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| **Introduction**<br>The purpose of this Guide is to assist standards developers (e.g. technical committees or working groups) to address accessibility in standards that focus, whether directly or indirectly, on any type of system that people use. It provides guidance for developing and writing appropriate accessibility requirements and recommendations in standards. However, while its intended audience are standards developers, this Guide contains information that can also be useful to other people, such as manufacturers, designers, service providers and educators. | **引言**<br>本指南的目的是帮助标准制定者（例如技术委员会或工作组）在那些直接或间接注重人们使用的任何类型的系统的标准中涉及无障碍性内容。它为在标准中开发和编写适当的无障碍要求与建议提供了指导。虽然它的主要受众是标准制定者，但其中所包含的信息对其他群体也同样具有参考价值，诸如制造商、设计师、服务提供者和教育工作者。 |
| The second edition of this Guide, retitled “Guide for addressing accessibility in standards,” builds upon the edition published in 2001, titled “Guidelines for standards developers to address the needs of older persons and persons with disabilities”. This edition takes account of developments in thinking and practice which have taken place since 2001 and takes a more inclusive approach. This edition also sets out to improve the usability and adoption of the Guide itself. This Guide, like its predecessor, is intended to be part of the overall framework that standards bodies can use in their efforts to support the development of systems that suit the needs of diverse users. | 本指南的第二版更名为《标准中涉及无障碍性的指南》，是在 2001 年出版的第一版《标准制定者考虑老年人和残疾人需求的指南》基础上修订而成。新版充分考虑了自 2001 年以来在理念与实践方面的发展，并采取了更具包容性的方法。新版也致力于提升本指南自身的可用性和采用。与上一版一样，本指南旨在成为各标准机构整体工作框架的一部分，以支持开发能够满足多元化的用户的需求的系统。 |
| It is an important goal for the whole of society that all people, regardless of their age, size or ability, have access to the broadest range of systems. Issues of accessibility to and usability of systems have become more critical as the number of people (such as older persons, children, persons with reduced abilities and persons with disabilities) with diverse user accessibility needs has increased. | 确保所有人群——无论其年龄、体型或能力如何——都能广泛使用各类系统，是全社会的重要目标。随着具有多元化的用户无障碍需求的人群（如老年人、儿童、能力受限者及残疾人）数量不断增长，系统无障碍性与可用性问题变得愈发关键。 |
| Based on their individual abilities and characteristics, people’s accessibility needs vary substantially and change throughout the course of their lives (i.e. as they advance from childhood to adulthood and on into old age). Impairments can be permanent, temporary or vary on a daily basis, and sometimes they are not fully recognized or acknowledged. In addition, although some limitations can be minor in nature, combinations of limitations can pose significant problems for individuals attempting to interact with systems. This is the case particularly where user accessibility needs and accessibility requirements were not recognized during development of those systems. Standards that include accessibility requirements can support development of | 由于个体能力和特征存在差异，人们的无障碍需求也大不相同，并会随生命周期而变化（即从童年到成年，再到老年）。功能障碍可能是永久性的、暂时性的，也可能每日波动；有时甚至未被充分认知或承认。此外，尽管某些限制可能较为轻微，但多种限制叠加在一起，可能给个人在与系统交互时带来重大困难。尤其是在系统开发阶段未能识别并考虑用户无障碍需求和要求的情况下。包含无障碍要求的标准有助于开发出能被更多用户使用的系统。 |

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| systems that can be used by more users. | |
| While much progress has been made worldwide in the development of accessibility standards relating to information and communications technology and the built environment, the development of accessibility standards related to other sectors has not always kept pace. However, the requirements of national and international anti-discrimination legislation have become increasingly stringent. | 尽管全球在信息通信技术和人工环境领域的无障碍标准制定方面已取得显著进展，但其他领域的无障碍标准发展却未能始终同步。与此同时，各国及国际层面反歧视立法要求日益严格。 |
| Additional recommendations are contained in the United Nations Convention on the Rights of Persons with Disabilities[36] particularly in Articles 4, 9, 21 and 30), in the UN Committee of the rights of persons with disabilities, General Comment 2[37] and emerging national and regional procurement regulations. | 《联合国残疾人权利公约》[36]（特别是第4、9、21 和 30 条）、联合国残疾人权利委员会第 2 号一般性意见[37]，以及正在兴起的国家和区域采购法规中，也提出了附加建议。 |
| International Standards of ISO and IEC and ITU-T recommendations can play an important part in avoiding market fragmentation and achieving harmonized accessible systems rather than those that meet only national standards and are incompatible with those produced in other nations. | ISO、IEC 的国际标准以及 ITU-T 的建议，在避免市场碎片化、推动实现协调统一的无障碍系统（而非仅符合本国标准但与其他国家生产的系统互不兼容的系统）方面能够发挥重要作用。 |
| The IEC/ISO/ITU Joint Policy Statement on Standardization and Accessibility[25] sets out the basic principles for ensuring that the needs of older persons, children and persons with disabilities are incorporated in the standards development process, providing justification on human rights and economic grounds. One of the core points of the Joint Policy Statement is “accessible or universal design”, which aims at ensuring that products, systems, services, environments and facilities can be used by persons from a population with the widest range of characteristics and abilities. In this second edition, the Guide is intended to supplement the Joint Policy Statement by providing a set of accessibility goals and describing human abilities and characteristics to assist standards developers in identifying accessibility needs of diverse users in diverse contexts of use. | IEC/ISO/ITU 联合发布的《标准化与无障碍联合政策声明》[25]阐明了将老年人、儿童和残疾人需求纳入标准制定过程的基本原则，从人权和经济角度提供了充分依据。该声明的核心要点之一是“无障碍设计”或“通用设计”，旨在确保产品、系统、服务、环境和设施能够被具备最广泛特征与能力的人群所使用。本指南第二版旨在补充上述联合政策声明，通过提供一套无障碍目标，并描述人的能力与特征，帮助标准制定者在多元化的使用场景场景中识别多元化的用户的无障碍需求。 |
| The guidance provided in this Guide is general. The Guide recognizes the principle that standards should normally not be design-restrictive. The Guide therefore suggests ways of determining user accessibility needs without providing specific solutions. It is important to realize that one-size-fits-all solutions seldom meet every person’s needs and that accessible features can benefit the majority of the population. | 本指南所提供的指导具有一般性。本指南承认一项基本原则，即标准通常不宜限制具体的设计方案。因此，本指南建议通过多种方式来确定用户的无障碍需求，但并不提供具体的解决方案。需要认识到，“一刀切”的方案很少能满足所有人的需求，而无障碍特性实际上能使大多数人群受益。 |
| Optimal solutions vary greatly depending on the specific users and contexts of use. | 最佳解决方案因具体用户群体和使用场景场景的不同而存在显著差异。针对特定产品或 |

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| Additional sector related guides might need to be developed for specific product or service sectors. | 服务领域，可能需要制定相应的行业附加指南。 |
| **Guide for addressing accessibility in standards**<br>**1 Scope**<br>This Guide provides guidance to standards developers on addressing accessibility requirements and recommendations in standards that focus, whether directly or indirectly, on systems (i.e. products, services and built environments) used by people. To assist standards developers to define accessibility requirements and recommendations, the Guide presents:<br>— a summary of current terminology relating to accessibility;<br>— issues to consider in support of accessibility in the standards development process;<br>— a set of accessibility goals (used to identify user accessibility needs);<br>— descriptions of (and design considerations for) human abilities and characteristics;<br>— strategies for addressing user accessibility needs and design considerations in standards. | **标准中涉及无障碍性的指南**<br><br>**1 范围**<br>本指南为标准制定者提供了在直接或间接注重人们使用的系统（即产品、服务和人工环境）的标准中涉及无障碍要求和建议的指导。为了帮助标准制定者界定无障碍要求和建议，本指南阐述了：<br>——与无障碍性相关的现行术语；<br>——在标准制定过程中支持无障碍性需要考虑的事项；<br>——一系列无障碍目标（用于识别用户的无障碍需求）；<br>——人类能力和特征的描述（以及设计考量）；<br>——在标准中涉及用户无障碍需求和设计考量的对策。 |
| **2 Terms and definitions**<br>For the purposes of this document, the following terms and definitions apply.<br>2.1<br>system<br>product, service, or built environment or any combination of them with which the user interacts<br>2.2<br>user<br>individual who accesses or interacts with a system<br>[SOURCE: ISO 9241-11:1998, 3.7, modified — “Accesses” has been added to the definition, “person” has been replaced by “individual”.]<br>2.3<br>diverse users<br>individuals with differing abilities and characteristics or accessibility needs<br>2.4<br>user accessibility need<br>user need related to features or attributes that are necessary for a system to be accessible<br>Note 1 to entry: User accessibility needs vary over time and across contexts of use.<br>2.5<br>impairments | **2 术语和定义**<br>下列术语和定义适用于本文件。<br><br>2.1<br>系统 system<br>与用户交互的产品、服务或人工环境，或它们的任意组合。<br><br>2.2<br>用户 user<br>访问系统或与系统交互的个人。<br>[来源：ISO 9241-11:1998，3.7，有修改——定义中增加了“访问”，“人员”被“个人”代替。]<br>2.3<br>多元化的用户 diverse users<br>具有不同能力和特征或无障碍需求的个人。<br>2.4<br>用户无障碍需求 user accessibility need<br>与系统可访问所必需的特性或属性相关的用户需求<br>注 1：用户无障碍需求随着时间和使用场景的不同而不同。<br>2.5<br>损伤 impairments |

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| problems in body function or structure related to a significant deviation or loss<br>Note 1 to entry: Impairments can be temporary or permanent; progressive, regressive or static; intermittent or continuous.<br>[SOURCE: ICF 2001, WHO, Clause 6, section 4.1] | 与重大偏差或损失有关的身体功能或结构问题。<br>注 1：损伤可能是暂时性的，也可能是永久性的；渐进的、倒退的或静止的；断断续续的或连续的。<br>[来源：ICF 2001，世界卫生组织，第 6 条，第 4.1 节] |
| 2.6<br>activity limitations<br>difficulties an individual can have in executing activities<br>[SOURCE: ICF 2001, WHO] | 2.6<br>活动受限 activity limitations<br>个人在执行活动时可能遇到的困难。<br>[来源：ICF 2001，世界卫生组织] |
| 2.7<br>context of use<br>physical and social environments in which a system is used, including users, tasks, equipment and materials<br>[SOURCE: ISO 9241-11:1998, 3.5, modified — The structure of the sentence has been changed.] | 2.7<br>使用场景 context of use<br>使用系统的物理和社会环境，包括用户、任务、设备和材料。<br>[来源：ISO 9241-11:1998，3.5，有修改——修改了句子的结构。] |
| 2.8<br>diverse contexts<br>differing contexts of use and differing economic, cultural and organizational conditions | 2.8<br>多元化的场景 diverse contexts<br>不同的使用场景和不同的经济、文化和组织条件。 |
| 2.9<br>effectiveness<br>accuracy and completeness with which users achieve specified goals<br>[SOURCE: ISO 9241-11:1998, 3.2] | 2.9<br>有效性 effectiveness<br>用户实现特定目标的准确性和完整性。<br>[来源：ISO 9241-11:1998，3.2] |
| 2.10<br>efficiency<br>resources expended in relation to the accuracy and completeness with which users achieve goals<br>[SOURCE: ISO 9241-11:1998, 3.3] | 2.10<br>效率 efficiency<br>与用户实现目标的准确性和完整性相关的资源消耗。<br>[来源：ISO 9241-11:1998，3.3] |
| 2.11<br>satisfaction<br>freedom from discomfort, and positive attitudes towards the use of the product<br>[SOURCE: ISO 9241-11:1998, 3.4] | 2.11<br>满意度 satisfaction<br>没有不适感，对产品使用持积极态度。<br>[来源：ISO 9241-11:1998，3.4] |
| 2.12<br>usability<br>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<br>[SOURCE: ISO 9241-11:1998, 3.1] | 2.12<br>可用性 usability<br>产品在特定使用场景下，被特定用户用于实现特定目标时所达到的有效性、效率和满意度的程度。<br>[来源：ISO 9241-11:1998，3.1] |
| 2.13<br>multiple means of presentation<br>different ways of presenting information<br>Note 1 to entry: Presenting information in different ways can improve the accessibility of systems | 2.13<br>多种呈现方式 multiple means of presentation<br>呈现信息的不同方式。<br>注 1： 以不同方式呈现信息能够提高系统的无障碍性。 |
| 2.14<br>multiple means of operation | 2.14<br>多种操作方式 multiple means of operation |

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| different ways of manipulation and control<br>Note 1 to entry: Providing different ways of manipulation and control can improve the accessibility of systems.<br>2.15<br>assistive product<br>any product (including devices, equipment, instruments and software), especially produced or generally available, used by or for persons with disability for participation, to protect, support, train, measure or substitute for body functions/structures and activities, or to prevent impairments, activity limitations or participation restrictions<br>[SOURCE: ISO 9999:2011, 2.3] | 不同的操作和控制方式。<br>注 1： 提供不同的操作和控制方式能够提高系统的无障碍性。<br><br>2.15<br>辅助产品 assistive product<br>为保护、支持、训练、测量或替代身体功能/结构和活动，或为了防止损伤、活动受限或参与限制，由残疾人使用或为残疾人参与社会的特别生产或普遍提供的任何产品（包括装置、设备、仪器和软件）。<br>[来源：ISO 9999：2011，2.3] |
| 2.16<br>assistive technology<br>equipment, product system, hardware, software or service that is used to increase, maintain or improve capabilities of individuals<br>Note 1 to entry: Assistive technology is an umbrella term that is broader than assistive products.<br>Note 2 to entry: Assistive technology can include assistive services, and professional services needed for<br>assessment, recommendation and provision. | 2.16<br>辅助技术 assistive technology<br>用于提高、维持或改进个人能力的设备、产品系统、硬件、软件或服务。<br>注 1： 辅助技术是一个总括性术语，比辅助产品更广泛。<br>注 2：辅助技术包括辅助服务以及评估、推荐和提供所需的专业服务。 |
| 2.17<br>standards body<br>standardizing body recognized at national, regional or international level, that has as a principal function, by virtue of its statutes, the preparation, approval or adoption of standards that are made available to the public<br>Note 1 to entry: A standards body may maintain standards committees, working groups or other entities to undertake standardization in various subject fields.<br>Note 2 to entry: A standards body may also have other principal functions.<br>[SOURCE: ISO/IEC Guide 2:2004, 4.4, modified — Note 1 has been added] | 2.17<br>标准机构 standards body<br>根据其章程以编制、批准或采用可公开提供的标准为主要职能，在国家、区域或国际层次上公认的标准化机构。<br>注 1： 标准机构可能设立并维护标准委员会、工作组或其他实体，负责各个主题领域的标准化。<br>注 2： 标准机构也可能具有其他主要职能。<br>[来源：ISO/IEC 指南 2:2004,，4.4，有修改——增加了注 1] |
| 2.18<br>universal design<br>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<br>Note 1 to entry: Universal design shall not exclude assistive devices for particular groups or persons with disabilities where this is needed.<br>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 | 2.18<br>通用设计 universal design<br>产品、环境、方案和服务的设计尽可能让所有人都能使用，而无需进行调整或专门设计。<br>注 1：通用设计不应排除特定群体或残疾人需要的辅助装置。<br>注 2： 通用设计、无障碍设计、全民设计、无障碍环境设计、包容性设计和跨代设计等术语经常以相同的含义互换使用。<br>[来源：《联合国残疾人权利公约》第 2 条，有修改——增加了注 2] |

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| interchangeably with the same meaning.<br>[SOURCE: United Nations Convention on the Rights of Persons with Disabilities, Art. 2, modified — Note 2 has been added] | |
| 2.19<br>accessible design<br>design focused on diverse users to maximize the number of potential users who can readily use a system in diverse contexts<br>Note 1 to entry: This aim can be achieved by (1) designing systems that are readily usable by most users without any modification, (2) making systems adaptable to different users (by providing adaptable user interfaces) and (3) having standardized interfaces to be compatible with assistive products and assistive technology.<br>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. | 2.19<br>无障碍设计 accessible design<br>以多元化的用户为中心的设计，旨在最大限度地增加能够在不同的场景中轻松使用系统的潜在用户数量。<br>注 1： 这一目标能通过以下方式实现：（1）设计让大多数用户无需任何修改就能很容易使用的系统；（2）让系统适合不同用户（通过提供用户适配接口）以及（3）设有标准化接口，以便与辅助产品和辅助技术兼容。<br>注 2： 通用设计、无障碍设计、全民设计、无障碍环境设计、包容性设计和跨代设计等术语经常以相同的含义互换使用。 |
| **3 Accessibility**<br>**3.1 General**<br>This Guide utilizes the term accessibility from an inclusive perspective, recognizing that accessibility generally benefits everyone.<br>In the context of standardization, several definitions for the term accessibility exist but in general, the term is used with a broad understanding. A widely-accepted definition refers to the “extent to which products, systems, services, environments and facilities can be used by people from a population with the widest range of characteristics and capabilities to achieve a specified goal in a specified context of use” (reference: ISO 26800,[13] and, similarly, ISO/TR 9241-100[3] and ISO/TR 22411[11]). | **3 无障碍性**<br>**3.1 概述**<br>本指南从包容性的角度使用了无障碍性一词，承认无障碍性通常对每个人都有益。<br>在标准化的背景下，对无障碍性一词有几种定义，但总的来说，对该术语的使用有着广泛的理解。一个被广泛接受的定义是指“产品、系统、服务、环境和设施在特定使用场景下被特征和能力范围最广的人群用于实现特定目标时所达到的程度”（参考：ISO 26800,[13]以及类似地，ISO/TR 9241-100[3]和 ISO/TR 22411[11]）。 |
| “Accessibility” and “usability” overlap and some standards define the term accessibility as “usability of a product, service, environment or facility by individuals with the widest range of capabilities” (reference:<br>ISO 9241-171,[5] ISO/IEC 25062[21] and ISO/IEC 29136.[22] This perspective emphasizes that accessibility involves both ease of use (which can affect task efficiency and user satisfaction) and success of use (i.e. system effectiveness). | “无障碍性”和“可用性”重叠，一些标准将无障碍性一词定义为“产品、服务、环境或设施被能力范围最广泛的个人所使用的可用性”（参考：ISO 9241-171[5]、ISO/IEC 25062[21]和 ISO/IEC 29136[22]。这一观点强调，无障碍性既涉及易用性（这会影响任务效率和用户满意度）和使用成功率（即系统有效性）。 |
| **3.2 Accessibility and standards**<br>Standards can greatly influence system designs and can therefore contribute significantly to increasing accessibility and minimizing the | **3.2 无障碍性和标准**<br>标准能够极大地影响系统设计，因此能显著提高无障碍性，并最大限度地减少限制无障 |

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| presence of systems that limit accessibility. If accessibility considerations are included in standards, system designers might recognize the need for accessibility features earlier in the design process. Addressing user accessibility needs earlier rather than later in the design process enables producers, possibly at little or no extra cost, to design and produce systems that are accessible.<br>Government legislation based on accessibility standards can influence public policies, procedures and practices.<br>A number of global trends have contributed to increasing the importance of accessibility in standards development. These are summarized in Annex A.<br>It is important for standards developers to recognize that no two people have exactly the same abilities and characteristics. Differences among people can be influenced by their gender, age, size, health condition, impairment, training and experience.<br>Accessible systems are particularly helpful when environmental context of use conditions (such as light intensity, noise or busy activity of nearby people) are unfavourable. Accessibility might be perceived to be in conflict with safety issues. However, it should be kept in mind that features designed to ensure usability and safety should strike a balance with accessibility in order to prevent the exclusion or harm of any user. Standards developers should ensure that systems with safety provisions address the needs of the full range of diverse users. | 碍性的系统的存在。如果标准中包含无障碍性考量，则系统设计者可能会在设计过程的早期就认识到对无障碍特性的需求。在设计过程中尽早涉及用户的无障碍需求，使生产商能够设计和生产可访问的系统，可能只需很少或不需要额外成本。<br>基于无障碍标准的政府立法能够影响公共政策、程序和做法。<br>很多全球趋势已经为提高标准制定中无障碍性的重要性作出了贡献。这些摘要载于附录A。<br>对于标准制定者来说，重要的是要认识到没有两个人拥有完全相同的能力和特征。人与人之间的差异可能受到性别、年龄、体型、健康状况、损伤、训练和经验的影响。<br>当使用条件的环境背景（如光照强度、噪音或附近人的繁忙活动）不利时，无障碍系统尤其有用。无障碍性可能被认为与安全事项相冲突。然而，宜谨记旨在确保可用性和安全的特性宜与无障碍性取得平衡，以防止任何用户被排斥或受到伤害。标准制定者宜确保有安全规定的系统考量例如各种多元化的用户的需求。 |
| **4 Accessibility in the standards development process**<br>**4.1 General**<br>This clause outlines how accessibility can be addressed in the standards development process:<br>— 4.2 contains general considerations for standards bodies related to making the standards<br>development process accessible;<br>— 4.3 provides guidance for each of the respective stages of the standards development process to ensure accessibility is given adequate consideration. | **4　标准制定过程中考虑无障碍性**<br>**4.1　概述**<br>本条概述了如何在标准制定过程中考虑无障碍性：<br>——4.2 包含了标准机构在使标准制定过程可访问方面的总体考量；<br>——4.3 为标准制定过程的各个阶段提供了指导，以确保充分考虑无障碍性。 |
| **4.2 Considerations by standards bodies**<br>Standards bodies should develop a process for determining whether projects would benefit from applying this Guide.<br>Standards bodies should ensure that all stages | **4.2　标准机构的考量事项**<br>标准机构宜制定一个程序，以确定项目是否会从应用本指南中受益。<br>标准机构宜确保标准制定过程的所有阶段都可以访问。这包括标准制定委员会编制的文 |

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| of the standards development process are accessible. This includes documentation and any information produced by the standards development committee, the means of access to these resources as well as the physical or remote access (e.g. through teleconferencing or web-conferencing tools) to the standards development committee meetings. This is because membership of standards development committees and people wishing to comment on drafts can have specific accessibility needs.<br>Standards bodies should encourage and facilitate the participation of relevant stakeholders in the standards development process. Stakeholders should include older persons and persons with disabilities from organizations representing these populations and those persons with a knowledge of the accessibility needs of children and gender-related groups1). | 件和任何信息、获取这些资源的方式以及对标准制定委员会会议的物理或远程参与（例如通过电话会议或网络会议工具）。这是因为标准制定委员会的成员和希望对草案发表评论的人可能有特定的无障碍需求。<br>标准机构宜鼓励和促进相关利益相关方参与标准制定过程。利益相关方宜包括代表老年人和残疾人的组织中的相关人员以及了解儿童和性别相关群体无障碍需求的人员 1） |
| Standards bodies should commission training for their staff and their committee officers (secretaries and chairpersons of standards development committees), in accordance with appropriate international specifications, to enable them to understand the importance of accessibility and to alert them to aspects in standards projects where accessibility considerations should be addressed.<br>Standards bodies should take necessary steps to make their buildings, services and facilities accessible.<br>This could include but would not be limited to: developing an accessibility policy and action plan for the standards body; ensuring that the organization's website is fully accessible; having policies and procedures in place to address accessibility needs; making accessibility improvements to the organization's building; and establishing an accessibility user group to advise the standards body on accessibility on an ongoing basis. | 标准机构宜根据适当的国际规范，委托对其工作人员及其委员会官员（标准制定委员会秘书和主席）进行培训，使他们了解无障碍性的重要性，并提醒他们注意标准项目中考虑无障碍问题的方面。<br>标准机构宜采取必要措施，使其建筑、服务和设施无障碍。这可能包括但不限于：为标准机构制定无障碍政策和行动计划；确保本组织的网站完全无障碍；有涉及无障碍需求的政策和程序；对本组织的大楼进行无障碍改进；以及建立一个无障碍用户小组，持续向标准机构提供无障碍方面的建议。 |
| **4.3 Considerations related to the standards development process**<br>The standards development process is typically organized as a sequence of the five stages listed below.<br>For each stage, the key participants are identified and a list of key actions is given to take into account accessibility considerations. | **4.3 与标准制定过程相关的考量事项**<br>标准制定过程通常由以下五个阶段组成。对于每个阶段，都会确定关键参与者，并给出一份关键行动清单，以考虑无障碍因素。 |
| **4.3.1 Stage 1: Define the standards project and determine the applicability of this Guide** | **4.3.1 阶段 1：界定标准项目并确定本指南的适用性** |

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| Key participants<br>Proposer of standards project<br>Members of the standards development committee<br>Key Actions [KA]<br>KA 1.1 Determine, with due diligence, whether the proposed standard focuses on a system or systems with which humans interact as users, either directly or indirectly. If this is not thought to be the case, then this Guide is generally not likely to be applicable.<br><br>If a standards development committee is unsure if this Guide applies to the specific standard it<br>is developing, the committee should use the Guide until such a time that it determines that the Guide does not apply to its standard. Sometimes a standards committee will initially decide that this Guide does not apply, only to find out later, as the draft standard evolves, that the system will involve direct or indirect interaction with humans. In these cases, the standards committee should begin using the Guide at that point and review the work already done.<br>KA 1.2 Identify the ways in which humans are likely to interact with the system, directly or indirectly.<br>KA 1.3 Identify potential users and determine or identify diversity of abilities and characteristics.<br><br>KA 1.4 Identify key sources of relevant information — such as existing regulations, standards, and research results — that should be collected and considered during the standards development process.<br><br>KA 1.5<br>Determine relevant accessibility aspects that should be addressed by the standard.<br>Outcomes of this stage<br>A decision has been made as to whether this Guide is applicable. Initial sources of additional information about accessibility have been identified.<br><br>**4.3.2 Stage 2: Ensure the standards development committee is well equipped to implement an accessible process with equitable participation**<br>Key participants<br>Standards body<br>Standards development committee chair and secretary<br>Key Actions [KA] | 关键参与者<br>标准项目提案人<br>标准制定委员会成员<br><br>关键行动 [KA]<br>KA 1.1 本着审慎原则，确定拟议标准是否侧重于人类作为用户直接或间接与之交互的一个或多个系统。如果认为情况并非如此，那么本指南通常不太可能适用。<br><br>如果标准制定委员会不确定本指南是否适用于其正在制定的特定标准，则委员会宜使用本指南，直到委员会确定本指南不适用为止。有时，标准委员会最初会决定本指南不适用，但后来随着标准草案的发展，才发现该系统将涉及与人的直接或间接互动。在这种情况下，标准委员会宜在那时开始使用本指南，并审查已经完成的工作。<br><br>KA 1.2 确定人类可能直接或间接与系统交互的方式。<br><br>KA 1.3 识别潜在用户，并确定或识别能力和特征的多样性。<br><br>KA 1.4 识别相关信息的关键来源——如现有法规、标准和研究结果，这些信息宜在标准制定过程中收集和考虑。<br><br>KA 1.5<br>确定标准宜涉及的相关无障碍方面。<br><br>本阶段的成果<br>已就本指南是否适用作出决定。关于无障碍性的补充信息的最初来源已经识别。<br><br>**4.3.2 阶段 2：确保标准制定委员会具备充分条件，能够在公平参与的情况下实施无障碍过程**<br><br>关键参与者<br>标准机构<br>标准制定委员会主席和秘书。<br><br>关键行动[KA] |

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| KA 2.1 Ensure standards development committee membership includes adequate target stakeholder group input.<br>KA 2.2 Establish processes to ensure the accessibility of information, communications and meeting facilities (including teleconferences and online communications) used during the development of the standard.<br>Outcomes of this stage<br>Individuals and organizations with knowledge in accessibility are involved in the project. Accessibility requirements are addressed in the operations of the committee and organization of meetings. | KA2.1 确保标准制定委员会成员包括适当的目标利益相关方群体。<br><br>KA2.2 建立过程，以确保标准制定过程中使用的信息、通信和会议设施（包括电话会议和在线通信）的无障碍性。<br><br>本阶段的成果<br>具有无障碍知识的个人和组织都参与了该项目。无障碍要求在委员会的运作和会议组织中得到处理。 |
| **4.3.3 Stage 3: Develop the content of the standard**<br>Key participants<br>Standards development committee chair and secretary<br>Experts<br>Standards development committee members | **4.3.3 阶段 3：开发标准的内容**<br><br>关键参与者<br>标准制定委员会主席和秘书<br>专家<br>标准制定委员会成员。 |
| Key Actions [KA]<br>KA 3.1 Define the issues: Use this Guide (and other relevant documents) to determine or verify user accessibility needs (see Clause 6) and/or design considerations (see Clause 7) regarding accessibility.<br>KA 3.2 Develop candidate requirements and recommendations: Determine potential ways (see Clause 8) in which each user accessibility need or design consideration could be met by requirements and recommendations within the standard, considering how flexible or alternative options could provide users with the ability to achieve accessibility in the way that best fits the context of use. | 关键行动[KA]<br>KA3.1 界定问题：使用本指南（和其他相关文件）来确定或验证用户的无障碍需求（见第 6 章）和/或关于无障碍的设计考量（见第 7 章）。<br>KA3.2 制定候选要求和建议：确定标准中的要求和建议能够满足每个用户无障碍需求或设计考量的潜在方式（见第 8 章），考虑如何通过灵活或替代性方案，使用户能够以最契合其使用场景的方式实现无障碍访问。 |
| KA 3.3 Evaluate the feasibility of potential requirements and recommendations, taking into account constraints and trade-offs.<br>KA 3.4 Incorporate resulting requirements and recommendations in the standard.<br>KA 3.5 Confirm requirements and recommendations: Consult stakeholders to confirm that accessibility is appropriately and adequately addressed in the standard.<br>KA 3.6 Repeat some of the previous steps in this stage, if necessitated by stakeholder feedback.<br>KA 3.7 Reference: Include a citation for this Guide on the reference list in the standard.<br>Outcome of this stage<br>Requirements and recommendations regarding accessibility for the widest range of users impacted by the standard have been addressed and are reflected in the draft standard. | KA3.3 评估潜在要求和建议的可行性，同时考虑各种限制因素和权衡取舍。<br><br>KA3.4 将由此产生的要求和建议纳入标准。<br><br>KA3.5 确认要求和建议：征询利益相关方的意见，以确认标准中适当和充分地解决了无障碍问题。<br>KA3.6 如果利益相关方反馈有必要，在此阶段重复之前的一些步骤。<br><br>KA3.7 参考文献：在标准的参考文献列表中列入本指南。<br>本阶段的成果<br>关于受该标准影响的最广泛用户的无障碍性的要求和建议已经得到解决，并反映在标准草案中。 |

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| **4.3.4 Stage 4: Issue the draft standard for public review and vote and revise the standard as needed**<br>Key participants<br>Standards body and stakeholders<br>Key Actions [KA]<br>KA 4.1 Ensure all draft documents are prepared and published in accessible format(s).<br><br>KA 4.2 Ensure links to all draft documents are disseminated widely in order to collect feedback from diverse stakeholders.<br>KA 4.3 Ensure that all commenting and voting tools are accessible.<br>Outcome of this stage<br>The draft has been disseminated to a wide audience, including diverse users in a diverse range of contexts of use. | **阶段 4：发布标准草案供公众审查和投票，并根据需要对标准进行修改**<br><br>关键参与者<br>标准机构和利益相关方。<br>关键行动[KA]<br>KA4.1 确保所有文件草案都以可访问的格式编制和发布。<br>KA4.2 确保广泛传播所有文件草案的链接，以收集来自不同利益相关方的反馈意见。<br><br>KA4.3 确保所有评论和投票工具均可访问。<br><br>本阶段的成果<br>该草案已分发给广泛的受众，包括在多元化的使用场景中的多元化的用户。 |
| **4.3.5 Stage 5: Publish the standard**<br>Key participants<br>Standards body<br>Key Actions [KA]<br>KA 5.1 Ensure the standard is published in accessible format(s).<br><br>KA 5.2 Ensure information about the new standard is disseminated to a wide range of relevant stakeholders, organizations and standards committees.<br>KA 5.3 National standard bodies are encouraged to translate Guide 71 to national language(s) to facilitate use by relevant stakeholders, organizations and standards committees.<br>Outcome of this stage<br>Standard is available for use by all interested parties. | **4.3.5 阶段 5：发布标准**<br>关键参与者<br>标准机构。<br>关键行动[KA]<br>KA5.1 确保标准以可访问的格式发布。<br><br>KA5.2 确保将有关新标准的信息传播给广泛的相关利益相关方、组织和标准委员会。<br><br>KA5.3 鼓励国家标准机构将 ISO/IEC 指南 71 翻译成国家语言，以方便相关利益相关方、组织和标准委员会使用。<br><br>本阶段的成果<br>标准可供所有相关方使用。 |
| **5 How to apply the Guide**<br>**5.1 Two approaches to addressing accessibility in standards**<br><br>This Guide identifies two complementary approaches to addressing accessibility in a specific standard:<br>— an accessibility goals approach (see Clause 6), which can be used to identify user accessibility needs that can, in turn, be used to identify accessibility requirements and recommendations for a standardization project;<br>— a human abilities and characteristics approach (see Clause 7), which can be used to identify design considerations that can, in turn, also be used to identify accessibility requirements and recommendations for a standardization project.<br>Standards developers should use these | **5 如何应用本指南**<br>**5.1 标准中涉及无障碍性的两种方法**<br><br>本指南识别出了在特定标准中涉及无障碍性的两种互补方法：<br>——无障碍目标方法（见第 6 章），该方法能够用于识别用户的无障碍需求，反过来，能用于识别标准化项目的无障碍要求和建议；<br>——人的能力和特征方法（见第 7 章），该方法能够用于识别设计考量因素，反过来，也能用于识别标准化项目的无障碍要求和建议。<br><br>标准制定者宜使用这些方法来处理适用标准 |

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| approaches to address accessibility in applicable standards.<br>The use of both approaches can result in the creation of the most appropriate set of standard-specific requirements and recommendations. The extent to which either approach is relied on can vary with the scope and context of use of the particular standard being developed. | 中涉及无障碍性的事宜。使用这两种方法能够产生一系列最合适的标准特定要求和建议。任何一种方法的依赖程度都可能因正在制定的特定标准的范围和使用场景而异。 |
| Clause 6 provides information on accessibility goals that can support accessibility. The clause discusses how standards developers can use questions (based on these goals) within the context of their specific standard to identify standard-specific user accessibility needs.<br>Clause 7 provides information on human abilities and characteristics and the consequences of impairments, including respective design considerations for accessibility. | 第 6 章提供了能够支持无障碍性的无障碍目标信息。这一章讨论了标准制定者如何在其特定标准的上下文中使用问题（基于这些目标）来识别特定于标准的用户无障碍需求。<br>第 7 章提供了关于人的能力和特征以及损伤后果的信息，包括各自的无障碍设计考量。 |
| Clause 8 provides strategies for developing standards requirements and recommendations based on the outputs of the two approaches, and includes examples of requirements and recommendations that result from the application of each strategy.<br>This Guide also recognizes the value of using a range of other sources of accessibility-related information.<br>Figure 1 provides a graphical summary of how this Guide can be used. | 第 8 章提供了根据这两种方法的输出制定标准要求和建议的对策，并包括应用每种对策所产生的要求和建议的示例。<br>本指南还认识到使用一系列其他来源的无障碍相关信息的价值。<br>图 1 提供了如何使用本指南的图形摘要。 |
| Figure 1 — Two approaches to address accessibility in standards | 图 1　标准中涉及无障碍性的两种方法 |
| Figure 1 is a visual representation of the two approaches presented in the Guide for addressing accessibility in standards. The first approach is discussed in Clause 6, which contains a set of accessibility goals that are used to identify user accessibility needs. The second approach is discussed in Clause 7, which contains categories of human abilities and characteristics as well as design considerations for each category. The results of taking either or both approaches in Clauses 6 and 7 can be applied to develop standard-specific requirements and recommendations, following one or more of the strategies discussed in Clause 8. | 图 1 直观地展示了本指南中提出的两种在标准中涉及无障碍性的方法。第 6 章讨论了第一种方法，其中包含一系列无障碍目标，用于识别用户的无障碍需求。第 7 章讨论了第二种方法，它包括人的能力和特征的类别以及每个类别的设计考量。根据第 8 章中讨论的一种或多种对策，采用第 6 章和第 7 章中任一种或两种方法的结果即能用于制定标准特定要求和建议。 |
| **5.2 Other sources of information**<br>A wide variety of other sources of information can be used by standards developers, within the scope of a particular standard, to identify user accessibility needs, design considerations | **5.2　其他信息来源**<br>在特定标准的范围内，标准制定者能够使用各种各样的其他信息来源来识别用户的无障碍需求、设计考量和/或与无障碍相关的要求 |

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| and/or accessibility related requirements and recommendations. | 和建议。 |
| It is recognized that different sectors (i.e. products, services and built environments) and their various subsectors have more specialized user accessibility needs than are presented in this Guide. The committees responsible for developing standards for these sectors and subsectors are encouraged to produce more detailed sector-specific guidance to assist standards developers within their domains.<br>One way of assisting standards developers is to create a collection of user accessibility needs that apply specifically to the particular sector (see e.g. ISO/IEC/TR 29138-1[23] and IEC/TR 62678[27]). | 人们认识到，不同的领域（即产品、服务和人工环境）及其各个子领域对用户无障碍的需求比本指南中所述的更为专业。鼓励负责为这些领域和子领域制定标准的委员会开发更详细的领域特定指南，以协助其领域内的标准制定者。协助标准制定者的一种方法是创建一个专门适用于特定领域的用户无障碍需求集合（例如，参见 ISO/IEC/TR 29138-1[23]和 IEC/TR 62678[27]）。 |
| Other potential sources of information on user accessibility needs, design considerations and/or accessibility related requirements can be found in government regulations. These can be used directly by standards developers but it is important to consider differences in regulations across the various jurisdictions intended to use the standard. | 有关用户无障碍需求、设计考量因素和/或无障碍相关要求的其他潜在信息来源能在政府法规中找到。标准制定者能够直接使用它们，但重要的是要考虑使用该标准的各个司法管辖区的法规差异。 |
| ISO/TR 22411[11] provides an expansion on the various human abilities and characteristics and design considerations presented in Clause 7 of this Guide. It also provides ergonomic data that can be used in developing specific requirements and recommendations. | ISO/TR 22411[11]对本指南第 7 章中提出的各种人类能力、特征和设计考量因素进行了扩展。它还提供了人体工程学数据，能够用于制定特定的要求和建议。 |
| The World Health Organization's International Classification of Functioning, Disability and Health (ICF)[39] is a source of information that can be used in standards to describe people and their functioning. | 世界卫生组织的国际功能、残疾和健康分类（ICF）[39] 是一个信息来源，能在标准中用于描述人及其功能。 |
| Adopted by over 190 member states, the ICF provides a resource for a unified, standard language and framework, which is consistent, clearly defined and unambiguous. It is available in the majority of the world's major languages. Annex B provides an overview on how to use the ICF as a resource for terminology that can be used in some parts of standards to describe people and their functioning. | ICF 被 190 多个成员国采用，为统一、标准的语言和框架提供了资源，这些语言和框架是一致的、清晰界定的和明确的。它以世界上大多数主要语言的版本面向社会提供。附录 B 概述了如何使用 ICF 作为术语资源，这些术语能在标准的某些部分中用以描述人及其功能。 |
| The number of standards that focus on accessibility within certain sectors is increasing (e.g. ISO 9241-171[5] and ISO 21542[10]). Where applicable accessibility standards exist, they can be used as normative references (i.e. other standards can either require that they be used in their entirety or that particular clauses within them be used). | 专注于某些领域无障碍性的标准数量正在增加（例如 ISO 9241-171[5] 和 ISO 21542[10]）。如果存在适用的无障碍标准，则能被规范性引用（即，其他标准能够要求完整使用这些标准，或者要求使用其中的特定条款）。 |
| It is useful to get feedback relating to user accessibility needs directly or indirectly from potential users of the systems to be developed | 直接或间接地从使用该标准制定的系统的潜在用户那里获得与用户无障碍需求相关的反馈是有用的。识别用户无障碍需求的一个有 |

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| using the standard. An effective method to identify user accessibility needs is the use of comprehensive surveys on user experiences. Often (e.g. in product development) companies have a significant amount of information that can help them identify accessibility needs (customer complaints, accident data, marketing data, usability testing results, etc.). | 效方法是对用户体验进行全面调查。通常（例如在产品开发中），公司拥有大量信息，能够帮助它们识别无障碍需求（客户投诉、事故数据、营销数据、可用性测试结果等）。 |
| This Guide can also be used in conjunction with other ISO/IEC Guides, including:<br>— ISO/IEC Guide 37, Instructions for use of products by consumers;[15]<br>— ISO/IEC Guide 41, Packaging — Recommendations for addressing consumer needs;[16]<br>— ISO/IEC Guide 50, Safety aspects — Guidelines for child safety;[17]<br>— ISO/IEC Guide 51, Safety aspects — Guidelines for their inclusion in standards;[18]<br>— ISO/IEC Guide 59, Code of good practice for standardization;[19]<br>— ISO/IEC Guide 76, Development of service standards — Recommendations for addressing consumer<br>issues.[20] | 本指南也能与其他 ISO/IEC 指南一起使用，包括：<br>——ISO/IEC 指南 37，消费者使用产品的说明；[15]<br>——ISO/IEC 指南 41，包装——涉及消费者需求的建议；[16]<br>——ISO/IEC 指南 50，安全方面——儿童安全指南；[17]<br>——ISO/IEC 指南 51，安全方面——将其纳入标准的指南；[18]<br>——ISO/IEC 指南 59，标准化良好实践规范；[19]<br>——ISO/IEC 指南 76，服务标准的制定-涉及消费者事宜的建议。 |
| **5.3 Verifying and validating that accessibility is adequately addressed**<br>Standards developers should verify and validate that accessibility has been adequately addressed in the standard.<br>It is preferable that verification and validation be conducted, using this Guide and any other appropriate resources, by external standards developers not involved in drafting the standard. | **5.3 验证和确认无障碍性是否得到充分解决**<br>标准制定者宜验证和确认标准中充分解决了无障碍性事宜。<br>最好由不参与起草标准的外部标准制定者使用本指南和任何其他适当资源进行验证和确认。 |
| Verification should confirm that the accessibility requirements and recommendations in the standard are consistent with the sources from which they were developed. | 验证宜确认标准中的无障碍要求和建议与制定这些要求和建议的来源一致。 |
| Validation should qualitatively confirm that the accessibility requirements and recommendations meet the needs of the stakeholders affected by systems that comply with the standard. Validation should involve input from representatives of various affected accessibility stakeholder groups and accessibility experts with knowledge of the domain of the standard. | 确认宜定性地确认无障碍要求和建议满足受符合标准的系统影响的利益相关方的需求。确认宜包括各种受影响的无障碍利益相关方团体的代表和了解标准领域的无障碍专家的意见。 |
| **6 Accessibility goals**<br>**6.1 General**<br>**6.1.1 Structure of the goals**<br>Accessibility goals provide one approach to the | **6 无障碍目标**<br>**6.1 概述**<br>**6.1.1 目标的结构**<br>无障碍目标提供了一种方法来识别和制定拟 |

批注 [c1]: ISO 已经有了新版，名称也换了

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| identification and development of specific accessibility related requirements and recommendations to be included in standards. This approach is referred to in this Guide as the accessibility goals approach. The goals can be applied to the design and evaluation of a variety of systems and thus could be included within the accessibility guidance in a variety of standards. | 纳入标准中的具体的无障碍相关要求和建议。这种方法在本指南中被称为无障碍目标方法。这些目标能够应用于各种系统的设计和评价，因此能够呢如各种标准的无障碍指南中。 |
| Each of the 11 goals is introduced by its name and presented in the same structure:<br>1. The goal: The basic goal statement.<br>2. Discussion: An elaboration on the basic goal statement.<br>3. Background: Sources from which the goal is derived.<br>4. Common user accessibility needs: User accessibility needs related to the goal.<br>5. Questions to consider: Questions for applying the goal. | 11 个目标中的每个目标都以名称开头，并采用相同的结构进行呈现：<br>1.目标：基本目标陈述。<br>2.讨论：对基本目标陈述的阐述。<br>3.背景：目标来源。<br>4.常见的用户无障碍需求：与目标相关的用户无障碍需求。<br>5.需要考虑的问题：应用目标的问题。 |
| The goals presented in this Guide are based on principles used in a variety of existing accessibility guidance documents (including ISO 9241-171,[5] ISO/IEC 40500[24] and Principles of Universal Design[32]) and other sources of related information (including ISO 9241-11,[2] ISO 14915-1,[8] ISO 26800[13]). Standards developers can benefit from consulting the original sources of information that were used to derive the goals and which are listed in the bibliography. While many of the sources used in their derivation come from the Information and Communications Technology (ICT) domain, these goals are intended to be a broad set of goals that can be applied across all domains. It is recognized that some goals can be more applicable to some domains than others. | 本指南中提出的目标基于各种现有无障碍指导文件中使用的原则（包括 ISO 9241-171[5]、ISO/IEC 40500[24]和通用设计原则[32]）和其他相关信息来源（包括 ISO 9221-11[2]、ISO 14915-1[8]、ISO 26800[13]）。标准制定者能够从参考文献中列出的用于推导目标的原始信息来源中受益。虽然在其推导中使用的许多来源来自信息和通信技术（ICT）领域，但这些目标旨在成为一系列广泛的目标，能够应用于所有领域。人们认识到，有些目标可能比其他目标更适用于某些领域。 |
| The accessibility goals in this section can help standards developers identify ways in which the standard they are developing could enhance or inhibit the accessibility of the systems on which the standard focuses and especially meet the user accessibility needs of diverse users in diverse contexts of use. | 本节中的无障碍目标能够帮助标准制定者识别他们正在制定的标准增强或抑制标准所针对的系统的无障碍性的方式，特别是满足多元化的使用场景中多元化的用户的用户无障碍需求。 |
| **6.1.2 Identifying user accessibility needs**<br>The typical user accessibility needs provided in this clause give standards developers an indication of needs that can be identified by considering the goals and answering the questions.<br>Diverse users can have a large number of differing user accessibility needs. However, it is important to recognize that different users | **6.1.2 识别用户无障碍需求**<br>本条中提供的典型用户无障碍需求，为标准制定者提供了对需求的提示，这些需求能够通过考虑各项目标和回答问题识别出来。<br>多元化的用户可能有大量不同的用户无障碍需求。然而，重要的是要认识到，不同的用户在不同的使用场景中可能有不同的用户无障碍需求，而特定的用户需求可能不是不同 |

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| can have different user accessibility needs in different contexts of use, and that specific user needs might not be user accessibility needs for different people in different circumstances. The user accessibility needs of some users might also conflict with the user accessibility needs of other users. Standards developers should ensure that the requirements and recommendations that they include in a standard are sufficient to meet the full set of user accessibility needs that are appropriate to the standard. Rather than disregarding some user accessibility needs in creating requirements and recommendations for a standard, it is important to ensure that the user accessibility needs of diverse users are accommodated in diverse ways. | 人群在不同情况下的用户无障碍需求。某些用户的用户无障碍需求也可能与其他用户的用户无障碍需求相冲突。标准制定者宜确保他们纳入标准中的要求和建议足以满足适用于标准的所有用户无障碍需求。在制定标准的要求和建议时，与其忽视某些用户的无障碍需求，重要的是确保以多样化的方式满足多元化的用户的用户无障碍需求。 |
| **6.1.3 Applying user accessibility needs to generate requirements and recommendations**<br>Standards developers should identify user accessibility needs relating to the particular standard they are developing. It is recognized that not all of the typical user accessibility needs identified in this clause might be relevant to all standards. Standards developers can apply the goals (either directly or via the questions that are presented with them) within the specific context of their standard to identify specific user accessibility needs. It is also recognized that the typical user accessibility needs listed in this clause should be specialized to suit a particular standard, and that standards developers should identify important user accessibility needs that are not listed here. Some of the goals might be easier to apply than other goals when developing a particular standard. However, often the less obviously applicable goals can be used to identify user accessibility needs that would otherwise be missed. | **6.1.3 应用用户无障碍需求以生成需求和建议**<br>标准制定者宜识别与他们正在制定的特定标准相关的用户无障碍需求。人们认识到，并非本条中识别出的所有典型用户无障碍需求都与所有标准相关。标准制定者需在其标准的特定上下文中应用目标（直接应用或通过与目标一起提出的问题结合应用），以识别特定的用户无障碍需求。人民还认识到，宜将本条中列出的典型用户无障碍需求专门化以适应特定标准，标准制定者宜识别此处未列出的重要的用户无障碍需求。在制定特定标准时，其中一些目标可能比其他目标更容易应用。然而，通常不太明显的适用目标能够用来识别那些可能被错过的用户无障碍需求。 |
| In most cases there will not be a one-to-one correspondence between requirements or recommendations and user accessibility needs. For example, multiple requirements and recommendations could combine to meet a single user accessibility need; and a single requirement or recommendation could be used to meet (or partially meet) more than one user accessibility need. It does not matter which goal or goals lead to the identification of a user accessibility need. Some of the goals might overlap or conflict with one another, requiring trade-offs to be made. Once the set of user accessibility needs has been identified, overlaps and potential conflicts can be dealt | 在大多数情况下，要求或建议与用户无障碍需求之间不会一一对应。例如，多个要求和建议可能结合起来满足单个的用户无障碍需求；并且单个要求或建议可能被用于满足（或部分满足）一个以上的用户无障碍需求。无论通过哪一个或哪些目标识别用户无障碍需求，都无关紧要。有些目标可能相互重叠或冲突，需要进行权衡。一旦识别出了一一系列用户无障碍需求，重叠和潜在的冲突就可以适当地处理了。重叠通常不需要采取行动；然而，在冲突的情况下，在制定无障碍相关的要求时可能需要进行权衡。 |

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| with appropriately. Overlaps will generally not require action; however, in the case of conflicts there could be a need for trade-offs in the development of accessibility-related requirements. | |
| The questions provided with goals in this clause are general questions that standards developers can use to help them to identify important issues and user accessibility needs relating to the goal. A copy of these questions is contained in Annex C to support their ease of use. Standards developers can use these questions to assist them in achieving this goal. Standards developers are encouraged to customize the set of questions by tailoring the existing questions and/or adding further questions in order to better suit the particular standard being developed. | 本条中与目标一起提供的问题是标准制定者能用来帮助识别与目标相关的重要事项和用户无障碍需求的通用问题。附录 C 给出了这些问题的副本，以使它们易于使用。标准制定者能够使用这些问题来帮助实现目标。鼓励标准制定者通过剪裁现有问题和/或添加更多问题来定制问题集，以便更好地适应正在制定的特定标准。 |
| NOTE<br>In this clause, the term “deliverable” is used to describe all types of documents that are produced taking into account the accessibility goals in this clause, such as standards, technical specifications, technical reports, publicly available specifications, guides, ITU recommendations or workshop agreements. | 注：本条中，“文件”一词用于指代在制定过程中考虑了本条所述无障碍目标的所有类型的文件，例如标准、技术规范、技术报告、可公开提供规范、指南、ITU 建议或研讨会协议。 |
| **6.2 The goals**<br>**6.2.1 Suitability for the widest range of users**<br>**6.2.1.1 The goal**<br>A system is suitable for the widest range of users if it meets the needs of diverse users in diverse contexts. | **6.2 目标**<br>**6.2.1 适用于最广泛的用户**<br>**6.2.1.1 目标**<br>如果一个系统在多元化的场景中满足多元化的用户的需求，那么它适用于最广泛的用户。 |
| **6.2.1.2 Discussion**<br>This goal recognizes that the widest range of users involves both diverse users and diverse contexts as defined in this Guide. While all the potential users might not always be readily known, it is important to ensure that persons, who could be appropriate users, if they were provided accessible means of doing so, are not excluded. | **6.2.1.2 讨论**<br>这一目标认识到，最广泛的用户包括本指南中界定的多元化的用户和多元化的场景。虽然并非所有潜在用户总是容易为人所知，但重要的是确保那些在获得无障碍使用途径后本可成为合适用户的人不被排除在外。 |
| **6.2.1.3 Background**<br>This goal is derived from the various definitions of accessibility as discussed in 3.1 and from the principle of “suitability for the widest range of use” in ISO 9241-171.[5] | **6.2.1.3 背景**<br>这一目标源于 3.1 中讨论的无障碍性的各种定义以及 ISO 9241-171[5]中“适用于最广泛的用途”的原则。 |
| **6.2.1.4 Common user accessibility needs**<br>User accessibility needs include:<br>— to be included as system users through the provision of accessible modes and methods of use;<br>— to have the system accessible to users with combinations of impairments and in adverse environmental conditions. | **6.2.1.4 常见的用户无障碍需求**<br>用户无障碍需求包括：<br>——通过提供可访问的使用模式和方法，将其作为系统用户包括在内；<br>——使系统能够为具有损伤组合和在不利环境条件下使用的用户访问。 |
| **6.2.1.5 Questions to consider** | **6.2.1.5 需要考虑的问题** |

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| a) Who are the potential users of systems that will be addressed by or who will relate to this deliverable?<br>b) Which potential users, if any, might be excluded by the requirements and recommendations in<br>this deliverable?<br>c) What are all the contexts of use in which systems that relate to this deliverable could be used?<br>d) Which contexts of use might be excluded by the requirements and recommendations in this deliverable? | a)谁是将受本文件所涉及的系统或与之相关的潜在用户？<br>b)哪些潜在用户（如果有的话）可能会被本文件中的要求和建议排除在外？<br>c)与此文件相关的系统可能在哪些使用场景中使用？<br>d)本文件中的要求和建议可能会排除哪些使用场景？ |
| **6.2.2 Conformity with user expectations**<br>**6.2.2.1 The goal**<br>A system conforms to user expectations if it is predictable based on the user's past experience, the context of use, laws and standards, and/or commonly accepted conventions. | **6.2.2 符合用户期望**<br>**6.2.2.1 目标**<br>如果系统基于用户以往的经验、使用场景、法律和标准和/或普遍接受的惯例而具有可预测性，那么该系统就符合用户期望。 |
| **6.2.2.2 Discussion**<br>This goal recognizes that failure to conform to user expectations can be confusing for diverse users and can lead to errors. Users can have expectations with regards to a number of aspects of a system including:<br>terminology, actions, responses, and communications. User expectations are based upon an individual's past experience and can be changed or enhanced (e.g. via the provision of information or training) and expectations can evolve over time. User expectations are often determined by the current context of use and can change across different contexts. When a user is in a new context, expectations will be based on similar contexts with which the user is familiar. This goal encourages that interaction with or operation of systems to be predictable. New systems might require users to learn new knowledge or skills. When people are required to modify familiar practices or habits, difficulties can result. This is especially significant because some users have considerable difficulties (that can extend to inabilities) in dealing with contradictory methods of performing actions that they understand as being similar to one another.<br>NOTE<br>It is not the intent of this goal to preclude the development of new expectations. However, it advocates consistency with user's existing expectations wherever possible. | **6.2.2.2 讨论**<br>这一目标认识到，不符合用户期望可能会让多元化的用户感到困惑，并可能导致错误。用户可能对系统的许多方面抱有期望，包括：术语、操作、响应和通信。用户期望基于个人以往的经验，并能够改变或增强（例如通过提供信息或培训），期望可能随着时间的推移而变化。用户期望通常由当前的使用场景决定，并且能够在不同的场景中发生变化。当用户处于新的场景时，期望将基于用户熟悉的类似场景。这一目标鼓励与系统的交互或系统的操作是可预测的。新系统可能需要用户学习新的知识或技能。当人们被要求改变熟悉的做法或习惯时，可能会出现困难。这一点尤其重要，因为一些用户在应对他们认为彼此相似却采用相互矛盾的操作方式时，会遇到相当大的困难（甚至可能完全无法应对）。<br>注：本目标并非旨在排除新期望的发展。然而，它提倡尽可能与用户现有的期望保持一致。 |
| **6.2.2.3 Background**<br>This goal is derived from the principles of "conformity with user expectations" from ISO 9241-110[4] and "simple and intuitive use" from Principles of Universal Design.[32] | **6.2.2.3 背景**<br>这一目标源于 ISO 9241-110[4]中的"符合用户期望"原则和通用设计原则中的"简单直观的使用"原则[32]。 |

**6.2.2.4 Common user accessibility needs**

User accessibility needs include:

— not to be surprised by the results of interactions with the system;

— to be able to apply personal knowledge and experience to interact successfully with the system;

— to receive instruction or training directed at preparing them for new knowledge needed to interact successfully with the system;

— to obtain immediate and easily accessible help or further instructions, where such help can be provided by the system.

**6.2.2.5 Questions to consider**

a) What are the expectations/user experiences of the diverse users of systems that relate to this deliverable?

b) Is there any available information on frustrated or confirmed user expectations with products affected by deliverables in this domain?

c) What conflicts with potential user expectations could result from using this deliverable?

d) What new user expectations will be created by using this deliverable?

**6.2.3 Support for individualization**

**6.2.3.1 The goal**

A system supports individualization if its components, functions or operations can be tailored to meet the needs of individual users.

**6.2.3.2 Discussion**

This goal recognizes that a single system design is seldom optimal in meeting the needs of every user and context of use and it can be important to provide users with choices in how to interact with a system.

While various types of systems or system components (e.g. the built environment) are not modifiable by users, individualization can be accomplished if the users can individualize the way in which they interact with the system.

Individualization focuses on providing each user with means of obtaining the best possible solution for that user. This can be accomplished by providing users with a choice in their methods of interacting with a system (such as alternative sets of operations or interactions, alternate modalities of interacting or operating, or cognitive strategies) and/or by providing alternative means or formats of interaction matched to that individual's needs in that context or by implementing other accessibility strategies.

**6.2.2.4 常见的用户无障碍需求**

用户无障碍需求包括：

——不要对与系统交互的结果感到惊讶；

——能够应用个人知识和经验与系统成功交互；

——接受指导或培训，以使他们为成功与系统交互所需的新知识做好准备；

——获得即时且易于访问的帮助或进一步的指示，这种帮助能由系统提供。

**6.2.2.5 需要考虑的问题**

a) 与本文件相关的系统的多元化的用户的期望/用户体验是什么？

b) 在本领域内，是否有任何关于受文件影响的产品的落空的或已确认的用户期望的可用信息？

c) 使用此文件可能导致哪些与潜在用户期望相冲突的情况？

d) 使用此文件将产生哪些新的用户期望？

**6.2.3 支持个性化**

**6.2.3.1 目标**

如果系统的组件、功能或操作能根据单个用户的需求进行定制，则该系统支持个性化。

**6.2.3.2 讨论**

这一目标认识到，单一的系统设计很少能满足每个用户的需求和使用场景，为用户提供如何与系统交互的多个选择可能很重要。虽然各种类型的系统或系统组件（例如，人工环境）不可由用户修改，但如果用户能够个性化他们与系统交互的方式，则可以实现个性化。

个性化侧重于为每位用户提供能够获得最适合其自身需求的解决方案的手段。这能通过向用户提供与系统交互方法的选择（例如可供选择的系列操作或交互集、可选的交互或操作模式或认知对策）和/或通过提供与个人在该场景中的需求相匹配的可选交互方式或格式或通过实施其他无障碍对策来实现。

**6.2.3.3 Background**

This goal is derived from the principles "suitability for individualization" from ISO 9241-110[4], "flexible in use" from ISO 9241-171,[5] and "flexibility in use" from Principles of Universal Design.[32]

**6.2.3.4 Common user accessibility needs**

User accessibility needs include:

— to be provided with (and to be able to choose) the way of interacting with a system that best works for them (including activating and deactivating built-in accessibility features);

— to be provided with information on available options for interacting with a system on which to base a choice of interaction methods;

— to be provided an accessible means to choose individualization features, which will be maintained for future uses of the system, until changed by the user.

**6.2.3.5 Questions to consider**

a) What aspects of user interaction with systems that relate to this deliverable should the user be able to individualize?

b) What aspects of user interaction with systems that relate to this deliverable could present barriers for some users if they are not individualizable?

c) What recognized or innovative sets of individual options or preferences could be recommended by the deliverable for potential implementation within systems?

d) How could the context in which the deliverable is used affect the identified individual options or preferences that are needed?

**6.2.4 Approachability**

**6.2.4.1 The goal**

A system is approachable if diverse users can overcome any physical or psychological barriers and physically or remotely access it to accomplish the task.

**6.2.4.2 Discussion**

This goal recognizes that a lack of approachability can create a barrier to use for some users. Access routes, spaces, sizes, designs, the layouts of control mechanisms, and the use of processes for interacting with systems are important for diverse users in diverse contexts of use. This involves being able to navigate to and within a system (as appropriate) and being able to get into positions and/or contexts needed to successfully interact with the system and to be able to leave the system. The system could be approachable directly (e.g. by touch, by voice), via remote means (e.g. by using

**6.2.3.3 背景**

这一目标源自 ISO 9241-110[4]中的“适合个性化”原则、ISO 9241-171[5]中的“使用灵活”原则和通用设计原则中的“使用上的灵活性”原则。

**6.2.3.4 常见的用户无障碍需求**

用户无障碍需求包括：

——提供（并能够选择）最适合他们与系统交互的方式（包括激活和停用内置的无障碍功能）；

——提供有关与系统交互的可用选项的信息，以便据此选择交互方式；

——提供一种可访问的方式来选择个性化功能，这些功能将被保留以供系统的未来使用，直到用户修改为止。

**6.2.3.5 需要考虑的问题**

a) 用户应该能够个性化与此文件相关的系统的用户交互的哪些方面？

b) 如果不能个性化，那么与此文件相关的系统的用户交互的哪些方面可能会给某些用户带来障碍？

c) 文件能推荐哪些公认的或创新的系列个人选项或偏好集，以便在系统内进行潜在实施；

d) 文件的使用场景可能如何影响已识别的个体所需选项或偏好。

**6.2.4 可接近性**

**6.2.4.1 目标**

如果多元化的用户能够克服任何物理或心理障碍，并通过物理或远程访问系统来完成任务，那么系统具有可接近性。

**6.2.4.2 讨论**

这一目标认识到，缺乏可接近性可能会给一些用户造成使用障碍。访问路径、空间、大小、设计、控制机制的布局以及与系统交互的过程的使用对于多元化的使用场景中的多元化的用户来说是重要的。这包括能够导航到系统内部及在系统内（视情况而定）进行导航，能够进入成功与系统交互所需的位置和/或场景，并能够退出系统。该系统可以通过直接方式（例如通过触摸、语音）、远程方式（例如通过使用电信通信）或使用辅助产品和辅助技术实现可接近性。

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| telecommunications), or<br>through the use of assistive products and assistive technology.<br>This goal recognizes that physical or psychological barriers can inhibit or prevent users from accessing a system. This goal recognizes the importance of taking into account those barriers that can be reasonably identified and removed or controlled but that, within certain environments, some barriers might have to remain where alternative systems will need to be used. | 这一目标认识到，物理或心理障碍会抑制或阻止用户访问系统。这一目标认识到要考虑那些能够被合理识别、消除或控制的障碍，但在某些环境中，部分障碍可能仍需保留，此时则需使用替代系统。 |
| **6.2.4.3 Background**<br>This goal is derived from the principle of "size and space for approach and use" from Principles of Universal Design.[32] | **6.2.4.3 背景**<br>这一目标源于通用设计原则[32]中的"提供接近和使用所需的尺寸和空间"原则。 |
| **6.2.4.4 Common user accessibility needs**<br>User accessibility needs include:<br>— to have adequate room to fit themselves and their assistive products or assistive technology;<br>— to have system controls located within close reach;<br>— to have interaction options clearly presented;<br>— to have appropriate levels of privacy and security;<br>— to be able to use the system remotely as well as directly. | **6.2.4.4 常见的用户无障碍需求**<br>用户无障碍需求包括：<br>——有足够的空间容纳自己和他们的辅助产品或辅助技术；<br>——将系统控制装置设置在触手可及的范围内；<br>——交互选项清晰呈现；<br>——具备适当的隐私和安全级别；<br>——能够通过远程方式以及直接方式使用该系统。 |
| **6.2.4.5 Questions to consider**<br>a) How could this deliverable ensure that resulting systems that relate to this deliverable be physically and psychologically approached by diverse users so that they can perform their tasks?<br>b) How could this deliverable ensure that systems that relate to this deliverable be remotely approached by diverse users to perform their tasks?<br>c) How could this deliverable avoid limits to physical, psychological or remote approachability for diverse users in diverse contexts of use? | **6.2.4.5 需要考虑的问题**<br>a) 这个文件如何确保与之相关的系统在物理和心理层面被多元化的用户接近，以便使他们能够完成任务？<br>b) 这个文件如何确保与之相关的系统能够被多元化的用户通过远程方式接近，以便使他们能够完成任务？<br>c) 这个文件如何避免在不同的使用场景中对多元化的用户的物理、心理或远程可接近性造成限制？ |
| **6.2.5 Perceivability**<br>**6.2.5.1 The goal**<br>A system is perceivable if diverse users in diverse contexts can sense the information and functionalities it presents. | **6.2.5 可感知性**<br>**6.2.5.1 目标**<br>如果不同场景中的多元化的用户能够感知系统所呈现的信息和功能，那么系统是可感知的。 |
| **6.2.5.2 Discussion**<br>This goal recognizes that perceivability is focused on the human physical capability to sense information in the sensory modality in which it is presented. Making use of multiple modalities (i.e. more than one of: visual, auditory, tactile, olfactory or taste) can provide perceivability for more diverse users and | **6.2.5.2 讨论**<br>这一目标认识到，可感知性侧重于人类在信息所呈现的感官模态中感知该信息的生理能力。使用多模态（即视觉、听觉、触觉、嗅觉或味觉中的一种以上）能够为更多多元化的用户和场景提供可感知性。在单个感官模态中提供信息能将一些用户在某些场景中排除在感知信息和功能之外。 |

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| contexts. Providing information in a single sensory modality can exclude some users in some contexts from perceiving information and functionalities. | |
| **6.2.5.3 Background**<br>This goal is derived from the principles of "perceptible information" from ISO 9241-171[5], "suitability for perception and understanding" from ISO 14915-1[8], "perceivable" from ISO/IEC 40500 (WCAG 2.0[24]) and "perceptible information" from Principles of Universal Design.[32] | **6.2.5.3 背景**<br>这一目标源自 ISO 9241-171[5]中的"可感知信息"、ISO 14915-1[8]中的"适用于感知和理解"和 ISO/IEC 40500（WCAG 2.0[24]）中的"可感知的"和通用设计原则[32]中的"可感知的信息"原则。 |
| **6.2.5.4 Common user accessibility needs**<br>User accessibility needs include:<br>— to use a specific sensory modality (or a set of specific modalities) to perceive information;<br>— to control various presentation attributes of a modality;<br>— to be able to distinguish among the individual elements of information that are being presented;<br>— to control the physical environment (to the extent reasonable) so that it does not interfere with perceiving the information. | **6.2.5.4 常见的用户无障碍需求**<br>用户无障碍需求包括：<br>——使用特定的感官模态（或一系列特定模态）来感知信息；<br>——控制某个模态的各种呈现属性；<br>——能够在正在呈现的信息的各个元素之间进行区分；<br>——控制物理环境（在合理的范围内），使其不干扰信息的感知。 |
| **6.2.5.5 Questions to consider**<br>a) Within the scope of this deliverable, what information should be presented by systems to users?<br>b) How could this deliverable ensure that diverse users in diverse contexts can perceive the information presented in systems that relate to this deliverable?<br>c) How could this deliverable limit the modalities that a system uses to present information to users? | **6.2.5.5 需要考虑的问题**<br>a) 在本文件的范围内，系统需要向用户呈现哪些信息？<br>b) 本文件如何确保多元化的场景中的多元化的用户能够感知与该文件相关的系统中呈现的信息；<br>c) 本文件如何限制系统向用户呈现信息的模态？ |
| **6.2.6 Understandability**<br>**6.2.6.1 The goal**<br>A system is understandable if its information and functionalities are interpretable by diverse users. | **6.2.6 可理解性**<br>**6.2.6.1 目标**<br>如果一个系统的信息和功能能被多元化的用户解释，那么它具有可理解性。 |
| **6.2.6.2 Discussion**<br>This goal recognizes that understandability depends on the human cognitive ability to correctly interpret the meaning of the information that has been perceived. This goal recognizes that it is important for a system to minimize the need and effort required for diverse users to learn and to remember.<br>Different users can have different styles of thinking that can influence their ability to understand presented information. Some users work best with models and concepts (e.g. goals, principles) and will have difficulties working with details that are not related to a model or concept. Some users work best with explicit procedures, details, or examples and | **6.2.6.2 讨论**<br>这一目标认识到，可理解性取决于人类正确解释所感知信息的含义的认知能力。这一目标认识到，对于一个系统来说，最大限度地减少多元化的用户学习和记忆所需的需求和努力是很重要的。<br><br>不同的用户可能有不同的思维风格，这会影响他们理解所呈现的信息的能力。一些用户在使用模型和概念（如目标、原则）时效果最佳，而在处理与模型或概念无关的细节时会遇到困难。一些用户在使用明确的程序、细节或示例时效果最佳，而在使用复杂的或抽象模型或概念时会遇到困难。不同的用户 |

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| will have difficulties working with complex or abstract models or concepts. Different users will have different needs related to their understanding how to interact with a system. | 在理解如何与系统交互方面会有不同的需求。 |
| Some users might have the knowledge and cognitive skills to understand a situation and make the correct decision, while other users might need constant assistance or regular retraining to be able to understand the same situation. Some users could benefit from tools that help them to analyse the information they are being given in a manner that aids in its understanding. | 一些用户可能具有理解情况并做出正确决定的知识和认知技能，而其他用户可能需要不断的帮助或定期的再培训才能理解相同的情况。一些用户能从工具中受益，这些工具帮助他们以有助于理解的方式分析所提供的信息。 |
| Language and culture can affect understanding. It is important that the use of linguistic and cultural aspects of presented information be considered with respect to the widest diversity of users in the widest diversity of contexts. | 语言和文化会影响理解。重要的是，在最广泛多样的使用场景中，需针对最广泛多样的用户，充分考虑所呈现信息的语言和文化因素。 |
| **6.2.6.3 Background**<br>This goal is derived from the principles of "self-descriptiveness" from ISO 9241-110[4], "understandable" from ISO 9241-171:2008,[5] Clause 5, "suitability for perception and understanding" from ISO 14915-1[8], "understandable" from ISO/IEC 40500[24] and "simple and intuitive use" from Principles of Universal Design.[32] | **6.2.6.3 背景**<br>这一目标源自 ISO 9241-110[4]中的"自我描述性"原则、ISO 9241-171:2008[5]第 5 条中的"可理解"原则、ISO 14915-1[8]中的"适合于感知和理解"原则，ISO/IEC 40500[24]中的"可理解的"原则和通用设计原则[32]中的"简单直观的使用"原则。 |
| **6.2.6.4 Common user accessibility needs**<br>User accessibility needs include:<br>— to be able to obtain an overview of the system and its components and functionalities;<br>— to be able to understand information presented by the system;<br>— to have information that supports their cognitive abilities;<br>— to have the steps for completing tasks minimized and clearly explained;<br>— to have cues to assist them in completing tasks;<br>— to have feedback that shows users the results of their actions;<br>— to be able to control the pace of interaction with the system;<br>— to be able to access help when needed. | **6.2.6.4 常见的用户无障碍需求**<br>用户无障碍需求包括：<br>——能够获得系统及其组件和功能的概览；<br>——能够理解系统所呈现的信息；<br>——获得支持其认知能力的信息；<br>——尽量减少完成任务的步骤，并对其进行清楚的解释；<br>——有线索帮助他们完成任务；<br>——向用户展示其行动结果的反馈；<br>——能够控制与系统交互的速度；<br>——能够在需要时获得帮助。 |
| **6.2.6.5 Questions to consider**<br>a) For systems within the scope of this deliverable, what information and functionalities should be presented that would need to be understood by users?<br>b) How could this deliverable assist in ensuring that the information and functionalities of the system are understandable for diverse users?<br>c) How could this deliverable support diverse users to be able to learn how to use the | **6.2.6.5 需要考虑的问题**<br>a) 对于本文件范围内的系统，需要向用户提供哪些需要用户理解的信息和功能？<br>b) 本文件如何有助于确保系统的信息和功能对多元化的用户来说是可理解的？<br>c) 本文件如何支持多元化的用户学习如何使用与之相关的系统的信息和功能？<br>d) 本文件如何确保系统避免对潜在用户造成不必要的认知负担？ |

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| information and functionalities of systems that relate to it?<br>d) How could this deliverable ensure that systems avoid making unnecessary cognitive demands on potential users? | |
| **6.2.7 Controllability**<br>**6.2.7.1 The goal**<br>A system is controllable if the user is able to initiate and complete the interaction(s) required to accomplish the task. | **6.2.7 可控性**<br>**6.2.7.1 目标**<br>如果用户能够发起并完成任务所需的交互，则系统是可控的。 |
| **6.2.7.2 Discussion**<br>This goal recognizes that it is important that diverse users can control their interactions with systems.<br>This depends on the ability of users to interact with different control mechanisms that require different interaction modalities (e.g. by touch, gesture, voice) to use a system. Providing multiple means of operation can improve controllability. | **6.2.7.2 讨论**<br>这一目标认识到，多元化的用户能够控制他们与系统的交互是很重要的。这取决于用户与不同控制机制交互的能力，这些控制机制需要不同的交互模态（例如通过触摸、手势、语音）来使用系统。提供多种操作方式能够提高可控性。 |
| **6.2.7.3 Background**<br>This goal is derived from the principles of "controllability" from ISO 9241-110[4], "operable" from ISO 9241-171[5], "suitability for exploration" from ISO 14915-1,[8] and "operable" from ISO/IEC 40500.[24] | **6.2.7.3 背景**<br>该目标源自 ISO 9241-110[4]中的"可控性"原则，<br>ISO 9241-171[5]中的"可操作的"原则，ISO 14915-1[8]中的"适合于探索"，和ISO/IEC 40500[24]中的"可操作的"。 |
| **6.2.7.4 Common user accessibility needs**<br>User accessibility needs include:<br>— to be able to use a specific interaction modality (or a set of specific interaction modalities) to interact with the system;<br>— to be able to perform the task using various parts of the body and specific types of actions;<br>— to be able to perform tasks one step at a time;<br>— to be able to interact with the system at one's own pace. | **6.2.7.4 常见的用户无障碍需求**<br>用户无障碍需求包括：<br>——能够使用特定交互模态（或一系列特定交互模态）与系统交互；<br>——能够使用身体的各个部位和特定类型的动作来完成任务；<br>——能够一步一个脚印地完成任务；<br>——能够以自己的节奏与系统交互。 |
| **6.2.7.5 Questions to consider**<br>a) For systems within the scope of this deliverable, what control actions should users need to be able to initiate and complete?<br>b) How could this deliverable ensure that diverse users in diverse contexts of use are able to initiate and complete the actions that are required to accomplish their tasks?<br>c) How could this deliverable avoid limiting the modalities that a user can use to initiate and complete the actions that are required to accomplish their tasks? | **6.2.7.5 需要考虑的问题**<br>需要考虑的问题包括：<br>a) 对于本文件范围内的系统，用户需要能够启动和完成哪些控制操作？<br>b) 本文件如何确保多元化的使用场景中的多元化的用户能够启动并完成其任务所需的操作？<br>c) 本文件如何避免限制用户用于启动和完成任务所需操作的交互模态？ |
| **6.2.8 Usability**<br>**6.2.8.1 The goal**<br>A system is usable if it supports diverse users in their diverse contexts to accomplish their tasks with effectiveness, efficiency and satisfaction. | **6.2.8 可用性**<br>**6.2.8.1 目标**<br>如果一个系统在多元化的场景中支持不同的用户以有效、高效和满意的方式完成任务，那么它具有可用性。 |

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| **6.2.8.2 Discussion**<br>If the minimum level of usability for a user in a context is not provided, then the user might not consider the system to be accessible enough to use. This goal recognizes that inadequate usability can discourage users from accessing a system. System effectiveness, efficiency and user satisfaction can vary greatly depending on the specific users and context of use. | **6.2.8.2 讨论**<br>如果没有为用户提供使用场景中的最低级别的可用性，则用户可能会认为该系统不够无障碍而不愿使用。这一目标认识到，可用性不足会阻碍用户访问系统。根据具体用户和使用场景的不同，系统的有效性、效率和用户满意度可能会有很大差异。 |
| **6.2.8.3 Background**<br>This goal is derived from the definitions of accessibility in terms of usability (see 3.1) and the principles of "suitability for the task" from ISO 9241-110[4], "suitability for the communication goal" from ISO 14915-1[8], "ease of operation" from ISO 20282-1[9] and 'low physical effort' from Principles of Universal Design.[32] It recognizes that usability is a prerequisite to the successful use of a system and that usability will vary across diverse users and diverse contexts of use. | **6.2.8.3 背景**<br>该目标来源于可用性方面的无障碍性定义（见 3.1）和 ISO 9241-110[4]中的"任务适用性"原则、ISO 14915-1[8]中的"通信目标适用性"、ISO 20282-1[9]中的"易于操作"和通用设计原则[32]中的"低体力消耗"原则。它认识到可用性是成功使用系统的先决条件，并且可用性在多元化的用户和多元化的使用场景中会有所不同。 |
| **6.2.8.4 Common user accessibility needs**<br>User accessibility needs include:<br>— to be able to avoid making mistakes in completing tasks;<br>— to perform tasks with a minimum of physical and cognitive exertion;<br>— to be able to complete tasks in an efficient manner relative to one's own abilities (i.e. what is efficient for one user will not necessarily be equally efficient for other users);<br>— to be able to complete tasks within the available time;<br>— to be able to complete tasks with the available resources;<br>— to be satisfied with the outcome of interacting with the system;<br>— to have confidence that using the system will not involve any negative consequences or unacceptable risks;<br>— to be satisfied that the system is worth using;<br>— to have a positive physical and psychological experience using the system. | **6.2.8.4 常见的用户无障碍需求**<br>用户无障碍需求包括：<br>——能够避免在完成任务时出错；<br>——以最少的体力和认知消耗来完成任务；<br>——能够以相对于自己能力的有效方式（即，对一个用户有效的方式对其他用户不一定同样有效）完成任务；<br>——能够在可用时间内完成任务；<br>——能够利用现有资源完成任务；<br>——对与系统交互的结果感到满意；<br>——有信心使用该系统，不会涉及任何负面后果或不可接受的风险；<br>——对该系统值得使用感到满意；<br>——使用该系统获得积极的身体和心理体验。 |
| **6.2.8.5 Questions to consider**<br>a) How could a system that relates to this deliverable assist diverse users in diverse contexts to effectively accomplish their tasks?<br>b) How could a system that relates to this deliverable assist diverse users in diverse contexts to accomplish their tasks in a manner that is efficient to each of them?<br>c) How could a system that relates to this deliverable assist diverse users in diverse contexts to accomplish their tasks in a manner | **6.2.8.5 需要考虑的问题**<br>a) 与本文件相关的系统如何在不同的场景中帮助多元化的用户有效地完成他们的任务？<br>b) 与本文件相关的系统如何帮助不同场景中的多元化的用户以对他们每个人都有效的方式完成他们的任务？<br>c) 与本文件相关的系统如何在不同的场景中帮助多元化的用户以使他们每个人都以满意的方式完成他们的任务？ |

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| that is satisfactory to each of them?<br>d) How could a system that relates to this deliverable avoid limiting the usability of the system for some users? | d) 与本文件相关的系统如何避免限制系统对某些用户的可用性？ |
| **6.2.9 Error tolerance**<br>**6.2.9.1 The goal**<br>A system has error tolerance if despite predictable errors, diverse users can complete the intended task or activity with either no, or minimal, corrective action or negative consequences. | **6.2.9 容错**<br>**6.2.9.1 目标**<br>如果一个系统在面对可预测的错误时，仍能使多元化的用户在没有纠正措施或仅需承担极少的负面后果的情况下完成预期任务或活动，则系统具有容错能力。 |
| **6.2.9.2 Discussion**<br>This goal recognizes the importance of minimizing the potential for error and that where errors cannot be avoided it is important to minimize their impact on users. Diverse users and diverse contexts can sometimes create situations in which a wide variety of errors can occur and where the effects of these errors can prevent the users from accomplishing their tasks. | **6.2.9.2 讨论**<br>这一目标认识到将错误可能性降至最低的重要性，并且在无法避免错误的情况下，将其对用户的影响降至最低是很重要的。多元化的用户和多元化的场景有时会产生各种各样的错误，并且这些错误的影响可能会阻碍用户完成他们的任务。 |
| **6.2.9.3 Background**<br>This goal is derived from the principles of “error tolerance” from ISO 9241-110[4], “error tolerant” from ISO 9241-171[5], “help users avoid and correct mistakes” from ISO/IEC 40500 (WCAG 2.0[24]) and “tolerance for error” from Principles of Universal Design.[32] | **6.2.9.3 背景**<br>该目标源自 ISO 9241-110[4]中的“容错”原则、ISO 9241-171[5]中的“容错”原则、ISO/IEC 40500（WCAG 2.0[24]）中的“帮助用户避免和纠正错误”原则和通用设计原则中的“误差容限”原则。 |
| **6.2.9.4 Common user accessibility needs**<br>User accessibility needs include:<br>— to be able to explore a system without unintentionally activating components or their functionality;<br>— to be able to successfully operate a system with limited body control (e.g. strength, tremors);<br>— to be able to detect when errors have been made;<br>— to be able to recover from errors made from interacting with the system (whenever possible);<br>— to reset a system to an earlier or original condition as a means to responding to errors;<br>— to avoid errors by having negative consequences be obvious, easy to avoid, and difficult to trigger. | **6.2.9.4 常见的用户无障碍需求**<br>用户无障碍需求包括：<br>——能够探索系统，而不会意外触发其中的组件或其功能；<br>——能够在有限的身体控制（例如力量、震颤）下成功地操作系统；<br>——能够在发生错误时进行检测；<br>——能够从与系统交互时产生的错误中恢复（只要可能）；<br>——将系统重置为较早或原始状态，作为对错误作出响应的手段；<br>——通过使负面后果显而易见、易于避免且难以触发，从而防止错误发生。 |
| **6.2.9.5 Questions to consider**<br>a) How could a system that relates to this deliverable assist in minimizing the adverse consequences of errors?<br>b) How could a system that relates to this deliverable assist in preventing errors?<br>c) How could a system that relates to this deliverable assist in minimizing errors? | **6.2.9.5 需要考虑的问题**<br>a) 与本文件相关的系统如何帮助将错误的不利后果降至最低；<br>b) 与本文件相关的系统如何帮助防止错误；<br>c) 与本文件相关的系统如何帮助最大限度地减少错误； |

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| d) How could this deliverable assist the resulting system in enabling users to recover from errors? | d) 本文件如何帮助系统使用户从错误中恢复。 |
| **6.2.10 Equitable use**<br>**6.2.10.1 The goal**<br>A system provides equitable use if it allows diverse users to accomplish tasks in an identical manner<br>whenever possible or in an equivalent manner when an identical manner is not possible.<br>**6.2.10.2 Discussion**<br>This goal recognizes that it is important to avoid situations that could discriminate against certain users or groups of users based on their accessibility needs. It expects that all potential users can be provided with a means to access and use the same system information and functionalities.<br>**6.2.10.3 Background**<br>This goal is derived from the principles of "equitable use" from ISO 9241-171[5] and "equitable use" from Principles of Universal Design.[32]<br>**6.2.10.4 Common user accessibility needs**<br>User accessibility needs include:<br>— to be able to use a system that relates to this deliverable in a manner that is as similar as possible to other users;<br>— to be able to use a system that relates to this deliverable in a manner that is different from but equivalent to that of other users;<br>— to have available alternate ways of interacting with a system that relates to this deliverable.<br>**6.2.10.5 Questions to consider**<br>a) How could a system that relates to this deliverable ensure that diverse users can interact with the system in an identical or equivalent manner?<br>b) Are there elements of the system that some users might not be able to interact with in an identical or equivalent manner?<br>c) How could systems that relate to this deliverable segregate, stigmatize or discriminate against some users?<br>d) Will requirements and recommendations in this deliverable promote social integration by treating all groups with equal or equivalent access? | **6.2.10 公平使用**<br>**6.2.10.1 目标**<br>如果一个系统允许多元化的用户尽可能以相同的方式完成任务，或者在不可能以相同方式完成任务时以等效方式完成，则该系统实现了公平使用。<br>**6.2.10.2 讨论**<br>这一目标认识到，避免出现可能因某些用户或用户群体的无障碍需求而歧视他们的情况是重要的。它希望所有潜在用户都能获得访问和使用相同系统信息和功能的途径。<br>**6.2.10.3 背景**<br>这一目标源于 ISO 9241-171[5]中的"公平使用"原则和通用设计原则中的"公平使用"原则。<br>**6.2.10.4 常见的用户无障碍需求**<br>用户无障碍需求包括：<br>——能够以与其他用户尽可能相似的方式使用与该文件相关的系统；<br>——能够以不同于但等效于其他用户的方式使用与该文件相关的系统；<br>——有与该文件相关的系统交互的可用替代方式。<br>**6.2.10.5 需要考虑的问题**<br>a) 与本文件相关的系统如何确保多元化的用户能够以相同或等效的方式与系统交互？<br>b) 系统中是否存在某些用户可能无法以相同或等效的方式进行交互的元素？<br>c) 与本文件相关的系统可能会以何种方式隔离、污蔑或歧视某些用户？<br>d) 本文件中的要求和建议是否会通过平等或同等机会对待所有群体来促进社会融合？ |
| **6.2.11 Compatibility with other systems**<br>**6.2.11.1 The goal**<br>A system provides compatibility if it allows diverse users to use other systems as a means to interact with it to accomplish the task.<br>**6.2.11.2 Discussion** | **6.2.11 与其他系统的兼容性**<br>**6.2.11.1 目标**<br>如果一个系统允许多元化的用户使用其他系统作为与它交互以完成任务的手段，那么它就具备兼容性。 |

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| This goal recognizes that in some cases some users might not be able to use a system without the assistance of some intermediary system. While it is not feasible to make all systems directly accessible to all people, the provision of compatibility can make it possible for diverse users to use assistive products or assistive technology to utilize the system.<br>NOTE<br>In the IT domain compatibility is often referred to as interoperability. | **6.2.11.2 讨论**<br>这一目标认识到，在某些情况下，如果没有某些中介系统的帮助，一些用户可能无法使用系统。虽然不可能让所有人都能直接访问所有系统，但提供兼容性能够让多元化的用户使用辅助产品或辅助技术来使用该系统。<br>注：在 IT 领域中，兼容性通常被称为互操作性。 |
| **6.2.11.3 Background**<br>This goal is derived from the principles of "robustness" from ISO 9241-171[5] and "robust" from ISO/IEC 40500.[24]<br>NOTE<br>See also the additional information in 3.2.<br>**6.2.11.4 Common user accessibility needs**<br>User accessibility needs include:<br>— to be able to use their own assistive products or assistive technology to interact with all the<br>functionalities of the system;<br>— to have the system not interfere with their assistive products or assistive technology.<br>**6.2.11.5 Questions to consider**<br>a) How could this deliverable ensure that diverse users can utilize their own assistive products or assistive technology (when needed) with any system that relates to it?<br>b) How could this deliverable avoid limiting the ability of users to utilize their own assistive products or assistive technology (when needed) with any system that relates to it?<br>c) How could this deliverable ensure that the systems that relate to it will be compatible with other systems across a range of contexts of use to facilitate accessibility by diverse users? | **6.2.11.3 背景**<br>该目标源自 ISO 9241-171[5]中的"稳健性"原则和 ISO/IEC 40500[24]中的"稳健"原则。<br>注：另请参阅 3.2 中的附加信息。<br>**6.2.11.4 常见的用户无障碍需求**<br>用户无障碍需求包括：<br>——能够使用自己的辅助产品或辅助技术与系统的所有功能进行交互；<br>——系统不干扰他们的辅助产品或辅助技术。<br>**6.2.11.5 需要考虑的问题**<br>a) 该文件如何确保多元化的用户能够在任何相关系统中使用他们自己的辅助产品或辅助技术（在需要时）？<br>b) 该文件如何避免限制用户在与之相关的任何系统中使用自己的辅助产品或辅助技术（在需要时）的能力？<br>c) 该文件如何确保与之相关的系统在各种使用场景中与其他系统兼容，以方便多元化的用户的访问？ |
| **7 Human abilities and characteristics**<br>**7.1 General**<br>**7.1.1 Description**<br>This clause provides information on human abilities and characteristics as well as associated design considerations. Standards developers can approach accessibility for system users by identifying the required user activities and the related human abilities and characteristics. The design considerations can inform the requirements and recommendations in standards.<br>The information on abilities and characteristics is organized according to the human body structures, human body functions, associated impairments and the consequences for overall functioning in terms of activity limitations and | **7 人的能力和特征**<br>**7.1 概述**<br>**7.1.1 描述**<br>本章提供了人类能力和特征及相关设计考量的信息。标准制定者能通过识别用户所需的活动以及相关的人类能力和特征，处理系统的无障碍事宜。设计考量能为标准中的要求和建议提供依据。<br>人类能力和特征的信息是根据人体结构、人体功能、相关损伤以及活动受限和参与限制对整体功能的影响来组织的。 |

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| participation restrictions.<br>This clause provides general design considerations for system designs that maximize accessibility for users but does not identify the full range of design considerations to address all accessibility issues.<br>NOTE For further information about human abilities and characteristics refer to ISO/TR 22411.[11]<br>In this clause terminology used to describe human abilities and characteristics that is directly from the World Health Organization's International Classification of Functioning, Disability and Health (ICF) is followed by the ICF reference code "ICF: bxxx" for Human Body Functions, or "ICF: sxxx" for Human Body Structures. Annex B provides an overview on how to use the ICF as a resource for terminology to describe people and their functioning. | 本章提供了面向系统设计的通用设计考量，旨在最大限度地实现用户的无障碍性，但并未识别处理所有无障碍事宜的全部设计考量。<br><br>注：有关人类能力和特征的更多信息，请参阅ISO/TR 22411[11]。<br><br>在本章中，用于描述人类能力和特征的术语直接来自世界卫生组织的国际功能、残疾和健康分类（ICF），这些术语之后是 ICF 参考代码，"ICF:bxxx"代表人体功能或"ICF:sxxx"代表用于身体结构。附录 B 提供了如何使用作为描述人及其功能的术语资源的 ICF。 |
| **7.1.2 Diversity of human abilities and characteristics**<br>The abilities and characteristics of people change as they advance from childhood to old age and vary substantially among individuals in any particular age group. Activity limitations and participation restrictions can be experienced by all people and can be the result of unsuccessful interaction between individuals with impairments or health conditions and barriers such as personal and environmental factors. Health conditions (e.g. circulatory, respiratory, neurological), impairments in body functions and structures and related limitations can be temporary or permanent, not visible and generally increase with age. It is important to recognize that sensory, physical and cognitive limitations vary from comparatively minor (such as mild hearing loss, mild seeing impairment, mild mobility impairment or mild memory loss) to significant limitations (such as deafness, blindness, paralysis or significant memory loss).<br>Although some impairments are minor in nature, combinations of impairments can impose significant limitations, as is often the case in ageing. While not all older persons have impairments, the prevalence of disability or limitations is highest among this demographic group. It is also important to recognize that children with impairments can have specific requirements based on their disabilities; they also have general needs and preferences that are similar to those of other children. | 7.1.2 人类能力和特征的多样性<br><br>人的能力和特征随年龄增长发生变化，即便是处于特定年龄段的群体，个体之间的差异也十分显著。所有人都可能经历活动受限和参与限制，这通常可能是存在损伤或健康状况和障碍（诸如个人和环境因素）的个体之间未能成功互动的结果。健康状况（如循环系统、呼吸系统、神经系统）、身体机能和结构损伤以及由此引发的相关限制可能是暂时的或永久的，这些情况通常不会显现出来，且会随着年龄的增长而加重。重要的是需要认识到，感官、身体及认知层面的限制存在差异，其程度跨度从轻度受限（如轻度听力损失、轻度视力损伤、轻度行动障碍或轻度记忆衰退），到重度受限（如失聪、失明、瘫痪或严重记忆丧失）。<br><br>虽然有些损伤本身程度较轻，但多种损伤叠加则可能导致重度受限，这种情况在老年人群体中尤为常见。虽然并非所有老年人都有身体损伤，但残疾或限制的发生率在老年人群体中最高。重要的是还需认识到，带有身体损伤的儿童可能除了会因自身残疾情况产生特定需求外，他们也具备与其他儿童相似的一般性需求与偏好。 |
| **7.2 Sensory abilities and characteristics**<br>**7.2.1 General** | **7.2 感官能力和特征**<br>**7.2.1 概述** |

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| Sensory functions in this section include:<br>— seeing functions (see 7.2.2);<br>— hearing functions (see 7.2.3);<br>— touch functions (see 7.2.4);<br>— taste and smell functions (see 7.2.5).<br>In general, sensory abilities decrease with age. | 本节中的感官功能包括：<br>—— 视觉功能（见 7.2.2）；<br>—— 听觉功能（见 7.2.3）；<br>—— 触觉功能（见 7.2.4）；<br>—— 味觉和嗅觉功能（见 7.2.5）。<br>一般来说，感官能力会随着年龄的增长而下降。 |
| **7.2.2 Seeing functions**<br>**7.2.2.1 Description**<br>Seeing functions (ICF: b210) relate to sensing the presence of light and sensing the form, size, shape, contrast and colour of visual stimuli, as well as discriminating the location, distance and speed of objects. The seeing function comprises a variety of aspects such as visual acuity, near and distant vision, accommodation to changes in focus, field of vision, perception of colour and distance (or depth), adaptation to changes in light levels and sensitivity to light. | **7.2.2 视觉功能**<br>**7.2.2.1 描述**<br>视觉功能（ICF:b210）涉及感知光线，感知视觉刺激的形态、大小、形状、对比度和颜色，以及辨别物体的位置、距离和速度。视觉功能包括多个方面，例如视力、近视和远视、对焦调节能力、视野、颜色感知和距离（或深度）感知、对光线强度变化的适应能力以及对光的敏感度。 |
| **7.2.2.2 Impairments and limitations**<br>Impairments and limitations can range from slight seeing impairments to complete blindness. Effects of impairments and limitations include:<br>— reduced ability to see images distinctly;<br>— reduced ability to change focus from near to distant objects, and vice versa;<br>— reduced ability to see things in one part of the field of vision (i.e. to the side, top, bottom or centre);<br>— reduced ability to distinguish colours, including effects due to age-related yellowing of the lens of the eye;<br>— increased sensitivity to glare;<br>— increased sensitivity to flashing lights or flickers;<br>— reduced ability to see contrast;<br>— reduced ability to judge distances and speed;<br>— reduced ability to see while the eye adjusts to different lighting levels;<br>— reduced sensitivity to light so that more light is needed to see.<br>Persons with blindness are considered to have very limited or no useful visual abilities and can rely on other sensory functions, such as hearing and touch, to obtain information.<br><br>Persons with seeing impairments can receive insufficient or distorted visual information and rely on auditory and tactile stimuli. Factors such as size, clarity (per se as well as in relation to surrounding factors including positioning and prominence in relation to field of vision), luminance and colour contrast can | **7.2.2.2 损伤和限制**<br>损伤和限制可能从轻微的视力损伤到完全失明。损伤和限制的影响包括:<br>——图像清晰辨识能力下降；<br>——远近物体对焦切换能力下降；<br>——视野特定区域（如侧方、上方、下方或中央区域）视物能力下降；<br>——色彩辨别能力下降，包括因年龄相关性晶状体变黄引发的辨色能力减退；<br>——对眩光的敏感度上升；<br>——对闪光或闪烁的敏感度上升；<br>——对比度辨识能力下降；<br>——距离和速度判断能力下降；<br>——眼部适应不同光照强度的视物能力下降；<br>——光敏感度下降，需更强光照才能满足视物需求。<br><br>盲人被认为具有非常有限或完全丧失的视觉能力，可能依靠其他感官功能，如听觉和触觉来获取信息。<br><br>视觉障碍者可能存在视觉信息获取不足或失真的情况，并依赖听觉和触觉刺激获取信息。比如尺寸、清晰度（本身以及与周围因素的关系，包括相对于视野的位置和突出程度）、亮度和色彩对比度等因素可能影响感知。有明显视觉障碍（低视力）的人通常需要更高的对比度，并且他们可能更倾向浅色 |

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| affect perception. Persons with significant seeing impairments (low vision) often require a higher contrast and can prefer light text on a darker background rather than darker text on a light background. They use other sensory functions such as hearing and touch functions to supplement visual information.<br>Adverse environmental conditions, such as poor lighting, smoke and fog, can reduce visibility and present many of the same types of effects listed above for many persons. | 文字配深色背景的呈现方式，而非深色文字配浅色背景的呈现方式。他们会借助听觉、触觉等其他感官功能来补充视觉信息。<br><br>光照不足、烟雾、雾气等不良环境条件，可能降低能见度，并对许多人产生与上述相同类型的影响。 |
| **7.2.2.3 Design considerations**<br>Design considerations that can facilitate accessibility include the following:<br>— multiple means of information presentation such as auditory or tactile to supplement or substitute for visual information;— appropriate size, contrast, form, luminance, lighting and viewing distance in relation to context of use;<br>— avoidance of glare;<br>— redundant forms of coding to supplement or substitute for information conveyed with colour coding, e.g. shape or texture coding;<br>— appropriate physical construction and properties of fonts such as size, spacing, with or without serif, upright form or italics, and light, medium or bold appearance within a specific context of use;<br>— visual information and controls placed in a prominent position, or a positioning that is flexible,<br>adjustable or duplicated;<br>— avoidance of flicker rates with flashing or blinking text, objects or video screens, especially those that can trigger visually induced seizures;<br>— distinctive form to facilitate identification of a product/environment and/or parts of a product/environment (including orientation, e.g. top/bottom, front/back, entrance/exit);<br>— coloured floor markings that draw attention to steps and potentially dangerous places;<br>— tactile floor indicators that draw attention to stairs, platform edges and pedestrian crossings;<br>— traffic lights equipped with acoustic signals to indicate when pedestrians can cross streets safely;<br>— accommodation of and compatibility with relevant assistive products and assistive technology.<br>NOTE Examples of assistive products, assistive technology and supports for persons with seeing impairments and blindness are guide dogs, guide assistants, talking Global Positioning Systems (GPS) devices, computers with dedicated computer software add-ons (e.g. screen reading software which simulates the | **7.2.2.3 设计考量**<br>能提升无障碍性的设计考量包括：<br>——采用多种信息呈现方式，如以听觉或触觉形式补充或替代视觉信息；<br>——与实际使用场景相匹配的尺寸、对比度、形式、亮度、照明和观看距离；<br>——避免眩光；<br>——冗余编码形式，用于补充或替代通过颜色编码传递的信息，例如形状或纹理编码；<br>——在特定使用场景中，字体具备适当的物理构造与属性，如字体的大小、间距、有无衬线、正体或斜体，以及细体、中等或粗体等外观形式；<br>——将视觉信息与控制部件设置于显眼位置，或采用灵活的布局方式；<br>——避免出现闪烁或快速移动的文字、物体或电子屏幕所产生的闪烁现象，尤其是那些可能引发视觉性癫痫发作的情况；<br>——独特的形态设计，便于识别产品/环境和/或产品/环境的各个部分（含方位标识，如顶部/底部、正面/背面、入口/出口）；<br>——彩色地面标识，用于提示台阶位置及潜在危险区域；<br>——触觉地面标识，用于提示楼梯、平台边缘及人行横道位置；<br>——配备了声音信号的交通信号灯，用于提示行人何时可以安全过街；<br>——与相关辅助产品和辅助技术的适应度和兼容性。<br><br>注：适用于视觉障碍者及盲人的辅助产品、辅助技术与支持手段示例有导盲犬、导盲助手、语音全球定位系统（GPS）设备、带有专用软件插件的计算机（如屏幕阅读软件，可模拟人声朗读屏幕上文字，或将纸质文件转换为盲文）、语音报时钟和语音温度计、专用条形码扫描仪、手持电脑和平板。 |

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| human voice reading the text on computer screen or renders hard-copy output into Braille), talking clocks and thermometers, specialized bar code scanners, hand-held computers and tablets. | |
| **7.2.3 Hearing functions**<br>**7.2.3.1 Description**<br>Hearing functions (ICF: b230) relate to sensing the presence of sounds including speech and discriminating the location, pitch, loudness, and quality of sounds. | **7.2.3 听觉功能**<br>**7.2.3.1 描述**<br>听觉功能（ICF:b230）涉及感知包括言语在内的各类声音的存在，以及对声音的方位、音调、响度及音质的辨别。 |
| **7.2.3.2 Impairments and limitations**<br>Impairments and limitations can range from slight hearing impairment to complete deafness. Effects of impairments and limitations include:<br>— reduced ability to detect the full range of sound frequencies, in particular higher frequencies;<br>— reduced ability to localize sound;<br>— reduced ability to detect low volume sound, especially when the ambient noise level is high or the distance between the sound source and the listener is large;<br>— reduced ability to discriminate sounds or speech especially when there is a high surrounding noise level or a large distance between the sound source and the listener;<br>— reduced ability to adapt to sudden changes in volume;<br>— reduced ability to discriminate and follow speech when two or more people are speaking at the same time;<br>— reduced ability to tolerate some frequencies and volumes (hyperacusis);<br>— reduced ability to separate speech, including instructions, from background sounds in recorded audio.<br>Persons with deafness can rely on other sensory functions to obtain information such as seeing and touch functions. Some people with deafness have difficulty understanding both written and spoken language.Persons with hearing impairment can receive insufficient or distorted auditory information. The volume, frequency, and clarity of any sound can be important factors that affect audibility. Some persons with hearing impairments can also have difficulty assimilating auditory information that is presented at a rapid rate. They can use other sensory functions, such as seeing and touch, to obtain information.Adverse environmental conditions such as noise (e.g. train stations, bars, restaurants) and voice messages in a foreign language can reduce audibility and present many of the same type of effects listed above | **7.2.3.2 损伤和限制**<br>损伤和限制的程度可能从轻微听力障碍到完全失聪不等。损伤和限制的影响包括:<br>——全频段声音的感知能力下降，尤其是高频段声音；<br>——声源定位能力下降；<br>——低音量声音感知能力下降，尤其是在环境噪声强度较高或声源与听者距离较远时；<br>——声音或言语辨别能力下降，尤其是在环境噪声强度较高或声源与听者距离较远时；<br>——对音量突变的适应能力下降；<br>——两人或多人同时发言时，辨别并追踪目标语音的能力下降；<br>——对某些频率和音量的耐受能力下降（听觉过敏）；<br>——从录音背景音中分离语音信息（含指令信息）的能力下降。<br>听力障碍者能依靠其他感官功能来获得信息，如视觉和触觉功能。部分失聪者在理解书面语言与口头语言时均存在障碍。听力障碍者可能存在听觉信息获取不足或失真的情况。声音的音量、频率和清晰度均为影响可听度的关键因素。部分听力障碍在快速接收声音信息时也会遇到困难。他们可能利用其他感官功能，如视觉和触觉来获取信息。<br>火车站、酒吧、餐厅等场所的噪声，以及外来语言语音播报等不良环境条件，能降低声音可听度，并对许多人产生上述相同类型的影响。 |

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| for many persons. | |
| **7.2.3.3 Design considerations**<br>Design considerations that can facilitate accessibility include the following:<br>— multiple means of information presentation such as visual (text or pictures) or tactile to supplement or substitute for auditory information;<br>— appropriate volume, pitch and frequency of spoken announcements, warnings and warning sounds in relation to context of use;<br>— adjustable volume over a wide range and with multiple frequencies;<br>— avoidance of sudden changes in volume of auditory signals;<br>— constant signal-to-noise ratio between the level of an announcement and that of the background noise;<br>— group assistive listening devices or communication systems such as induction loops, infrared or radio systems;<br>— emergency announcements that are visual with text, and where appropriate, in sign language, as well as of an appropriate volume and pitch decrease risk for persons with hearing impairment;<br>— a good acoustic environment, that reduces background sounds and promotes sound that is important to be heard;<br>— accommodation for and compatibility with relevant assistive products, assistive technology and supports.<br>NOTE Assistive products, assistive technology and supports for persons with hearing impairments<br>and deafness include sign language, communication assistants, assistive listening devices (ALDs), visual communications technologies, live captioning, telecommunications devices for the deaf (TDD/TTY), text telephones, speech recognition technology, alerting devices with visual signals or vibration, hearing aids<br>(traditional hearing aids and/or implants). | **7.2.3.3 设计考量**<br>能提升无障碍性的设计考量包括：<br>——多种信息呈现方式，如以视觉（文本或图片）或触觉补充或替代听觉信息；<br>——与实际使用场景相关的适当音量、音调和频率的口头通告、警告及警示音；<br>——在宽范围和多个频率上可调节的音量；<br>——避免听觉信号音量的突然变化；<br>——公告音量与背景噪音音量之间保持稳定的信噪比；<br>——群体助听设备或通信系统，例如感应回路、红外或无线电系统；<br>——带有文字说明的紧急通知，适宜时辅以手语；并且音量与音调适中以降低听觉障碍者面临的风险；<br>——一个良好的声学环境，能够减少背景噪音，并促进重要的声音被听到；<br>——兼容并适配相关辅助产品、辅助技术及支持。<br><br>注：适用于听力障碍者和耳聋患者的辅助产品、辅助技术和支持包括手语、通信助理、助听设备（ALD）、视觉通信技术、实时字幕、聋人专用通信设备（TDD/TTY）、文本电话、语音识别技术、带有视觉信号或振动功能的警报装置、助听器（传统助听器和/或植入式助听器）。 |
| **7.2.4 Touch functions**<br>**7.2.4.1 Description**<br>Touch functions (ICF: b265) relate to sensing surfaces and their texture or quality. Included are functions of being sensitive to temperature, vibration, shaking, or oscillation, superficial pressure, deep pressure, and other stimuli. | **7.2.4 触觉功能**<br>**7.2.4.1 描述**<br>触觉功能（ICF:b265）涉及对表面及其纹理或品质的感知。包括对温度、振动、摇晃或振荡、表面压力、深层压力及其他刺激的感知。 |
| **7.2.4.2 Impairments and limitations**<br>Impairments and limitations due to reduced and/or distorted touch function can vary.<br>Effects of impairments and limitations include:<br>— reduced ability to feel the difference | **7.2.4.2 损伤和限制**<br>由于触摸功能减退和/或失真造成的损伤和限制可能会有所不同。损伤和限制的影响包括:<br>——感知物体、表面、纹理等之间差异的能力下降； |

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| between objects, surfaces, textures, etc.;<br>— reduced ability to feel temperatures and noxious stimuli (e.g. sharp edges, corrosive substances);<br>— reduced ability to handle and manipulate objects and controls;<br>— reduced ability to use touch screens or similar types of control devices.<br>Persons with impairments of touch functions can rely on other sensory functions, such as seeing and hearing, to obtain information. Persons with hypersensitive touch can be injured by stimuli which might cause only discomfort to other people. Persons who lack touch sensitivity are more likely to be<br>injured by stimuli such as sharp edges and extremely hot/cold surfaces than are people whose greater sensitivity to touch allows them to take action to prevent injury in the presence of such stimuli.<br>Adverse environmental conditions, such as low ambient temperature, can present many of the same type of effects listed above for many persons. | ——感知温度和有害刺激（如锋利的边缘、腐蚀性物质）的能力下降；<br>——处理和操控对象和控件的能力下降；<br>——使用触摸屏或类似控制设备的能力下降。<br><br>触觉功能受损的人能依靠其他感官功能，如视觉和听觉来获取信息。触觉过度敏感的人可能会受到刺激而受伤，而这些刺激只会给其他人带来不适感。触觉迟钝者比触觉敏感者更易因锋利边缘、极冷/极热表面等刺激而受伤，因触觉敏感者能够凭借更强的触觉敏感度采取措施避免受伤。<br>较低的气温等不利的环境条件，可能使人产生许多与上述相同类型的影响。 |
| **7.2.4.3 Design considerations**<br>Design considerations that can facilitate accessibility include the following:<br>— multiple means of information presentation such as visual or auditory information to supplement or substitute for tactile information or biometric controls;<br>— multiple means of control such as eye and voice control, sensors and automatic or remote controls;<br>— avoidance of sharp and uneven points/edges/surfaces;<br>— avoidance of excessively hot or cold surfaces which can be touched (even inadvertently);<br>— distinctive form to facilitate identification of a product and its parts, which in turn can facilitate use/handling/assembly. | **7.2.4.3 设计考量**<br>能提升无障碍性的设计考量包括：<br>——多种信息呈现方式，如以视觉或听觉信息补充或替代触觉信息或生物识别控制；<br>——多种控制方式，如眼动控制、语音控制、传感器控制及自动或远程控制；<br>——避免尖锐、凹凸不平的点/边/面；<br>——避免触摸过热或过冷的表面（即使是无意触摸）；<br>——辨识度高的形态设计，有助于对产品及其零部件的识别，从而便于使用、操作、组装。 |
| **7.2.5 Taste functions and smell functions**<br>**7.2.5.1 Description**<br>Taste (ICF: b250) relates to sensing five basic qualities, through receptors on the tongue: bitter, sweet, sour, salt and savouriness (umami). Smell (ICF: b255) relates to the use of receptors in the nose to sense odours and smells. The two senses of taste and smell are used together to identify the odours and flavours which can normally be distinguished. | **7.2.5 味觉功能和嗅觉功能**<br>**7.2.5.1 描述**<br>味觉（ICF:b250）涉及通过舌头上的感知器感知五种基本味道：苦、甜、酸、咸和鲜味。嗅觉（ICF:b255）涉及通过鼻腔中的感受器感知气味和味道。味觉与嗅觉这两种感官共同作用，以识别通常能够区分的气味和味道。 |
| **7.2.5.2 Impairments and limitations**<br>Impairments and limitations due to reduced and / or distorted taste and smell functions can vary. Effects of impairments and limitations include: | **7.2.5.2 损伤和限制**<br>由于味觉和嗅觉功能减退或感知失真造成的损伤和限制可能会有所不同。损伤和限制的影响包括: |

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| — reduced ability to distinguish odours and flavours;<br>— reduced ability to identify dangerous or toxic substances such as detecting when food has deteriorated or hazards such as smoke.<br>Some persons with impairments or limitations of taste and smell functions rely on other sensory functions, such as seeing, hearing and touch, to obtain information.<br>Adverse conditions such as having a common cold can present many of the same type of effects listed above for many persons. | ——辨别气味和味道的能力下降；<br>——识别危险或有毒物质的能力下降，例如无法察觉食物是否变质或烟雾等危险情况。<br>一些味觉和嗅觉功能受损或受限的人依靠其他感官功能，如视觉、听觉和触觉来获取信息。<br><br>普通感冒等不利状况，可能使人产生许多与上述相同类型的影响。 |
| 7.2.5.3 Design considerations<br>Design considerations that can facilitate accessibility include the following:<br>— multiple means of information presentation to supplement or substitute for information gained by taste and smell functions;<br>— information in labelling on ingredients, use by and expiration dates;<br>— visual and auditory signals to alert people to the presence of smoke or dangerous chemicals;<br>— information or labelling to warn about strong smell or taste;<br>— provision of minimal odours and taste, except where necessary (e.g. odours and taste are expected in foods). | 7.2.5.3 设计考量<br>有助于提升无障碍性的设计考量包括：<br>——多种信息呈现方式，以补充或替代通过味觉和嗅觉获得的信息；<br>——标签上标注成分、使用期限和有效期的信息；<br>——视觉和听觉信号，用于提醒人们注意烟雾或危险化学品的存在；<br>——用于警示有关强烈气味或味道的信息或标签；<br>——除非确有必要（如食品本身应有的气味与味道），尽量降低气味与味道的散发。 |
| **7.3 Immunological system functions**<br>**7.3.1 Description**<br>Immunological system functions (ICF: b435) of the body are related to protection against foreign substances, including infections, by specific and non-specific immune responses. | **7.3 免疫系统功能**<br>**7.3.1 描述**<br>身体的免疫系统功能（ICF:b435）与抵御外来物质（包括感染）的特异性与非特异性免疫反应有关。 |
| **7.3.2 Impairments and limitations**<br>Impairments related to immunological system functions such as allergies (immunological reaction to a substance) and hypersensitivities (non-specific response to a substance) vary and can cause reactions that range from mild or annoying to life-threatening. These impairments are generally divided into three categories: contact, food and respiratory. For the purposes of this clause, hypersensitivities related to chemicals in the physical environment are included.<br>Effects of impairments related to immunological system functions include reduced ability to tolerate exposure to, contact with, and/or ingestion of substance/s to which a body reacts. Such substances can act as barriers to the person's capacity to use systems. | **7.3.2 损伤和限制**<br>与免疫系统功能相关的损伤，如过敏（对某种物质的免疫反应）和超敏反应（对某种物质的非特异性反应），其程度各异，可能导致从轻微或令人烦恼的症状到危及生命的反应。这些损伤通常分为三类：接触性、食入性和吸入性。就本章而言，与物理环境中化学物质相关的过敏反应也包括在内。<br><br>免疫系统功能受损的影响包括：对暴露于、接触和/或摄入会引起身体反应的物质的耐受能力下降。这些物质可能会成为人体使用系统的能力的障碍。 |
| **7.3.3 Design considerations**<br>Some design considerations that can facilitate accessibility include the following:<br>— avoidance of inclusion of allergens, sensitizing substances and chemicals known to cause hypersensitivities in products, foodstuffs | **7.3.3 设计考量**<br>能提升无障碍性的设计考量包括：<br>——避免在产品、食品和环境中加入过敏原、致敏物质及已知可引发超敏反应的化学物质； |

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| and environments;<br>— appropriate information and labelling of ingredients/contents (including allergens, sensitizing and chemical substances known to cause hypersensitivities) in accessible format, the provision of this information being mostly subject to national or international regulation and which can include<br>— a list of ingredients,<br>— a separate statement that declares any major allergens or sensitizing substances included, and<br>— warnings such as information regarding any change in composition of significance related to allergens and sensitizing substances;<br>— ventilation systems that filter out respiratory allergens;<br>— prevention of mould growth, e.g. by controlling level of indoor humidity, and following appropriate cleaning routines;<br>— avoidance of dust-collecting furnishings in public areas;<br>— availability of “allergy-free” areas such as smoke-free and allergy-free rooms in hotels, and animal free areas in public transportation. | ——以无障碍的形式提供成分/内容（包括过敏原、致敏物质及已知可引发超敏反应的化学物质）的适当信息及标签，此类信息的披露主要受国家或国际法规的约束，可能包括：<br>——一份成分列表，<br>——一份列出任何主要过敏原或致敏物质的单独声明，以及<br>——警示，如与过敏原和致敏物质有关的任何重要成分变化的信息；<br>——能够过滤吸入性过敏原的通风系统；<br>——防止霉菌滋生，例如通过控制室内湿度水平，并遵循适当的清洁程序；<br>——避免在公共区域使用容易积尘的家具；<br>——提供“无过敏”区域，如酒店的无烟和无过敏源房间，以及公共交通中的无动物区域。 |
| **7.4 Physical abilities and characteristics**<br>**7.4.1 General**<br>Activity limitations can result from various characteristics and impairment of physical abilities and result from interacting with systems that do not facilitate accessibility.<br>Physical abilities and characteristics in this section include:<br>— body size (see 7.4.2);<br>— upper and lower body movement (see 7.4.3 and 7.4.4);<br>— strength and endurance (see 7.4.5);<br>— voice and speech functions (see 7.4.6). | **7.4 身体能力和特征**<br>**7.4.1 概述**<br>活动受限可能是由多种因素及身体机能损伤导致，也可能是由于与不利于无障碍性的系统交互而导致的。<br>本节中的身体能力和特征包括：<br>——身体尺寸（见7.4.2）；<br>——上半身和下半身运动（见7.4.3和7.4.4）；<br>——力量和耐力（见7.4.5）；<br>——语言和言语功能（见7.4.6）。 |
| **7.4.2 Body size**<br>**7.4.2.1 Description of human body size, shape and related needsHuman**<br>body size is represented by sets of anthropometric data values for mass (weight) and a range of static linear dimensions of people measured when standing, sitting, and with arms relaxed or outstretched (arm reach). Significant variability in human size exists across age, and gender and in different regions of the world.<br>Human body size and shape can also differ significantly across a range of impairments or disabilities such as; amputation, short stature, natural height of a human in an upright position, tall stature and obesity. Old age generally causes a decline in stature.<br>Different anthropometric values are not normally directly proportional (e.g. body shape | **7.4.2 身体尺寸**<br>**7.4.2.1 人体尺寸、形态和相关需求的描述**<br>人体尺寸由一系列人体测量数据值表示，这些数据包括质量（体重）以及人在站立、坐着、手臂放松或伸展状态下的一系列静态线性尺寸。不同年龄、性别及地域的人的体型存在显著差异。<br>人体尺寸和形态也可能因各种损伤或残疾而出现显著差异，例如：截肢、身材矮小、人体直立时的自然身高、身材高大及肥胖等。人体身高通常会随着年龄增长而降低。<br>不同的人体测量值通常不成正比（例如，不 |

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| and mass cannot be calculated from stature). Multiple interrelated human size values affect the considerations related to accessibility.<br><br>Requirements for additional space can be associated with the presence of accompanying persons, service animals (any guide dog, signal dog, or other animal trained to provide assistance to an individual with a disability), assistive products, assistive technology and equipment. Associated equipment that effectively increases human size can include products such as protective clothing, orthotics, personal mobility aids, a child's stroller, and luggage.<br>The range of dimension and mass values for the smallest and the largest people and their equipment that will be interacting with the system can be used to determine design requirements and recommendations related to size, space and load. Systems that do not accommodate the size, shape or mass of some people can be very inconvenient, potentially hazardous and can completely restrict access. | 能根据身高计算体型和体重）。多个相互关联的人体尺寸值会影响与无障碍性相关的考量因素。<br><br>对额外空间的需求，可能与随行人员、服务动物(导盲犬、信号犬及其他经过训练用以协助残疾人的动物)、辅助产品、辅助技术和设备的存在有关。有效增加人体尺寸的相关设备包括防护服、矫形器、个人助行器、儿童推车和行李等。<br><br>与系统产生交互的各类人群（含体型最小者与体型最大者）及其所用设备的尺寸与质量范围数据，能作为确定尺寸、空间及荷载相关设计要求与建议的依据。如果系统无法适应某些人的尺寸、形态或质量，可能会非常不便，存在潜在危险，甚至可能完全限制系统使用。 |
| **7.4.2.2 Impairments and limitations**<br>Impairments and variations in body size and space requirements vary and can cause difficulties ranging from slight inconvenience to significant activity limitations. Effects of impairments and variations in body size and space requirements as associated with accessibility can include:<br>— reduced ability to move around and control or interact with systems due to impairments that affect body size or shape such as amputations, growth variations, and body orientations such as seated postures;<br>— reduced ability to reach, see, step on to or otherwise interact with systems due to very small or short body size and shape characteristics;<br>— reduced ability to access, fit comfortably or otherwise interact with systems and / or to move across distances due to very large or tall body size and shape characteristics;<br>— reduced ability to be present in an environment and interact with systems due to lack of additional space for necessary caregivers, service animals and / or equipment. | **7.4.2.2　损伤和限制**<br>身体尺寸的损伤和变化以及空间需求的差异各不相同，轻则造成困扰，重则导致严重的活动受限。与无障碍性相关的身体尺寸及空间需求方面的损伤和变化所引发的影响可能包括：<br>——由于身体尺寸或形态的损伤，如截肢、生长变化和身体姿势（如坐姿），导致的行动能力下降以及对控制系统或与系统交互的能力下降；<br>——由于身体尺寸和形态过于矮小或短小，导致够到、看到、踩到或以其他方式与系统交互的能力下降；<br>——由于身体尺寸和形态过于庞大或高大，导致进入、舒适地贴合或以其他方式与系统交互和/或跨距离移动的能力下降；<br>——由于缺乏用于必要的照顾者、服务动物和/或设备的额外空间，导致在环境中停留和与系统交互的能力下降。 |
| **7.4.2.3 Design considerations**<br>Design considerations for size, space and load capacities of systems that can facilitate accessibility include the following:<br>— additional space in built environments;<br>— space for clothing and personal protective equipment; | **8.4.2.3　设计考量**<br>能提升无障碍性的系统尺寸、空间和承载能力方面的设计考量包括：<br>——人工环境中的额外空间；<br>——衣物和个人防护设备的空间；<br>——多种尺寸选择和/或具备可调整性； |

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| — multiple size offerings and / or adjustability;<br>— height clearance for tall persons;<br>— width clearance for large persons;<br>— step heights and reach distances for small persons;<br>— space for assistive products, assistive technology, service animals and accompanying persons;<br>— load capacities of system components appropriate for larger mass (weight) requirements;<br>— systems with a clear line of sight to important components for seated or standing users;<br>— systems with a comfortable reach to all components for seated or standing users;<br>— grip sizes in systems components that accommodate variations in user sizes and shapes. | ——为体型高大者设置足够的净高；<br>——为体型壮硕者设置足够的净宽；<br>——为身材矮小者适配合理的踏步高度与触及距离；<br>——辅助产品、辅助技术、服务动物和陪同人员的空间；<br>——适合较大质量(体重)要求的系统组件的承载能力；<br>——为坐着或站着的用户提供对重要组件具有清晰视线的系统；<br>——系统组件的握持尺寸能够适应用户尺寸和手型的差异。 |
| **7.4.3**<br>**Movement: Functions of upper body structures and fine hand use abilities**<br>**7.4.3.1 Description**<br>Upper extremities (ICF: s730) structures include shoulder, upper arm, elbow, forearm and hand.Fine hand use relates to dexterity and manipulation, and includes:<br>— picking up, grasping, manipulating and releasing objects and performing the coordinated actions of handling objects;<br>— picking up, manipulating and releasing objects using one's hand, fingers and thumb, such as when lifting objects off a table or turning a dial or knob. | **7.4.3 运动：上半身结构的功能和手部精细操作能力**<br>**7.4.3.1 描述**<br>上肢(ICF: s730)结构包括肩部、上臂、肘部、前臂和手。手部精细操作涉及灵活性和操控性，包括：<br>——拾取、抓取、操控和释放物体，并完成操纵物体的协调性动作；<br>——用手、手指和拇指拿起、操控和释放物体，例如从桌面取物或转动旋钮或旋杆。 |
| **7.4.3.2 Impairments and limitations**<br>Impairments in movement-related functions of upper body structures can affect the person's balance, coordination, sensation, and movement of head, hands, and body. Effects of impairments and limitations include:<br>— reduced ability to turn and bend objects and other impairments in range of motion of hands;<br>— reduced ability to bring thumbs and fingers close together or an inability to separate them very far;<br>— reduced ability in complex operations, such as pushing and turning objects;<br>— reduced ability in tasks that involve coordination and precision, such as opening packaging, dealing with fastenings, threading a needle;<br>— inadvertent or involuntary movement (e.g. tremor) that interferes with fine hand use;<br>— reduced ability to reach distant objects, or objects on the floor due to limited range of motion of shoulder joint and/or elbow joint; | **7.4.3.2 损伤和限制**<br>上半身结构的运动相关功能损伤会影响人的平衡、协调、感知能力以及头部、手部和身体的运动。损伤和限制的影响包括:<br>——转动和弯曲物体的能力下降以及手部活动范围方面的其他障碍；<br>——拇指与手指的对合能力下降，或无法大幅分开；<br>——在复杂操作（如推动和转动物体）方面的能力下降；<br>——在需要协调和精确操作的任务中表现能力下降，如打开包装、处理紧固件、穿针等；<br>——无意识或非自主性动作（如震颤）干扰手部精细操作；<br>——由于肩关节和/或肘关节的活动范围受限，拾取远处物体或地板上物体的能力下降；<br>——由于上半身力量减弱或肌肉骨骼软组织损伤，导致搬运重物或体积较大物体的能力 |

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| — reduced ability to manage heavy or bulky objects due to weakness or musculoskeletal temporal injury in the upper body;<br>— reduced ability caused by use of non-dominant hand (left or right). | 下降；<br>——因使用非惯用手（左手或右手）而导致的能力下降。 |
| **7.4.3.3 Design considerations**<br>Design considerations that can facilitate accessibility include the following:<br>— manufacturing materials of lighter weight or lower density to reduce the weight of products;<br>— products shaped to facilitate easy grasping, lifting and carrying with either or both hands;<br>— manual controls that allow a comfortable grip, avoid the need for twisting of the wrist, and offer minimal resistance;<br>— controls that avoid the need to manipulate multiple controls at the same time;<br>— non-slippery surface that aids gripping and manipulating for people with limited dexterity;<br>— textured surfaces, to increase friction, and facilitate the application of force;<br>— design and spacing of controls that guard against inadvertent activation of a control other than the one intended;<br>— containers that allow easy opening and closing with reasonably low attainable operating force;<br>— simple and straightforward sequences for opening of packaging and assembling, installing or operating a product;<br>— avoidance of simultaneous double movements, e.g. pushing and twisting;<br>— alternative controls for accommodation of upper body movement impairments.<br>NOTE When accurate positioning of an object is required, consideration is taken so that the hand(s) can hold it properly and comfortably with a clearly perceived spatial orientationn (taken from ISO/TR 22411:2008,[11] 7.3.1.1). | **7.4.3.3　设计考量**<br>能提升无障碍性的设计考量包括：<br>——采用轻质或低密度的材料，以减轻产品的重量；<br>——产品经过设计便于单手或双手抓握、提起和携带；<br>——手动控制装置便于握持，避免手腕扭动，并提供最小的阻力；<br>——避免同时操作多个控制装置的控制设计；<br>——有助于行动不便者抓握和操控的防滑表面；<br>——增加摩擦力并有助于施加力的作用纹理表面；<br>——操控装置的设计与布局防止意外触发非目标控制装置；<br>——易于开启和关闭且所需操作力较小的容器；<br>——简单明了的产品包装开启、组装、安装或操作步骤；<br>——避免同时进行双重动作，例如推压和扭转；<br>——用于适配上半身运动障碍者的替代性控制方式。<br><br>注：当需要对物体进行精准定位时，需充分考虑以确保双手能轻松地握持物体，并能清晰感知其空间方位（取自 ISO/TR 22411:2008[11]，7.3.1.1）。 |
| **7.4.4 Movement: Functions of lower body structures**<br>**7.4.4.1 Description**<br>Lower extremity (ICF: s750) structures include:<br>— hip, thigh, knee, lower leg, ankle and foot.<br>Movements of lower body structures include:<br>— maintaining and changing the body position and transferring oneself from one area to another;<br>— walking, climbing stairs, and moving around which might involve using any equipment and/or assistive products such as wheelchairs or walkers;<br>— moving objects with lower extremities such as pushing and kicking. | **7.4.4 运动：下半身结构的功能**<br>**7.4.4.1　描述**<br>下肢(ICF: s750)结构包括：<br>——臀部、大腿、膝盖、小腿、脚踝和足部。<br>下半身结构的运动包括：<br>——保持和改变身体姿势，以及完成人体在不同区域间的转移；<br>——步行、爬楼梯和四处走动，可能需要使用各种设备和/或辅助产品，如轮椅或助行器；<br>——使用下肢移动物体，如推和踢。 |
| **7.4.4.2 Impairments and limitations**<br>Impairments in movement-related functions of | **7.4.4.2 损伤和限制** |

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| lower body structure can affect a person's balance, coordination, sensation, and movement of body, thigh, leg, ankle and foot. Effects of impairments and limitations include:<br>— reduced ability to walk, move around, climb stairs or ladders, and transfer from one place to another;<br>— reduced ability to drive or otherwise make use of transportation means;<br>— reduced ability to control the body when turning, bending, or maintaining balance;<br>— difficulty in kneeling, sitting down, rising, standing, walking, and /or climbing stairs or ladders;<br>— reduced ability to perform coordinated actions aimed at moving objects by using legs and feet;<br>— increased potential for slipping, tripping, or other balance disturbances that can cause falls;<br>NOTE<br>Balance disturbances sometimes require rapid responses in joint rotations and limb movements, placing extraordinary demands on the balance control system. Even very small bumps and protrusions can cause tripping. Impairments in vestibular nerve function can also cause disturbances to balance.<br>— an increased fear of falling due to balance impairment.<br>Adverse conditions such as wearing shoes that are heavy or have slippery soles or high heels can impair movement. | 下半身结构的运动相关功能受损会影响人的平衡、协调、感知能力，以及身体、大腿、小腿、脚踝和足部的运动。损伤和限制的影响包括:<br>——行走、移动、上下楼梯或梯子以及从一个地方转移到另一个地方的能力下降；<br>——驾驶或使用其他交通工具的能力下降；<br>——转身、弯腰或保持平衡时，控制身体的能力下降；<br>——跪、坐、起身、站、走和/或上下楼梯或梯子时存在困难；<br>——使用腿和脚来移动物体的协调行动能力下降；<br>——滑倒、绊倒或其他可能引发跌倒的平衡失调风险增加；<br>注：平衡失调有时需要关节旋转和肢体动作的快速反应，这对平衡控制系统提出了高要求。即使是微小的凸起或障碍物也会导致绊倒。前庭神经功能受损也会导致平衡障碍。<br>——由于平衡功能受损，对跌倒的恐惧加剧。<br><br>鞋子过重、鞋底过滑或鞋跟过高等不利因素，也可能对下肢活动造成阻碍。 |
| **7.4.4.3 Design considerations**<br>Design considerations that can facilitate accessibility include the following:<br>— slip-resistant, threshold-free layout, e.g. in buildings and paved outdoor environments;<br>— avoidance of sudden changes in surface level, obstacles, bumps or protrusions;<br>— equipment, such as elevators and other lifting systems;<br>— ramps with appropriate slopes and adequate space to allow for approach and manoeuvring, and use of wheelchairs, walking frames, or walking aids;<br>— stairs with appropriate dimensions and banisters or hand grips alongside;<br>— ample time for persons with mobility limitations to pass through automatic doors and to use pedestrian crossings. | **7.4.4.3　设计考量**<br>能提升无障碍性的设计考量包括：<br>——防滑、无门槛布局，例如在建筑物和铺设的室外环境中；<br>——避免地面高度的突然变化、障碍物、隆起物或或突起物；<br>——设备，如电梯和其他升降系统；<br>——具有适当坡度和足够空间的坡道，以便通行和操作，使用轮椅、步行架或助行器；<br>——具有合理尺寸的楼梯，并在两侧配置栏杆或扶手；<br>——为行动不便者预留充足时间顺利通过自动门及使用人行横道。 |
| **7.4.5 Muscle power and muscle endurance**<br>**7.4.5.1 Description**<br>Muscle power (ICF: b730) functions relate to the force generated by the contraction of a muscle or muscle group.<br>Muscle endurance (ICF: b740) functions relate | **7.4.5 肌肉力量和肌肉耐力**<br>**7.4.5.1　描述**<br>肌肉力量(ICF: b730)功能指肌肉或肌群收缩所产生的力量。<br>肌肉耐力(ICF: b740)功能指维持肌肉收缩至 |

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| to sustaining muscle contraction for the required period of time.<br>Related activities include lifting and climbing that can involve whole body functions. | 所需时长的能力。<br>相关活动包括需要调动全身机能完成的举重和攀爬。 |
| **7.4.5.2 Impairments and limitations**<br>Impairments in muscle strength in the body can have a considerable impact on activities of daily living and on the quality of life. Effects of impairments and limitations include:<br>— reduced muscle power and endurance;<br>— reduced grip strength making it difficult or painful to operate a system against resistance or torque;<br>— fatigue when use of a system requires prolonged activity;<br>— reduced control of passive movement (i.e. when an external force such as gravity causes the motion) resulting in difficulties, e.g. lowering a heavy object to the ground or sitting down on a chair.<br>Adverse conditions, such as slippery or uneven surfaces, wearing shoes that are heavy, have slippery soles or high heels, present many of the same type of effects listed above for many persons. | **7.4.5.2 损伤和限制**<br>身体肌肉力量的减弱会对日常生活活动和生活质量产生显著影响。损伤和限制的影响包括:<br>——肌肉力量和耐力下降；<br>——握力减弱，克服阻力或扭矩操作系统变得困难或痛苦；<br>——当使用系统需要长时间操作时所出现的疲劳；<br>——被动运动（即当重力等外力引发肢体运动时）的控制能力下降，从而导致行动困难，例如将重物放在地上或坐在椅子上。<br>地面湿滑或凹凸不平、穿着过重、鞋底过滑或鞋跟过高的鞋子等不利因素，也会使许多人出现上述相同类型的影响。 |
| **7.4.5.3 Design considerations**<br>Design considerations that can facilitate accessibility include the following:<br>— use of power grip (whole hand) which requires less effort than pinch grip (between thumb and index or middle finger);<br>— appropriate handling characteristics (e.g. size and weight) for systems that involve lifting, holding, carrying or opening;<br>— avoidance of long handling time and unnecessary repetition of operations;<br>— avoidance of long service lines that cause people to stand unsupported for long periods of time;<br>— alternative means of control in vehicles to accommodate lower body movement. | **7.4.5.3 设计考量**<br>能提升无障碍性的设计考量包括：<br>——采用全手握持(整个手发力)，因其比捏握(拇指与食指或中指之间)所需的力气要小；<br>——对于需要提起、握持、搬运或开启的系统，具备适当的操控特性（如尺寸和重量）；<br>——避免长时间的握持操作和不必要的重复操作；<br>——避免设置过长的服务通道，以免人们长时间无支撑地站立；<br>——车辆中提供替代的控制方式，以适应下半身活动的需求。 |
| **7.4.6 Voice and speech**<br>**7.4.6.1 Description**<br>Voice relates to the sound produced by the vocal organs, usually as speech (ICF: s398).<br>The voice function (ICF: b310) comprises a variety of aspects such as articulation, volume, fluency, speed, melody and rhythm.<br>Impairments include voicelessness (aphonia), defective use of the voice (dysphonia), rough and harsh voice (hoarseness), stammering and stuttering.<br>Related activities include speaking and conversing. | **7.4.6 发声和言语**<br>**7.4.6.1 描述**<br>发声指发声器官所产生的声音，通常体现为言语（ICF: s398）。<br>发声功能(ICF: b310)包括清晰度、音量、流畅度、语速、语调和节奏等多个方面。<br>损伤包括失声（发声障碍）、发生异常（发声困难）、声音粗糙刺耳（声音嘶哑）、口吃和结巴。<br>相关活动包括说话和交谈。 |
| **7.4.6.2 Impairments and limitations**<br>Impairments in voice and speech can affect a | **7.4.6.2 损伤和限制**<br>发声和言语的损伤会影响一个人用言语交流 |

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| person's ability to communicate and convey information with speech. Effects of impairments and limitations include:<br>— reduced social interaction;<br>— reduced participation in activities;<br>— reduced ability to interact with systems that use voice input.<br>Adverse environmental conditions, such as high levels of ambient noise, can present the same type of effects. | 和传递信息的能力。损伤和限制的影响包括:<br>——社会互动减少;<br>——活动参与度降低;<br>——与语音输入类系统的交互能力下降。<br>环境噪声过高等不利的环境条件，可能会产生类似的影响。 |
| **7.4.6.3 Design considerations**<br>Design considerations that can facilitate accessibility include the following:<br>— alternative forms of communication such as via text, facial expressions, hand movements or signs, body postures, and other forms of body language;<br>— augmentative and alternative communication based on symbols, aids, techniques, and/or strategies;<br>— support for the use of assistive products such as speech synthesizers and communication amplifier and video communication;<br>— provision of alternative means to interact with interactive voice systems and intercom systems, such as real-time text. | **7.4.6.3 设计考量**<br>能提升无障碍性的设计考量包括:<br>——替代性的交流形式，如通过文字、面部表情、手势或手语、身体姿势和其他形式的肢体语言;<br>——基于符号、辅助工具、技术和/或对策的补充和替代性交流方式;<br>——支持使用语音合成器、交流放大器和视频通信等辅助产品;<br>——为交互式语音系统、对讲系统配备替代性交互方式，例如实时文本。 |
| **7.5 Cognitive abilities**<br>**7.5.1 Description**<br>Cognition is the understanding, integrating and processing of information which includes abstraction, organization of ideas, reasoning, analysis and synthesis (ICF: b164). Cognition is complex and dependent on a number of mental functions (ICF: b1) including: | **7.5 认知能力**<br>**7.5.1 描述**<br>认知指对信息的理解、整合和处理过程，包括抽象、思想组织、推理、分析与综合(ICF: b164)。认知是复杂的，依赖多种心理功能(ICF: b1)，包括: |
| 1) global mental functions such as intellect, consciousness, energy and motivation;<br>2) specific mental functions, such as<br>— perception (ability to recognize and interpret stimuli),<br>— attention (ability to sustain, shift, divide, and/or share attention),<br>— learning,<br>— memory (ability to register, store and/or retrieve information as needed),<br>— language (ability to produce and understand),<br>— reasoning,<br>— problem solving,<br>— decision making, and<br>— reading;<br>3) affective (emotional) functions. | 1） 整体性心理功能，如智力、意识、精力和动机;<br>2）特定心理功能，如<br>——感知（识别和解读刺激的能力），<br>——注意力（维持、转移、分散和/或分享注意力的能力），<br>——学习，<br>——记忆力（根据需要注册、存储和/或检索信息的能力），<br>——语言（产生和理解的能力），<br>——推理，<br>——解决问题，<br>——作出决策，以及<br>——阅读;<br>3）情感（情绪）功能。 |
| **7.5.2 Impairments and limitations**<br>Impairment of global mental, specific mental and/or affective function (listed above) can occur and cause limitations for any person including those with average and high | **7.5.2 损伤和限制**<br>整体性心理功能、特定心理功能和/或情感功能的损害（如上所列）可能会发生，并会对包括智力水平中等及较高的人群在内的所有 |

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| intellectual functioning.<br>Cognitive impairments can be related to limitations such as reduced capacity to carry out activities and/or difficulties with social participation.<br>Impairments and related limitations can affect:<br>— ability to plan, initiate, carry out and terminate activities;<br>— ability to organize thoughts and activities;<br>— ability to sustain attention, concentrate on important stimuli/information and ignore distractions;<br>— ability to multi-task (i.e. to divide attention among several operations, tasks or individual task elements);<br>— ability to maintain skills (e.g. how to drive a car);<br>— speed in performing tasks/activities and in responding in a timely manner;<br>— ability to store and retrieve information (e.g. remember episodes in relation to time, recall facts);<br>— ability to perceive information (e.g. accurate and fluid word recognition);<br>— ability to learn;<br>— ability to make generalizations and associations;<br>— ability to solve problems including recognizing the problem, identifying, choosing and implementing solutions, and evaluating outcomes;<br>— ability to understand and/or express oneself (e.g. comprehension, communication, speech, fluency,<br>writing, repetition, naming, signs, symbols);<br>— capacity for self-control and self-motivation (including increased irritability, rigidity, lower stress tolerance, confusion, disorientation, anxiety, loneliness and depression);<br>— preference for different learning or information understanding styles such as text-based vs. graphics-based styles.<br>Adverse environmental conditions, such as high levels of environmental stimuli (e.g. flashing lights, crowds of people), can overwhelm or confuse many persons and present the same type of effects listed above for many persons. | 人造成限制。<br>认知障碍可能与某些限制有关，如活动执行能力下降和/或社会参与方面存在困难。<br><br>损伤和相关限制可能会影响：<br>——规划、启动、执行和终止活动的能力；<br>——组织思想和统筹活动的能力；<br>——保持注意力，专注于重要刺激/信息以及忽视干扰因素的能力；<br>——同时处理多项任务的能力（即在多个操作、任务或单个任务元素之间分配注意力）；<br>——保持技能的能力（例如如何驾驶汽车）；<br>——执行任务/活动的速度和及时响应的速度；<br>——存储和提取信息的能力（例如，按时间顺序记住事件、回忆事实）；<br>——感知信息的能力（例如准确和流畅的单词识别）；<br>——学习能力；<br>——概括和联想的能力；<br>——解决问题的能力，包括识别问题、确定、选择和实施解决方案以及评估结果；<br>——理解他人和/或自我表达的能力（例如理解、沟通、言语、流利性、写作、复述、命名、使用手势、符号）；<br>——自我控制和自我激励的能力（包括易怒、僵硬、压力耐受力降低、困惑、定向障碍、焦虑、孤独和抑郁）；<br>——对不同的学习或信息理解的偏好，例如基于文字的方式与基于图形的方式。<br><br>高水平的环境刺激等不利环境条件（例如灯光频闪、人群聚集），可能会使人不知所措或产生混乱，从而导致许多人产生上述相同类型的影响。 |
| **7.5.3 Design considerations**<br>Design considerations that can facilitate accessibility include the following:<br>— information about time and place;<br>— schedules, structures, signals to indicate start and termination of activities;<br>— an overview that informs the user what to expect before providing any details;<br>— appropriate feedback/cues/reminders that | **7.5.3 设计考量**<br>能提升无障碍性的设计考量包括：<br>——关于时间和地点的信息；<br>——用以指示活动开始与结束的日程表、结构和标识；<br>——在提供任何细节之前，先给出一个概览，让用户了解接下来的内容；<br>——适当的反馈/提示/提醒，以维持用户的 |

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| hold the user's attention and give support through a process;<br>— feedback that is adjustable to the needs and preferences of users;<br>— environments and presentations that are stimulating but also avoid distractions;<br>— systems and procedures that adapt to individual situations, abilities and preferences;<br>— similar arrangement/layout and design of feedback and control logic on products of a similar type;<br>— similar design of feedback and control logic on products of a similar type;<br>— error-tolerant operating sequences;<br>— flexible time period for assimilation of information and response;<br>— simple and straightforward sequences for opening of packaging and assembling, installing or operating a product;<br>— information provided in multiple formats, e.g. text is read out, diagrams are provided in addition to text;<br>— information and instructions that are easy to understand in the language of the user;<br>— explicit information on expectations placed on the user;<br>— systems that can be used (as far as possible) without an instruction manual;<br>— procedures that facilitate learning (learning by doing is generally easier than memorizing instructions, repetitions);<br>— multiple means of information presentation (e.g. text is read out, widely recognized symbols);<br>— emergency evacuation routes designed so that they are intuitive and easy to follow which clearly designate any alternative routes that accommodate for persons with disabilities;<br>— accommodation for/compatibility with relevant supports and assistive products and assistive technology.<br>NOTE Examples of assistive products, assistive technology and supports for persons with cognitive impairments are assistants, computers with dedicated computer software, hand-held computers and tablets. Design considerations that accommodate persons with varying cognitive impairments are also advantageous for most people because they reduce cognitive load (e.g. facilitate memory, decrease errors, and facilitate solving complex problems). | 注意力，并在操作过程中提供支持；<br>——可根据用户的需求和偏好进行调整的反馈机制；<br>——既富有启发性又不会分散注意力的环境和展示方式；<br>——能够根据个人具体情况、能力和偏好进行调整的系统和程序；<br>——同类产品采用相似的的反馈与控制逻辑排列/布局及设计；<br>——同类产品采用相似的反馈与控制逻辑的设计；<br>——容错式操作流程；<br>——用于消化信息和作出反应的灵活时间段；<br>——简洁明了的产品包装开启、组装、安装或操作步骤；<br>——采用多种方式提供信息，例如，文本语音播报、文本之外辅以图示；<br>——以用户语言提供的易于理解的信息和指令；<br>——关于对用户的期望的明确信息；<br>——能（尽可能）在没有说明书的情况下使用的系统；<br>——促进学习的程序（通过实践学习通常比记忆指令、复述更容易）；<br>——多种信息呈现方式（例如，文本语音播报、广泛认可的符号）；<br>——紧急疏散路线的设计直观易懂、便于遵循，并明确标注出可供残疾人使用的备用路线；<br>——与相关辅助工具、辅助产品以及辅助技术的兼容性与适配性。<br><br>注：适用于认知障碍者的辅助产品、辅助技术及辅助工具包括：陪护人员、配备专用计算机软件的电脑、手持电脑和平板。针对不同类型认知障碍者需求的设计考量，同样能对大多数人有益，因为这些设计可减轻认知负担（例如辅助记忆、减少失误以及助力解决复杂问题等）。 |
| **8 Strategies for addressing user accessibility needs and design considerations in standards**<br>**8.1 General**<br>Whether standards developers identify user | **8 标准中涉及用户无障碍需求和设计考量的对策**<br>**8.1 通则**<br>无论标准制定者使用无障碍目标方法来识别用户无障碍需求，还是使用人的能力和特征 |

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| accessibility needs using the accessibility goals approach or design considerations using the human abilities and characteristics approach, these needs and considerations can be translated into specific accessibility requirements and recommendations in standards. This clause provides eight strategies that standards developers can apply in order to write specific accessibility requirements and recommendations in standards.<br>The strategies represent the potential means by which a specific identified user accessibility need or design consideration might be met. Standards developers should consider and select the strategy or strategies that can best be applied to transform the needs and considerations into requirements and recommendations given the context and particulars of the standard they are developing. In some instances multiple strategies will be needed to meet a single identified user accessibility need or design consideration, and sometimes the application of a single strategy will be able to address multiple needs or considerations. Further, these strategies are applicable to the design of user interactions, tasks and activities, as well as to the design of the system itself. The strategies presented are those widely used to address user accessibility needs and design considerations, and do not constitute an exhaustive set.<br>Following the presentation of each strategy are one or more examples describing requirements/recommendations that might result from the application of that strategy in a particular standard's context. These examples are for illustrative purposes only and are not intended to represent guidance that exists in actual standards. In practice, standards differ widely in the depth and level of detail of their requirements and recommendations. | 方法来识别设计考量，这些需求和考虑都能够转化为标准中特定的无障碍要求和建议。本章提供了标准制定者能够应用的八种对策，以便在标准中起草特定的无障碍要求和建议。<br>这些对策代表了为满足特定的已识别的用户无障碍需求或设计考量可能采取的措施。标准制定者宜根据正在制定标准的具体场景和细节，考虑并选择能最有效地将需求和考量因素转化为要求和建议的对策。在某些情况下，需要应用多项对策满足某个特定用户无障碍需求或设计考量，有时应用单个对策将满足多个需求或考量因素。此外，这些对策适用于用户交互、任务和活动的设计，以及系统自身的设计。所提出的对策是广泛用于解决用户无障碍需求和设计考量的对策，并非详尽无遗。<br>在每项对策之后，均提供了一个或多个示例，说明在特定标准的场景中应用该对策可能产生的无障碍要求/建议。这些示例仅用于说明，并不代表现行标准中的实际指导内容。在实践中，不同标准在要求和建议的深度和详细程度上存在很大差异。 |
| **8.2 Developing standard-specific requirements and recommendations based on user accessibility needs and design considerations**<br>**8.2.1 Provide multiple means of information presentation and user interaction**<br>**8.2.1.1 General**<br>Consider using more than one means of presentation by which users can perceive the same information and multiple means by which users can interact with the system to achieve a given objective, whether it is to perform a task, engage in an activity, or to obtain or use a service. | **8.2 基于用户无障碍需求和设计考量制定标准特定的要求和建议**<br>**8.2.1 提供多种信息呈现方式和用户交互方式**<br>**8.2.1.1 概述**<br>考虑使用一种以上的信息呈现方式，使用户能够通过不同途径感知相同的信息，并提供多种用户与系统交互的方式，以实现既定目标，无论是完成一项任务、参与一项活动，还是获得或使用服务。 |
| **8.2.1.2 Provide multiple means of information presentation** | **8.2.1.2 提供多种信息呈现方式**<br>提供一种以上的方式让用户感知相同的信 |

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| Providing more than one means of presentation by which users can perceive the same information entails 1) presenting information via more than one sensory modality (as in Example 1 below) and/or 2) providing information in more than one form within the same sensory modality (as in Example 2 below). This basic strategy is sometimes called alternative formats. Thus, the same information might be provided to users through the auditory and the visual senses, the visual and the tactile senses, or the auditory and the tactile senses. In some less common instances, other sensory modalities (e.g. taste, smell) can be used in combination with visual, auditory, or tactile senses.<br>EXAMPLE 1 A standard for paging systems could require that the pager signal be presented through the<br>vibration of the pager as well as through an auditory or visual display.<br>EXAMPLE 2 A standard for video recorder instruction manuals could require that a visual illustration of a video recorder and its controls be provided, along with a textual description of the same information. | 息：<br>1）通过一种以上的感官模态（如示例 1 所示）呈现信息和/或<br>2） 在同一感官模态内以多种形式提供信息（如示例 2 所示）。<br>这种基本对策有时被称为替代形式。因此，可以通过听觉与视觉、视觉与触觉或听觉与触觉等不同组合方式向用户提供相同的信息。在少数情况下，其他感官模态（如味觉、嗅觉）能够与视觉、听觉或触觉结合使用。<br><br>示例 1：寻呼系统标准可能要求寻呼信号既通过设备振动以及声音提示或视觉显示来传达。<br>示例 2：录像机说明书标准可能要求提供录像机及其控制部件的图示外，还需附有相同信息的文字描述。 |
| **8.2.1.3 Provide multiple means of user interaction**<br>It is important that people have more than one way to complete a task or activity or to interact with a system to achieve the same objective(s). Standards developers can specify in their standards that these multiple means be provided.<br>EXAMPLE 1 A software standard could require that the user be able to enter data into the system using a keyboard or voice input, with both options being available.<br>EXAMPLE 2 A standard for a home appliance could require that users be able to operate the controls of the appliance with either the right or the left hand. The controls are to be oriented to be equally usable by either hand.<br>EXAMPLE 3 A customer service standard could require that users be able to initiate contact with customer service via either a telephone call or an e-mail message.<br>EXAMPLE 4 A building standard could specify that both stairs and an elevator be provided by which users can move from one level of a building to another. | **8.2.1.3 提供多种用户交互方式**<br>重要的是，人们有不止一种方式来完成某项任务或活动，或与系统交互以实现相同的目标。标准制定者可以在标准中明确规定这些多种交互方式。<br><br>示例 1：软件标准可能要求用户能够使用键盘和语音输入两种方式，将数据输入系统。<br><br>示例 2：家用电器标准可能要求用户能够用右手或左手操作电器的控制装置。控制装置的布局需确保左右手使用时具有同等的便利性。<br>示例 3：客户服务标准可能要求用户能够通过电话或电子邮件任一方式，联系客户服务部门。<br>示例 4：建筑标准可能规定同时设置楼梯和电梯，供用户在不同楼层之间通行。 |
| **8.2.2 Set fixed parameters to accommodate the widest range of users**<br>When there is a need to fix a design parameter at some value, for example the minimum door width in a public building, consider setting that | **8.2.2 设置固定参数以适应最广泛的用户**<br><br>当需要将设计参数固定在某个值时，例如公共建筑中门的最小宽度，考虑将该值设置为 |

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| value so that it minimizes the number of people whose accessibility might be limited by it.<br>Many design parameters can only be set to one specified value. There can only be one width for a conventional door in a given building, for example, and the weight of a given consumer product like a tablet computer has a specific value. In these cases standards developers should consider whether the chosen value for the design parameter is the best choice in order to accommodate the widest range of users.<br>Finally, it is desirable to question whether a design parameter being considered as fixed could actually be adjustable to meet more accessibility needs, as illustrated in Example 3 below.<br>EXAMPLE 1 A standard's requirement for an auditory signal for a laundry dryer to indicate that the laundry is dry could mandate that the signal be composed of multiple frequencies with the centre frequency between 400 Hz and 2 000 Hz. The standards developer has considered whether this specification is appropriate for meeting the need for the widest range of users to be able to hear the signal.<br>EXAMPLE 2 A public building standard specifies a suitable minimum door width to accommodate the passage of large persons and/or wheelchair users.<br>EXAMPLE 3 In health care, examination tables in clinics often have a fixed height. Having evaluated the user accessibility needs and design considerations from the patient and the examiner perspective, the standard developer recognizes that examination tables need to be height-adjustable. In this case, what was a fixed design parameter becomes an adjustable parameter, and requirements in the standard are written to reflect that.<br>EXAMPLE 4 A postal service standard could limit the weight of packages for delivery (e.g. to 18 kg, rather than 27 kg), so that a greater percentage of postal workers will be able to lift and carry any package that is sent. | 最大限度地减少可能受其限制的人数。<br>许多设计参数只能设置为一个特定值。例如，某一建筑物中的常规门只能有一个宽度，某款消费品（如平板电脑）的重量也只能是一个具体数值。在此类情况下，标准制定者宜考虑设计参数的选定值是否是最佳选择，以尽可能满足最广泛用户群体的无障碍需求。<br>最后，值得审慎考虑的是，当前被认为是固定的设计参数是否实际上可以设计为可调节的，从而更好地满足更多无障碍需求，如示例 3 所示。<br>示例 1：某项标准规定衣物烘干机在衣物烘干完成时发出听觉提示信号，可能规定该信号由多个频率组成，其中心频率介于 400 Hz 和 2 000 Hz 之间。标准制定者已经考虑了技术规范是否满足最广泛的用户能够听到该提示音的需求。<br>示例 2：公共建筑标准规定了合适的门的最小宽度，以确保体型较大的人员和/或轮椅使用者能够顺利通行。<br>示例 3：在医疗健康领域，诊所的检查台通常有固定的高度。标准制定者从患者和医护人员的角度评估了用户的无障碍需求和设计考量因素后，认识到检查台的高度需要具备高度可调节功能。在这种情况下，原本固定的设计参数变成了可调整的参数，标准中的相关要求也相应调整以反映这一变化。<br>示例 4：邮政服务标准可能将递送包裹的重量设限（例如限制为 18 公斤，而非 27 公斤），这样就有更大比例的邮政工作人员安全地搬运任何寄送的包裹。 |
| **8.2.3 Set adjustable parameters to accommodate the widest range of users**<br>Consider whether the range of adjustability for adjustable parameters is sufficient to enable access for the largest number of users.<br>Providing adjustability is one of the strategies most commonly used for addressing some accessibility needs, particularly when those needs vary widely with respect to a particular design parameter.<br>EXAMPLE 1 An automobile's control for forward/backward seat adjustment is designed so that drivers with the shortest and longest | **8.2.3 设置可调节的参数以适应最广泛的用户**<br>考虑可调节参数的调节范围是否满足最广泛用户的使用需求。<br>提供可调节性是解决一些无障碍需求最常用的对策之一，尤其适用于当用户在某一特定设计参数上的需求差异较大时。<br>示例 1：汽车的座椅前后调节控制装置的设计，既能满足腿长最短和最长驾驶者的舒适乘坐需求，也能满足需要在脊柱与方向盘之 |

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| legs can be comfortably accommodated, as well as people who require additional space between their spine and the steering wheel.<br>EXAMPLE 2 The range of volume settings provided for a set of headphones can accommodate as many hearing disabilities as possible. | 间保留额外空间的驾驶者的需求。<br><br>示例 2：耳机所提供的音量调节范围能适应多种听力障碍情况。 |
| **8.2.4 Minimize unnecessary complexity**<br>**8.2.4.1 General**<br>The greater the complexity of user tasks and activities and the systems with which those tasks are performed, the more likely it is that some people will experience accessibility problems, and the more likely they will be to make errors that prevent them from achieving their objectives. There are cases in which complexity is necessary, and also cases in which complexity is desirable. Nevertheless, it is important to simplify and streamline many designs to eliminate unnecessary and/or undesirable levels of complexity to enable the greatest number of people to perform tasks, to access and receive services, and to use products and navigate or otherwise use the built environment. It is also important that complex systems with many features are designed so that they do not obscure basic system functionality.<br>There are many aspects of design that affect overall complexity, and thus many means (i.e. “substrategies”) that can be considered by standards developers for reducing unnecessary complexity, as illustrated below. | **8.2.4 最大限度地降低不必要的复杂性**<br>**8.2.4.1 概述**<br>用户任务和活动以及执行这些任务的系统越复杂，就越有可能遇到无障碍性问题，也越容易因操作错误而无法实现其目标。虽然在某些情况下复杂性是必要的，甚至是有益的。但仍然有必要对许多设计进行简化和优化，以消除不必要和/或不合理的复杂性，使尽可能多的人能够执行任务、获取和接收服务、使用产品，以及在人工环境中通行或进行其他活动。同样重要的是，具有许多功能的复杂系统的设计不会混淆基本的系统功能。同样重要的是，对于功能繁多的复杂系统，其设计要确保基本功能不会难以发现。<br>影响整体复杂性的设计因素有很多，因此标准制定者可以考虑采取许多方法（即“子对策”）来降低不必要的复杂性，如下所述。 |
| **8.2.4.2 Simplify the language**<br>Systems involving user instructions that employ jargon, poor sentence construction, and terminology that exceeds the language comprehension of the user can interfere with users’ understanding and use of the system. Using well-constructed sentences and commonly used vocabularies, as well as avoiding jargon, will increase accessibility.<br>EXAMPLE A standard about the design of instructional materials for home appliances specifies that all instructional materials should be written at the reading level of a 12-year-old child. | **8.2.4.2 简化语言**<br>在涉及用户说明的系统中，若使用行话、句子结构混乱以及使用超出用户语言理解能力的术语，可能妨碍用户对系统的理解和使用。使用结构清晰句子和常用词汇，并避免使用专业术语，有助于提高无障碍性。<br>示例：关于家用电器说明书设计的标准规定，所有说明材料的表述难度都不宜超过 12 岁儿童的阅读水平。 |
| **8.2.4.3 Simplify the performance requirements of user activities and tasks**<br>Systems that require users to perform long sequences of steps to accomplish a task, and require that those steps be executed in a particular order, increase the chance of errors and decrease the chance that some users will be able to achieve their objectives. When unnecessary steps can be eliminated or when users have flexibility in executing steps (such | **8.2.4.3 简化用户活动和任务的性能要求**<br>要求用户执行冗长步骤来完成任务，并要求这些步骤按特定顺序执行，会增加出错的可能性，并降低部分用户实现其目标的可能性。当能够消除不必要的步骤，或者当用户在执行步骤时拥有更多灵活性（例如暂停、保存并稍后恢复），可以提高无障碍性。<br>注：有时这种对策可能涉及将某些任务步骤或活动交由技术自动执行来实现。 |

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| as pausing or saving and resuming later) accessibility can be increased.<br>NOTE Sometimes this strategy can involve re-allocating certain task steps or activities to technology to execute.<br>EXAMPLE A standard for cellular phones specifies that the cellular phone user should be able to initiate a call simply by saying the name or touching the name or picture of the person as displayed in the contact list. This eliminates the task of entering the phone number when making a call, which can be problematic for people who have difficulty correctly reading and remembering phone numbers, as well as for those who have difficulty with physically entering the numbers on the phone. | 示例：手机标准规定，用户宜能够通过说出联系人姓名，或点击通讯录中联系人的姓名或照片，直接拨打电话。这一设计省去了手动输入电话号码的步骤，便于对准确读取和记忆电话号码以及在手机上实际输入电话号码有困难的用户拨打电话。 |
| **8.2.4.4 Ensure that basic functionality is easily accessible**<br>An accessibility problem can occur when optional features are implemented in such a way that they obscure the basic functionality of the system. In that case, they can become a barrier to the access and use of the primary system functionality intended. A way of avoiding this problem is to ensure that the basic system functionality is easily accessible and usable — i.e. it is not obscured by the optional features that only serve to distract or confuse some users. There are many ways in which this strategy can be applied in practice, some of which can involve the use of other strategies introduced in this clause.<br>EXAMPLE A standard for the design of consumer product instructions requires that instructions regarding use of the basic functionality be presented first, while discussion of optional or advanced features is contained in a later section, clearly separated from those for the primary system functionality. For complex products, it also specifies that a "Quick Start" Guide be provided, addressing only the basic operation of the product. | **8.2.4.4 确保基本功能易于访问**<br>当可选功能的实现方式影响了系统基本功能时，可能出现无障碍性问题。在这种情况下，可选功能可能反而成为访问和使用系统核心功能的障碍。避免此类问题的一种方法是确保系统的基本功能易于访问和使用，即不被会分散或迷惑部分用户注意力的可选功能所掩盖。在实践中，这一对策有多种方式实施，其中一些方式能够结合本章的其他对策共同使用。<br>示例：消费品说明书设计的标准规定，关于基本功能使用的说明首先呈现，而可选或高级功能的说明置于后续章节中，并与基本功能的说明明确区分。对于复杂的产品，还规定提供仅介绍产品的基本操作的"快速入门"指南。 |
| **8.2.4.5 Provide unambiguous options for using information and making decisions**<br>Decisions can be difficult for users if they do not understand the options available at any given point in a task or activity and at any point during the use of a system. Supporting users in their use of information and in decision-making will help to increase accessibility and ensure that all users can achieve their objectives. Nonverbal means of communication (audio, video, icons etc.) should be provided.<br>EXAMPLE 1 A standard for voice messaging | **8.2.4.5 为使用信息和作出决策提供明确的选项**<br>如果用户在执行任务或参与活动的任何时刻，无法清楚理解当前可用的选项，就可能难以做出决策。通过支持用户有效理解信息并辅助其进行决策，将有助于提高无障碍性，确保所有用户都能实现其目标。宜提供非语言的沟通方式（音频、视频、图标等）以辅助理解。<br>示例 1：语音消息系统标准规定，系统宜提 |

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| systems specifies that the system should provide a feature that allows users to query the system at any point about the options that are currently available to them in the system.<br>EXAMPLE 2 A hospital design standard includes specific requirements for visual and tactile markings intended to guide visitors to the major departments within a hospital. | 供允许用户在任意时刻查询当前可使用的操作选项的功能。<br><br>示例 2：医院建筑设计标准规定具体的要求，要设置视觉和触觉标识，旨在引导访客前往医院内的主要科室。 |
| **8.2.5 Provide individualized access to a system**<br>Individualization involves meeting user accessibility needs as determined by an individual user. Using this strategy ensures that an individual's specified needs are met. In order to do this, the individual's specific needs must be identifiable. Systems that are controlled by or have embedded Information and Communications Technology (ICT) lend themselves particularly well to individualization because of the relative ease of access to an individual's requirements (which might be stored or accessed electronically) and the ease of adaptability of many such systems. Many services are also easily individualizable where individual user accessibility needs, can be identified.<br>Reasons to adopt this strategy include personal security, confidentiality, commercial convenience,<br>preservation of dignity or conflicting individual needs.<br>EXAMPLE 1 A standard relating to a tablet operating system specifies a data model format for storing a set of individual accessibility preferences in the cloud so as to enable use of the same set of preferences on multiple devices.<br>EXAMPLE 2 A university learning management system delivers online educational content matched to each individual learner's accessibility preferences and the characteristics of the device on which the content is being delivered at the time. The system follows a national standard that specifies that learning content must meet an individual's needs and preferences represented in a format that is specified by a particular international standard for preferences.<br>EXAMPLE 3 A standard specifies how a credit and debit card payment system can identify and access<br>accessibility preferences stored separately from the card. This enables devices such as automatic teller machines and payment terminals to adapt to the same set of individual preferences in different contexts of use. Another part of the same standard specifies | **8.2.5 提供对系统的个性化访问**<br>个性化是指根据单个用户确定的无障碍需求。使用此对策能够确保满足单个用户的特定需求。为此，单个用户的具体需求必须是可识别的。由信息和通信技术（ICT）控制或嵌入信息和通信技术的系统特别适合个性化，因为相对容易获得单个用户的需求（可以电子方式存储或访问），并且具备良好的适应性。在许多服务中，如果能够识别单个用户的无障碍需求，也易于实现个性化。<br>采取这一对策的原因包括保障人身安全、维护隐私保密、提升商业便利、维护用户尊严，以及应对不同用户之间可能存在冲突的个性化需求。<br><br>示例 1：平板电脑操作系统标准规定了一种数据模型格式，用于将用户的个性化无障碍偏好设置存储在云端，从而使其能够在多台设备上使用同一套偏好设置。<br><br>示例 2：某高校的学习管理系统根据每位学生的无障碍性偏好和当时正在使用设备的特性，提供相匹配的在线教育内容。该系统遵循一项国家标准，该标准规定学习内容必须满足个人的需求和偏好，以特定国际标准格式表达。<br><br>示例 3：一项标准规定了信用卡和借记卡支付系统如何识别和访问独立于卡片本身存储的无障碍性偏好设置。这使得诸如自动柜员机（ATM）和支付终端等设备能够在不同使用场景下，适应具有相同偏好的一组用户。该标准的其他部分规定了如何创建、编辑和存储一组无障碍偏好设置。 |

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| how a set of accessibility preferences can be created, edited and stored.<br>EXAMPLE 4 A quality standard relating to the provision of support services stipulates that a college administration system should make bookings for sign-language interpreters for particular students for particular lessons and transcription services that provide a written record of what the lecturer said. Where possible interpreters are matched to individual students to provide continuity. It recommends that transcription should be provided where individual user accessibility needs require it. | 示例 4：一项关于支持服务质量的标准规定，高校管理系统宜为特定学生在特定课程提供手语翻译服务，并提供课堂转录服务，以书面形式记录讲师所讲内容。在可行的情况下，为学生固定匹配同一位翻译人员，以保障服务连续性。该标准建议，在单个用户有此无障碍需求时，宜提供转录服务。 |
| **8.2.6 Eliminate unnecessary limits or constraints on user interactions with a system**<br>People engage in tasks and activities in different ways. By limiting the ways in which a user can engage or interact with a system, accessibility can be decreased or even made impossible for some users. One of the most frequently encountered, and often unnecessary, types of design constraints is the constraint on the time a user has to complete a task or activity. Everyone does not do things at the same pace, and standards developers can consider removing time-based constraints as a means of increasing accessibility. Systems that allow users to extend the time available can increase accessibility.<br>Other types of constraints also exist (e.g. space constraints, knowledge-based constraints) that standards developers can consider eliminating if it would increase accessibility for users.<br>EXAMPLE A standard on phone-based customer service requires account numbers to be entered using a telephone keypad. The standard does not limit the amount of time the user has to enter the account number, but specifies that the software will continue to process keystrokes until the entire account number is entered, regardless of the pace of those keystrokes. | **8.2.6 消除对用户与系统交互的不必要限制或约束**<br>人们执行任务和参与活动的方式各不相同。若限制用户与系统交互方式，可能会降低无障碍性，甚至一些用户完全无法使用系统。最常见且往往不必要的约束之一，是对用户完成某项任务或活动所允许的时间的限制。每个人做事情的速度都不一样，标准制定者能够/可能考虑不对时间进行约束，作为提高无障碍性的一种手段。允许用户延长操作时间，能够提高系统的无障碍性。<br>此外，还存在其他类型的约束（例如空间约束、知识要求限制），标准制定者能够/可能考虑消除这些约束，提高用户的无障碍性。<br>示例：电话客户服务标准规定使用电话键盘输入帐号，没有限制用户输入帐号的时间，而是规定系统将持续接收按键输入，直至完整账户号码被全部输入完毕，继续处理击键，直到输入整个帐号，无论用户按键速度如何。 |
| **8.2.7 Provide compatibility with assistive products and assistive technology**<br>In situations in which users might need to use assistive products and assistive technology to access a system, the responsibility of standards developers is to ensure that the system provides compatibility with commonly used assistive products and assistive technology so that users can achieve their goals.<br>EXAMPLE 1 A standard for a software product specifies that all information presented by the application shall be available to screen-reading software.<br>EXAMPLE 2 A hospital building design | **8.2.7 提供与辅助产品和辅助技术的兼容性**<br>在用户可能需要使用辅助产品和辅助技术来访问系统的情况下，标准制定者的责任是确保系统与常用的辅助产品和辅助技术兼容，以便用户能够实现其目标。<br>示例 1：软件产品标准规定，应用程序提供的所有信息应能被屏幕阅读软件获取。<br>示例 2：医院建筑设计标准规定，医院的哪 |

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| standard specifies which areas of the hospital shall be wheelchair-accessible. | 些区域应具备轮椅无障碍通行条件。 |
| **8.2.8 Provide alternative versions of a system**<br>Although it is highly likely that companies will have made decisions about alternative versions of a system (called product lines in some contexts) long before standards are written, they may not have done so based on accessibility considerations. It is quite possible that the standard development activity itself will identify the need for a revision of the design or, as a last resort, an additional version of the system based on accessibility considerations. Thus, this strategy is included here and can be considered by standards developers who are addressing user accessibility needs or design considerations that have not been identified or met during the design process. Obviously, the strategy itself can only be implemented by designers, and the standards developers' role is to identify the need for a design approach to enhance accessibility and to provide to those responsible for design the appropriate guidance to undertake it.<br>EXAMPLE A standards committee recognizes during the context of producing a standard on gardening tools that the accessibility needs of people with relatively small hands are not being well met by the design of the gardening tools currently available. In considering how best to address this, the committee decides that an alternative product line is the best and perhaps only way to resolve the issue because of the large differences in the relevant hand dimensions that exist in the user population. | 8.2.8 **提供系统的替代版本**<br>尽管企业很有可能早在编写标准之前就已经对系统的替代版本（在某些场景下称为产品系列）做出了决定，但这些决定可能未必是基于无障碍性考量。标准制定活动本身很可能会确定是否需要修改设计，或在万不得已的情况下，基于无障碍需求开发系统的额外版本。因此，此对策再此列出，供标准制定者在在应对那些在设计过程中未被识别或未被满足的用户无障碍需求或设计考量时予以考虑。显然，该对策的实际实施需由设计人员完成，标准制定者的职责是识别提高无障碍性的设计需求，并向设计人员提供适当的指导。<br>示例：某个标准化技术委员会在制定园艺工具标准的过程中认识到，现有市售园艺工具的设计未能充分满足手部尺寸相对较小人群的无障碍需求。在评估最佳解决方案时，委员会认为，由于用户群体的手部尺寸差异显著，开发一个替代的产品系列可能是解决该问题的最佳且甚至是唯一的方法。 |
| Annex A<br>(informative)<br>Global trends supporting accessibility<br>A.1 General<br>Significant changes have occurred during the past few decades related to how disability and accessibility are understood and represented. In response to the world's ageing population and global consumer markets becoming increasingly diverse, various models of disability have been created, as well as new laws and regulations, policies, standards, and design trends.<br>A.2 Trends in global demographics and market diversity<br>According to the World Report on Disability (published by the World Health Organization and the World Bank in June 2011,[40] approximately 15 % of the world population (over one billion people) has some type of | 附录 A<br>（资料性）<br>支持无障碍性的全球趋势<br>A.1 概述<br>在过去几十年中，残疾和无障碍的理解和表现方式发生了重大变化。为了应对世界人口老龄化和全球消费市场日益多样化，各种残疾模式以及新的法律法规、政策、标准和设计趋势被创造出来。<br>A.2 全球人口统计和市场多样性趋势<br>根据《世界残疾报告》（由世界卫生组织和世界银行于 2011 年 6 月发布[40]），大约15%的世界人口（超过 10 亿人）患有某种类型的暂时或永久残疾，其中 80%生活在发展 |

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| temporary or permanent disability, and 80 % of these individuals live in developing countries. There are often barriers that prevent individuals from participating fully in society. | 中国家。往往存在阻碍个人充分参与社会的障碍。 |
| With an ageing population, the demand for accessible and usable systems is increasing. In addition, global markets composed of users from different countries, regions, cultures and races make it a necessity to consider users' varying abilities and characteristics, different knowledge bases and expectations in the design of various systems. The requirements for accessibility of systems as perceived and experienced by users is a key driver in system design and development. | 随着人口老龄化，对可访问和可用系统的需求正在增加。此外，由来自不同国家、地区、文化和种族的用户组成的全球市场使得在设计各种系统时有必要考虑用户不同的能力和特征、不同的知识基础和期望。用户感知和体验到的系统无障碍性要求是系统设计和开发的关键驱动因素。 |
| A.3 Models of disability<br>The world's changing attitudes about disability and accessibility have been reflected in the "models of disability" created in the past few decades. | A.3 残疾模式<br>过去几十年创建的"残疾模式"反映了世界对残疾和无障碍性的态度不断变化。 |
| The earliest model was the "medical model," which described disabilities with reference to the medical conditions they were seen to arise from. The focus of disability management was on professionals curing or treating the underlying condition. | 最早的模式是"医学模式"，该模式将残疾描述为源于其所关联的医学状况。残疾管理的重点是由专业人员对潜在疾病进行治愈或治疗。 |
| Another model, developed in response to the medical model was the "social model" of disability. This revolutionized the understanding of disability by arguing that it was not mainly caused by impairments but by the way society was organized and responded to people with disabilities. In the social model, disability is the product of the physical, organizational and attitudinal barriers present within society. | 另一种针对医学模式发展起来的模式是残疾的"社会模式"。这彻底改变了对残疾的理解，认为残疾主要不是由损伤引起的，而是由社会的组织方式和对残疾人的反应引起的。在社会模式中，残疾是社会内部存在的身体、组织和态度障碍的产物。 |
| These models informed development of the "human rights model" of disability, which typically expressed a moral and political commitment that countries, states and organizations should take in regard to persons with disabilities. | 这些模式推动了残疾"人权模式"的发展，该模式通常表达了各国、各地区和各类组织宜对残疾人作出的道德和政治承诺。 |
| A.4 Trends in regulatory frameworks and governmental policies and standards<br>The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD[36]) is the basic international framework addressing the rights of persons with disabilities. The Convention had been signed by end 2014 by some 160 countries and ratified into national law by some 150 countries, making progress towards increasing the accessibility of public facilities and services a national obligation. | A.4 监管框架以及政府政策和标准的趋势<br>《联合国残疾人权利公约》（UNCRPD[36]）是处理残疾人权利的基本国际框架。截至2014 年底，约 160 个国家签署了《公约》，约 150 个国家将其批准为本国法律，从而使得提高公共设施和服务的无障碍性成为一项国家义务。 |

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| Partly in response to the UNCRPD, in many countries government procurement rules require that products and services meet certain accessibility requirements as a precondition to qualify to participate in public procurement. These government measures contribute to the growing size of the market for accessible products and services. The UNCRPD, (in Article 4 (f) General Obligations) promotes Universal Design in the development of standards and guidelines for goods, services, equipment and facilities.[36],[37]Considered globally there is a general trend away from national approaches to accessibility that classify and separate people with disabilities towards more integrated international approaches that recognize users as individuals who have a variety of unique needs. This is demonstrated by the development of initiatives to devise cohesive approaches to accessibility that are inclusive such as W3C Web Content Accessibility Guidelines,[38] Section 508 of the Rehabilitation Act,[35] the work of the ISO/IEC JTC 1 Special Working Group on Accessibility,[26] Mandates 376, 420 and 473 in Europe[29] and many others, including this Guide. | 部分是为了响应《联合国残疾人权利公约》，许多国家的政府采购规则要求产品和服务满足某些无障碍要求，以此作为有资格参与公共采购的先决条件。这些政府措施有助于无障碍产品和服务市场的规模不断扩大。UNCRPD（在第 4 条（f）一般义务中）推动在制定商品、服务、设备和设施的标准和指南时进行通用设计[36],[37]。<br>从全球来看，总的趋势是从对残疾人进行分类和分离的国家办法转向承认用户是具有各种独特需求的个人的更加综合的国际性办法。这体现在多项旨在制定包容性、整体性无障碍方案的倡议中，如 W3C 网页内容无障碍指南[38]，美国康复法案第 508 节[35]，ISO/IEC JTC 1 无障碍特别工作组的工作[26]，欧洲第 376、420 和 473 号指令[29]以及包括本指南在内的许多其他文件。 |
| A.5 Trends in design<br>Universal design and similar concepts (such as: inclusive design and design for all) refer to making systems usable to the widest possible range of users. These concepts go beyond concepts such as barrier-free design, by removing differentiations between persons with and without disabilities and including all persons as potential users within a diverse population. It is the intent of these concepts that “mainstream” systems be usable by as many persons as possible (although this does not mean that all users can be expected to use a system in the same manner).<br>These concepts recognize that human beings can benefit from accessible systems in various contexts throughout their lives. Features that make products and services usable for persons with disabilities can also make them convenient and easy to use for everyone else. This is particularly helpful when people have temporary difficulties, such as lost glasses, a broken leg or a journey with a pram/stroller or bulky luggage. Increased accessibility and usability often result, therefore, in better products and services for all.<br>NOTE There are minor distinctions between what each of these terms mean to the many | A.5 设计趋势<br>通用设计和类似概念（如：包容性设计和全民设计）指的是使系统可供尽可能广泛的用户使用。这些概念超越了无障碍设计等概念，消除了残疾人和非残疾人之间的区别，并将所有人作为不同人群中的潜在用户。这些概念的目的是让尽可能多的人使用“主流”系统（尽管这并不意味着所有用户都能以相同的方式使用系统）。<br>这些概念认识到，人类可以在其一生的各种场景中受益于无障碍系统。使产品和服务可供残疾人使用的功能也能使其方便易用。当人们遇到暂时的困难时，例如眼镜丢失、腿骨折或带着婴儿车/婴儿车或笨重的行李旅行时，这尤其有用。因此，无障碍性和可用性的提高往往会为所有人带来更好的产品和服务。<br>注：这些术语对世界各地使用它们的许多人和组织而言有细微的区别。然而，近年来， |

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| people and organizations worldwide that use them. However, in recent years 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. | 通用设计、无障碍设计、全民设计、无障碍环境设计、包容性设计和跨代设计等术语经常以相同的含义互换使用。 |
| Annex B<br>(informative)<br>The International Classification of Functioning, Disability and Health (ICF) as a resource for terminology | 附录 B<br>（资料性）<br>作为术语资源的《国际功能、残疾和健康分类（ICF）》 |
| B.1 Function of the ICF as a resource for terminology<br>Terminology and associated reference codes from the World Health Organization's International Classification of Functioning, Disability and Health (ICF) 2001[39] are used in parts of this Guide to describe human abilities and characteristics. The ICF classification provides a resource for terminology that can be used in some parts of standards.<br>ICF terminology is used across broad sectors including health, disability, rehabilitation, community care, insurance, social security, employment, education, economics, social policy, legislation and built environment design and modification. | B.1 ICF 作为术语资源的功能<br>本指南的部分内容使用了世界卫生组织《国际功能、残疾和健康分类（ICF）》2001[39]中的术语和相关参考代码来描述人的能力和特征。ICF 分类为可用于标准某些部分的术语提供了资源。<br>ICF 术语广泛用于卫生、残疾、康复、社区护理、保险、社会保障、就业、教育、经济、社会政策、立法以及人工环境设计和改造等领域。 |
| B.2 ICF resource tools<br>Standards developers new to the ICF can find Introduction and User Guide resources at the following websites to begin using the ICF. The "ICF Browser" is a word search tool that can be used to view terminology for use in standards.<br>An ICF Introduction and User Guide tutorial is available at: "ICF Illustration Library" http://www.icfillustration.com/icfil_eng/top.html<br>A word search tool to locate ICF terms and codes is available at: "ICF Browser": http://apps.who.int/classifications/icfbrowser/<br>The ICF Browser search tool can also be found from the World Health Organization main website at: www.who.int | B.2 ICF 资源工具<br>初次接触 ICF 的标准制定者，能在以下网站上找到《简介》和《用户指南》资源，以开始使用 ICF。"ICF 浏览器"是一个单词搜索工具，能用于查看标准中使用的术语。<br>ICF《简介》和《用户指南》教程位于："ICF 插图库 "http://www.icfillustration.com/icfil_eng/top.html<br>在以下网址有用于查找 ICF 术语和代码的单词搜索工具："ICF 浏览器"：http://apps.who.int/classifications/icfbrowser/<br>ICF 浏览器搜索工具也能在世界卫生组织的主网站上找到：www.who.int |
| B.3 ICF Components Terminology and Reference Codes<br>The definitions of the ICF component terms and their reference code letters are:<br>— Body functions ('b') are the physiological functions of body systems (including psychological functions).<br>— Body structures ('s') are anatomical parts of | B.3 ICF 组成部分术语和参考代码<br>ICF 组成部分术语及其参考代码字母的定义如下：<br>——身体功能('b') 是身体系统的生理功能（包括心理功能）。<br>——身体结构 ('s') 是身体的解剖部分，如器官、四肢及其组成部分。 |

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| the body such as organs, limbs and their components.<br>— Activity (‘d’) is the execution of a task or action by an individual.<br>— Activity limitations are difficulties an individual may have in executing activities.<br>— Participation (‘d’) is involvement in a life situation.<br>— Participation restrictions are problems an individual may experience in involvement in life situations.<br>— Environmental factors (‘e’) make up the physical, social and attitudinal environment in which<br>people live and conduct their lives.<br>— Impairments are problems in body function or structure such as a significant deviation or loss. | ——活动（‘d’）是指个人执行任务或行动。<br>——活动受限是个人在执行活动时可能遇到的困难。<br>——参与（‘d’）是指对生活场景的参与。<br>——参与限制是个人在参与生活环境中可能遇到的问题。<br>——环境因素（‘e’)构成了人们生活和行为的物理、社会和态度环境。<br>——损伤是指身体功能或结构方面的问题，如严重偏离或丧失。 |
| ICF reference code letters are followed by a series of code numbers for ICF components. Each additional digit in an ICF code number indicates a more detailed sub category level of information in the ICF classification. An example of a general ICF category is “b2 Sensory Function” and a sub-category would be “b230 Hearing Function”. | ICF 参考代码字母后面跟着一系列 ICF 组成部分的代码编号。ICF 代码编号中的每个附加数字表示 ICF 分类中更详细的子类别信息级别。一般 ICF 类别的一个例子是“b2 感官功能”，子类别是“b230 听力功能”。 |
| B.4 Human abilities and characteristic terms to use as search terms in the ICF<br>Table B.1 below provides a list of Abilities and Characteristics terms used in parts of this Guide that align with a list of terms that can be used in the “ICF Browser” search box to help to find terminology used in the ICF | B.4 在 ICF 中用作搜索术语的人类能力和特征术语<br>表 B.1 提供了本指南的部分中使用的能力和特征术语列表，这些术语与可在“ICF 浏览器”搜索框中使用的术语列表一致，有助于查找 ICF 中使用的术语。<br><br>表 B.1——指南 71 中的人类能力和特征以及 ICF 浏览器中使用的搜索术语 |
| B.5 Additional resources other than the ICF for terminology reference frameworks<br>When the ICF does not provide appropriate terminology to describe concepts in a standard, the literature suggests considering the following international reference frameworks for terms about personal factors<br>or the built environment:<br>Terms to describe Personal Factors can be found in the Systematized Nomenclature of Medicine - Clinical Terms (SNOMED-CT), available at: http://www.ihtsdo.org/snomed-ct/.<br>Terms to describe components of the physical and built environment can be found in the frameworks, OmniClass[33] and UniClass,[34] available at: http://www.omniclass.org/background.asp. | B.5 除 ICF 之外用于术语参考框架的其他资源<br>当 ICF 没有提供适当的术语来描述标准中的概念时，文献建议考虑以下关于个人因素或人工环境术语的国际参考框架：<br>描述个人因素的术语在系统化医学术语-临床术语（SNOMED-CT）中找到，网址为：http://www.ihtsdo.org/snomed-ct/.<br>描述物理和人工环境组件的术语在 OmniClass 和 UniClass 中找到，从以下网址获得：http://www.omniclass.org/background.asp。 |

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| Annex C<br>(informative)<br><br>Questions to aid in achieving the accessibility goals<br>Table C.1 provides a check list to aid standards developers in asking, answering, and applying the various questions related to the accessibility goals from Clause 6. The questions from Clause 6 appear in the left column, entitled “Question”. The middle column, entitled “Answer”, can be used to record the answer to each of these questions and can include sources that have led to these answers. The right column, entitled “Clause(s)/subclause(s) of deliverable”, is used to record the particular sections of the deliverable that would be affected by the answers to the questions.<br>NOTE The term “deliverable” is used to describe all types of documents that are produced taking into account the accessibility goals in this clause, such as standards, technical specifications, technical reports, publicly available specifications, guides, ITU recommendations or workshop agreements. | 附录 C<br>（资料性）<br><br>帮助实现无障碍目标的问题<br><br>表 C.1 提供了一个检查列表，以帮助标准制定者询问、回答和应用与第 6 章中的无障碍目标相关的各种问题。第 6 章的问题载于标题为“问题”的左列。中间一列的标题为“回答”，用于记录对每个问题的回答，并包括导致这些回答的来源。右栏标题为“文件的章/条”，用于记录文件中受问题回答影响的特定部分。<br><br>注：“文件”一词用于描述考虑到本条中的无障碍目标而编制的所有类型的文件，如标准、技术规范、技术报告、可公开提供规范、指南、ITU 建议或研讨会协议。<br>表 C.1——与无障碍目标相关的问题清单 |
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