



## INCLUSIVE MOBILITY – HOW TO TACKLE NEEDS AND CHALLENGES OF PERSONS WITH REDUCED MOBILITY

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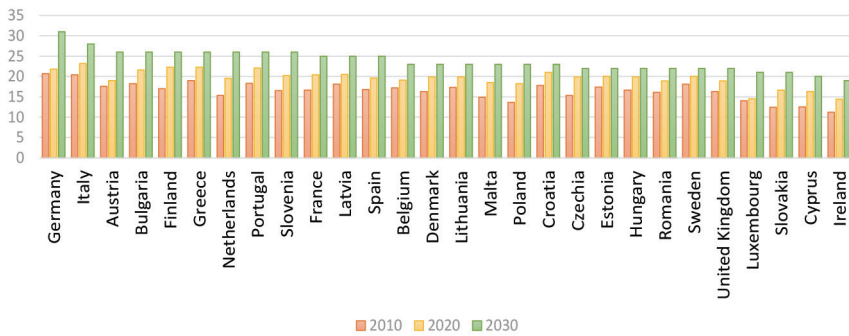
### Abstract

Mobility is an essential component of all European societies and is at the heart of the European Integration project. It is widely recognized that all citizens should be able to participate in economic, social and cultural life. European Union addresses investment in multimodal, environment-friendly, green, safe transport and mobility, to name some of the objectives, it seeks to achieve by mobilizing different funds. The idea of accessible transport is also high on the EU agenda. Accessibility is a multi-faceted objective, it can include the availability of information, the connection of metropolitan areas with rural or remote areas and also other aspects. However, the basic idea of accessibility in an integrated area should primarily mean the barrier-free mobility of people with disabilities and people with reduced mobility. This problem deserves to receive much more attention than is currently the case, considering that many recent studies estimate that the number of senior citizens and people with disabilities will double in the next 20 years.

*Keywords: mobility and accessibility, inclusion, persons with reduced mobility*

### 1 Introduction

A disability is an impairment that may be cognitive, developmental, intellectual, mental, physical, sensory, or a combination thereof. It significantly affects a person's life activities and may be present from birth or occur during a person's lifetime." Elderly People known as +65-year-olds, have the majority of the population of disabled people with physical impairments and changing mental states. "...Aging is rhetorically - sometimes ominously -invoked as a pressing reason why disability should be of vital interest to all of us (we are all getting older), thereby inadvertently reinforcing the damaging and dominant stereotype of aging as exclusively an experience of decline and deterioration. But little attention has been paid to the interconnectedness of aging and disability," argues [1]. Globally, there are several organizations such as WHO [2], Eurostat [3, 4], European Federation of Retired and Elderly People (FERPA) and American with Disabilities Act, Public Health Agency of Canada, Independent Living, and Rehabilitation Research [5] that publish valuable statistics. The EU-28 population is estimated to be 510.3 million, with 19.2 % of the population aged 65 and older [3]. Furthermore, the population aged 65+ increased by 2.4 % over the last decade. Wright [6] has provided an overview of the average age and percentage of people aged +65 in the UK and associated countries. It also shows how the UK and EU countries have aged between 1985 and 2010 and are projected to age by older and disabled people every year until 2035.



**Figure 1** Percentage of persons aged 65 and over across EU by a country for years 1985 and 2010 and projection for 2035; adapted from “Office for National Statistics” [3]

There has been significant progress in the implementation and also adoption of ITS technologies to remove barriers in the physical mobility of PRMs through the provision of e-government, e-health services, e-housing or even the ease of use of video conferencing, teleshopping etc. The penetration of e-government in the population varies and, as expected, decreases with age, so it is expected to have a very limited impact on older people or people with disabilities, who often and in many parts of Europe still do not have the same opportunities for education and access to technology.

Therefore, physical mobility is one of the most important features that people need for almost all activities, e.g. social contacts, visiting friends, work, leisure, shopping - physical mobility is a basic requirement. Although today some physical trips can be replaced by virtualization (e.g. teleworking, video conferencing), physical movements will never be completely replaceable by technological inventions. Therefore, physical transport systems must be as user-friendly as possible to meet the needs of all people, including mobility-impaired people.

The UN Convention on the Rights of Persons with Disabilities, adopted in 2006 at UN Headquarters in New York, is one of the most important documents defining, promoting and protecting the fundamental rights of persons with disabilities. Accordingly, the EU member states have adopted the law on ratification of the UN Convention on the Rights of Persons with Disabilities, which makes the Convention an integral part of national legislation.

## 2 Mobility and accessibility for all

In recent decades, great progress has been made in Europe in improving the accessibility of public transport for people with reduced mobility. However, this progress has not been substantial in all areas and varies considerably across Europe. While people with reduced mobility are passively protected by a number of protected rights enshrined in EU and national laws, the situation in practice varies from country to country and especially from region to region in the EU, despite clear objectives in the document „Transforming our world: the 2030 Agenda for Sustainable Development“, namely to:

- reduce inequality within and between countries (Goal 10);
- make cities and human settlements inclusive, safe, resilient and sustainable (Goal 11).

Based on the Convention on Road Traffic, commonly known as Vienna Convention on Road Traffic, every driver of a motor vehicle must hold appropriate documentation; a driving license (also known as a driving permit) can only be issued after passing a theoretical and practical test, which are regulated by each country or jurisdiction. A driving license issued by an EU member state is recognized and can be used throughout the EU as long as it is

valid, the driver is old enough to drive a vehicle of the relevant category, and the license is not suspended or restricted and has not been revoked in the issuing country. People with disabilities (PwD) and reduced mobility (PRM) are entitled to obtain a driving license if they pass tests, but they may have some restrictions determined by an expert. The EU has created uniform codes for restrictions due to health conditions and general codes for car adoption needed to enable PwD and PRM drive safely. The codes are added on the driving license. According to the legislation, people with various disabilities are also entitled to have a driver's license (can be with some restrictions), but national standpoints and willingness to help and support this group of people differ. From countries where people with disabilities are reimbursed for car purchase and adoption and the cost of obtaining a driver's license, to countries where people with disabilities are discouraged and disprivileged to drive. Accessibility to public places and services, as well as to public transport, correlates strongly with the understanding and acceptance of persons with disabilities as equal members of society.

## 2.1 Needs and challenges in the field of disabled person's mobility

At the European level and in terms of legislation, EU member states have ratified the UN Convention on the Rights of Persons with Disabilities which obliges parties (states) to make their transport systems accessible "on an equal basis with others". There is some improvement in transport accessibility at EU level, but there is a lack of mainstreaming of accessibility requirements, national accessibility legislation is not harmonized and is characterized by significant fragmentation.

The accessibility of transport, barrier-free mobility, varies widely across EU countries. Small member states tend to perform better, while other countries still have much potential for improvement. Improvements are needed in every area, e.g. legislation, harmonization, funding, training.

Even in countries like Austria, which can be considered as a good performing country, accessibility varies a lot in different provinces/regions. Vienna, the capital of Austria, for example, has often been described as one of the most accessible cities by public transport, not only in Europe but in the world. Progress over the last 40 years in terms of public transport accessibility in Vienna has been significant, as Figure 2 shows. The web-based route planner in Vienna, which has been online since 2009, offers people with disabilities and persons with reduced mobility the possibility to choose journeys only on busses that are suitable for them (e.g. low-floor busses).



Past and ...



present situation ...

Figure 2 Vienna Tramways – adoptions for (disabled) people [10]

When it comes to long-distance transport, as mentioned above, the situation varies from province to province, but it is worth mentioning one of the good practices found in Austria. Namely, there is an information platform for barrier-free holidays in Austria on the website <https://euregio-barrierefrei.eu/en>, which provides holiday-related information for wheelchair users and all other mobility-impaired travelers.



**Figure 3** Barrier free ticket machines (ticket machines for everyone) installed in Vienna [10]

According to the clustering of EU countries on the basis of transport accessibility in the Research for TRAN committee, countries can be divided into groups: 1) Low-achievers (e.g. Hungary), where both the legal framework and implementation require improvements, 2) Late-achievers (Slovenia, Croatia), lacking serious implementation, but also countries with general accessibility plans that include all modes of transport, 3) Countries with good or adequate legal frameworks (Bulgaria, Romania) with limited resources leading to low implementation, and 4) Countries with better opportunities for long-distance transport and room for improvement in local transport accessibility.

The general problems of persons with disabilities and reduced mobility in Southern Europe range from dealing with a bad legacy from past times with prejudices and stereotypes, through scares attempt to build policies of inclusion and non-discrimination, to more adequate measures and policies - which are still not fully developed - to enable barrier-free life for persons with disabilities and reduced mobility.

To improve this situation, a wide range of requirements must be addressed, starting with building a positive image of PWDs and PRMs, accessibility of information, accessible public and private transport, including barrier-free access to indoor and outdoor spaces. In terms of safety and independence, it is very important to create hazard-free streets and buildings, safe roadways and signage for drivers and pedestrians, and safe, accessible and affordable public transport.

Limited accessibility, lack of information, and other problems with public transportation force people with disabilities and those with limited mobility to choose private transport - usually cars - to gain or maintain their independence. Even when there is good accessibility to public transport, the last mile is traveled by car, as is the case for the general public who do not face similar barriers. It is worth noting that disabled people and people with reduced mobility have a desire and need to reduce their dependency as much as possible. This in turn leads to economic and social benefits for society as a whole. For this reason, transport policy should aim to meet the aspirations of non-disabled and disabled people alike. A particular part of the mobility of people with disabilities and RM relates to the opportunities to move around by public transport, i.e. busses, trains, taxis. These opportunities directly depend on the adaptability of the transport infrastructure at the stops for people with disabilities, on the accessibility of the access points for these people and, above all, on the adaptability of

the vehicles for their boarding and safe travel. The practice of accessibility and adaptation of public transport for people with disabilities in a state varies, depending on the cities, and often with the common problem of not meeting all the elements necessary for the smooth movement of these people, for example, not all public transport infrastructure (vehicles, platforms, etc.) are adapted for the boarding of people with disabilities.

The ability to drive and be independent is not the privilege of all PwD and but where this potential exists, improving the social, economic and cultural integration of people with disabilities and persons with disabilities into local and wider society leads to a higher quality of life of PwD and PRM. Countries and governments should devote all possible attention to empowering PwD and PRM to be mobile and independent by driving themselves and obtaining their own car. To realize the full potential of self-driving of PwD and PRM, a number of conditions need to be met from the perspective of national and local governments:

- availability of funding and support for car adaptations and car ownership,
- of procedures for PwD and PRM to obtain/retain a driving license,
- the availability of (accessible) parking spaces for people with disabilities.
- a higher driving culture in terms of respecting parking places for disabled persons (not occupying the parking space and leaving space necessary for people with disabilities and reduced mobility to get into the car),
- harmonized physical and mental examinations of disabled persons to determine their ability to drive and the conditions (e.g. type of car adoption) under which PwD and PRM are allowed to self-drives,
- accessible roadways and roadsides.

Given the attention that PwD and PRM have received, at least declaratively, one might assume that in most European countries the simplest step to achieving/maintaining independence through self-driving, where possible, is regulated and largely guaranteed. However, the situation in the EU varies from the attitude of “anyone that wants can drive” (e.g. Sweden) to the attitude of “any disability is a barrier for driving” (e.g. Western Balkan countries).

The study from 2000 conducted in 15 EU Member States, shows that even in countries with well-developed public transport systems, people, both non-disabled and disabled, prefer to use cars; trips by private cars are about eight times more preferred than trips by public transport.

At this point, it should be noted that enabling independent self-driving where appropriate would have a positive impact on the overall quality of life of PwD and PRM but would also economically create a whole new, previously untapped economy of accessible tourism. In the study for the TRAN Committee, it is estimated that in the EU Member States alone, demand from tourists with disabilities and older people is estimated at 780 million travels, resulting in €400 billion revenues per year, and is expected to grow by 1 % per year in the coming years. However, it is estimated that only 9 % of tourism services in the EU28 provide accessible services (and even these have different levels of accessibility due to the lack of harmonised accessibility standards). Furthermore, estimates show a potential increase in demand for accessible travel and tourism of 44 % per year, which could be achieved if appropriate accessible offers were created.

## 2.2 Status quo in Slovenia

The total population of Slovenia is about 2.067 million people and the average life expectancy of Slovenian men and women is 78.2 and 84.3 years, respectively. The share of people over 65 in the total Slovenian population is about 19.2 % and is estimated to reach 26 % by 2035. More than 15 % of the total EU population are PwDs and PRMs. In Slovenia, the proportion is around 12-13 % of the total population, which is not significantly different from the

estimates for the EU. There are no official data on the number of PwD and PRM in Slovenia; the number is estimated on the basis of registers for each category of disability.

One of the fundamental rights of all people, including PwD and PRM, is accessibility to public and private sector services and the physical environment. This includes the ability to use public transport. In addition to the EU Regulation on the rights of passengers when using public transport (all means of transport, i.e. land services, airplane, or waterborne mean of transport), which imposes certain obligations on public transport providers, the national Equalization of Opportunities for Persons with Disabilities Act aims to ensure that disabled persons in Slovenia can use public transport on the same terms as others. The main measures envisaged in the national legislation, which represent a step forward in ensuring mobility and accessibility of public transport for all, are the following: adaptation of busses and long-distance busses and trains, availability of information on the possibility of using public transport, bus and train stations must have barrier-free entry and exit, information must be accessible in the techniques adapted for PwD and PRM, if a disabled person uses a wheelchair, guide dog, etc., he/she must not be charged extra costs, to name a few.

Slovenia has committed itself to implementing the Convention, but similar to the other EU countries, the process of implementation is long and takes place mainly in terms of the country's financial possibilities. Nevertheless, it can be said that the situation is visibly improving. As far as public transport passengers are concerned, a wheelchair user can travel by train between all major Slovenian cities, as the stations allow boarding and alighting, but not all trains are fully adapted to PwD and PRM. People in wheelchairs can use public transport, such as busses, in Ljubljana and Maribor. In intercity bus transport, the possibility to transport them is limited for the time being, as the vehicles are not adapted for the transport of persons with disabilities in wheelchairs. Specially adapted taxis are available in Ljubljana for transporting wheelchair users and other disabled people. In order to provide a free (or minimal cost) transport service, many disability organizations in Ljubljana, Maribor and some other larger Slovenian cities have specially adapted minibusses to transport their members. At Jože Pučnik Airport they provide exemplary access for PwD and PRM to the plane. However, in the area of information and ticket sales, the current situation is not so promising. Apart from some newer vehicle information systems (e.g. voice announcement of stops on busses and trains), rare Braille signs and marked corridors for access to vehicles, there is hardly any other assistance for PwD and PRM.

In Slovenia a disabled person who can drive the vehicle on his own, only if the vehicle is properly adapted, can claim the cost of adapting the vehicle once every six years. The disabled person who does not operate the vehicle by himself/herself is also entitled to the adaptation if the adaptation is necessary for the disabled person to get into the vehicle and to ensure a safety aspect of driving. In this case, the disabled person can also claim the costs for devices and accessories to bridge the height difference when getting into the vehicle and for the relevant systems to attach the wheelchair to the vehicle once every six years. The type of adaptation of the vehicle, the conditions for the adaptation, the durability, the quality standards for the adaptation and the type of maintenance are specified in the Regulations on technical aids and adaptation of vehicles. The disabled person is entitled to the reimbursement of 85 % of the value of each adaptation, for a disabled person with poor economic status, the reimbursement can also be up to 100 %. No funds are available for co-financing the purchase of a (new) vehicle.

### 3 Efficient improvements towards equal mobility

Even the most advanced countries in terms of accessibility for all still have room for improvement in many areas that would greatly enhance the mobility of people with disabilities and limited mobility, such as:

- Provide passenger information at bus stops that is easy to understand both visually and audibly.
- Provide bus/train platform edges with visual and tactile strips.
- Make barrier-free parking spaces along the road as possible so that people do not have to get on the road when getting out of the car.
- Provide controls on parking ticket machines at appropriate heights and with tactile design.
- Design stairs with high-contrast step marking, handrails, and no hazards.
- Provide some counters at wheelchair accessible heights and accessible to wheelchair users.
- Remove barriers from otherwise accessible routes and make staff aware of accessibility issues.
- Make information about the facility's accessibility available on the Internet.
- Develop solutions for the different needs of the individual groups of disabled persons together with those who needs this kind of solutions.
- Ensure a continuous barrier-free mobility chain and take into account the design principle "Design for all" and the "two senses principle" (always two senses so that in each case one can act).
- Develop appropriate standards, regulations and recommendations on a regular basis and implement them consistently.

### References

- [1] Adams, R., Reiss, B., Serlin, D.: *Keywords for Disability Studies*, First. ed, New York University Press, New York University Press, New York, 2015.
- [2] World Health Organization, *Better health for people with disabilities: Infographic*, 2016.
- [3] Eurostat, *People in the EU – statistics on an ageing society - Statistics Explained 13*, pp. 1–20., 2015.
- [4] Eurostat, *EU-Commonwealth of Independent States (CIS) - statistics on active ageing - Statistics Explained*, European Commission, [http://ec.europa.eu/eurostat/statistics-explained/index.php/EU-Commonwealth\\_of\\_Independent\\_States\\_\(CIS\)-\\_statistics\\_on\\_active\\_ageing](http://ec.europa.eu/eurostat/statistics-explained/index.php/EU-Commonwealth_of_Independent_States_(CIS)-_statistics_on_active_ageing), 26.11.2017.
- [5] Salzman, C., Matter, R., Ganapathiraju, A.: *A Planning Guide for Making Temporary Events Accessible to People with Disabilities*, ADA National Network. Washington DC, 2015.
- [6] Wright, E.: *Population Ageing in the United Kingdom, its Constituent Countries and the European Union*, *Population Trends* 139 (2010), pp. 91–114. <https://doi.org/10.1057/pt.2010.7>
- [7] European Commission, *European Urban Mobility, Policy Context*, European Union, Brussels, 2017.
- [8] European Commission, *Innovative and Sustainable Urban Mobility Solutions*, CIVITAS, Brussels, EU, 2017.
- [9] European Commission, *A Concept for Sustainable Urban Mobility Plans*, Brussels, EU, 2013.
- [10] 13<sup>th</sup> World Conference on transport research, <http://www.wctrs-society.com/wp-content/uploads/abstracts/rio/selected/2913.pdf>