen in strong light. Examples of common access services are captioning, audio description, and sign language interpretation. A service such as captioning, audio description, or visual signing improves the accessibility of the audiovisual content for which it was made. It is required that metadata be available in an electronic program guide (EPG) to allow a user to be able to determine the access services available.

## **6.2 Accessibility**

See clause 3.2 for a concise definition.

Accessibility can be viewed as the "ability to access", and possibly benefit, from some system or entity. Accessibility is often used to focus on PWD or identify persons with specific needs who may or may not be PWD and their right of access to entities, directly, or through use of assistive technology (AT) or access services. Accessibility is the property of being accessible and useable upon demand by an authorized entity. Accessibility is strongly related to universal design (see article 2 of [b-UNCRPD]), when the approach involves "direct access". Universal design is about making (and designing) things from the beginning of concept to realisation, to be accessible to as many people as possible, whether or not they have a disability or "specific needs". Using the principles of universal design in the beginning of the design process will make products, services, and environments, both virtual and real, accessible to a greater number of people and will prevent expensive refits later when accessibility is possibly required by regulation. An alternative method of providing accessibility is to provide "indirect access" by having the entity support the use of a person's AT to achieve access.

## **6.3 Accessibility content**

See clause 3.3 for a concise definition.

In order for PWD and specific needs to follow audiovisual content, certain technology must be implemented. Examples are the following: For persons who are deaf and/or profoundly hard of hearing, open and closed captioning (including audio captioning) are necessary for understanding dialogue and background noises. An example is sign language, which also can be open or closed. For persons who are visually impaired, audio description is necessary to describe the non-spoken content of audiovisual content.

## **6.4 Accessibility feature**

See clause 3.4 for a concise definition.

Examples of accessible features are: Captions for persons who are deaf and persons who are hard of hearing, subtitles in various languages, and sign language interpretation for video and audio description for the visually impaired.

## **6.5 Assistive listening devices (ALDs)**

See clause 3.5 for a concise definition.

ALDs include hearing aids worn in the ear with or without radio assistance and radio communication systems comprising of a narrow band transmitter(s). These can be handheld, placed on a table, or worn physically around the neck. They can have a wired or an inductive connection to a hearing aid. ADLs also include cochlear implants.

## **6.6 Assistive listening system (ALS)**

See clause 3.6 for a concise definition.

ALSs include telecoil (an audio inductive loop), infrared systems, or radio frequency-based systems that are found in mobile phones. They can be found installed at shop counters and in large venues e.g., theatres, museums, and conference centres.

### **6.7 Assistive technology (AT)**

See clause 3.7 for a concise definition.

AT is an interface to an ICT device that allows access to technology. It also includes the process used in selecting, locating, and using ICTs. The use of AT and AT devices promotes greater independence by enabling people to perform tasks that they were formerly unable to accomplish, or had great difficulty accomplishing, by providing enhancements to or changed methods of interacting with the technology. It provides "indirect access" and this is supported by universal design. An example would be a screen reader that enables persons who are blind to hear the printed text read aloud.

### **6.8 Audio and spoken subtitles**

See clause 3.8 for a concise definition.

Subtitles become the audio content of an audiovisual work or sequence in a foreign language through specific techniques that convert the text into speech from subtitles on the screen in the target language by text recognition. This may be done at the source or on the user's device using speech synthesis.

### **6.9 Audio captions/captioning**

See clause 3.9 for a concise definition.

Audio captioning may be done at the source or in the user's device using speech synthesis. This is for the benefit of persons with vision impairments or no vision at all where the only meaningful content is coming from the captions or subtitles.

### **6.10 Audio description**

See clause 3.10 for a concise definition.

This service provides additional audible narrative. Audio description is mixed with the dialogue. This describes the significant aspects of the visual content, settings, actions, and ambiguous sounds of the audiovisual media that cannot be understood from the main dialogue soundtrack alone. Audio description should be synchronous with this list to describe any actions and identify who is doing what, where, and when. Special attention should be paid to the audio mix to make sure that the volume of the main dialogue and the audio description are not in conflict.

### **6.11 Captions/captioning**

See clause 3.11 for a concise definition.

Captions provide a real-time on-screen transcript of the dialogue as well as any sound effects for when an Internet or television broadcast is live. Ideally, users may have some control over the position and size of the presentation. Captions can also be pre-recorded and synchronized with the dialogue of the content. [b-ITU-T Y.1901]. There are different ways to identify speakers, i.e., with different colours.

There is also real-time captioning (also referred to as communication access real-time translation (CART)), which is used for meetings to enable participation for persons with disabilities PWD. This service can be provided by means of either textual or graphical supplementary content. The captions and the dialogue are usually in the same language. The service is primarily to assist users having difficulty hearing the sound. They are also beneficial to those persons who do not understand the spoken language for other reasons e.g., language is not that person's first language, e.g., sign language.

Presently, captions are created in two basic ways, either spoken or typed. Most commonly, text is produced by stenographic methods using technology similar to court reporting, or using a respeaking technique through speech recognition software. There are technical forms of creating captions in foreign languages that do not have a script, that do not have keyboard, or for which speech technology solutions are yet to be available. They might use different keyboards and techniques. One example is in Japan where two captioners work together simultaneously using a specialized keyboard to produce their language.

### **6.12 Clean audio**

See clause 3.12 for a concise definition.

Clean audio enables everyone to hear the sound of the broadcast content clearly. This includes the dialogue and narrative, audio description, audio captions, and spoken subtitles. This is imperative for those persons who have hearing difficulties and includes persons who are hard of hearing and those with age related disabilities.

### **6.13 Closed/open accessibility services**

See clause 3.13 for a concise definition.

There is a need for both the use of open and closed services. The user should have the ability to turn on and turn off a service, such as captioning or sign language, if it is not needed. Equally, when a person with disabilities is in situation away from home, they should be able to turn these services on or off at will. Open captions are also vital for announcing emergencies and other public announcements. It is necessary to have open services in giving the general public important live information as in news broadcasting. These open services are not in the control of the user for safety reasons, or as in the case of a live broadcast. There is also the possibility that technically, for whatever reason, it is not possible to provide closed services.

### **6.14 Design for all (deprecated)**

See clause 3.14 for a concise definition, and Appendix I on deprecated terminology.

The term design for all was used before the creation of the terminology of universal design but is not recognized or used in [b-UNCRPD], article 2. Unfortunately, its implied implementation is not practical from industries' point of view, but it does not carry a social stigma if it is used in addition to help explain the term universal design which has a slightly more flexible meaning. Design for all should not be used in place of universal design. It is preferred to use UN language. See inclusive design in clause 3.18 and universal design in clause 3.42.

### **6.15 Disability**

See clause 3.15 for a concise definition and clause 6.24 for more information on PWDs.

No additional discussion is provided for this term.

### **6.16 Human factors or ergonomics**

See clause 3.16 for a concise definition.

This category can deal with accessibility for PWD but not exclusively. Examples of human factor accessibility in practical applications could be:

- Curb cuts, which can be used by wheel chairs, motorized disability scooters, and perambulators for babies.
- The tactile marker in the keypad "5" key in telephone sets conforming to [b-ITU-T E.161], that guide blind users in placing voice calls.

- Captioning in audiovisual programmes, which helps an audience to understand its content in a loud environment.

## 6.17 Impairment

See clause 3.17 for a concise definition. Additional terms related to impairments include:

- Impairment, age related:** Is a collection of sensory and cognitive impairments that increase with age. In the general sense, it covers matters such as the deterioration of sight and hearing, memory impairment or memory loss, and motor impairment.
- Impairment, cognitive:** Affects the individual's ability to think, concentrate, formulate ideas, reason, and remember.
- Impairment, dexterity:** Is the reduced function of arms and hands that makes activities related to moving, turning, or pressing objects difficult or impossible. This may or may not influence speech communication. If other motor features of the body do not function well it may impair speech communication.
- Impairment, functional:** Refers to a person's loss of functional ability of an organ or physical or mental capability to perform its specified function. The existence of a medical condition may not necessarily restrict functional capacity and does not define disability. The UN definition of impairment is "any loss or abnormality of psychological or anatomical structure or function."
- Impairment, hearing loss:** Please see Appendix I, deprecated terminology.

This term should not be used to include both deaf and hard of hearing persons. Instead, hearing disability should be used as a general term. The terms to be used are persons who are deaf or hard of hearing.

Hearing loss can affect the whole auditory range and be a profound hearing loss, which can make hearing speech and sound impossible through auditory means, or can vary in degree; this type of hearing loss describes a person who is deaf. Hearing loss can also affect only a part of the auditory spectrum and in this case AT can assist (e.g., a hearing aid placed in the ear or ears); this type of loss describes a person who is hard of hearing. The use of the word profound means severe. Technology is usually needed in both cases, but it actually is different. Persons who are deaf need visual solutions, and persons who are hard of hearing need enhanced audio solutions, see [b-WFD and IFHOH].

- Impairment, visual:** Visual impairment (or vision impairment) is vision loss (of a person) to such a degree as to qualify as needing additional support through a significant limitation of visual capability resulting from either disease, trauma, age related or congenital, and all of which can include degenerative conditions that cannot be corrected by conventional means, such as the use of glasses and refractive correction, medication, or surgery. The loss may cover visual acuity, significant central or peripheral field defects, or reduced contrast sensitivity.

## 6.18 Inclusive design

See clause 3.18 for a concise definition.

The design of mainstream products and/or services that are accessible to, and usable by, as many people as reasonably possible without the need for special adaptation or specialized design. Inclusive design is used usually as a synonym for universal design but is not recognized or used in article 2 of [b-UNCRPD]. The use of UN language is preferred, but it does not carry a social stigma if inclusive design is used in addition to help explain the term universal design. Inclusive design should not be used in place of universal design.

## **6.19 Interface accessibility**

See clause 3.19 for a concise definition.

Interface accessibility is concerned with components and controls such as physical (hardware and remote controls) and virtual controls, e.g., displays, menus, electronic programme guides (EPGs), windows, and selection grids. An accessible interface does not automatically imply content accessibility.

## **6.20 Keyboard emulator**

See clause 3.20 for a concise definition.

Keyboard emulators are used by individuals who are unable to physically enter text using a keyboard.

## **6.21 Lip-reading and lip-reading interpretation**

See clause 3.21 for a concise definition.

Many persons become profoundly deaf and deafened later in life. These persons who do not have sign language skills often rely on recognizing the spoken words on the lips of others without sound and can interpret speech correctly. This technique works better on a one to one basis in real time. Dialects and moustaches sometimes get in the way but with high definition (HD) television it is more feasible to virtually see speech on the mouths of speakers that persons with hearing disabilities cannot recognize by sound. Lip reading can make it possible to understand speech without sound only when the speaker is facing the camera. This, of course, is not always the case and many persons with have to rely on captioning as well.

## **6.22 Lip speaking or oral interpreters**

See clause 3.22 for a concise definition.

There are lip speaking or oral interpreters who also exist to help persons with hearing disabilities to understand content that they cannot hear in meetings or other events. There are qualifications required for lip speaker interpreters similar to those required for the sign language interpreter. They must be accredited in the same way that sign language interpreters are qualified and accredited. This is an important interpretation technique for persons who are deaf but who do not sign. This often is important for older persons who have been deafened later in life as well as persons who are hard of hearing. This is useful in areas where captioning is not available.

## **6.23 Mainstreaming**

See clause 3.23 for a concise definition.

Whenever possible, mainstreaming should be transparent or give equivalent access using ATs. ATs can be necessary to assist inclusion, by recognizing and providing for specific needs or requirements, especially upon request. ATs will provide equivalency of integration. Mainstreaming is necessary to achieve integration, see [b-UNRCPD]. This also applies to the writing of accessibility features into mainstream standardization. See "accessibility features".

## **6.24 Persons with age related disabilities**

See clause 3.24 for a concise definition.

People grow older but do not necessarily see themselves as old or elderly. They often resist seeing the changes and the diminishing capabilities that age brings as making them a person with disabilities. The use of the term elderly is discouraged and not accurate, especially when age related disabilities can begin in the early forties. The simple beginning of wearing glasses due to the inability to focus or see distant objects clearly is a classic example. Deterioration of hearing with age and the loss of the ability to separate sounds makes it difficult to understand speech in noisy environments. Older

persons can also be referred to as persons with specific needs, especially if there is a strong resistance to being labelled as an older person or a PWD.

#### **6.25 Persons with disabilities (PWD)**

See clause 3.25 for a concise definition.

It is incorrect to refer to a PWD as a disabled or handicapped person. This definition was at the behest of the consulting panel of PWD when the UNCRPD was created. The basis of this choice was that they were persons first and had a disability second. The Council of Europe uses the term people with disabilities but the [b-UNCRPD] uses persons with disabilities.

#### **6.26 Persons with specific needs**

See clause 3.26 for a concise definition.

The term persons with specific needs can be used for persons with age related disabilities and others, i.e., women, youth, children, and indigenous people as well as persons who suffer from illiteracy, both with and without disabilities. Curb cuts are an example of mainstreaming for persons with specific needs that accommodate many people with and without disabilities. They were designed for the accommodation of wheel chair users and motorized scooters for persons with disabilities. However, they are also invaluable to mothers with baby buggies or prams see [b-WTDC AP]. Persons with specific needs covers everyone but should not entirely replace the term persons with disabilities.

#### **6.27 Pixelation**

See clause 3.27 for a concise definition.

When a person with low vision tries to read text, view graphics or photos on a personal computer (PC) screen, the person may use screen magnification software to enlarge content. However, if the software is not well designed, the text (in an image or graphic or photo) can become too "pixelated" to be legible when the image is magnified. The pixelation (as defined in clause 3.27) of the text or image occurs and it is not discernible. This applies also to a person without disabilities in general if the image is poor.

#### **6.28 Platform accessibility features**

See clause 3.28 for a concise definition.

Examples of platform accessibility features are screen magnification or "zoom" functionality provided within an operating system, and the font size and icon size of photos or items on a desktop. These are usually built into the operating system and can be activated without adding any other software.

#### **6.29 Profile settings**

See clause 3.29 for a concise definition.

The internet protocol television (IPTV) and EPG architecture are required to support the capability to store and retrieve multiple profiles containing sets of user interface preference settings and language settings so that it will be easy to switch to different personal preferences for different users without the user having to reset them each time. This should also include accessibility features in the settings for captioning, sign language, and audio description.

#### **6.30 Real time**

See clause 3.30 for a concise definition.

Real time text, live television emissions, live voice telephone calls, and text phone telephone calls are generally real time services. Instant messaging and e-mail are not delivered in real time as the transmission of messages must be activated by the user doing an action to send the data.

### **6.31 Relay service**

See clause 3.31 for a concise definition.

A relay service is usually a human operated service for media and mode (voice, text, and video) translation during phone conversations. The provision of relay services that are well integrated into the phone system is an important capability of accessible phone services for persons who are deaf or hard of hearing, and those whose speech cannot be clearly understood.

Relay services are usually provided as community supported services, as their operation requires many more human resources than regular person to person calls, see [b-ITU-G3ict].

Existing types of relay services are:

- Video relay services, translating between sign language in video and speech in a voice phone.
- Text relay services, translating between real-time text in the text part of a phone and speech in a voice phone, usually for persons with speech impairments, hearing disabilities, including those who are hard of hearing, deaf or deaf-blind.
- Speech-to-Speech relay services, supporting speech calls for people with speech impairments or cognitive disabilities.
- Captioned speech relay services (captioned telephony), adding real-time text captions to a voice call, for people who are hard of hearing or deaf.

In all these cases, the other media (voice, video, text) may be handled as well in the call, ideally connected in two- or three-party call mode between the parties in the call who have terminals that can handle these media.

Integration of relay services in the phone system implies:

- Calls to a number for a person with disabilities should be able to invoke a relay service selected by the user if the user so decides.
- Calls from a person with disabilities to another number should be able to invoke a relay service selected by the user if the user so decides.
- Calls between two users who can and want to use the same modes and media in the call should be possible without invoking any relay service.

Relay services should work with all commonly used handsets and terminals. Users need to be able to use the same terminal for calls directly in the modes they handle, as is used for calls through relay services and with emergency services. The relay and emergency services can only feasibly support a limited number of connection types or protocols. Thus, it is important to coordinate the specifications of access to relay services, to emergency services, and to terminals used by people with disabilities so that maximum interoperability in all available media is achieved for the occurring call combinations.

### **6.32 Remote participation**

See clause 3.32 for a concise definition.

The online process that enables a person to participate in a meeting without actually being physically present at the meeting location is by the use of online communication tools. This includes video, audio, and text communication in chat boxes. It also allows for captioning to be included for those persons with disabilities who cannot access sound.

More details concerning remote participation can be found in [b-ITU-T HSTP.ACC-RemPart] and [b-ITU-T A-Sup. 4].

### **6.33 Respeaking**

See clause 3.33 for a concise definition.

This technique involves a longer delay in producing captions as there are three steps to producing the captions and the loss of synchronization is an issue to be considered.

Unless there is a supplementary typing input device, respeaking is not accurate when it comes to the reproduction of foreign names or nouns, unless they are programmed into the software in advance.

### **6.34 Screen magnification software**

See clause 3.34 for a concise definition.

Screen magnification is an accessibility feature included in some hardware. An example can be found in mobile phones. This accessibility feature may already be included in computer operating systems. If this is not available, often times this accessibility feature can be downloaded. Screen magnification is useful for persons with varying sight problems and is also used by those with learning difficulties.

### **6.35 Screen reader software**

See clause 3.35 for a concise definition.

Screen readers can come in audible format where a person can listen to the word printed on the screen. It can also come in a refreshable braille display, enabling a person who is blind to read in braille what was printed on the screen,

### **6.36 Sign language**

See clause 3.36 for a concise definition.

As is the case with any language, sign language has its own distinct grammar and syntax. There is a different sign language for every spoken language, and dialects are found within each country just like any spoken language. There does not exist an international sign language per se, but deaf individuals who use different signed languages adapt their signing to communicate with each other and make themselves understood. This has led some to misconstrue that there exists a single uniform signed language understood by all deaf persons. This is in fact an incorrect assumption. International Sign as a distinct language does not exist, but what does exist is a form of very basic signs with a limited vocabulary that does not include specific terminology and is used to communicate between deaf persons who use different signed languages which is referred to as International Sign. It is constantly changing and adapting to the specific needs of participants in specific situations. It is used primarily within the international deaf community to have a communication method that most can understand without having to resort to having so many different national sign languages present at a large international meeting for persons who are from many different countries, However, many deaf people do not use or know any form of International Sign and it is interpreted differently in every country. It can be used under certain circumstances when no other choice is available, but not in detailed technical discussions. There is no equivalent spoken language translation. Thus, a real true understandable International Sign is not standardized or consistent as explained above.

### **6.37 Sign language interpretation**

See clause 3.37 for a concise definition.

Sign language interpretation is often done by human beings who are fluent in a particular national sign language. There must always be two persons for each language just as there are two persons who interpret orally spoken languages. This can be done live with the interpreters present or remotely via

video. There are avatars that have been created to simulate human sign language interpretation. However, the problem with avatars is that one of the functions for a sign language interpreter is to voice out what a person with disabilities is signing if that person does not speak.

### **6.38 Special needs**

See clause 3.38 for a concise definition.

This term can be used only for countries or on a form to identify any special requirements that a person with disabilities or a person with specific needs requires to be able to participate. It should not be used to describe a person with disabilities. One cannot refer to a person having special needs. The terminology specific needs (see clause 3.39) is now used instead of special needs with regard to people, see [b-WTDC A.P] [b-WTDC Res.68].

The use of the term special needs to describe a person with disabilities countermands the desire of PWDs to be mainstreamed into technology, education, work, and society. The use of this term to describe PWDs also indicates that they are deemed not capable and to include them would create huge difficulties. It gives industry the view that the word “special” means small market, and therefore not profitable to consider as a mainstream item for implementation of accessibility features in technology and services that if implemented would eliminate barriers to inclusiveness.

See Appendix I on depreciated terminology.

### **6.39 Specific needs**

See clause 3.39 for a concise definition.

This term was created to cover a wider range of needs and includes more than just persons with disabilities. It replaces the terminology special needs (see clause 6.38), which now only refers to countries and not people. Specific needs refers to a wide range of categories including women, children, youth, indigenous people, older persons with age related disabilities, persons with illiteracy, as well as persons with disabilities. It allows for the concept of mainstreaming, human factors, and encompasses the needs of many, which supports the UNCRPD concept of universal design, see [b-UNCRPD], [b-ITU PP 14 Res.175], [b-WTDC Res.58], [b-WTDC AP].

### **6.40 Subtitles**

See clause 3.40 for a concise definition.

The assumed audience for subtitling is for persons who can hear, as well as those who cannot hear, and those who do not understand the language of the dialogue. Subtitles can be on smartphones, tablets, computers, or any screen-based content, etc. They can be produced manually or by respeaking. It is technically possible to choose their position on the screen, their size, and colours. They should be synchronized with the spoken content. Subtitles in the past usually have been open in the content for the purpose of language translation or to clarify the speech of any language spoken that is unclear and was separate from closed captioning/subtitling that is superimposed later for the entire dialogue and captioned audio on the content for accessibility.

Subtitle text is not always real time dialogue text transcriptions. Sometimes it is pre-embedded in the content and may not follow all the dialogue when translating the speech of one individual speaking a language other than the main language of the content. If captions or captioning is introduced later, which translates all the main dialogue and sound effects with text, care needs to be taken to place the two forms of text successfully on the screen without one interfering with the placement of the other.

NOTE – This service can be provided by means of either textual or graphical supplementary content.

Subtitles are the translation of spoken words only, while captions include spoken words plus any meaningful sound whose perception is important to understanding the content of the audio-visual program. See clause 3.11.

#### **6.41 Supplementary audio services**

See clause 3.41 for a concise definition.

Supplementary audio (SA) can be the audio description, which describes the scenario and the unspoken action of the content for the benefit of persons with a disability who cannot see the content. It is in addition to the spoken dialogue. It can also be audio captioning or spoken subtitles in which the text written on the screen is read out audibly for those with reading difficulties and/or persons who have visual difficulties.

The SA stream may be provided using one of two schemes (see [b-ETSI TS 101-154]):

- Broadcast mixed: Pre-mixed by the broadcaster and offered as an alternative audio stream, as in open accessibility services.
- Receiver mixed: Mixed in the receiver under the control of signalling provided by the broadcaster plus some limited control of the user, as in closed accessibility services.

#### **6.42 Universal design**

See clause 3.42 for a concise definition.

No additional discussion is provided for this term.

## Appendix I

### Deprecated terminology

(This appendix does not form an integral part of this Recommendation.)

The following is terminology that should be avoided when referring to accessibility issues.

**Elderly:** Not to be used as the term, as it is deemed as offensive to "older persons". See persons with age related disabilities. The word elderly is a negative term which is counterproductive to assisting older persons in dealing with age degenerative problems.

**Handicapped:** Not to be used unless it is in colloquial use for a specific language translation purpose. See persons with disabilities.

**Hearing impairment:** The use of the word impairment is restricted and cannot be used for those with hearing disabilities because the solutions are completely the opposite for persons who are deaf and persons who are hard of hearing. If a person is deaf, they will need visual communication or assistive technologies as in captioning or text that can be read and video for sign language. If a person is hard of hearing, they will need improved audio communication or assistive technologies that enhance audio i.e., ALDs as in hearing aids see [b-WFD and IFHOH]. See also clause 3.17.

**Inclusive design, design for all, or accessible design** is often used in place of and to mean universal design which is the correct UN language taken from the [b-UNCRPD]. These terms are historic and have many different definitions in the different documents and different organizations that use them. It is recommended that we migrate to using the recognized UN terminology. See the disclaimer in [b-ITU-T H-Sup.17].

**Persons with special needs:** Not to be used to describe a person. The term special needs has been found to be offensive to persons with disabilities. It also gives the wrong impression to industry that the market of persons with disabilities is small and thus marginalizes them with regards to the standardization and implementation of accessibility features in standardization. The term special needs could be used in the context of a registration form in order to indicate anyone who needed special access of some kind, for instance, to attend a meeting or to access a building. It should not be used to define a person. Special needs can be used for countries, as in countries with special needs see [b-WTDC AP], (see also persons with disabilities, clauses 3.23, 3.38, 6.23, 6.38).

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