TECHNICAL REPORT

ISO/IEC
TR
29138-2

Information technology — Accessibility considerations for people with disabilities —

Part 2:
Standards inventory

Technologies de l'information — Considérations d'accessibilité pour les personnes infirmes —

Partie 2: Inventaire des normes

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ISO/IEC TR 29138-2:2009
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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

In exceptional circumstances, the joint technical committee may propose the publication of a Technical Report of one of the following types:

— type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;

— type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;

— type 3, when the joint technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example).

Technical Reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical Reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

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

ISO/IEC TR 29138-2, which is a Technical Report of type 3, was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

ISO/IEC TR 29138 consists of the following parts, under the general title *Information technology — Accessibility considerations for people with disabilities*:

— *Part 1: User needs summary*

— *Part 2: Standards inventory*

— *Part 3: Guidance on user needs mapping*

Introduction

ISO/IEC JTC 1 believes that the work in the area of information communication technology (ICT) standardization for accessibility is a major undertaking, encompassing many global, regional and local interests. Additionally, there are significant standards efforts taking place in ISO, IEC, ITU and the national and regional standards bodies as well as various consortia/fora and user groups.

This Technical Report identifies sources of ICT accessibility guidance to support users with the widest range of capabilities. The number of people using ICT products and services, which combine hardware, software, and network technologies, is increasing, as is the variety of ICT products and services. Our everyday lives are filled with such products and services. Currently available ICT equipment and services, however, are not always accessible. Typically, the people most excluded by poor accessibility of products and services are those with disabilities and those with limitations due to age. However, they are not the only ones who experience difficulty in operating ICT products, such as personal computers (PCs). It is essential to improve ICT accessibility so that people with such special needs can have access to ICT products and services. The improvement of accessibility of products and services benefits all users, not only people with such special needs, leading to an inclusive e-society.

By providing appropriate ICT accessibility standards, the market of accessible ICT products and services will develop more efficiently and effectively. Standardization encourages organizations to address the needs of the people with disabilities and people with limitations due to age and triggers development of ICT products and services with built in accessibility.

Standardization bodies are starting to address disability and age-related issues and will, increasingly, develop and implement policies and programs in their standards development to include the needs of both people with disabilities and people with limitations due to age. Individuals have different access needs because of their different levels of capabilities and disabilities. Particularly people with multiple disabilities have distinct needs. The great variety and distinctiveness of individual differences make it difficult for individual standards to address all the needs which address the widest range of capabilities and disabilities.

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Information technology — Accessibility considerations for people with disabilities —

Part 2:
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1 Scope

This part of ISO/IEC TR 29138 identifies a collection of documents (which it refers to as standards even though they encompass more than traditional ISO and ISO/IEC standards) that provides guidance on meeting the needs of people with disabilities. While its primary audience is standards developers, it can also be helpful for developers of information technology products and services, policy makers, procurers and for accessibility advocates to consider.

In addition to identifying user needs, this part of ISO/IEC TR 29138 identifies problems that people with disabilities experience with Information Technologies that lead to these user needs and identifies the relationship of these user needs with the accessibility factors for standards developers to consider found in ISO/IEC Guide 71: *Guidelines to address the needs of older persons and people with disabilities* when developing standards.

2 Terms and definitions

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

2.1
standard
identifiable document that contains some specific guidance

NOTE   In the context of this part of ISO/IEC TR 29138, document standards include: all ISO and ISO/IEC standards, technical reports, publicly available specifications and all documents of other organizations that have a similar function to these ISO and ISO/IEC documents.

2.2
user
person who interacts with the product, service or environment

NOTE   Adapted from ISO/IEC Guide 71 definition 3.4, which is adapted from ISO 9241-11:1998.

2.3
user accessibility need
user need
requirement 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 1   Where there are many other types of user needs, this Technical Report only deals with user accessibility needs and thus uses the shorter form "user need" to refer to user accessibility needs.

NOTE 2   It might not be possible to meet all user needs.

3 Standards categories

There are many possible means of organizing the set of standards identified in this part of ISO/IEC TR 29138. The approach taken here is to categorize them in terms of their breadth of application. This organization does not provide mutually exclusive categories, but rather categories that can be added together to provide increasingly detailed guidance.

a) **High-level standards** (clause 4.1) are the most generally applicable standards. In addition to collections of guidance from multiple categories, this category also includes standards providing general guidance and those providing guidance on design.

   NOTE   Because of their composition, standards listed in clause 4.1 can also be considered as belonging to all other categories.

b) **Hardware/equipment-oriented standards** (clause 4.2) apply to all types of computer hardware and to most types of related equipment, including consumer electronics, communication equipment, and computers and related equipment designed for use in specialized environments.

   NOTE 1   Additional standards applying to specialized environments are listed in clause 4.5.

   NOTE 2   Additional standards applying to communications services are listed in clause 4.6.

c) **Software/services-oriented standards** (clause 4.3) apply to software used to control computer hardware and equipment with embedded computer controls.

   NOTE   Additional standards applying to communications services are listed in clause 4.6.

d) **User capabilities-oriented standards** (clause 4.4) apply to people regardless of the types of computer systems, equipment, and/or environmental elements that they interact with. These standards provide anthropomorphic guidance related to various populations of humans.

e) **Environment-oriented standards** (clause 4.5) apply to specialized types of computer hardware, related equipment, and environmental design factors for various specific environments, including: public access systems, control centers, and remote / mobile computing.

f) **Communications services-oriented standards** (clause 4.6) apply to the functionality of various types of computer and telecommunications communications. This category includes standards dealing with: communications protocols, telephone regulations and television regulations.

NOTE   Standards on communications equipment (as opposed to communications services) listed in clause 4.2.

g) **Other relevant standards** (clause 4.7) include packaging and other issues.

Good general design is a prerequisite to good accessible design. Thus standards, which may or may not have their own accessibility related guidance are also important in ensuring aspects of usability, which is the goal of accessibility when applied to populations of users with differing capabilities.

Within each category, standards are subdivided into tow subcategories|:

a) standards focused on accessibility

b) standards partly related to accessibility

Within each subcategory, standards are ordered in the following manner:

a) ISO and ISO/IEC standards ordered based on their ISO number

b) Other global standards and sets of guidelines (where such exist, e.g. W3C and IEEE)

c) Regional and national standards, guidelines and regulations

4 The standards

4.1 High-level standards

4.1.1 High-level standards focused on accessibility

Standard Identifier	Title	Organization	Status	Source
ISO and ISO/IEC standards				
ISO Guide 71	Guidelines for standards developers to address the needs of older persons and persons with disabilities	ISO	Guide published 2001	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=33987
ISO 9241-20	Ergonomics of human-system interaction — Part 20: Accessibility guidelines for information/communication technology (ICT) equipment and services	ISO TC159/SC4	IS published 2008	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=40727
ISO TR 22411	Ergonomic data and guidelines for the application of ISO/IEC Guide 71 in standards related to products and services to address the needs of older persons and persons with disabilities	ISO TC159/WG2	TR published 2008 now under redevelopment	http://www.iso.org/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=40933
ISO/IEC 24756	Information technology — Framework for specifying a common access profile (CAP) of needs and capabilities of users, systems, and their environments	ISO/IEC JTC1/SC35	under development FDIS published 2007	http://www.iso.org/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=41526
Regional and national standards, guidelines and regulations				
BS 7000-6	Design management systems. Managing inclusive design. Guide	UK BSI	Published 2005	http://www.bsi-global.com/en/Shop/Publication-Detail/?pid=000000000030142267
CWA 14661	Guidelines to Standardisers of ICT products and services in the CEN ICT domain	EU CEN	Published 2003	ftp://cenftp1.cenorm.be/PUBLIC/CWAs/e-Europe/DFA/cwa14661-00-2003-Feb.pdf

DIN TR 124	Barrierefreie Gebrauchsgüte	Germany DIN	Published 2005	http://www.beuth.de/beuth/owa/bwr_eins tieg.artikelinfo?z_kontaktnummer=20060 41477573539720060727020140&z_art_id=83849626
JIS X 8341-1	Guidelines for older persons and persons with disabilities — Information and communications equipment, software and services — Part 1: Common Guidelines	Japan JIS	Published 2004	http://www.webstore.jsa.or.jp/webstore/Com/FlowControl.jsp?lang=en&bunsyol d=JIS+X+8341-1%3A2004&dantaiCd=JIS&status=1&pa geNo=0
JIS Z 8071	Guidelines for standards developers to address the needs of older persons and persons with disabilities	Japan JIS	Published 2003	http://www.webstore.jsa.or.jp/webstore/Com/FlowControl.jsp?lang=en&bunsyol d=JIS+Z+8071%3A2003&dantaiCd=JIS &status=1&pageNo=0
Stanca Act	Provisions to support the access to information technologies for the disabled	Italy Federal Law	Published 2004	http://www.pubbliaccesso.gov.it/english/i ndex.htm
Korea Guidelines	Recommendation Guidelines to Improve Accessibility for the Disabled and the Elderly to the IT services/IT products	Korea MIC	Published 2002	http://www.iabf.or.kr/lib/common/downlo ad.asp?path=pds&file=Recommendation Guidelines to Improve Accessibility.pdf
Nordic Guidelines	Nordic Guidelines for Computer Accessibility	Nordic Council of Ministers	Published 1998	http://trace.wisc.edu/docs/nordic_guideli nes/nordic_guidelines.htm
US 508	Section 508 of the US Rehabilitation Act	USA Federal Law	Published 1998 under revision	http://www.section508.gov/index.cfm?Fu seAction=Content&ID=12

4.1.2 High-level standards partly related to accessibility

Standard Identifier	Title	Organization	Status	Source
ISO and ISO/IEC standards				
ISO 1503	Ergonomic requirements for design on spatial orientation and directions of movements	ISO TC159/SC4	IS published 2008	http://www.iso.org/iso/iso_catalogue/catalogue_ics/catalogue_detail_ics.htm?csnumber=40302
ISO 6385	Ergonomic principles in the design of work systems	ISO TC159/SC1	IS published 2004, under revision as 6385-2	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=35885
ISO 6385-1	Ergonomics — Part 1: Basic concepts, terms and definitions	ISO TC159/SC1	under development, CD published 2008 (will replace ISO 6385)	http://www.iso.org/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=42885
ISO 9241-1	Ergonomic requirements for office work with visual display terminals (VDTs) — Part 1: General introduction	ISO TC159/SC4	IS published 1997, Amendment 1 published 2001	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=21922 http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=31246
ISO 9241-2	Ergonomic requirements for office work with visual display terminals (VDTs) — Part 2: Guidance on task requirements	ISO TC159/SC4	IS published 1992	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=16874
ISO 9241-11	Ergonomic requirements for office work with visual display terminals (VDTs) — Part 11: Guidance on usability	ISO TC159/SC4	IS published 1998	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=16883
ISO 9241-210	Ergonomics of human system interaction — Part 210: Human-centred design for interactive systems	ISO TC159/SC4	under development, DIS published 2008 (will replace ISO13407)	—

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Reference	Title	Committee	Status	URL
ISO/IEC 12207	Information technology — Software life cycle processes	ISO/IEC JTC1/SC7	IS published 2008	http://www.iso.org/iso/iso_catalogue/catalogue_ics/catalogue_detail_ics.htm?csnumber=43447
ISO 13407	Human-centred design processes for interactive systems	ISO TC159/SC4	IS published 1999 (under revision as 9241-210)	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=21197
ISO/IEC 15288	Systems engineering — System life cycle processes	ISO/IEC JTC1/SC7	IS published 2008	http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=43564
ISO/IEC 15289	Systems and software engineering — Content of systems and software life cycle process information products (Documentation)	ISO/IEC JTC1/SC7	Published 2006	http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=43790
ISO TR 16982	Ergonomics of human-system interaction — Usability methods supporting human-centred design	ISO TC159/SC4	TR published 2002	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=31176
ISO PAS 18152	Ergonomics of human-system interaction — Specification for the process assessment of human-system issues	ISO TC159/SC4	PAS published 2003	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=38596
ISO TR 18529	Ergonomics — Ergonomics of human-system interaction — Human-centred lifecycle process descriptions	ISO TC159/SC4	TR published 2000	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=33499
ISO/IEC 25060	Software product Quality Requirements and Evaluation (SQuaRE) — Common Industry Format (CIF) for Usability — General Framework for Usability-related Information	ISO/IEC JTC1/SC7	under development DTR published 2008	http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=35786
ISO/IEC 25062	Software engineering — Software product Quality Requirements and Evaluation (SQuaRE) — Common Industry Format (CIF) for usability test reports	ISO/IEC JTC1/SC7	IS published 2006	http://www.iso.org/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=43046

4.2 Hardware-oriented / equipment-oriented standards

4.2.1 Hardware-oriented / equipment-oriented standards focused on accessibility

Standard Identifier	Title	Organization	Status	Source
ISO and ISO/IEC standards				
ISO/IEC 10779	Information Technology — Office equipment accessibility guidelines for elderly persons and persons with disabilities	ISO/IEC JTC1 SC 28	published 2008	http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=46086
ISO/IEC 29136	Information Technology — User Interfaces — Accessibility functions for personal computers	ISO/IEC JTC1 SC 35	under development new work item 2007	—
ISO/IEC 13066	Information Technology — Interoperability with Assistive Technology (AT)	ISO/IEC JTC1 SC 35	under development new work item 2008	—
Regional and national standards, guidelines and regulations				
ANSI C.63.19	American National Standard for Methods of Measurement of Compatibility between Wireless Communication Devices and Hearing Aids	USA ANSI/IEEE	Published 2007	http://webstore.ansi.org/ansidocstore/product.asp?sku=IEEE+Std+C63%2E19%2D2007
JBMS-71	Auditory signal	Japan JBMIA	Published 2006	http://www.jbmia.or.jp/hyojun2/upload-v3/archive/JBMS-71.pdf
JIS S0011	Guidelines for all people including elderly and people with disabilities — Marking of tactile dots on consumer products	Japan JIS	Published 2000	http://www.webstore.jsa.or.jp/webstore/Com/FlowControl.jsp?lang=en&bunsyold=JIS+S+0011%3A2000&dantaiCd=JIS&status=1&pageNo=0
JIS S 0012	Guidelines for all people including elderly and people with disabilities — Usability of consumer products	Japan JIS	Published 2000	http://www.webstore.jsa.or.jp/webstore/Com/FlowControl.jsp?lang=en&bunsyold=JIS+S+0012%3A2000&dantaiCd=JIS&status=1&pageNo=0

Reference	Title	Organization	Status	Link
JIS S 0013	Guidelines for the elderly and people with disabilities — Auditory signals on consumer products	Japan JIS	Published 2002	http://www.webstore.jsa.or.jp/webstore/Com/FlowControl.jsp?lang=en&bunsyold=JIS+S+0013%3A2002&dantaiCd=JIS&status=1&pageNo=0
JIS S 0014	Guidelines for the elderly and people with disabilities — Auditory signals on consumer products — Sound pressure levels of signals for the elderly and in noisy conditions	Japan JIS	Published 2003	http://www.webstore.jsa.or.jp/webstore/Com/FlowControl.jsp?lang=en&bunsyold=JIS+S+0014%3A2003&dantaiCd=JIS&status=1&pageNo=0
JIS X 8341-2	Guidelines for older persons and persons with disabilities — Information and communications equipment, software and services — Part 2: Information processing equipment	Japan JIS	Published 2004	http://www.webstore.jsa.or.jp/webstore/Com/FlowControl.jsp?lang=en&bunsyold=JIS+X+8341-2%3A2004&dantaiCd=JIS&status=1&pageNo=0
JIS X 8341-4	Guidelines for older persons and persons with disabilities — Information and communications equipment, software and services — Part 4: Telecommunications equipment	Japan JIS	Published 2005	http://www.webstore.jsa.or.jp/webstore/Com/FlowControl.jsp?lang=en&bunsyold=JIS+X+8341-4%3A2005&dantaiCd=JIS&status=1&pageNo=0
JIS X 8341-5	Guidelines for older persons and persons with disabilities — Information and communications equipment, software and services — Part 5: Office equipment	Japan JIS	Published 2006	http://www.webstore.jsa.or.jp/webstore/Com/FlowControl.jsp?lang=en&bunsyold=JIS+X+8341-5%3A2006&dantaiCd=JIS&status=1&pageNo=0
TIA 504-A	Telecommunications-Telephone Terminal Equipment-Magnetic Field and Acoustic Gain Requirements for Headset Telephones Intended for Use by the Hard of Hearing	USA TIA	Published 1998	http://www.tiaonline.org/standards/catalog/details.cfm?document_id=1213
UNE 139801	Computer applications for people with disabilities. Computer accessibility requirements. Hardware.	Spain AENOR	Published 2003	http://www.aenor.es/desarrollo/inicio/home/home.asp#

4.2.2 Hardware-oriented / equipment-oriented standards partly related to accessibility

Standard Identifier	Title	Organization	Status	Source
	ISO and ISO/IEC standards			
ISO 7000	Graphical symbols for use on equipment — Index and synopsis	ISO TC145/SC 3	IS published 2004	http://www.iso.org/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=35627
ISO 9241-3	Ergonomic requirements for office work with visual display terminals (VDTs) — Part 3: Visual display requirements	ISO TC159/SC4	IS published 1992 under revision as 9241-300 to 308	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=16875
ISO 9241-4	Ergonomic requirements for office work with visual display terminals (VDTs) — Part 4: Keyboard requirements	ISO TC159/SC4	IS published 1998	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=16876
ISO 9241-7	Ergonomic requirements for office work with visual display terminals (VDTs) — Part 7: Requirements for display with reflections	ISO TC159/SC4	IS published 1998	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=16879
ISO 9241-8	Ergonomic requirements for office work with visual display terminals (VDTs) — Part 8: Requirements for displayed colours	ISO TC159/SC4	IS published 1997	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=16880
ISO 9241-9	Ergonomic requirements for office work with visual display terminals (VDTs) — Part 9: Requirements for non-keyboard input devices	ISO TC159/SC4	IS published 2000	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=30030
ISO 9241-300	Ergonomics of human-system interaction — Part 300: Introduction to electronic visual display requirements	ISO TC159/SC4	IS published 2007	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=40096
ISO 9241-302	Ergonomics of human-system interaction — Part 302: Terminology for electronic visual displays	ISO TC159/SC4	IS published 2008	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=40097