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# STRATEGIC BUSINESS PLAN – ISO/TC 173 ASSISTIVE PRODUCTS

## Executive summary

The primary objective of ISO/TC 173 is to produce standards in the field of assistive products and related services to assist a person in compensating for reduced abilities, including follow-up activities and revisions. The major product categories that ISO/TC 173 presently deals with are wheelchairs, assistive products for walking as well as aids for ostomy and incontinence. ISO/TC 173 is also continuously developing a classification and terminology standard for assistive products.

A report on disability from WHO (*World report on disability, WHO 2011*) states that more than one billion people in the world live with some form of disability, of whom nearly 200 million experience considerable difficulties in functioning. Assistive products can mean a difference to all these people. ISO/TC 173 can provide concrete contributions to all these people making it easier to live a better life.

New areas are being added recently such as cognitive aspects in existing standards and there is a growing concern that assistive products for cognitive disabilities should be covered. Other areas which are included are products for personal hygiene and accessible design. Also there is a subject on how to include self-evident and easily understood information, addressing non-professionals in the standards on how to safely use assistive products in the ordinary home. This latter aspect is related to the fact that an increasing number of older persons will live in an ordinary residence with the support of relatives. This is a challenge which ISO/TC 173 has to address. ISO/TC 173 focuses on elaborating generic standards and pays special attention to the specific risks involved with the interaction of persons with reduced abilities, and their assistive products, with the environment and different products/systems. ISO/TC 173 strives to achieve a high level of co-ordination with other standards organisations such as IEC, CEN, CENELEC and ETSI.

There is a wide variety of assistive products/systems, many of which are technically advanced and of significant economic value. Some of the larger product categories in the market are wheelchairs, beds, assistive products for walking, hoists, and aids for incontinence and ostomy. Growth sectors are primarily products based on information and communication technologies such as computer accessories, telecommunications equipment, special software, and products for controlling and signalling, including smart home automation accessed by assistive technology Robotic systems are also key issues as they are growing within all sectors these are especially important in the area of TC 173 as they compensate for reduced abilities and assist in daily tasks.

The committee recognizes that due to the fast uptake of digital technology and the usage of services supplied via Internet there is an emerging grey zone in between the traditional assistive products and products available on the ordinary consumer market.

Consumers/users of assistive products are usually persons with a disability and/or older persons – persons who have special requirements, as a consequence of limitations in one or more functions: vision, hearing, cognition, mental functions, movement, balance, sensory functions, stamina, or body structure.

The major customer groups in the market are government departments, service providers, reimbursement authorities/bodies (e.g. insurance companies) and private individuals. The significance of the different groups of customers varies from country to country depending on government policies, service delivery systems and reimbursement schemes.

The major benefits expected of the standards developed by ISO/TC 173 are:

- product design and performance criteria for manufacturers;
- decreased production costs for assistive products;
- safe, reliable and functional products produced for purchasers and users;
- increased quality of life for users;
- improved cost effectiveness for purchasers, both private and public;
- enhanced compatibility between products;
- standards in new emerging areas such as accessibility and cognitive devices;
- common testing methods leading to comparable, reliable test results, such as the methods developed and standardized for testing electrical and manual wheelchairs.

# 1 Introduction

## 1.1 ISO technical committees and business planning

The extension of formal business planning to ISO Technical Committees (ISO/TCs) is an important measure which forms part of a major review of business. The aim is to align the ISO work programme with expressed business environment needs and trends and to allow ISO/TCs to prioritize among different projects, to identify the benefits expected from the availability of International Standards, and to ensure adequate resources for projects throughout their development.

## 1.2 International standardization and the role of ISO

The foremost aim of international standardization is to facilitate the exchange of goods and services through the elimination of technical barriers to trade.

Three bodies are responsible for the planning, development and adoption of International Standards: ISO (International Organization for Standardization) is responsible for all sectors excluding Electrotechnical, which is the responsibility of IEC (International Electrotechnical Committee), and most of the Telecommunications Technologies, which are largely the responsibility of ITU (International Telecommunication Union).

ISO is a legal association, the members of which are the National Standards Bodies (NSBs) of some 164 countries (organizations representing social and economic interests at the international level), supported by a Central Secretariat based in Geneva, Switzerland.

The principal deliverable of ISO is the International Standard.

An International Standard embodies the essential principles of global openness and transparency, consensus and technical coherence. These are safeguarded through its development in an ISO Technical Committee (ISO/TC), representative of all interested parties, supported by a public comment phase (the ISO Technical Enquiry). ISO and its Technical Committees are also able to offer the ISO Technical Specification (ISO/TS), the ISO Public Available Specification (ISO/PAS) and the ISO Technical Report (ISO/TR) as solutions to market needs. These ISO products represent lower levels of consensus and have therefore not the same status as an International Standard.

ISO offers also the International Workshop Agreement (IWA) as a deliverable which aims to bridge the gap between the activities of consortia and the formal process of standardization represented by ISO and its national members. An important distinction is that the IWA is developed by ISO workshops and fora, comprising only participants with direct interest, and so it is not accorded the status of an International Standard.

# 2 Business Environment of the ISO/TC

## 2.1 Description of the Business Environment

The following political, economic, technical, regulatory, legal and social dynamics describe the business environment of the industry sector, products, materials, disciplines or practices related to the scope of this ISO/TC, and they may significantly influence how the relevant standards development processes are conducted and the content of the resulting standards:

**Products**

There are a wide variety of assistive products/systems many of which are technically advanced and represent significant economic values. An assistive product is defined in ISO 9999:2022 as a “product that optimizes a person’s functioning and reduces disability”.

Some of the larger product categories in the market are wheelchairs, hearing aids, prostheses and orthoses, beds, assistive products for walking, hoists, and aids for incontinence and ostomy.

ISO/TC 173 covers a broad sector of these product categories, but some products are dealt with by other committees such as hearing aids and prostheses and orthoses.

An extensive list of different types of assistive products could be found in ISO 9999 Assistive products – Classification and terminology. This standard has been prepared by ISO/TC 173 in collaboration with CEN.

Growth sectors are primarily products based on information and communication technologies such as computer accessories, telecommunications equipment, special software, and products for controlling and signalling. Assistive products designed to support persons with cognitive disabilities begin also to represent significant economic values. There is also a fast-growing market for so called “smart simple products” often developed for usage at home to meet the needs of older persons facing mild disabilities or reduced functions. Often these products are sold on the ordinary consumer market at the same time as some of them also are being prescribed by service providers of assistive products in several countries.

Many technologies are used in the products: mechanical, electrical, electronics, computer hardware and software, materials, and design technology. With the convergence of computers, broadband TV and telecommunication services digital technology has become an integrated part of assistive devices. The Internet is an integrated part in an increasing number of assistive products already available. To some extent physical products are being replaced by software available via Internet. This is a trend that is foreseen to be continued. One area is often called smart home appliances or ambient technologies, where also assistive products have a role to play as we approach a scenario called 'Internet of things', where appliances can interact with each other.

The committee recognizes that due to the fast uptake of digital technology and the usage of services supplied via Internet there is an emerging grey zone in between the traditional assistive products and products available on the ordinary consumer market.

Another big sector that has to be covered within TC 173 is robotic systems. These products are already making their way into assistive products; we are talking about robotic wheelchairs, hoists, rollators and many other new assistive products to be used at home or outside.

**Industry**

The industry is dominated heavily by small and medium-sized enterprises (SME), except for certain sectors, such as wheelchairs and prostheses, where a few large suppliers dominate but where there are still a large number of small suppliers of niche products.

Due to the identified grey zone between mainstream products and assistive products some manufacturers of mainstream consumer products are also important stakeholders. For example, mobile phones have become Smartphones. Mobiles in combination with apps have been found very useful especially for people with cognitive impairment and people with visual impairment through the use of audio menus, etc.
The biggest determinants to the size of companies in the industry are generally the type of product involved, i.e., software development is largely SME-driven due to smaller national markets, fragmented by language.

**Major customer groups**
The major customer groups in the market are:
- government departments;
- service providers;
- reimbursement authorities/bodies (e.g. insurance companies);
- private individuals (i.e. consumers/users).

Consumers/users of assistive products are usually persons with reduced abilities and/or older persons – persons who have special requirements, as a consequence of limitations in one or more functions: vision, hearing, cognition, mental functions, movement, balance, sensory functions, stamina, or body structure.
The significance of the different groups of customers varies from country to country depending on government policies, service delivery systems and reimbursement schemes. A buying decision in the case of many assistive products is usually complex. While the person with reduced abilities often plays a role, many other individuals are frequently involved in the selection and purchase of a product. The size of the group involved may vary widely. Depending on the items being considered, the customer or customers may include family members, nursing staff members, therapists, physicians, case workers, funding agencies/ companies, other rehabilitation engineering personnel, and an assortment of other interested care providers.
In a number of countries the end user has to pay the cost for assistive devices.
In some countries "Free choice" is introduced, meaning that the user gets the possibility to decide on their own what assistive product they prefer and the responsible provider of the product and the service of the assistive product. An increased user influence is generally expected all over the world in the future as well as a growing private market.

**Economical factors**
The economical cost for assistive products is large. There are major consequences, which affect the budgets of governments, communities, hospitals and other institutions/payment bodies, most of which are facing increasing demands to contain costs and improve cost-effectiveness. The cost for assistive products is just one side of the coin. The other side is represented by possibility to participate in work life and an active life and social inclusion.
For individual users, assistive products may represent a major expense item in their personal budget.

**Reimbursement systems**
Reimbursement systems are a specific feature of the market. Reimbursement from a third party is common in many countries and sometimes procedures can be complicated and require specialised knowledge. Reimbursement systems for the provision of assistive products to persons with reduced abilities are part of the healthcare and social welfare systems in many countries, particularly in Europe and Canada. In some countries reimbursement can be more complicated as multiple requests to payment sources (government, private insurance, non-profit agencies) may be involved. For example in the United States, a person with disability may be eligible for government sponsorship

(Medicaid, Medicare, Veterans Health Administration, Vocational Rehabilitation, etc.), private insurance or non-profit agencies. It is the policy of government agencies such as Medicaid and Medicare that one must demonstrate rejection from private insurance carriers before authorising approvals. It is also the policy of many non-profit agencies that one must demonstrate rejection from government agencies before they authorise approval for funding.
Third party payers in reimbursement systems imply that payment bodies are important stakeholders in the market. It may also imply that there is not a straight producer-consumer (seller-user) relation, and that the third party may play an important role for the specification of requirements, etc. (e.g. public purchasers, insurance companies, non-profit agencies, prescribers of assistive products).

**Service provision**
Service provision in connection with assistive products is another specific feature of the market. Service provision is neither simple nor limited, especially for sophisticated assistive products and/or assistive products that must be tailored to the needs and preferences of a person with disability. There are many service provision models, which span a vast area and use a wide spectrum of methods for delivering assistive products and technological services. Service provision can be provided in a number of different ways (e.g. by retailers, assistive products companies, departments within a comprehensive rehabilitation programme, assistive products centres located at a university, government-based programmes, non-profit organisations, volunteer groups). Elements in the service delivery process are: initiative, assessment, typology of solution, selection of products, financing authorisation, delivery, information and instruction, installation/adaptation, management, maintenance and follow-up.
Service provision implies that healthcare professionals, social welfare professionals, researchers and retailers are important stakeholders in the market and that they may play an important role for the specification of requirements etc.

**Important stakeholders in the market**
Important stakeholders in the market (no ranking) are:
- users/consumers and their family member, organisations, attendants;
- manufacturers and their organisations;
- international bodies, national governments, communities and other political bodies (including payment bodies);
- public and private purchasers; (third party payers – public, private companies, non-profit disability organisations, volunteer organisations);
- healthcare, social welfare and insurance professionals;
- test laboratories;
- research and educational bodies (universities etc.);
- other standardization bodies.

**Political/legislative factors**
Most countries have national regulations and regulatory bodies that may affect the design of the assistive products, or their use, e.g., U.S. Food and Drugs Administration (FDA) and Health Canada’s Therapeutic Products Programme (TPP). The political/legislative factors that affect standardization in the field of assistive products in Europe should primarily be reflected by the relevant EU directives, mandates and other commonly accepted documents (e.g., official reports of the European Commission, policy of CEN, etc.).
Changes in the government policies towards provisions for disabled and older persons can affect the market for assistive products. For example, in April 2000 public long-term care insurance came into effect in Japan. The programme subsidies with central and government funds 90% of the cost of equipment to assist older persons and persons with reduced

abilities in their daily life. The public long-term care insurance programme is expected to stimulate the market for assistive products to a great extent. Services in the Long-Term Care Insurance are divided into two categories, preventative services and in-home services. The preventative services were introduced in the reformation of the system in 2006.

**Safety aspects**
Persons with reduced abilities have special requirements, as a consequence of limitations in one or more functions: vision, hearing, cognition, mental functions, movement, balance, sensory functions, stamina, or body structure. Thus, safety aspects are specific and crucially important for persons with reduced abilities, and should be one cornerstone for the design of standards for assistive products. Due to their personal characteristics, or the assistive products they use, persons with reduced abilities may have different interactions with the environment/products than other people, which may result in higher probability of injury and more severe injuries – to themselves and to other persons.

**Technical factors**
Assistive products for persons with reduced abilities combine many different technologies, and technical development is very rapid. This is particularly valid for Information and Communication Technology (ICT) and robotic systems, which gives new or improved possibilities for an independent life for large groups of persons with reduced abilities. It also affects the design of traditional assistive products, and increases the possibilities to integrate different products/systems.
Technical development is very important to persons with reduced abilities – as an opportunity for independence, but also as a potential obstacle or even hazard. Modern technology facilitates new and/or better products/systems, but may also be obstructive for persons with reduced abilities. Example: commonly used and sophisticated computerised systems in banks, shops, etc., may be very difficult to use for a blind person or for a person with limitations in cognitive functions. In some cases it may cause hazards as well. Example: persons with reduced abilities frequently use remote control systems for manoeuvring doors, elevators, etc. A malfunction may cause severe risks for the user and others involved. The rapid advance of technology and techniques means that some standards have to be revised or amended soon after publication.

**Social factors**
In the countries of Europe and North America where higher rates of disability are reported, there is a distinct trend for older people and people with disability to live independently in their own homes rather than in special institutions. In addition, the proportion of older people is increasing in the population of many countries. A large number of these persons need assistive products in their daily life. Considering the trend toward independent living and the increase in the proportion of older people in the population the market of assistive products is expected to increase.
The UN Convention on the Rights of Persons with Disabilities puts higher emphasis on the rights of persons with reduced abilities.
Improved accessibility enhances the quality of life and can reduce discrimination. Products, services and environments that improve accessibility should be available to more persons, so economies of scale can be attained. This may generate an increase in trade, as products and services become easier to use for entire populations and, in turn, will benefit society as a whole.

**Competence needed**
The technical competence needed for standardization covers many technical areas (mechanics, electrical engineering, chemistry, ICT, etc.), and a very large number of

different types of systems/products. It also involves a large number of different professional skills, primarily in the field of rehabilitation (physicians, therapists, pedagogues, medical technicians, etc.).
Users and their organisations represent a unique competence, and it is vitally important to engage them in standardization work. This is underlined by the fact that the design of the products/systems often affects their safety and possibility to an independent life in a very personal way.

**International factors**
The market for assistive products is global. The technology used is often identical or similar - at least in the industrialised parts of the world. The need for standardization often coincides, and the competence/experts needed for standardization work can be found throughout the world. A close co-operation is established between the European and the International standardization bodies in the field of assistive products for persons with reduced abilities.

## 2.2 Quantitative Indicators of the Business Environment

The following list of quantitative indicators describes the business environment in order to provide adequate information to support actions of the ISO/TC:

**Prevalence of disability**
WHO and the World Bank have in 2011 presented new global estimates clarifying that more than one billion people experience some form of disability. This corresponds to 15 % of the total population. New research shows that almost one-fifth of the estimated global total of persons living with disabilities, or between 110-190 million, encounter significant difficulties. The global disability prevalence is higher than previous WHO estimates, which date from the 1970s and suggested a figure of around 10%. This global estimate for disability is on the rise due to population ageing and the rapid spread of chronic diseases, as well as improvements in the methodologies used to measure disability.
Stereotypical views of disability emphasize wheelchair users and a few other “classic” groups such as blind people and deaf people. However, the disability experience resulting from the interaction of health conditions, personal factors, and environmental factors varies greatly.
(*World report on disability*, WHO 2011).

**Estimate of market size**
Assistive Devices Market was valued at USD 18.41 Billion in 2021, and it is expected to reach USD 28.56 Billion by 2029, but in many low and middle income countries, there is limited access to these technologies. Based on the report from WHO it is not surprising to conclude that the market size will grow substantially. According to WHO (2016) globally, more than 1 billion people need 1 or more assistive products.
With an ageing global population and a rise in no communicable diseases, more than 2 billion people will need at least 1 assistive product by 2050, with many older people needing 2 or more.
The socio-economic circumstances and socio-cultural environment for the individual with a disability impact on the allocation of resources to purchase assistive products makes it is difficult to assess the number of potential consumers of assistive products.
In the countries of Europe and North America where higher rates of disability earlier on have been reported, and where assistive products are often provided on prescription, there is a

distinct trend for older people and people with disability to live independently in their own homes as long as possible rather than in special institutions. In addition, the proportion of older people is increasing in the population of many European and Asian countries. Currently it is estimated that 120 million people in geographic Europe have a disability or are older. A large number of these persons need assistive products in their daily life.
There is a demographic change going on in many countries all over the world. This very much is a result of a successful health and social policy, including housing policy.

The demographic changes in many countries are also expected to increase the total population over 65 years. This will substantially influence the market for assistive products. So, even although it is difficult to assess the exact number of potential consumers of assistive products, it is fairly clear that the market for assistive products should increase in response to the trend toward independent living and the increase in the proportion of older people in the population, see Figure 1:

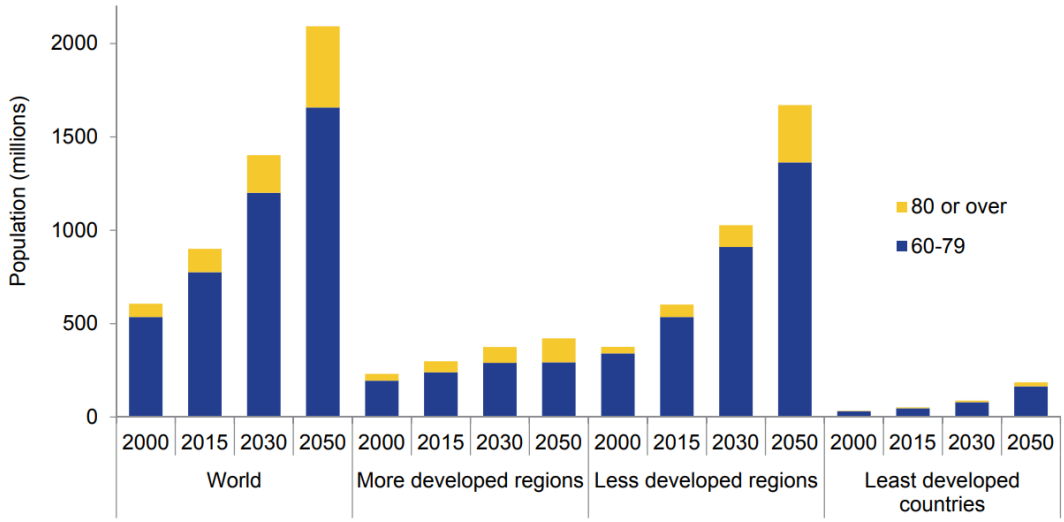


Figure 1. Population aged 60-79 years and aged 80 years or over by development group, 2000, 2015, 2030 and 2050
Source: UN Report on development and disability (2018)

**Global statistics on the use of assistive products**

Today, only 1 in 10 people in need have access to assistive technology due to high costs and a lack of awareness, availability, trained personnel, policy, and financing.

- 200 million people with low vision who do not have access to glasses or other low-vision devices.
- 70 million people who need a wheelchair and only 5% to 15% of those in need who have access to one.
- 360 million people globally have moderate to profound hearing loss. Hearing aid production currently meets less than 10% of the global need.
- Huge workforce shortages in assistive technology: over 75% of low-income countries have no prosthetic and orthotics training programmes. Countries with the highest prevalence of disability-related health conditions tend to be those with the lowest supply of health workers skilled in provision of assistive technology (as low as 2 professionals per 10 000 population).

For updated statistics on disability and use of assistive technology including assistive products please review current UN and WHO reports.
WHO has put forward four areas of intervention to achieve healthy ageing. One of these areas includes harnessing innovation to develop assistive devices that will allow older people with functional loss to remain independent, productive and avoid institutionalization. This initiative will lead to accelerated access to appropriate assistive devices for older people and by facilitating the development of low-cost quality devices, it will also contribute to reducing health care costs.
This initiative includes conducting detailed mappings of the needs and availability of assistive devices in various regions of the world. There is also development of Priority Assistive Product list for the devices identified as essential, but not currently available in most part of the world in order to facilitate their development. WHO will also facilitate technology transfer of suitable technologies to produce devices at lower costs and finally create or strengthen Centre's of Excellences for assistive devices for older people.
Corporation with WHO regarding less resource settings:
WHO is coordinating the **Global Cooperation on Assistive Technology (GATE)**, which exists to improve access to high-quality affordable assistive technology for everyone, everywhere.
ISO TC 173 is working on standards that will improve accessibility to products, services and environments. The aim is to meet the full range of characteristics and abilities including economy and environment.

# 3 Benefits expected from the work of the ISO/TC

Persons living with a disability tend to experience poor health and barriers to participate in society. Efficient and functional assistive products can help to raise health status for the individual as well as inclusiveness in society.

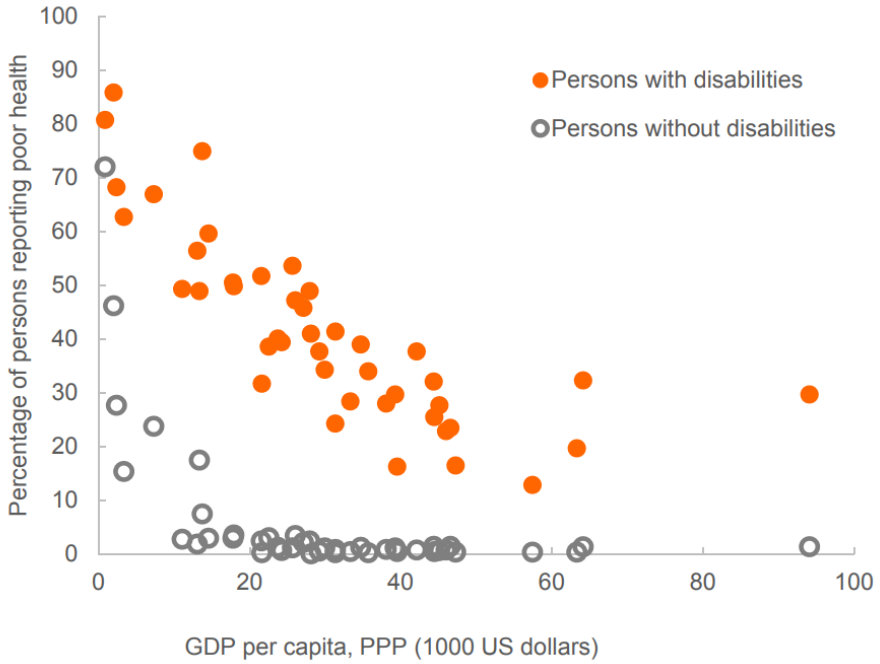


Figure 2 – Percentage of persons who report poor health status versus GDP per capita, by disability status, in 43 countries, around 2013.
Source: UN Report on development and disability (2018)

UN states that in order to achieve the promise of the 2030 Agenda, disability must be mainstreamed into the implementation of all Sustainable Development Goals (SDG). Areas of particular importance for the realization of disability-inclusive development include social protection, education (SDG 4), employment (SDG 8) and basic services, including health-care services (SDG 3), water and sanitation (SDG 6), and energy (SDG 7). Accessible infrastructural development in urban and rural environments, public spaces, facilities and services (SDG 11) is also of paramount importance to the participation of persons with disabilities in all aspects of society and development. Progress in these areas can catalyse progress across all SDGs. (UN 2018)
The development of standards for Assistive Products plays therefore, directly or indirectly, an important role in achievements of several SDGs. Further information how **ISO work in relation to UN SDGs are found here**

The major benefits of the standards developed by ISO/TC 173 are:

- product design and performance criteria for manufacturers;
- decreased production costs for assistive products;
- safe, reliable and functional products produced for purchasers and users;
- increased quality of life for users;
- improved cost effectiveness for purchasers, both private and public;
- enhanced compatibility between products;
- reduced device abandonment

- standards in new emerging areas such as accessibility and cognitive devices;
- Coordination with standards committees dealing with everyday products, services and environments;
- representation of interests of older persons and persons with reduced abilities;
- common testing methods leading to comparable, reliable test results, such as the methods developed.
- test methods and requirements set for the different environments worldwide

# 4 Representation and participation in the ISO/TC

## 4.1 Membership

**Countries/ISO member bodies that are P and O members of the ISO committee**

## 4.2 Analysis of the participation

ISO/TC 173 has P- and O-members from Africa, Asia, Australia, Europe, North America, and South America, with a dominance of actors from Europe, North America and East Asia, which also are the dominant markets.
A wide range of interests is represented in the work of ISO/TC 173: industry, research and test institutes, rehabilitation centres, government regulatory agencies, health service agencies and user organisations.
The users and their organisations represent a unique competence, and it is vitally important to engage them in the standardization work.
Except for the ISO national members as mentioned in 4.1 there are liaisons with several organizations such as:
- European Association for the Co-ordination of Consumer Representation in Standardization (ANEC);
- European Disposables and Nonwovens Association (EDANA);
- International Labour Organization (ILO);
- International Society for Prosthetics and Orthotics (ISPO);
- Rehabilitation International (RI);
- World Blind Union (WBU);
- World Health Organization (WHO);
- World Veterans Federation (FMAC).

# 5 Objectives of the ISO/TC and strategies for their achievement

## 5.1 Defined objectives of the ISO/TC

The primary objectives of ISO/TC 173 are:
- to produce standards on assistive products for persons with reduced abilities, including follow-up activities and revisions;
- to inform about the ISO/TC 173 standards production and other activities.

Standardization in the field of assistive products and related services is the scope of ISO/TC 173. Excluded are assistive products that are dealt with by other technical committees such as access to means of transport, building construction, furniture, implants for surgery, ergonomics, prosthetics and orthotics, ophthalmic optics, electrical safety, robotics, and hearing aids.
The majority of work items directly under ISO/TC 173 concern producing new standards, widening the work area regarding development within society including as example, standards dealing with walking aids, beds and some assistive systems for persons with vision impairments and hearing impairments.
Information and Communication Technology (ICT) gives new or improved possibilities to an independent life for a large group of persons with reduced abilities.
In 2018 TC 173 included “related services” in the Scope due to an aim within TC 173 stakeholders to develop standards for services related to assistive products, e.g. related to manufacturing, customizing, adapting, maintenance, repair, training etc.

New initiatives have been launched and are foreseen to be launched within the cognitive area, accessible design and usage of assistive products at home with support from relatives or non-professionals.
As a result of the fast development within the field of Assisitive Products there is a need for the ISO/TC 173 to follow what is happening in different geographical regions. The content of the concept of Assistive Product is being slightly changed and the organizations responsible for providing assistive services are facing a paradigm shift due to the technical development, increased demands among users to have an increased influence of what kind of device they can chose in between, a growing grey zone in between the ordinary consumer market and traditional Assistive Products. This in combination with a growing number of older persons we can see a fast increase in demand of Assistive Products or supportive technology. In some countries there is a demand for new technology, as a complement and/or replacement of personal assistance, to support older persons and people with disabilities with the aim to increase autonomy and independent life for the persons concerned. This kind of development is accompanied by expressions like health robotics, ambient assistive living and welfare technology for all.
There is also a strong need for ISO/TC 173 to consider the variety of living standard between persons with disabilities depending on whether they live in a developing country or an industrialized country. To what extent this could be incorporated into global standards is a challenge for ISO/TC 173 to tackle.
ISO/TC 173/SC 1 has produced more than thirty standards dealing with wheelchair aspects ranging from nomenclature, test methods and requirement for the wheelchair itself and wheelchair tiedown and occupant-restraint systems and is actively working on a strategy to revise and review the standards to facilitate their use. Wheelchair seating is also included.
ISO/TC 173/SC 2 continues to work on the update of ISO 9999 *Assistive products– Classification and terminology*, carefully following and taking part in developments in the field, incl aim of harmonization with other international classifications.

Approximately 25 standards dealing with aids for ostomy and incontinence have been produced by ISO/TC 173/SC 3. Reviewing and revision of these standards is the main work for the subcommittee in the near future. Special attention is focused on presenting test methods for the evaluation of urine-absorbing products.
ISO/TC 173/SC 7 was established in 2010 to work with standardization on accessible design related to individual products and services for older persons and persons with reduced abilities thus giving guidance and recommendations aiming to maximize the number of potential users of products and services. This SC has now changed into Assistive products for persons with impaired sensory functions.
ISO/TC 173 WG 1 has drafted a lot of standards for assistive products for walking, such as rollators, crutches, walking frames, tables, trolleys etc, and is continuously reviewing them, as well as preparing new proposals.
ISO/TC 173 WG 9 has started the revision of ISO 17966 about hygiene products for toileting, bathing and showering.
ISO/TC 173 WG 10 has completed several standards for cognitive accessibility, both for assistive products, but also for general considerations applicable to all mainstream systems, products and services.
ISO/TC 173 WG 11 has several ongoing items for assistive products for tissue integrity.
ISO/TC 173 WG 12 has completed its work on a new general standard, ISO 21856 *Assistive products – general requirements and test methods*.
ISO/TC 173/WG 13 has completed the revision of ISO 10535 *Hoists for the transfer of persons – Requirements and test methods.* The third edition of this standard was published in 2021.

## 5.2 Identified strategies to achieve the ISO/TC's defined objectives

The overall and long-range strategy to cover the basic need of standards in the field of assistive products should be done step-by-step, concentrating on a limited number of simultaneously ongoing activities, and in close co-operation with other interested parties wherever possible. The work is conducted simultaneously within the SC's and WG's. It is coordinated within the chairperson's advisory group. New work will either be set to an existing SC or a new started WG depending of art of work. The use of SC's and WG's are suitable as we have many different kind of work going on that needs this structure. If there are just one group it will be a WG directly under the TC, if there are several WG's under a specific area, a SC is set up.
Cooperation with other TC's are vital to the work, to achieve best competence in all work.
Meetings are set as face-to-face meetings with the possibility of attending remotely at all meetings. In between meetings there are remote meetings to check status. The CAG group meets every third month remotely. Cooperation is also done with user organizations, WHO etc. Mostly the committee starts from scratch as developing a new standard, but might use a national standard as a base if there is one.
The basic platform for the work should comprise all kinds of assistive products for persons with reduced abilities, i.e., products addressing limitations in vision, hearing, cognitive functions, mental functions, mobility, motoric functions, balance, sensory functions, stamina or body structure. No assistive products should be *a priori* excluded.
ISO/TC 173 should co-operate with other TCs having responsibilities connected to assistive products.
In 2010 an international workshop were organized under the theme "Accessibility and the contribution of International Standards", by the World Standards Cooperation (WSC). The

final recommendations from that workshop are an important input also to ISO/TC 173. Among other things a common accessibility policy, the revision of Guide 71 and establishment of a Helpdesk was included in the recommendations. There is a link between accessibility and assistive products; they can be seen as complementary subjects, or two sides of the same coin. ISO/TC 173 needs to follow what is happening with the recommendations from the Accessibility workshop. As one follow-up there was a ISO/TMB Strategic Advicory Group (SAG) on Accessibility installed 2018-2020. TC 173 acknowledge and support the recommendations that were formulated in the **SAG final report**, including the **accessibility toolkit** that was created.
ISO/IEC Guide 71 should be promoted to all committees as the key reference document within ISO and IEC to be applied by them when addressing accessibility matters. ISO/TC 173 Committee did participate in the work on the revison of Guide 71.
With this background:
- the standards should, as far as possible, be designed as generic standards, i.e. covering broader groups of products/systems;
- special attention should be paid to the specific risks involved with the interaction of persons with reduced abilities, and their assistive products, with the environment and different products/systems;
- special attention should be paid to the possibilities to take initiatives in cognitive areas and accessibility due to demographic change and new possibilities with new technology;
- special attention should be paid to the need for revisions/amendments of standards;
- there should be a high level of co-ordination with other standards organisations: IEC, CEN, CENELEC and ETSI;
- established liaisons with other TC´s should be further utilized;
- wherever suitable/possible, the work should be carried out in line with the Vienna agreement, aiming at identical International and European Standards;
- all needed competence should be engaged in the work, but special attention should be paid to the need for consumer's representation;
- the work should be carried out in a cost-efficient way, including the use of modern information technology, and reduction of physical meetings as much as possible.

ISO/TC 173 has developed a specific web site in order to easily communicate the activities of ISO/TC 173, see **https://committee.iso.org/home/tc173**

# 6 Factors affecting completion and implementation of the ISO/TC work programme

It should be possible to carry out the present activities according to plans. The major risks concern the establishment of new work items, and those risks are primarily financially based. In particular, it has become difficult to recruit sufficient participation from national members for establishment of working groups. Participation in standardization work is voluntary on the part of organizations, businesses, academic institutions and individuals. All parties involved must be more aware of the value of standardization work in order to ensure a high level of participation.

The participation of consumer and end user representation in standardization is essential but sometimes obstructed due to lack of financing.

TC 173 also cooperate with other organizations and use networks in getting experts for involvement in TC 173 activities.

# 7 Structure, current projects and publications of the ISO/TC

## Information on ISO online

The link below is to the TC's page on ISO's website:
**https://www.iso.org/committee/53782.html**

Click on the tabs and links on this page to find the following information:

- About (Secretariat, Committee Manager, Chair, Date of creation, Scope, etc.)
- Contact details
- Structure (Subcommittees and working groups)
- Liaisons
- Meetings
- Tools
- Work programme (published standards and standards under development)

## Reference information

**Glossary of terms and abbreviations used in ISO/TC Business Plans**

**General information on the principles of ISO's technical work**