



A disability perspective into our closest technologies

European Disability Forum Position Paper
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**Position paper on access, barriers and policy
recommendations about Assistive Technologies**



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Introduction

The European Disability Forum

The European Disability Forum is an independent NGO that represents the interests of 100 million Europeans with disabilities. EDF is a unique platform which brings together representative organisation of persons with disabilities from across Europe. EDF is run by persons with disabilities and their families. We are a strong, united voice of persons with disabilities in Europe.

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Executive Summary

Assistive Technologies (AT) are those products or services specifically designed for persons with disabilities, such as wheelchairs, eyeglasses, hearing aids, screen readers or alternative communication devices. There is a great diversity of AT, ranging from medical devices (e.g. cochlear implants) and high tech (e.g. a refreshable Braille line device), to low tech (e.g. crutches). Besides, current developments in new and emerging technologies, like Artificial Intelligence or robotics, are bringing new possibilities to the AT sector and persons with disabilities.

The importance of AT is recognised in the UN Convention on the Rights of Persons with Disabilities, as these are indispensable for the everyday life of many persons with disabilities. However, persons with disabilities in the EU still face many barriers to access these essential technologies, and fully benefit from them. Furthermore, the many differences among the EU countries' delivery models of AT also create disparities for both users and AT industry.

There is not an EU internal single market when it comes to AT, because of different certification schemes at national level. Persons with disabilities must go through lengthy and complex administrative processes, sometimes very medical oriented, to access AT, and they often lack the necessary information and the possibility to select the most appropriate piece of AT for them. Moreover, the different AT provision systems are not sufficiently flexible, and person-centred, and in some cases these models even discriminate against certain persons with disabilities, based on their age or work status.

Thanks to the inputs from its members, EDF has identified a set of barriers and policy recommendations in view of the recently announced action by the Commission in 2023 to undertake an examination of the AT market in the EU. Our objectives are clear: to ensure that persons with disabilities benefit from an EU-wide single market for AT, so they can select the most suitable technology for them, and that these technologies are of quality, available, and affordable to all persons with disabilities.

Assistive Technologies

Introduction

Imagine a hard of hearing person whose insurance scheme offers a 9,000 euros hearing aid but needs a higher quality one that costs 13,000 euros as they attend conferences regularly, so they offer to pay the difference out of pocket. The insurance does not allow this: it is the 9,000 euros solution or nothing.

A parent is aware of an augmentative and alternative communication device that uses artificial intelligence (AI) to predict the likely communication needs of their child with cerebral palsy. The device is neither available nor certified as assistive technology in their country, so it is not refundable. If they import the device, they will not get the VAT reduction, whereas according to EU law¹, an organisation or institution would.

A blind person in France must pay 400 euros for the same screen reader software that a Spanish blind person can get for free through the Spanish blind organisation.

These are problems and disparities across Europe when it comes to assistive technologies, and while our focus is on this region, we want to note that across the world in low and middle income countries only 1 in 10 persons with disabilities have access to assistive technologies according to the World Health Organisation².

Definitions

Assistive technologies (AT) refer to any item, piece of equipment, service or product system (such as software) that is used to increase, maintain, substitute or improve functional capabilities of persons with disabilities. These technologies alleviate and compensate activity limitation or participation restriction of persons with disabilities³. AT are specifically designed for persons with disabilities, even though some have become widely used by non-disabled people (e.g. teletext service).

¹ Council Directive 2009/132/EC, article 48: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32009L0132z>

² More information at <https://www.who.int/news-room/fact-sheets/detail/assistive-technology>

³ This definition is extracted from Directive (EU) 2019/882, known as the European Accessibility Act: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L .2019.151.01.0070.01.ENG&toc=OJ:L:2019:151:TOC>

It is important to distinguish the difference between universal design, accessibility and AT. **Universal design** is “the 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”, as defined in article 2 of the UN Convention on the Rights of Persons with Disabilities (UN CRPD)⁴. “Universal design shall not exclude assistive devices for particular groups of persons with disabilities where this is needed”.

We can draw two conclusions from this definition. First, one of the outcomes of a universal design approach⁵ will be **accessibility for persons with disabilities**, this is the characteristics and functions of a product, service, system or infrastructure to enable access to persons with disabilities on an equal basis with others. And second, there should always exist the possibility of using AT.

A building with a stair entrance is not universally designed; if a ramp is built, or a wheelchair lifting platform is installed, this will make the entrance more accessible⁶, but a person using a wheelchair will always access and navigate the space using their AT. Thus, universal design (the approach), accessibility (the measurable outcome and the prerequisite⁷ for equal access), and assistive technologies (of individual use) are interconnected. Without accessibility, the purpose and possibilities of AT are undermined, and thereby the potential of persons with disabilities to participate in society on an equal basis with others.

Assistive Technologies in the UN CRPD

All the 181 State Parties to the UN Convention on the Rights of Persons with Disabilities (UN CRPD) are bound by its General Obligations (art. 4) to promote research and development of AT, as well as to provide information about them to persons with disabilities. AT is also explicitly

⁴ UN CRPD available at <https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html>

⁵ More information, including the 7 principles of Universal Design, can be found at the Centre for Excellence in Universal Design in Ireland: <http://universaldesign.ie/What-is-Universal-Design/>. Additionally, in 2019 the European Standardisation Organisation CEN adopted a European Standard on EN 17161:2019 ‘Design for All - Accessibility following a Design for All approach in products, goods and services - Extending the range of users’ which can be used by any organisation to apply a Universal Design/Design for All approach to achieve greater accessibility. More information at: <https://www.cen.eu/news/brief-news/Pages/NEWS-2019-014.aspx>

⁶ Having a universal design approach that incorporates accessibility and takes into consideration the potential use of AT is always more effective and (cost) efficient, than retrofitting accessibility afterwards.

⁷ Accessibility is considered as a General Principle (art. 3) of the UN CRPD, as it is a precondition to enjoy all the rights enshrined in the Convention.

mentioned in several articles of the Convention, namely: on Mobility (art. 20), on Habilitation and rehabilitation (art. 26), Participation in political and public life (art. 29), and International cooperation (art. 32).

However, as mentioned above, given the intrinsic relationship between accessibility and assistive technologies, it is obvious that AT do definitely play an important role in many of the rights derived from the Convention, from living independently (art. 19), to education (art. 24), health (art. 25), employment (art. 27), and so forth. We want to underline this crosscutting aspect, as there are many AT delivery systems which take into account just one specific domain for which the AT is considered, e.g. being enrolled in formal education or employed.

Technology trends in Assistive Technologies

Due to the progress on technology and disability related legislation that requires accessibility, the distinction between AT and accessible technologies is blurring⁸. In some cases what was needed before as a standalone piece of AT is now built into mainstream technologies, such as smartphones, tablets or computers. This is why persons with disabilities are generally early adopters of technologies when these are available, affordable and accessible to them. Screen readers, magnifiers, telescoping with the camera, real time text messaging, video resolution supporting sign language communication, compatibility with assistive listening devices, and countless applications to support the autonomy of persons with disabilities are life changing. Are these AT? No, but they serve persons with disabilities and many older people as if they were, and non-disable people also benefit from them as technology usability increases too.

Emerging technologies, such as AI, robotics, 3D scanning and printing, or reality technologies (like augmented and virtual reality) are already bringing new accessible and assistive solutions to persons with disabilities and will continue doing so in the years to come. For more on this, we recommend reading our report "Plug and Pray? A disability perspective on artificial intelligence, automated decision making and other emerging technologies"⁹, in which we explore the opportunities and risks from the perspective of persons with disabilities.

Despite this increasing takeover of accessible technologies, many AT delivery systems in Europe only provide the legacy certified AT. This

⁸ Financial Times: "Disability tech goes mainstream":

<https://www.ft.com/content/ae91d600-8caf-11e7-9580-c651950d3672>

⁹ Available at EDF website: <http://www.edf-feph.org/newsroom/news/edf-launches-report-plug-and-pray>

makes it difficult for new AT manufacturers (including open source oriented) to get into the market, and for the users to take the most suitable piece of technology, regardless if this is assistive or mainstream.

Assistive Technologies in the EU

Even though the EU is very proud of its internal single market, the AT market is very fragmented due to the nature of these products. This AT market is dominated by small and medium enterprises, except for hearing aids and cochlear implants (very few companies causing high prices).

National AT delivery services have different approaches and certification schemes for what can be considered a piece of AT. At this point it is important to distinguish between the heavily regulated **medical devices**, such as cochlear implants, from **high tech AT**, such as a refreshable braille line device, and **low tech AT** such as magnifier glass or crutches.

There are two broad **AT delivery models**, through:

1. Public agencies (e.g. Ireland, Italy, Spain, Sweden, the UK, Denmark, Portugal), such as health care providers or other governmental organisations.
2. Insurance providers (e.g. Netherlands, Luxembourg, Austria, Germany) in which these providers cooperate with public agencies, including health care providers, in determining eligibility and the provision of AT.

The ways in which these models provide the AT to the users varies broadly:

- at administration levels (national, regional, local);
- scope of services (social, health, education, employment, etc.);
- eligibility rules (to access the AT, and to the AT itself);
- AT provider players (schools, service providers to persons with disabilities, NGOs, etc.);
- and methods (personal payments, in kind contribution, reimbursements, subvention, etc.).

Barriers to access and benefit from Assistive Technologies

This diverse AT ecosystem poses obstacles to persons with disabilities. We have identified ten key barriers:

1. **Availability:** Countries with a limited list of options of AT, which complicates the uptake of new technologies within the EU internal market and globally, particularly when the products are considered

medical devices¹⁰.

Some models do not recognize the AT nature of accessible technologies: according to our members in Portugal, “in some districts is possible to have a grant for an accessible computer and in others a computer is not eligible for financing”¹¹.

2. **Affordability:** High cost of certain (high tech) AT, and lack of flexibility to cover costs. VAT on AT can vary from 20% in Austria to 7% in Germany.

Cochlear implants may cost up to 30,000 euros + 8,000 euros on average per update of the technology. These updates are regulated by law (from 4 years in Iceland, to 8-12 years in Sweden), but if users need a repair in some cases it may need to be covered by themselves. Bosnia Herzegovina does not cover these updates. Braille displays may cost up to 6,000 euros and more. That is why the World Blind Union joined a research project to come up with a more affordable device¹².

3. **Technology:** Limited usability of certain products and services, especially those concerning legacy AT. These barriers also remain due to lack of involvement of persons with disabilities in the designing of certain AT.
4. **Informational barriers:** Lack of independent information to choose the best suited technology, as well as lack of support once the AT is delivered. Although good examples can be found in Malta, Spain and Italy¹³. Another useful resource is the Unified Listing of the GPII in the US¹⁴.
5. **Procedural:** A long complicated process to access the AT, including, sometimes, conflicts between persons with disabilities and the AT providers. In Belgium or Portugal AT provision can take longer than a year. Our members in Germany said: “this has even led to people, starting a new job losing their jobs again immediately in their trial period, as they could not work without their aids”.
6. **Infrastructure:** non-respected standards can cause, for example, interferences on hearing aids because of other devices using their radiofrequency bandwidth. An inaccessible website will be useless for a screen reader user. Problems arise as well when there is not a

¹⁰ See the case of Open Voice Factory speech generator in the Financial Times article.

¹¹ This and the following quotes were gathered through a European Commission questionnaire to EU Member States about AT, which we also distributed among our members.

¹² Orbit reader: <http://www.orbitresearch.com/orbit-research-introduces-the-worlds-most-affordable-40-cell-braille-display/>

¹³ Malta ACTU (<https://sapport.gov.mt/en/Services/Pages/ACTU.aspx>), Spain CEAPAT (https://ceapat.imserso.es/ceapat_01/index.htm); Italy GLIC (<https://www.centriausili.it/>)

¹⁴ Global Public Inclusive Infrastructure – Unified Listing: <https://ul.gpii.net/>

suitable infrastructure for appropriate use of the AT (e.g. poor Internet connection) and/or interoperability problems when other products, services and systems do not work seamlessly with the AT (e.g. an assistive interpreting services cannot communicate with emergency numbers).

7. **Language:** 80 % of assistive software is available only in English according to the DISCIT project¹⁵.
8. **Attitudinal:** There is still stigma and discrimination toward persons with disabilities and certain assistive products and services. Guide dog users often suffer discrimination because of their assistance dogs.
9. **Legal:** In addition to different thresholds to be eligible to access AT, based on the broadly variable disability assessments across Europe, most of which only have a medical approach to disability, different AT delivery models set restrictions based on age: discriminating against older people, or whether the person works and how they are working.
In Austria or Denmark “funding options are significantly reduced for age-related impairments”. In the case of Austria, self-employed persons or those in vocational training encounter more obstacles to acquire AT than persons who employed and request AT as reasonable accommodation for their work.
In countries such as the Ukraine, Serbia and Bosnia Herzegovina cochlear implants are only funded for children.
10. **Lack of involvement:** According to our members in Germany “the organisations are not involved in the contractual arrangements between the funding agency and the service provider”.

EDF recommendations

At EDF we advocate for the European Commission to take action and set the conditions to overcome these barriers. Much legal progress has been achieved in the EU in the past years concerning accessibility through the Web Accessibility Directive¹⁶, the Audiovisual Media Services Directive¹⁷, the European Electronic Communication Code¹⁸, and particularly the European Accessibility Act. We believe it is time for the EU to make an effort in ensuring the following:

- The **AT market to fully take advantage of the EU internal single market** and to benefit from the free movement of products

¹⁵ More information at <https://cordis.europa.eu/project/id/320079>

¹⁶ Directive (EU) 2016/2102: <https://eur-lex.europa.eu/eli/dir/2016/2102/oj>

¹⁷ Directive (EU) 2018/1808 <https://eur-lex.europa.eu/eli/dir/2018/1808/oj>

¹⁸ Directive (EU) 2018/1972: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32018L1972>

and services. This means to set up a joint mechanism for the mutual certification of relevant AT across countries.

- EU Member States to facilitate **accessible information on available AT**.
- Establishment of an **independent centre to support in the selection of AT**, taking into account the experience and expectations of the users, as well as the context of use of the AT.
- Provision of **person-centred training** about the use of AT and its maintenance.
- **Further flexibility, ease and speed within the AT delivery model**.
- **Affordability** of high tech AT and medical devices.
- **Research on innovative assistive solutions** taking advantage of emerging technologies.
- **Participation of organisations of persons with disabilities** in the above initiatives and solutions so that AT are developed and deployed with full consideration of users' needs and experiences.

The European Commission has announced in its European Disability Rights Strategy 2021-2030 that it "will examine by 2023 the functioning of the internal market for assistive technologies to identify need for further action as diverse rules in the Members States on product eligibility and certification may harm the competitiveness of price"¹⁹. We welcome this action and expect a legislative proposal which should address the barriers and recommendations stated above for the benefit of all.

¹⁹ European Disability Rights Strategy 2021-2030: <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1614872097963&uri=COM%3A2021%3A101%3AFIN>

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