

# TECHNICAL REPORT



**Audio, video and multimedia systems and equipment activities and  
considerations related to accessibility and usability**  
(standards.iteh.ai)

IEC TR 62678:2010

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# INTERNATIONAL ELECTROTECHNICAL COMMISSION

## AUDIO, VIDEO AND MULTIMEDIA SYSTEMS AND EQUIPMENT ACTIVITIES AND CONSIDERATIONS RELATED TO ACCESSIBILITY AND USABILITY

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IEC 62678, which is a technical report, has been prepared by IEC technical committee 100: Audio, video and multimedia systems and equipment.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
100/1688/DTR	100/1737/RVC

Full information on the voting for the approval of this technical report can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
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- amended.

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## INTRODUCTION

With an objective to research, review, and consider accessibility and usability and to start the project, a survey was designed and distributed to the IEC TC100 P-members to obtain information about the related issues, public policies, and activities. In April 2008, the survey results were reported to the AGS (Bangkok, Thailand) and in November, 2008 the first in-person meeting of the Project Team was held in Sao Paulo, Brazil.

Subsequently, four global teleconferences, numerous electronic mail exchanges, and use of the IEC on-line Collaboration Tools located at [www.iec.ch](http://www.iec.ch) occurred. The Project Team also held an in-person meeting in Tel Aviv, Israel in October 2009. As a result of these sessions, the Project Team produced this TR which attempts to explain the possible relevance of accessibility and usability to the IEC TC100 programme of work. Every aspect of this TR may or may not be appropriate for all IEC TC100 projects and / or participants. Likewise, this TR may or may not address considerations for product designers. However, this TR does provide information to assist the IEC TC100 standards experts in their accessibility and usability research, review, and consideration.

Clause 2 (Normative references) includes those documents referenced in the main body of this TR with the exception of Table 2. This document is numbered with other documents of the Project Team, 002-012, dated 03/31/10.

This TR extracts and applies the user needs published in the ISO/IEC TR 29138-1, Information Technology-Accessibility considerations for people with disabilities – Part 1: User needs summary, paraphrased and extracted with permission.

This TR contains four informative annexes.

- a) Annex A on the United Nations (UN) Convention on the Rights of Persons with Disabilities (paraphrased and extracted with permission).
- b) Annex B which comments on some IEC TC100 standards which contain accessibility considerations,
- c) Annex C on research projects in Europe.

Every effort was made to include resources that are publicly accessible.

# AUDIO, VIDEO AND MULTIMEDIA SYSTEMS AND EQUIPMENT ACTIVITIES AND CONSIDERATIONS RELATED TO ACCESSIBILITY AND USABILITY

## 1 Scope

This Technical Report (TR) provides information on accessibility and usability terms, activities, completed and ongoing standards, technical reports, projects, and specifies user needs that may or may not apply to audio, video and multimedia systems and equipment. Comments about demographics and public policies are included. A checklist of accessibility and usability considerations is also included. Industry experts may or may not apply this information when they evaluate opportunities to integrate support for accessibility and usability in their work.

## 2 Normative references

The following referenced documents are indispensable for the application 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.

ISO/IEC 25062:2006, *Software product quality requirements and evaluation (SQuaRE) – Common Industry Format (CIF) for usability test reports*

ISO/IEC TR 29138-1:2009, *Information technology – Accessibility considerations for people with disabilities – Part 1: User needs summary*

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## 3 Terms, definitions and abbreviations

### 3.1 Terms and definitions

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

#### 3.1.1

##### **accessibility**

degree to which a product (e.g., device, service, and environment) is accessible by as many people as possible

NOTE Accessibility can be viewed as the "ability to access" the functionality, and possible benefit, of some system or entity. Accessibility is often used to focus on people with disabilities and their right of access to entities, often through use of assistive technology. Several definitions of accessibility refer directly to access-based individual rights laws and regulations. Products or services designed to meet these regulations are often termed "Easy Access" or "Accessible". See: [www.wikipedia.org](http://www.wikipedia.org)

#### 3.1.2

##### **adaptive design**

interoperability with assistive technology

NOTE See ISO/IEC Guide 71.

#### 3.1.3

##### **assistive technology**

designates assistive, adaptive, and rehabilitative devices designed to enable use by people with disabilities or to enhance usability

### 3.1.4

#### **barrier-free design**

design without barriers for individuals with disabilities

### 3.1.5

#### **design-for-all**

##### **DFA**

design and development of products and / or services with the aim that, regardless of age, gender, capabilities, or cultural background, everyone can easily use and access a product and / or service

### 3.1.6

#### **disability**

any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being

NOTE See World Health Organization (WHO), [www.who.int/en/](http://www.who.int/en/)

### 3.1.7

#### **eAccessibility**

access to mainstream information and communication technology (ICT) and audio video (AV) products and services by the widest number of people in accordance with design-for-all (DFA)

NOTE See European Association for the Co-ordination of Consumer Representation in Standardisation (ANEC) also described as the “European consumer voice in standardisation” and the European Disability Forum (EDF).

### 3.1.8

#### **universal design**

design for usability by the widest range of users based on their sensory, physical, and cognitive abilities

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### 3.1.9

#### **usability**

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

NOTE See ISO 9241-11.

### 3.1.10

#### **user accessibility need**

##### **user need**

requirements of a product or its environment of use that improves accessibility to the system for users whose abilities are reduced through environmental factors, injury, disability, or natural degradation from aging

NOTE See ISO/IEC TR 29138-2: 2009.

## 3.2 Abbreviations

For the purposes of this document, the following abbreviations apply.

ADA	Americans with Disabilities Act
ANEC	European Association for the Co-ordination of Consumer Representation in Standardisation
ASTC	Advanced Television Systems Committee
AT	Assistive Technology
CFR	Code of Federal Regulations

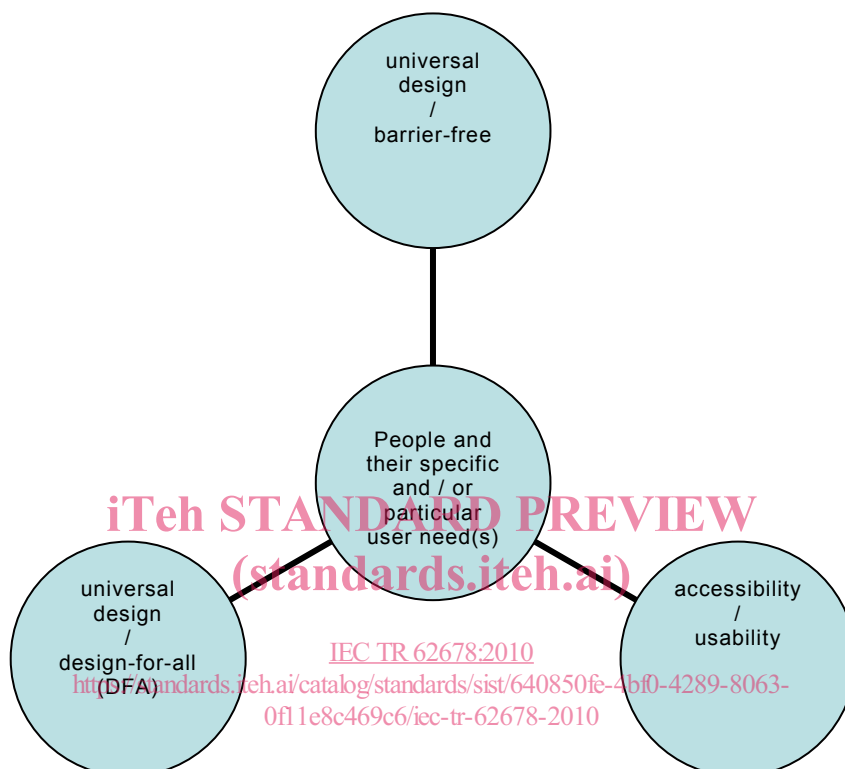
CIF	Common Industry Format
dB	decibel
DDA	Disability Discrimination Act
DFA	Design-For-All
EC	European Commission
EU	European Union
FY	Fiscal Year
ICT	Information and Communication Technology
ISO	International Standards Organization
ITU	International Telecommunication Union
ITU-T	ITU Telecommunication Sector
JIS	Japanese Industrial Standard
JISC	Japanese Industrial Standards Committee
JCA-AHF	Joint Coordination Activity on Accessibility and Human Factors
MEAC	Measuring Progress of E-Accessibility in Europe
METI	Ministry of Economy, Trade and Industry
MIC	Ministry of Internal Affairs and Communications
MLIT	Ministry of Land, Infrastructure, Transport and Tourism
NWIP	New Work Item Proposal
SQaRE	Software product quality requirements and evaluation
SWG-A	Special Working Group on Accessibility (of the ISO/IEC Joint Technical Committee One, JTC1)
TA	Technical Area
TR	Technical Report
TRS	Telecommunications Relay Service
VDT	Visual Display Terminal
UK	United Kingdom
UN	United Nations
U.S.	United States of America
USC	United States Code
U.S.FCC	U.S. Federal Communications Commission
W3C	World Wide Web Consortium
WHO	World Health Organization
WG	Working Group

## 4 Applications of terms and definitions

### 4.1 Applications and intentions

Although the application of terms and definitions related to accessibility and usability may differ, often the meaning is the same: i.e. to reach as many people as possible. See Figure 1 which depicts the importance of the human aspect in accessibility / usability of terms and definitions.

Among the participants of a survey, designed and distributed to obtain information about accessibility and usability issues, public policies and activities, Japan, China, the U.S., Germany, France and the UK described their use of terms and definitions. They stated that individuals attempting to apply terms and definitions are also encouraged to research national policies. IEC/TC 100 addresses many areas of audio, video and multimedia equipment standardization. As the experts choose to consider the terminology for accessibility and usability, they may use the “Checklist of accessibility and usability considerations” in Clause 11 of this TR.



IEC 2309/10

NOTE People and their specific and/or particular user need(s) are, figuratively, placed in the center of terminology that expresses the intention to meet specific or particular user needs.

**Figure 1 – People and their particular user needs**

#### **4.2 Applications of the terms: universal design, barrier-free design, accessibility, and disability in Japan**

The terms “universal design” and “barrier-free” are used in Japan to describe technology, buildings, and other physical infrastructures. Japanese Industrial Standard (JIS) X 8341 applies terms that may assist audio, video and multimedia systems and equipment standards designers who address individuals with disabilities or individuals who are experiencing natural degradation typically due to aging. JIS X 8341 provides information on ways to improve accessibility, required when (primarily) elderly persons, persons with disabilities and those with temporary disabilities use office equipment. The standard gives information concerning the usability aspects when planning, developing and designing office equipment. In this case, office equipment refers to copying machines, multifunction devices, and page printers that are used in office environments.

In Japan, the term “accessibility” is used to communicate a few concepts with regard to information. Specifically, “accessibility” in Japan is used to communicate the concepts of accessible, usable, and useful information. Generally, the term is used to communicate where “the user can use equipment and services smoothly”. The previous text includes an informal translation of the definition for the term “accessibility”.

NOTE 1 See Barrier-Free, Universal Design Promotion Outline of Japan’s Cabinet Office.

NOTE 2 See Japan’s Info-Communication Access Council.

The term “accessibility” is defined in Japan for the information technology sector by the Ministry of Internal Affairs and Communications (MIC) to address all people including, elderly and disabled persons so they can use information technology products, services and facilities without difficulty.

NOTE 3 Source for documents published in the Japanese: [http://www.soumu.go.jp/s-news/2005/051215\\_1.html](http://www.soumu.go.jp/s-news/2005/051215_1.html)

For the terms “accessibility” and “usability” used with respect to equipment and services the JIS Z 8071 standard may be followed. The scope of JIS Z 8071 begins as follows: “This guide provides guidance to writers of relevant standards on how to take into account the needs of older persons and persons with disabilities. Whilst recognizing that some people with very extensive and complex disabilities may have requirements beyond the level addressed in this Guide, a very large number of people have minor impairments which can be easily addressed by relatively small changes of approach in standards, thereby increasing the market for the product or service”.

The scope of JIS Z 8071 continues, as follows “this Guide aims to inform, increase understanding and raise awareness about how human abilities impact on the usability of products, services and environments”. As stated in the scope, JIS Z 8071 aims to outline the relationship between the requirements in standards and the accessibility and usability of products and services and to raise awareness about the benefits of adopting accessible design principles in terms of wider markets. The scope explains that the Guide applies to products, services and environments encountered in all aspects of daily life and intended for the consumer market and the workplace.

According to the Japanese “Physical Disability Welfare Act (informal translation)”, enacted in 1951, which was partially amended to define disability for people of 18 years of age and older, the term “disability” consists of various types of disabilities including sight, hearing, and motor skills. Glaucoma, total blindness, and amblyopic conditions are also included. Notably, colour-blindness, conditions of cataract, and the degradation of sight due to aging are not included. Therefore, an all-encompassing definition of “disability” is not intended. The concept of a hearing disability, in Japan, addresses a specific hearing disability of 70 decibel (dB) and above, but does not include degradation due to aging which results in hearing loss of sounds at higher frequencies.

The participants in the IEC/TC 100 from the Japanese National Committee comment that as the AV products decrease in their size and the functions of such products change, improved usability and added convenience results for those individuals experiencing natural degradation due to aging or due to disabilities. Reportedly, some Japanese industries share a common concept surrounding the improvement of usability. That is, the concept of “universal design” which has applications in various industrial areas and is useful for communication purposes. According to the Japanese Ministry of Economy, Trade and Industry (METI), regardless of one’s culture, language, nationality, age, gender, or disability, “universal design” expresses how one can use products, facilities, and information. The “universal design” concept, in Japan, remains general and widely used for industrial products and product features.

NOTE 4 See <http://www.meti.go.jp/report/data/g00828bj.html>.

NOTE 5 See <http://www.meti.go.jp/report/downloadfiles/g10522cj.pdf>.