SUITCEYES Scoping Report on Law and Policy on Deafblindness, Disability and New Technologies

Working Paper

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Contents

Executive Summary

In Greece, 11.2% of people report severe limitations in daily life activities (EU SILC 2016). People with deafblindness are not recognised as a distinct eligible group with regard to disability provisions, which tend to be impairment specific, including disability pensions, cash benefits, technical aids, and community-based rehabilitation services. Rather, individuals will primarily identify as blind or deaf, and access provisions, accordingly, including support by respective representative bodies.

The national disability rights legal framework (Law 4488/2017)[1], renders universal design and reasonable adjustment mandatory for both public and private service providers, with explicit reference to making use of assistive technology, and ensuring access to digital information and communication technologies, and mass media.

To an extent, legislative measures exist to safeguard disability inclusion, particularly in relation to accessibility of the physical environment, including buildings and public spaces (Law 4067/2012; law 2621/ 2009), access to televisual products (Ministerial Decision 3/12/2018) and public sector digital content and services (Law 4591/2019).

Nevertheless, there remain gaps in monitoring and enforcement of standards, particularly in the private sector, including protection from denial of reasonable adjustment, while the UN CRPD committee further concludes that accessible and inclusive environments, including services, equipment, information and communication technologies, are particularly lacking in primary, secondary and tertiary education.

Access to new technologies is fragmented. Indicatively, expenditure for assistive technology and/or accessible ICT is not foreseen in the national health and rehabilitation provisions. Access points for information, software and hardware are mainly provided through the non-profit sector, including user led organisations/ groups, while there is some promising practice with Accessibility Labs in Higher Education Institutions. Mainstream vocational training programs (ESF 2014-2020) are the main means for developing ICT skills available to disabled people, while blind users specifically can access adapted training.

Disability mainstreaming has similarly been limited in policy and regulations with regard to new technologies, such as personal data regulations and cybersecurity. However, strategic vision for research and innovation puts emphasis on user driven innovation, smart services, growth and digital skills. This report outlines research projects that employ new technologies to address disability specific needs; however, it is understood that research products tend not to directly translate into widely available applications, especially in a context of low supply of accessible new technologies in the country.

[1] Law 4488/2017 "Public Sector Pension reforms, employees protection, the rights of people with disabilities and other regulations

1. People with Deafblindness

1.1 Official recognition of people with deafblindness as an eligible group

Deafblindness is not recognised as a distinct impairment and/or eligible group in national disability assessment procedures.

Disability assessment for accessing multiple disability benefits and services in Greece is carried out by the Centre for Certification of Disability (KEPA), which forms part of the Social Security Agency (EFKA), working under the auspices of the Ministry of Labour. Assessment is based on the Barema scale (%) according to the Single Table of Disability Percentage Determination[2].

The conditions and impairments assessed are grouped under 19 chapters, where visual impairments (chapter 17) are assessed separately from hearing impairments (chapter 14), without acknowledging deafblindness as a distinct impairment. Similarly, regulations on disability provisions in cash and in-kind address deafness and blindness separately (please see also section 1.3 of this report).

In general, the scales used in the Barema method reflect the level of severity of a given impairment. Indicatively, complete deafness (on both sides) is assessed as 80% on the Barema scale. Visual loss over 5 degrees on both sides is assessed as 80%. It is useful to note that the threshold for a disability pension is at 50%, while for additional disability cash benefits the threshold is normally set at 67% or 80%.

1.2 National data on people with deafblindness

Micro data analysis of EU-SILC 2016 from the National Statistical Service 2017[3] conducted by the National Confederation of Persons with Disabilities (NCDB) Disability Observatory[4] does not disaggregate by type of impairment[5]. Nevertheless, it is useful to note that in Greece, 24.7% of the population declared activity limitation due to health reasons, and more specifically 11.2% with severe limitations.The Hellenic Association of Deafblind "The Heliotrope"[6] counts approximately 25 member households with a deafblind person, while estimating that the total number of households concerned is at least double that number.

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[2] Journal of Government 4591/B/2017 http://www.nomotelia.gr/photos/File/4591B-17.pdf Please see also a more detailed report on Disability Assessment: ANED (2018) Disability Assessment Method Country Report (p. 6) https://www.disability-europe.net/downloads/907-country-report-on-disability-assessment-greece

[3] http://www.statistics.gr/el/statistics/-/publication/SFA10/2017.

[4] NCDP Observatory for Disability Issues, March 2018 Employment Indicators and Disability- Part 1 https://www.esamea.gr/publications/others/3732-2o-deltio-paratiritirioy-thematon-anapirias-tis-e-s-a-mea-deiktes-apasxolisis-kai-plithysmos-me-anapiria-meros-aa.

[5] Please see ANED (2018) EU2020 Country Report https://www.disability-europe.net/downloads/939-country-report-on-the-european-semester-greece

[6] The Heliotrope is a parents, caregivers, tutors and friends of deafblind children association established in 1992 https://pstiliotropio.blogspot.com/. The information was provided in a telephone contact with the Secretary of the Association for the purposes of this report.

1.3 National law and policies specific to people with deafblindness / sensory impairment

Overall, national social protection systems with regard to disability involve disability pensions, cash benefits, technical aids and rehabilitation services in the community[7]. Disability provisions tend to be impairment specific. People with deafblindness are not recognised as a distinct eligible group; rather they will normally be identified as primarily either blind or primarily deaf, and access available provisions accordingly.

Disabled people may receive a full or reduced pension depending on the type/ level of impairment and pensionable service completed. The minimum threshold for **disability pensions** for all social security bodies is a 50% level of impairment (% Barema scale). In the case of multiple impairments (such as deafblindness), the final percentage reflects the combined level of severity of existing impairments.

The full amount of a pension is awarded to disabled people with incapacity to work (according to the Single Table for Defining the Percentage of Disability, please see also section 1.1). More specifically, people with blindness can receive full pension upon completion of 15 years of pensionable service regardless of age.[8] People with 80% deafness can receive full pension upon meeting minimum insurance requirements with respect to their age, as defined by social security regulations at any given time.

Disabled and/or old-age pensioners who are blind and require constant supervision and support from a third person are further entitled to the total incapacity benefit which equals to 50% of their pension, but cannot exceed the sum payment of 20 days of an unskilled worker as it applies in a given time.[9]

Welfare disability benefits (in cash) are intended for those who are uninsured or indirectly insured (i.e. spouse or parent is insured). They are impairment specific and monthly rates are as follows for deaf and/or blind people[10]:

- Blindness: 362 Euros for adults; 697 Euros for children
- Deafness: 362 Euros

Please note that depending on the severity of multiple sensory impairment, it is possible for some deafblind people to receive multiple disability cash benefits[11].

Finally, the Single Regulation of Health Provisions (last modified in 2018) defines eligibility and cost ceilings for **assistive devices, medical supplies and**

[7] ANED Country Report on Social Protection and Article 28 for Greece https://www.disability-europe.net/downloads/735-country-report-on-social-protection-and-article-28-uncrpd-greece

[8] MISSOC Country Entry Greece 2014 http://ec.europa.eu/social/main.jsp?catId=1112&langId=en&intPageId=2583.

[9] IKA Total Incapacity Benefit https://www.ika.gr/gr/infopages/pensioncalc/otherinformation_1_2.cfm.

[10] Welfare Benefits 2008-2011 (Government Gazzette 931/B/2008 http://www.posgamea.gr/Uploads/ProniakaEpidomata.pdf

[11] As reported in the phone conversation with the Hellenic Association “The Heliotrope” for the purposes of this report.

specialised health services. Basic features of the regulation of provision of assistive devices are as follows: a) devices provided include **only basic rehabilitation** aids (e.g. wheelchair, prosthetics, hoists, etc.); b) provisions are in cash (contribution), rather than in kind; c) eligibility is based on medical assessment with an emphasis on diagnosis rather than need[12]. **Please note no specialised or ICT assistive devices are provided by the state (see also section 6).**

Special Education Day Services (Article 17 of the Health Provision Regulations) are covered at a 100% rate for children with physical, sensory or intellectual disability. Various community- based rehabilitation services are additionally covered. More specifically, children with hearing or speech impairments are entitled to such services with the maximum amount awarded being 250 euros per month. (Par 2C). For children with multiple impairments, (physical, sensory and/or intellectual) the monthly amount is 590 Euros.

With regard to **social participation and/or equal access** to goods and services, the Ministerial Decision *Access to Televisual products* (3/12/2018) Ministry of Digital Policy, Telecommunications and Information (previous) adhering to disability rights framework 4488/2017, constitutes a first step to equal access to entertainment and information. Private broadcasting stations are obliged to provide news in sign language daily from 5pm to 11pm and at least 4 hours of other content weekly (documentaries, shows, etc.) with subtitling[13].

Please see also Section 2.1 on the national disability rights framework that seeks to promote equality and social inclusion, discussed more specifically with reference to access to technology.

1.4 Important bodies that represent, report on or have responsibility for people with deafblindness

The Heliotrope is an association of parents, caregivers, tutors and friends of deafblind children, established in 1992[14]. Its main goal is the education, rehabilitation, social protection and safeguarding of the rights of people with deafblindness. It currently implements training courses in sign language and interpretation, as well as information sessions on deafblindness, in Athens.

Individuals with deafblindness may also enrol with the representative associations of people with either visual or hearing impairments. Relevant information is provided below:

Panhellenic Blind People's Association http://www.pst.gr/

Established in 1932 in Athens, the Panhellenic Blind People's Association was the first self-organised body representing people with visual impairments and disabled

[12] ANED DOTCOM Greece D.4 Provision of assistive devices at home
[13] https://government.gov.gr/parochi-isotimis-prosvasis-ton-amea-stin-enimerosi-ke-tin-psichagogia/
[14] https://pstiliotropio.blogspot.com/

people in general. It currently registers 6000 members and premises across nine regional authorities in Greece. It also represents blind people on the National Co-federation of Disabled People (NCDP). Some of the main services provided include:

a. Talking books and journals: established in 1965, it currently hosts more than 8000 book titles. Since 2018, in collaboration with the University of Athens, the material is available in a digital library for all members and individuals who are officially assessed as visually impaired.
b. Orientation, Mobility and Daily Life Skills Service: established since 1994, provided free of charge, provides individuals with the necessary skills and competences to navigate and perform daily tasks safely and independently.
c. ICT Department: Information provision, support, and training on the use of ICT for blind users.
d. Technical aids exhibition: hosts technical aids, such as walking sticks, talking watches, etc. aimed to improve daily life of people with visual impairments.

Hellenic Federation of the Deaf https://www.omke.gr/

The Hellenic Federation of the Deaf consists of 18 local associations of people with hearing impairments and represents deaf people on the National Co-federation of Disabled People (NCDP). It is also a member of the European Union of the Deaf (EUD) and World Federation of the Deaf (WFD). Its main role is to coordinate associated entities initiatives and promote awareness of the rights of people with hearing impairments. Key initiatives have included recently: the relay service of the National Institute of the Deaf (2019), the DeaFestival co-organised by the Deaf Association of Thessaloniki (2019), and Sign Language provision to students in Higher Education (2017-2019).

2. Overview of Law and Policy on New Technologies and Disabled People

2.1 Overall legal and policy framework for access to technology

The revised disability rights legal framework (Law 4488/2017),[15] which seeks to promote implementation of the UN CRPD, makes the following **explicit references to new technologies** and their potential in enhancing accessibility, participation and social inclusion:

Article 63, par. 2: 2 Universal design of administrative products, environment and services, and reasonable adjustment: Public administration is obliged to undertake recommended measures adapted to the specific needs of disabled

[15] Law 4488/2017 "Public Sector Pension reforms, employees protection, the rights of people with disabilities and other regulations

individuals in order to ensure the principle of equal treatment. Reasonable adjustments, provided they do not incur disproportionate or unjustified burden, include assistive technology, personal assistance, individualised adjustment of processes or practices and specialised services for communication.

Article 64, par. 2: Access to digital environment, especially digital communications, information and services, including media and network services & Article 67 Non- discrimination in Mass media and audiovisual activities – par. 2: Service providers in media and communications, including the internet, "are obliged to make use of new technologies, such as talking webpages, subtitling, audio description and sign language interpretation, in order to ensure accessibility". However, the Ministerial Decision anticipated to "define the means, procedure and any other technical matter or detail for implementing the regulations outlined in this paragraph", is still pending.

The recently published UN Concluding Observations and Recommendations to the initial report of Greece with regard to the implementation of the CRPD[16] challenge the adequacy of the above-mentioned framework in safeguarding disability rights across the board, pointing to its limited scope of application, as well as delay in implementation. It states:

> 7a. The Committee is concerned about:
> (a) The lack of a comprehensive legislative framework guaranteeing equal treatment and protection from discrimination, including the provision of specific measures and individualised support, and protection from the denial of reasonable accommodation, particularly in such key sectors as education, social protection and the provision of goods and services;….. (c) The delay in the adoption of secondary legislation based on Law No. 4488/2017 (art. 74) extending protection against discrimination on the grounds of disability in the fields of education and the provision of goods and services".

Specific reference is made to accessibility as well as new technologies in the UN Committee's recommendations for the field of education:

> 34 (b) Schools and universities lack accessible and inclusive environments, buildings, educational material, services, equipment, **information and communication technologies,** as well as individualised support provided to students with disabilities;
> Recommendation:
> 35 (b) Ensure the accessibility of school and university environments, in line with the Convention, by promoting universal design, the provision of specific measures and individualised support, such as accessible and adapted materials, inclusive curricula, **inclusive information and communication technologies for pupils and students with disabilities, and digital pedagogy.**

[16] http://docstore.ohchr.org/SelfServices/FilesHandler.ashx?enc=6QkG1d%2fPPRiCAqhKb7yhskOcZ9cO6iPa1r3wEJzoMtZPRlsn2F8be6qzYChDHrmBTMH%2bqHKEyy9lkIKsnfl7vYm%2b%2fX3mXiOTCPBgssnHiOpTdzNgr31DcGr9iV91p4N2

2.2 Overall legal and policy framework for accessibility

a. Accessibility of the built environment

The Greek accessibility legislation for the built environment does not make particular references to the needs of deaf-blind persons. In general, as far as accessibility of the built environment is concerned, there are two laws that constitute the most important legislative documents. These are the New Greek Building Regulations (Law 4067/2012) and the legislation concerning the installation and design of Tactile Ground/ Surface Indicators (Law 2621/ 2009).

As far as the **New Building Regulations**[17] are concerned, in article 26 it is stated that:

> "In the premises of all new buildings, other than residential buildings, for which the building permit shall be issued after the publication of this law, it is necessary to ensure the horizontal and vertical autonomous and safe access by persons with disability or restricted mobility as well as that they are served at all internal and external areas of buildings according to the "Design for All" guidelines, as they are amended and applied each time.
> In these buildings, it is also necessary to provide sanitary places accessible to persons with disability or persons with restricted mobility. These account for at least 5% of the total sanitary places or at least one per complex of sanitary facilities, which can have mixed use (men / women). The above mentioned accessible sanitary facilities will be counted in the number of sanitary areas imposed per use by other provisions.
> The possibility of autonomous and safe access to all buildings by persons with disability or restricted mobility is ensured with accessible horizontal and vertical routes, starting at the level of the pavement and leading up to the elevator door and the interior and exterior spaces of the buildings. These consist of elements designed according to the relevant guidelines, such as ramps, platform lifts, lifts, with the provision of sheltered accessible waiting areas in case of emergency needs in each floor (one space for wheelchair users when the floor population is less than 200 people, or 1 space for two wheelchair users when the floor population is more than 200 people)."
> The public outdoor areas of the buildings mentioned in paragraph 1, must be formulated appropriately, in order to be used by persons with disability or restricted mobility."

Furthermore, according to the New Building Regulations:

> "The buildings existing before this law (which was published in the Greek Governmental Gazette in 2012) enters into force, housing public services, legal persons governed by public law, legal persons by private sector law, social

[17] https://www.hellenicparliament.gr/Nomothetiko-Ergo/Anazitisi-Nomothetikou-Ergou?law_id=3dc4f0f3-36b8-4431-92d2-4ade78c39705

organisations, local authorities or having public use (conference halls, exhibitions, museums, concert halls, sports or cultural gatherings, churches, theatres / cinemas, restaurants / confectionery- bars / cafes / entertainment centres, multi-use halls, waiting rooms for passengers, banks etc.), buildings of temporary residence, educational use, health centres, social welfare use, justice services, offices and commerce, industry and craft, as well as parking spaces and service stations should make the necessary configurations so that their functional spaces are accessible from persons with disability or restricted mobility.
The arrangements referred in this paragraph should be made according to the design guidelines referred in paragraph 1 and should be completed by 2020, provided that they do not intervene with the building's main structure. If they are not completed by then, the buildings will be considered not to have a valid building license."

Thus, in essence, **by 2020,** all premises of public interest that do not comply with the aforementioned legislative demands, will be considered as not having a valid building license. The legislation also describes some very particular cases where exceptions in the enforcement of the abovementioned provisions are allowed.

Furthermore, the reference of the **"Design for All" Greek Accessibility Guidelines** gives a legislative dimension to the Guidelines themselves. The "Design for All" guidelines are issued by the Hellenic Ministry of Environment and Energy. They are based on European and International guidelines, covering the following subjects:

- Configuration of external areas for pedestrian movement
- Design of parking spaces
- Public buildings
- Ramps
- Stairs and staircases
- Mechanical means for connecting different levels
- Signage
- Buildings' entrances
- Public toilets

In the chapter concerning signage, particular guidelines are mentioned for improving signage for blind visitors to buildings of public interest. However, there is no particular reference to deaf blind users of infrastructure.

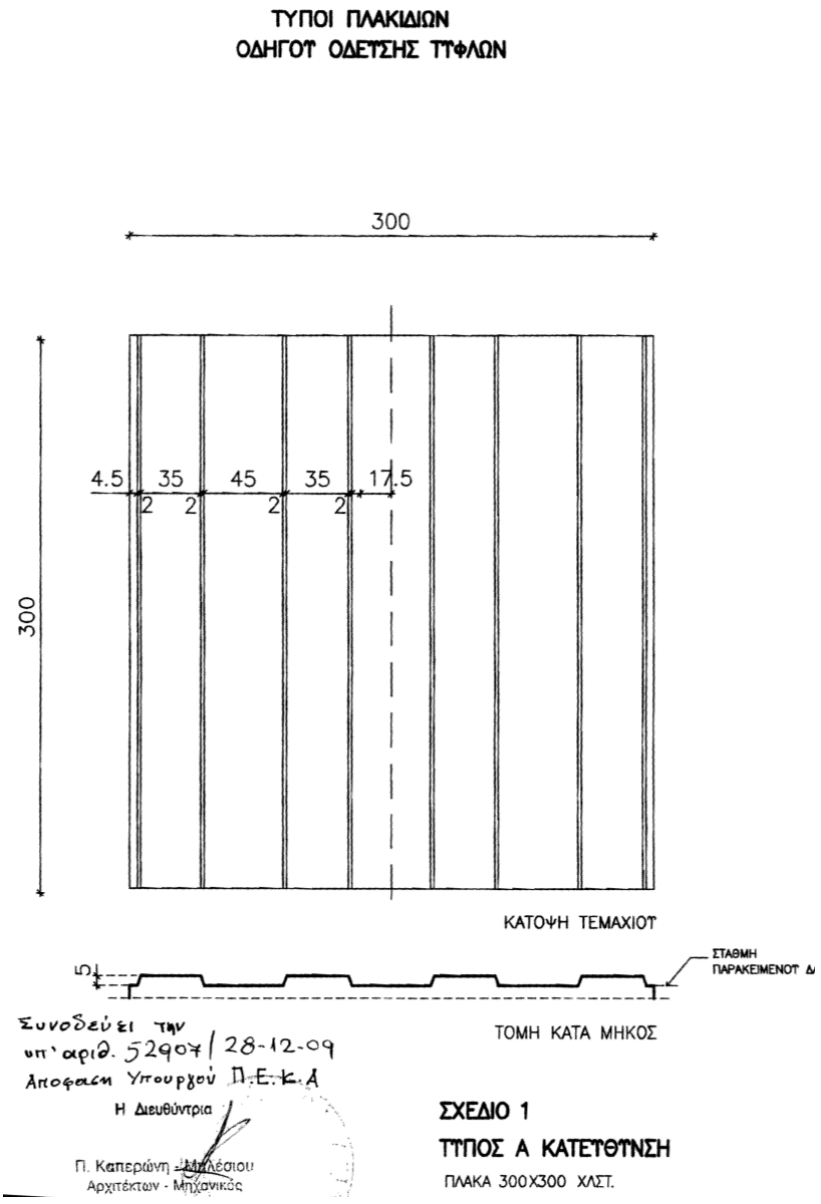
The latest legislation concerning the installation and design of Tactile Ground/ Surface Indicators is law 2621/ 2009 **"Special arrangements for servicing people with disabilities in areas of public use that are intended for pedestrian traffic"**[18]. In this law the specifications of tactile guides for the safe movement of people with vision impairments is determined and indicative uses are described. For the construction of the indicators, non-slip, square tiles are used (each side 0.30m. or 0.40m.), and four distinct types are defined:

[18] https://www.e-nomothesia.gr/kat-periballon/skhedia-poleon/upourgike-apophase-52907-2009.html

a) Tiles with wide and sparse stripes, type A: "Direction ", which are placed with the stripes parallel to the axis of movement to direct visually impaired people.

These are placed in a free pedestrian zone if it has a width equal to or more than 1.50m. They are installed at a distance of at least 0.50 m from the building line or from an overhang of a building below a height of 2.20m. The same distance is kept by any other obstacle or equipment in the area.

Example of Type "A"



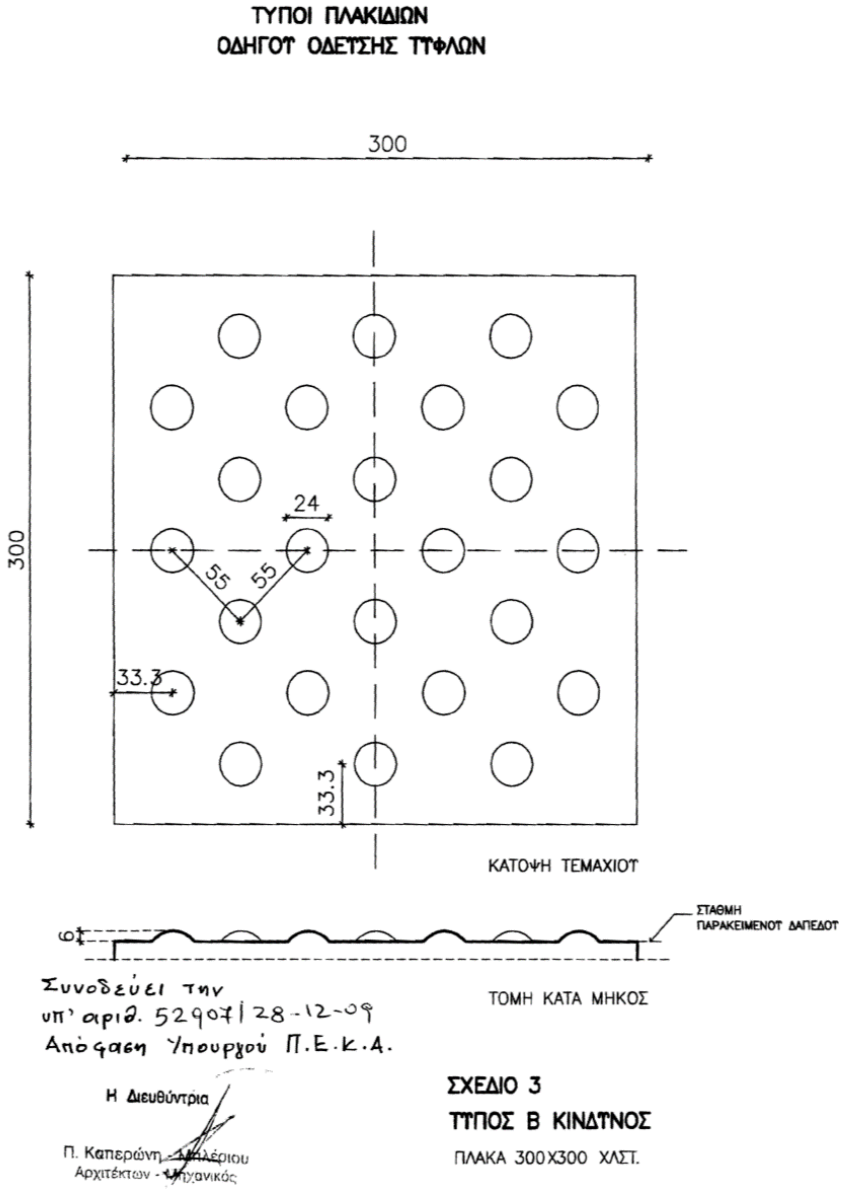
(b) Type B: "DANGER", which are placed to alert people with visual disability to potential risks. They are always yellow and their width is 0.30m. These are mandatory in the following circumstances:

- At the beginning and at the end of the ramps and stairs, throughout their width and at 0.30m from the connection of the ramp and the horizontal levels or the edge of the first and last step. Especially at kerb ramps of pavements, they are placed only at the end of the ramps at the side adjacent to the road at the entire width of the pedestrian crossings or the pedestrian crossing islands.

- Throughout the width of the opening of lift doors, at all levels, at a distance of at least 0.30m from the opening of the door.

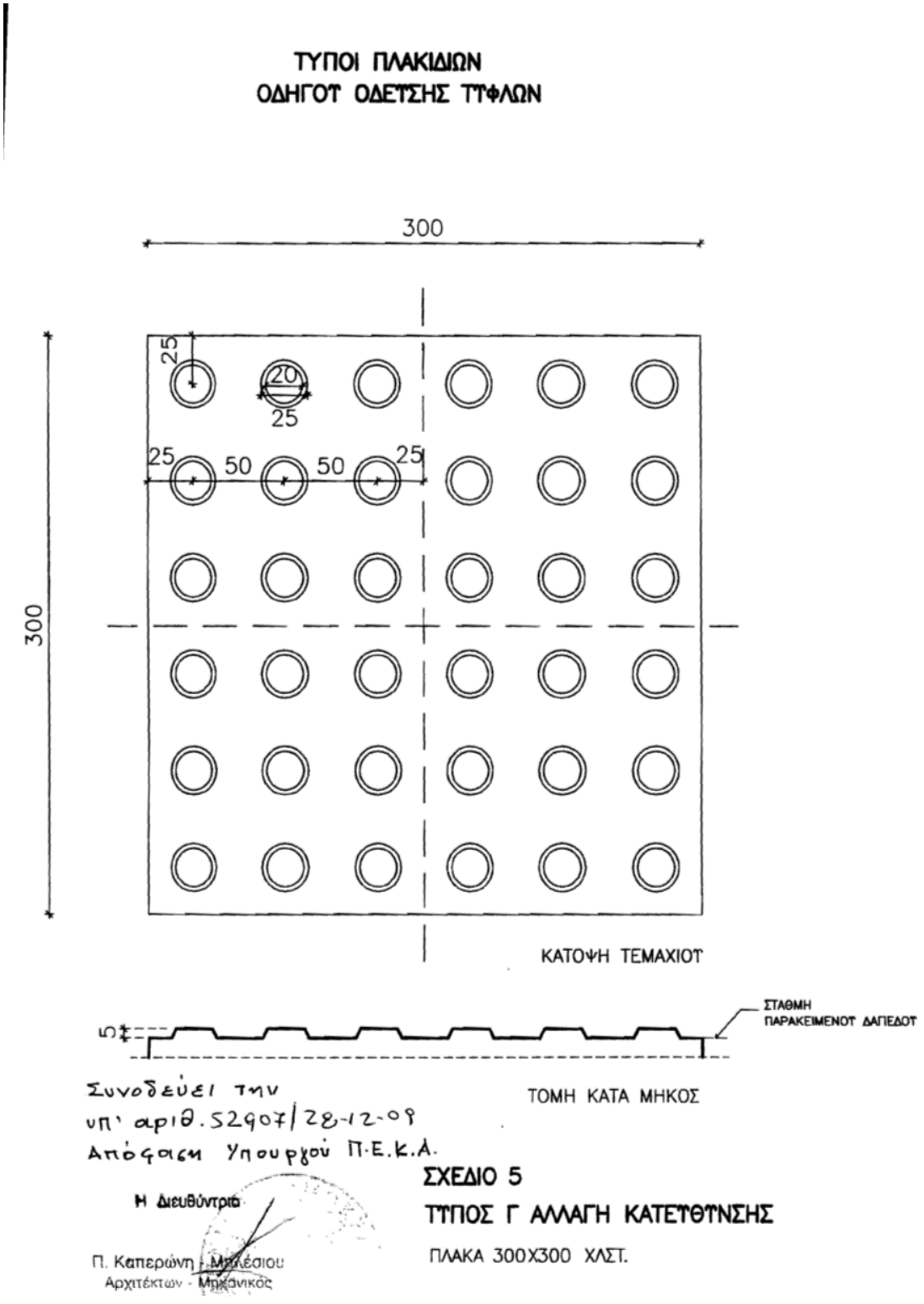
- Along public transport platforms (trains, subways, trams etc.) at a distance of 0.50m from the edge of the docks.

Example of Type "B"



c) type C: “DIRECTION CHANGE" which are placed on points of change of direction of type A tiles.

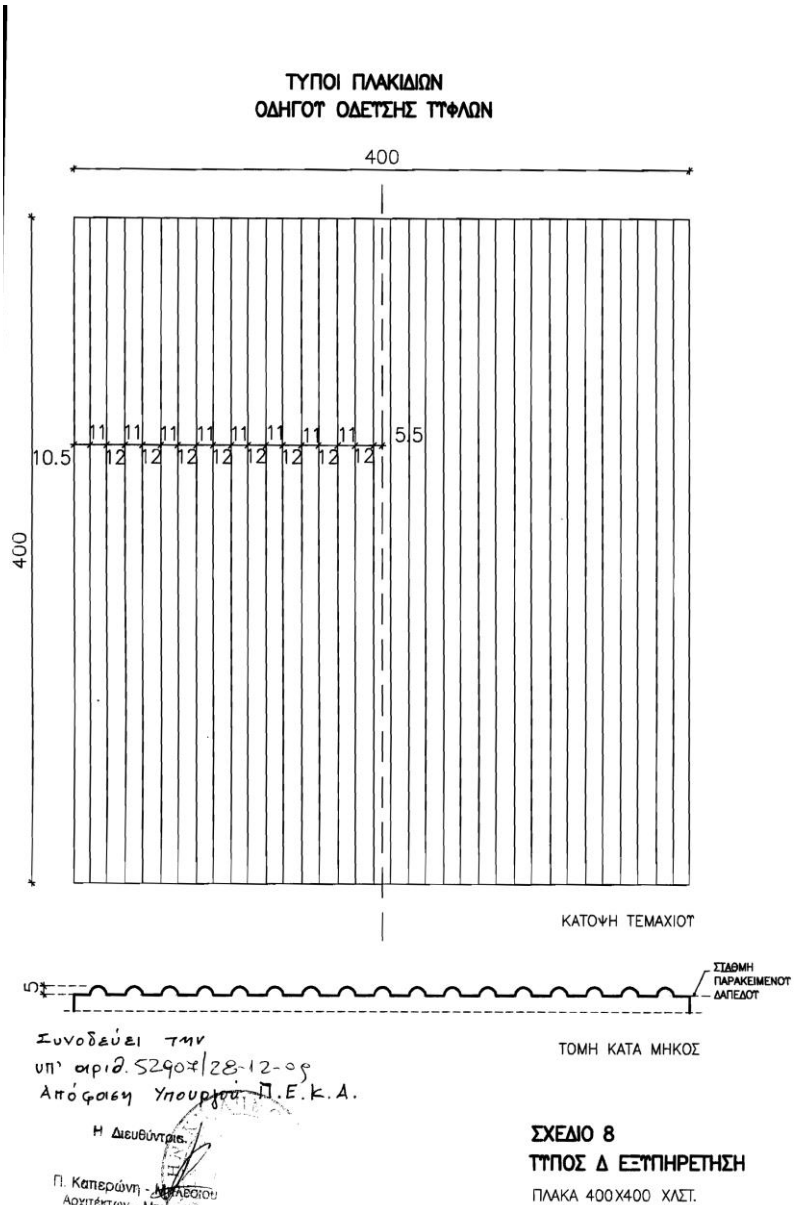
Example of Type “C”



d) type D: "SERVICE"(as shown in Figures 7 and 8 which accompany this), which are placed to lead visually impaired persons to services (transportation stops, telephone booths, special tactile signs etc.) or to entrances of adjacent public and private service buildings.

Type D plates, with the stripes perpendicular to the user's movement, are used for the surface of kerb ramps.

Example of Type "D"



b. Digital accessibility

As far as digital accessibility is concerned, a major breakthrough for Greek practices is the introduction of **Law 4591/2019** (Government Gazette 19 A / 12-2-19): "Incorporation into Greek law of: a) Directive (EU) 2016/2102 of the European Parliament and of the Council of 26 October 2016 on accessibility of websites and applications for mobile devices of public sector organizations and (b) Article 1 of Council Directive (EU) 2017/2455 of 5 December 2017.

This Law aims to approximate the laws, regulations and administrative provisions of the Member States relating to the accessibility requirements of websites and mobile applications of public sector bodies, thereby enabling those websites and mobile applications to be more accessible to users, in particular to persons with disabilities.

As in the Directive, the Law does not apply to the following websites and mobile applications:

(a) websites and mobile applications of public service broadcasters and their subsidiaries, and of other bodies or their subsidiaries fulfilling a public service broadcasting remit;
(b) websites and mobile applications of NGOs that do not provide services that are essential to the public, or services that specifically address the needs of, or are meant for, persons with disabilities.

Also, it does not apply to the following content of websites and mobile applications:

(a) office file formats published before 23 September 2018, unless such content is needed for active administrative processes relating to the tasks performed by the public sector body concerned;
(b) pre-recorded time-based media published before 23 September 2020;
(c) live time-based media;
(d) online maps and mapping services, as long as essential information is provided in an accessible digital manner for maps intended for navigational use;
(e) third-party content that is neither funded nor developed by, nor under the control of, the public sector body concerned;
(f) reproductions of items in heritage collections that cannot be made fully accessible because of either:
a. the incompatibility of accessibility requirements with either the preservation of the item concerned or the authenticity of the reproduction (e.g. contrast); or
b. the unavailability of automated and cost-efficient solutions that would easily extract the text of manuscripts or other items in heritage collections and transform it into content compatible with the accessibility requirements;
(g) content of extranets and intranets, that is to say, websites that are only available for a closed group of people and not to the general public as such, published before 23 September 2019, until such websites undergo a substantial revision;

(h) content of websites and mobile applications qualifying as archives, meaning that they only contain content that is neither needed for active administrative processes nor updated or edited after 23 September 2019.

Furthermore, websites and mobile applications of schools, kindergartens or nurseries may be excluded from the application of this law, except for the content thereof relating to essential online administrative functions.

In the article 4 of the Law, it is required that:

"Public sector organisations design, develop, operate and maintain websites and applications for mobile devices, in compliance with the principles of accessibility, including the principles of perception, operability, understandability and robustness.
The individual principles of accessibility have the following meaning:
(a) perception, meaning that information and components of the user interface are presented to users in ways that they can perceive;
(b) operability, meaning that user interface components and navigation are user-friendly;
(c) understandability, which means that the information and operation of the user interface are understandable;
d) robustness, which means that the content is robust enough to be reliably interpreted by a wide range of user agents, including supportive technologies."

The concept of disproportionate burden is also described. According to the law, public sector bodies apply the accessibility requirements set out to the extent that those requirements do not impose a disproportionate burden on the public sector bodies. In order to assess the extent to which compliance with the accessibility requirements set out imposes a disproportionate burden, the public sector body concerned takes account of relevant circumstances, including the following:

- the size, resources and nature of the public sector body concerned; and
- the estimated costs and benefits for the public sector body concerned in relation to the estimated benefits for persons with disabilities, taking into account the frequency and duration of use of the specific website or mobile application.

In Article 8 of the Law, the creation of a Public Websites and Applications Registry is described, which will be maintained by the Greek Ministry of Interior. Websites and applications for portable devices of public sector organisations that comply with the accessibility requirements of Articles 4 and 6 of the Law will be listed at the registry with the assent of the Greek National Confederation of Disabled Persons.

3. Regulation of New Technologies

Overview of regulatory bodies for New Technologies

A parliamentary Committee on Research and Technology has been established on a permanent basis. The highest level regulatory body is the National Council of Research, Technology and Innovation (ESETEK), which supports the state in drafting the national strategy for research, technology and innovation development. It also provides direct expert advice to the Ministry of Education and Research, including setting priorities for research funding and recommendations for the regulation of research institutes under the auspices of the General Secretariat of Research and Innovation.

The General Secretariat of Research and Innovation is responsible for regulating research institutes outside academia (Law 4321/2014[19] Research, Technological Development and other regulations). Some relevant provisions include:

a. Research Institutes are co-funded by the state budget and their own economic activities.
b. Supporting independence in managing own resources, research findings, and human resources. (Art. 4, para. C)
c. Gender mainstreaming (Art.4 para. E): acknowledges contribution of research and innovation to gender equality as a distinct objective of the national strategy – inclusion of gender in research activities, and equal representation of women in staff across levels.
d. Contribution to the “social, energy, and environmental policy in country” para.16
e. Contribution to regional development and jobs growth, especially youth employment. (para. 17)

Personal Data Regulations

Any pre-existing national regulations regarding processing of personal data, including through cameras and sensors, have now been substituted with the recently transposed GDPR Directive to the Greek legislation (L.4624/2019).[20] Please note face and object recognition are not explicitly addressed in the current legal framework in Greece.[21]

[19] http://www.gsrt.gr/Legislation/Files/LawFiles136/%CE%9D.%204310-2014,%20%CF%80%CE%B5%CF%81%CE%AF%20%CE%AD%CF%81%CE%B5%CF%85%CE%BD%CE%B1%CF%82.pdf

[20] https://www.e-nomothesia.gr/kat-dedomena-prosopikou-kharaktera/nomos-4624-2019-phek-137a-29-8-2019.html

[21] A full review of legislation addressing rights in the digital world (inc Greek Constitution): https://www.homodigitalis.gr/%ce%b5%ce%bd%ce%b7%ce%bc%ce%b5%cf%81%cf%89%cf%84%ce%b9%ce%ba%cf%8c-%cf%85%ce%bb%ce%b9%ce%ba%cf%8c/%cf%83%cf%87%ce%b5%cf%84%ce%b9%ce%ba%ce%ae-%ce%bd%ce%bf%ce%bc%ce%bf%ce%b8%ce%b5%cf%83%ce%af%ce%b1

Audiovisual surveillance systems

Individuals and private entities must comply with general personal data regulations, unless surveillance systems record private premises exclusively.[22] In that case, there is no obligation to report the use of surveillance systems to the relevant Data Protection Authority, and it is the responsibility of every entity or individual to comply with the GDPR.

The use of such systems in public areas by private individuals or entities is not allowed. Similarly, they are not allowed in common use places such as restaurants, shopping malls or other leisure spaces (Directive 1/2011), except for specific spots such as entrances, cashier, warehouse and parking spaces. In any case, they must not be installed in staff premises where clients do not have access (Art. 7 Directive 1/2011; please see also below).

Public authorities processing personal data

Article 22 specifies categories of personal data where processing is allowed in exemption from GDPR (art.9 par.1) and includes:

a. Exercising rights and obligations in relation to social security and social protection provisions.
b. For reasons of preventative medicine, assessment of capacity to work, medical diagnosis, health and social care provisions, and/or
c. Reasons of public interest in the wider sector of public health, such as cross border threats, maintaining high quality of healthcare, medical technology and pharmaceutics.

Technical and organisational measures, access rights, and encryption are nevertheless measures to be taken to protect such data.

Article 24 and 25 specify the conditions under which a public or private actor may use/ disclose personal data for a purpose other than that for which the data was collected, namely: verify data for which there are suspicions of inaccuracy, necessary for reasons of national security, penal code investigations, preventing harm to other people's rights, and for producing national statistics.

Art.27 para.7 using cameras in the workplace is only allowed if intended to protect individuals or property goods. Data collected must not be used for assessing the performance of employees. All employees must be informed in writing about the installation and operation of such as system.

Art. 28: to the extent to which personal data protection is compromised by the principle of freedom of expression and information (e.g. journalism, academic or literary expression), certain GDPR aspects do not apply (Chapters: 2, 3, 4, 5 and 7).

[22] Decision 46/2018
https://www.dpa.gr/APDPXPortlets/htdocs/documentSDisplay.jsp?docid=28,12,241,205,38,93,67,87

Art. 30: Personal data processing is allowed **without the informed consent** of the data subject, when this is required for scientific or historical research or collection and archiving of statistical data. However, no publication of personal data is allowed without the explicit permission from data subjects.

4. Ethical frameworks relevant to disabled people and new technologies in place or under development

The National Strategy for Research and Innovation for Smart Specialisation 2014-2020[23] identifies technological development and innovation as key to "bridging regional inequalities and creating sustainable employment with respect to individuals and society, the environment and culture". Specific objectives include enhancing entrepreneurship through **application driven research/ user driven innovation**, in priority economy sectors. There is no explicit link to accessibility, participation or social inclusion, however some relevant priorities involve open data, smart applications and services and digital skills.[24]

It is anticipated however that developments on a European level around technological innovation and ethics[25] will inevitably shape policy and regulations on national level. There is no legal framework in Greece for Artificial Intelligence currently, and arguably the more prominent principles such as diversity, non-discrimination and fairness are advanced in this sector in both discourse and practice in member states, the more likely they are to shape developments on a national level.

5. Disabled People's Access to Information

Disabled people's access to information about new technologies seems to be rather fragmented, and mainly based on private initiatives. The review has identified the following forums where disabled people can access information, including in most instances, free applications and/or content:

a. Information provided through representative bodies (please see section 1.4) and/or user groups.

For the purposes of this study, we approached a Facebook group called e-accessibility, which concerns individuals with visual impairment. The group was established in 2016 by Dimitris Tharenos, who has been blind for the past 15 years and today has 790 members. The purpose of the group is to inform peers about technology and access to electronic applications. This is mainly for Android systems, and less for iPhones due to their higher cost. The host tests applications and then suggests some advantages and disadvantages through the group page. Based on

[23] Page 80 http://www.gsrt.gr/Financing/Files/ProPeFiles19/RIS3V.5_21.7.2015.pdf
[24] Pages 81-82
[25] https://ec.europa.eu/digital-single-market/en/news/ethics-guidelines-trustworthy-ai

the experiences of users of the Facebook group, people with visual impairments tend to mostly use phone communication and are less interested in applications. According to the host's view, in order to encourage use of new technologies by disabled people, the state needs to establish mechanisms to assess and certify the accessibility of web pages of service providers as well as provide electronic gadgets (assistive technology) in order to counteract low awareness, particularly for the elderly population.

b. Online Platforms focusing on Education, Health and Social Protection

Specialeducation.gr[26] is an independent online service provider, which aims to provide best available information on issues of special education/ inclusive education, and share best practices among parents, educators, students, schools, individuals, groups and associations. Thematic categories include impairment specific information, legislation, and scientific papers, and there is a section dedicated to new technologies.

NOESI.gr is a non-profit organisation that provides free services to pupils with disabilities and/or special educational needs, their families as well as disability related associations. Since 2008, it hosts a community of practice and a network of service providers related to child development, prevention, health and welfare, interventions for children with special educational needs, and social inclusion of disabled people, aiming to develop two-way communication between services/ professionals and beneficiaries.

c. Accessibility Units in Higher Education

Speech and Accessibility Lab, Informatics and Telecommunications Department, National and Kapodistrian University of Athens[27]

The Accessibility Unit of the University of Athens has been a pioneer in providing students with personalised technological solutions for ensuring equal access to higher education studies and life. The Accessibility Unit includes the following departments and activities:

a. Electronic Accessibility Department (e-access): This Department is responsible for the evaluation of the students' abilities and the provision of the Personal Assistive Technologies – as well as the technical support of the accessible workstations in University's libraries. Within the Department a Video Relay Service (VRS)* is operating for deaf students, while there is production and distribution of accessible educational material.

[26] Specialeducation.gr https://www.specialeducation.gr/frontend/articles.php?cid=145
[27] Extract from ANED country report on equality of educational and training opportunities for young disabled people, 2010 (p. 16-18) updated where relevant https://www.disability-europe.net/downloads/570-report-on-equality-of-educational-and-training-opportunities-for-young-disabled-people-greece

b. ATHENA Free AT Software Inventory aims to inform and provide persons with disabilities, their facilitators as well the professionals of the domain, about available free assistive technology (AT) solutions (open source or freeware). Free assistive technology applications for smartphones and tablets are given in the website mATHENA Free AT Software Inventory for mobile devices.
c. Structured Environment Accessibility: The Accessibility Unit deals with every-day accessibility problems and validates the accessibility specifications for the new University buildings and the external environment of the campus. It also makes modifications of the existing buildings and the external environment of the campus in order to restore its accessibility.
d. Transportation Service: It arranges daily transportation to the University of students who use a wheelchair, or those with severe mobility disabilities. An accessible mini-van (capacity of five students with disabilities; of which two passengers with wheelchairs) is staffed to transfer (daily) the students from their homes to the University and vice-versa between 7am and 10pm.

Some examples of AT provided by the Unit:

For students with vision difficulties: screen reader, text to speech, Braille display, Braille embosser, Braille translation software, scanner with OCR Software, CCTV magnifier, screen scanning, etc.

For students with speech difficulties: speech recognition, voice enhancing systems, text to speech programmes, etc.

Moreover, a larger (in terms of personnel and equipment) unit has been designed to produce accessible material quickly and in larger quantities. The Accessible Educational Material Production Department is responsible for receiving and responding to requests from students; contacting publishers (obligated by law to provide books in electronic format), acquiring books in digital format when available; securing and distributing electronic books (in various formats) or in Braille or in large print.

Finally, the University's Libraries are equipped with accessible workstations[28] for low-vision, blind and mobility disabled students, while the librarians have been properly trained to support the students' use of accessible equipment.

Accessibility Unit, University of Macedonia, Thessaloniki[29]

The unit consist of the following departments:

a. Electronic Accessibility: design, development and provision of specialised technical aids
b. Environmental Accessibility: design, development and provision of accessibility technical aids and services

[28] http://speech.di.uoa.gr/libaccess
[29] https://meallamatia.gr/skylos-drone-gia-tyflous-kai-alles-made-in-greece-istories-kainotomias/

c. Social and educational inclusion: making best use of differentiated instruction methods
d. Independent living support: assisting transition to adulthood
e. Study support: supporting studies with suitable assistive technology (design and development).

The Accessibility Lab is actively involved in research projects making use of new technologies for people with blindness more specifically. It is worth noting that disabled users are actively involved in the design and evaluation of products. For instance, under the THALIS project completed in 2015, audio-tactile aids for orientation and mobility were designed and evaluated with the support of users. “The findings were encouraging enough so as to continue research in this field; as it proves the use of such aids contributes significantly in spatial cognition and mental mapping, which are useful in moving safely and effectively”.[30] Another project recently completed under the scientific coordination of the University of Macedonia, was «AT-MAPS: Specification of symbols used on audio-tactile maps for individuals with blindness», which developed global standards for creating audio-tactile maps for blind users. An audio-tactile map of Europe was produced, which is freely available in four languages. Finally, the Accessibility Lab aims to be a pioneer in the design and development of an Electronic Guide Dog for blind people. The Director of the Unit emphasises however that “research achievements often remain idle, without there being any connection with production. Patents (in Greece) are rare and significantly fall short of the number of achievements by researchers.”

6. Access to Equipment

Please note that information access points referenced above (Section 5) simultaneously offer free access to assistive technology, including innovative technological aids and software applications. The following sections offer a wider picture of the current situation in the public and private sector which overall provide limited access to equipment for disabled people.

6.1 Public Sector

New technologies are generally not available through established channels of disability support provisions (please see also section 1.3).

The types of technical aids or technology provided, cost ceilings and eligibility criteria are defined by the Single Organisation for Provision of Health Services. More specifically (Article 15 of the Health Provision Regulations), the main categories of

[30] Interview of the Director of the Accessibility Lab (University of Macedonia), Konstantinos Papadopoulos, published on 28 December 2018 at https://meallamatia.gr/skylos-drone-gia-tyflous-kai-alles-made-in-greece-istories-kainotomias/

the devices provided include: visual and hearing aids, rehabilitation aids (wheelchairs, hoists, beds, etc.), prosthetics, respiratory devices and other extra aids, such as orthopaedic braces. Provision is in cash, with cost ceilings provided at the annex of the regulations, awarded following medical assessment and evaluation of the health committees of the National Health Provision Organisation (EOPPY). No specific age or impairment levels apply.[31]

6.2 Private Sector

Available studies[32] point to a number of factors amounting overall to **very low demand and supply of assistive technology and accessible new technologies** for disabled people. There is limited accessibility to (public and private) goods and services on offer, a lack of national up to date legislation on technical aids, including lack of information at exhibition centres and virtually non- existent in country production of technical aids (or new technologies) for disabled people. As well as this, there a general lack of understanding of user needs.

It is worth noting here that there are few national studies on new technologies and disabled people and where they do exist, they are quite outdated. More specifically, the last available studies were conducted in the ESF period 2007-2014 where Information Society formed a distinct strand of actions[33].

There is finally some interesting analysis in the National Strategy for Smart Specialisation 2014-2020[34] (p. 56), which points to critical factors that have led to **low levels of innovation in the country** overall,. They identify “a clear lack of orientation towards the real needs of society and especially of youth and vulnerable groups, aiming to change the productive model, stable work placements and development”.

7. Accessibility measures in the built environment

Various initiatives on technology, enabling the application of accessibility measures in the built environment have been identified.

[31] ANED Country Report on Social Protection and Article 28 (p.5):

[32] National Co-federation of Disabled People, 2014 New technologies and Disability: Equal opportunities or new forms of exclusion? (p. 118-119) provides an overview of studies conducted which date from 2004 to 2008.

[33] National Co-federation of Disabled People, 2014 New technologies and Disability: Equal opportunities or new forms of exclusion?(p. 118-119) provides an overview of studies conducted which date from 2004 to 2008.

[34] **Research and Innovation Strategies for Smart Specialisation 2014-2020** https://www.espa.gr/el/pages/staticRIS3.aspx

E-vision[35] is a research project in progress at the time of writing this report, led by the ICT Institute of the National Centre for Research and Technological Development[36], aiming to create a system for assisting people with reduced vision, which will enable identification of persons and objects at a semantic level. This research has been co-financed by the European Union and Greek national funds through the Operational Programme Competitiveness, Entrepreneurship and Innovation, under the call RESEARCH – CREATE – INNOVATE. For its realisation, recent significant results in the area of mechanical vision will be used, combined with wide production and availability of digital data and visual content. The project aims to improve the quality of life of people with reduced vision by providing them with an innovative and useful tool that addresses the main weakness of existing systems. These limitations are that systems provide only the possibility of identifying and avoiding obstacles and do not focus particularly on semantic entities, namely distinguishing objects (e.g. table or chair), the status of a person (e.g. concierge or vendor) or even the identity of a person (e.g. Anna or Maria). As a result, people with reduced vision face significant limitations on their autonomy, both in terms of daily activities (such as visiting a supermarket or a public service), emotional interaction and initiating communication.

With respect to the technological framework of the developed system, an array of sensors (camera, handset, etc.) are integrated into the user's glasses and will be connected to the mechanical vision system that will run on the user's mobile phone. This will inform the user about the objects or people in front of him / her through an acoustic diode. This functionality will be integrated into an interface that will control various parameters and adapt them to the user's preferences, ensuring the system's comparability with other perceptual processes.

A critical point in developing the e-vision system is the exploitation of the mobile phone, an instrument with limited computing and storage resources for executing and reproducing mechanical vision algorithms. The manufacture of an advanced form of camera glasses, handset and wireless connection to the mobile phone is also one of the project's main priorities.

To evaluate the effectiveness of e-Vision and user experience, three activities are planned:

- The first will simulate a visit to a supermarket to buy the week's supplies, where e-Vision will allow the user to identify the products on the shelves and collect them without the assistance of an escort.
- The second will simulate a tour inside the City Hall of Thessaloniki, enabling the user to interact with the employees of the Municipality and to successfully complete a number of tasks.
- The third one will simulate a walk on the seafront of Thessaloniki, where the user will be able to interact with familiar faces. He/she will also be able to listen to the

[35] https://evision-project.gr
[36] https://www.certh.gr/

environment through specially designed soundscapes, which will be linked to selected points of interest.

WHEELROUTE is an interesting application being developed by a Greek start-up named “AccessLab” with the support of “Invent ICT” incubator[37]. This is an online GIS platform with open accessibility and mobility data. The user is able to get information about accessible ramps and sidewalks in specific areas of Athens and also navigate through suggested routes from one point to another, measure a distance and report an obstacle, such as illegal parking.

Data collection is being carried out by “AccessLab” through field research in selected study areas of Athens city. Infrastructures are recorded and evaluated according to accessibility standards. Ramps and sidewalks are grouped according to their accessibility status into three categories (accessible, tolerable and inaccessible). For the evaluation of sidewalks in particular, the specific parameters considered are width, incline and assessment by a wheelchair user. The digital map also illustrates information about accessible facilities providing municipal services, including town halls, sports facilities, citizen’s services and centres, etc. User involvement has a key role. Anyone can contribute by answering an online questionnaire to identify the opportunities and needs for people in wheelchairs moving in the city. The user can actively participate in shaping the urban environment and in decision-making processes, by providing recommendations on interventions in the urban environment to improve accessibility and also in ways to upgrade the platform's functionality.

On a larger scale, “**Developing a Strategy for Smart Cities and Implementation of a National Parking Management System**"[38] with a total budget of approximately 20 million euros, makes use of new technologies for managing 20,000 parking spaces in major urban cities, which is specifically anticipated to reduce “anti-social parking” including illegal parking over access points for disabled people. The developed system is based on a Geo-Location technology, which "guides" the driver to a free parking space via a smartphone and informs him about traffic regulations, weather and/or current activities in the Municipality. The same technology also notifies the municipal authority responsible for illegal parking to protect the parking spaces of residents and disabled people.

Initially, 1,000 sensors will be installed along the central roads of Athens which, through a mobile application (iOS and Android), will inform drivers about the availability of free parking spaces. After parking in a smart spot, drivers will be able to pay for their parking time through the existing “MyAthensPass” mobile app.

In addition, an integrated Smart City Platform for sensor support and management will be installed. The platform will provide the City Administration with a dashboard control centre that will display the overall picture of the parking lot in downtown Athens.

[37] https://webgis.accesslab.gr
[38] https://www.akep.gr/AkepFiles/ΩΗΕΜ465ΧΘ0-N47.pdf
https://www.akep.gr/AkepFiles/632Η465ΧΘ0-ΚΡΩ.pdf

The smart parking system includes among others specifications to safeguard the parking spots of residents and vulnerable users, such as people with reduced mobility.

Dedicated sensors will ensure the availability of parking spots for disabled people through an online platform that will enable the registration and prioritisation of specific user groups (permanent residents, persons with disabilities, beneficiaries of special invoices, etc.).

The overall excessive demand for parking creates quite extensive illegal parking conditions, especially at peak times, due to the inadequacy of free street parking and the lack of acceptable parking alternatives. Thus, one of the main objectives of this project is ensuring better control over antisocial parking in unauthorised areas such as on ramps and parking spots for people with disabilities. Through the use of a PDA application, the municipal police officer responsible for supervising the application of the system in a specific area will receive automatic information about illegal parking in their area of intervention only.

In the field of **civil protection**, an innovative application called "Safe AmeA" has been developed by the University of Partras (Department of Electrical and Computer Engineering) in cooperation with the Social Organisation of the Municipality of Patras. "Safe AmeA" is an online registration platform for People with Disabilities validated through Public Authorities, Clubs and Municipal Social Services[39]. This application aims to provide to Civil Protection Services, such as the Hellenic Fire Service, the National Emergency Centre, the Special Units for disasters and other competent authorities, the exact location of people with disabilities in cases of emergency or natural disasters. It is intended to inform the corresponding Authorities, of the existence of people with disabilities who need special treatment concerning their approach or transportation.[40]

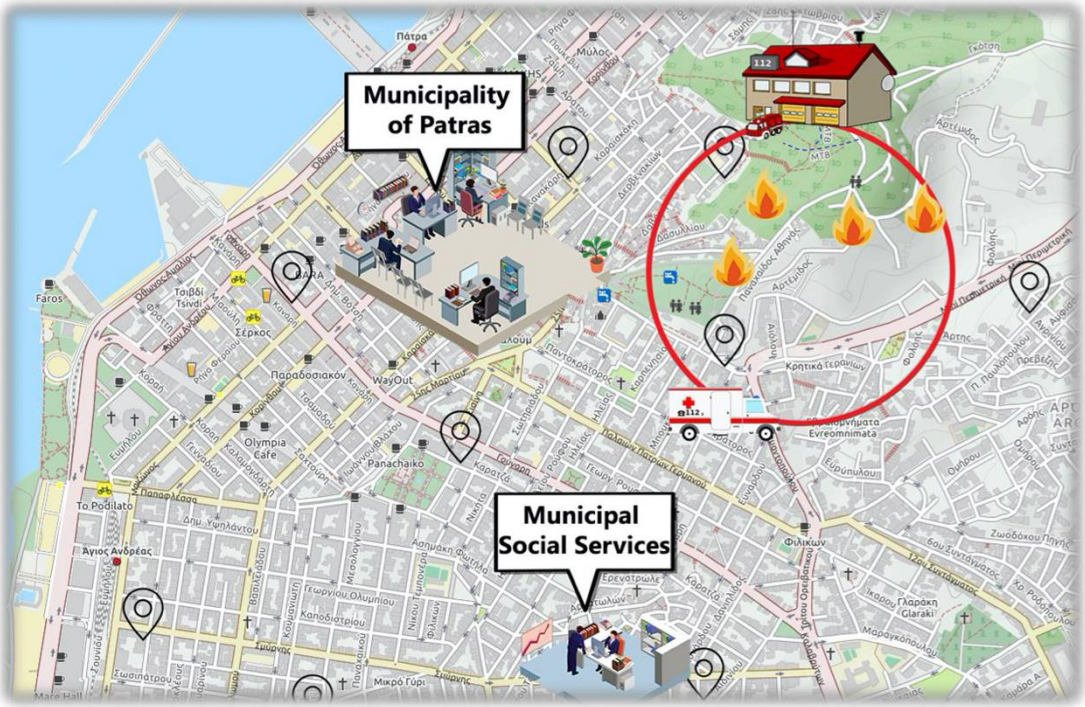
This record will constitute a useful tool for local communities for designing appropriate policies to improve the day-to-day living of People with Disabilities through the supervision of the geographical distribution of these individuals in the Municipality. (e.g. Accessible municipal public areas, public transport, etc.). "Safe AmeA" is addressed to three target groups:

- People with disabilities (or temporary difficulties)
- Clubs of people with disabilities and corresponding social structures
- Emergency services and civil protection

[39] http://patrastimes.gr/δυτική-ελλάδα/πάτρα-παρουσιάστηκαν-απο-τον-δήμο-οι-ε/; please note also information provided by the scientific coordinator of the project Prof. Spyros Denazis, Electrical & Computer Engineering Department, University of Patras

[40] The data is used by the authorities on an ad hoc basis, i.e. at the time of an emergency in order to locate disabled people in the municipality and arrange evacuation, assistance, etc. The data is only accessed by the authorities.

The main features of the application include among others: the creation of accounts for people with disabilities, the public authorities, the emergency services and the Municipality; periodic alerts prompting the update of the disability data and contact information for people with disabilities' assistants. It also provides a management environment for the registered members of authorities, for social services and the municipality, user roles (access rights).



8. Skill Development and Work Opportunities

Skill development in ICT is mostly promoted through mainstream vocational training programmes, funded by the European Structural and Investment Funds (ESIF) 2014-2020. Indicatively, the last call (October 2019) addressed 56 municipalities through the provision of training vouchers to staff placed in public work schemes[41]. In addition, there are ongoing vocational training programmes for disabled people run by the Public Employment Organisation (OAED), which include training in ICT for people with different types of impairment (please note blind people are trained separately in specialised premises)[42]. Interestingly, there was a recent announcement by the Minister of Education that it is in the government's plans to

[41] https://www.espa.gr/el/Pages/ProclamationsFS.aspx?item=4578
[42] https://agan.gov.gr/articlesview.php?id=2084

include new technologies in mainstream primary and secondary school education curricula[43].

With regard to engineers' training in disability issues it is worth noting finally that the revised disability rights framework (Law 4488/2017) specified that universities are responsible for including in their study programmes and seminars, training modules which relate to the rights of persons with disability according to the UN CRPD. The content and technical specifications of such programmes shall be defined by the respective Ministries in cooperation with the national Coordination Mechanism and Focal Point for the implementation of the UN CRPD (Law 4488/2017 Art. 66, para. 2)[44]. Please note the latter bodies have not been formed to date.

9. Cybersecurity and Safeguards against hate crime and abuse

As far as cybersecurity is concerned, of particular interest is the introduction of **Law 4577/18** (Government Gazette 199 A / 3-12-18) "Incorporation into Greek legislation of Directive 2016/1148 / EU of the European Parliament and Council on measures for a high common level of security of network and information systems across the Union and other provisions".

This Directive lays down measures with a view to achieving a high common level of security of network and information systems within the Union so as to improve the functioning of the internal market. To that end, this Directive:

(a) lays down obligations for all Member States to adopt a national strategy on the security of network and information systems;

(b) creates a Cooperation Group in order to support and facilitate strategic cooperation and the exchange of information among Member States and to develop trust and confidence amongst them;

(c) creates a computer security incident response teams network ('CSIRTs network') in order to contribute to the development of trust and confidence between Member States and to promote swift and effective operational cooperation;

(d) establishes security and notification requirements for operators of essential services and for digital service providers;

(e) lays down obligations for Member States to designate national competent authorities, single points of contact and CSIRTs with tasks related to the security of network and information systems.

Even before the introduction of the Law, having to cope with the obligations of the directive and to meet strict deadlines, Greece took some steps forward. With **the**

[43] https://www.alfavita.gr/ekpaideysi/ypoyrgeio-paideias/307561_n-kerameos-sto-programma-spoydon-oi-nees-tehnologies-diarkis

[44] Extract from the ANED DOTCOM database Greece H.5 https://www.disability-europe.net/dotcom

Presidential Decree of 82/2017 a National Cyber Security Authority (NCSA) was established along with the Single Point of Contact, both of which operate in the newly formed General Secretary of Digital Policy, Ministry of Digital Policy, Telecommunications and Media. Also, a National Cyber Security Strategy, which sets out the strategic objectives, priorities and appropriate policy and regulatory measures to ensure a high level of protection of digital systems at national level, was published in September of 2017. From late 2017, NCSA has been representing Greece in the Cooperation Group and the National CERT in the CSIRT network of the EU.[45]

The national strategy was issued as a **ministerial decision in 2018**[46] and set the following partial objectives:

1. Upgrading the level of prevention, evaluation, analysis and deterrence threats to the security of ICT systems and infrastructures.
2. Strengthening the capacity of public and private sector actors in prevention and response to cyber security incidents, in improving resilience and recoverability of ICT systems after cyberattacks.
3. Creating an effective framework for coordination and cooperation
4. Active participation of the country in international initiatives and actions
5. Raising awareness of all social actors and informing users for safe use of cyberspace.
6. Continuous adaptation of the national institutional framework to new technology requirements and the European guidelines
7. Promoting innovation, research and development on security
8. Utilising international best practices.

Legislation was followed by a Ministerial decision in October 2019 (**Ministerial Decision 1027**/8.10.2019. Issues of implementation and procedures of Law 4577/2018). The decision sets a Unified Security Policy, determines security measures, requires the designation of Information and Network Security Officers at certain organisations, and sets the criteria for “events that cause serious disruption for basic service providers”.

All the above refer to the issue of cybersecurity in general, focusing mostly on cyberattacks in essential service providers and not making specific mentions to disabled web users.

10. Conclusions

This scoping review has aimed to highlight gaps and opportunities in disability policy. It has also identified innovation frameworks in Greece currently, that aim to promote the development and use of new technologies to enhance social participation and

[45] Maglaras et al. (2018) NIS Directive: The case of Greece. Security and Safety 4(14) DOI:10.4108/eai.15-5-2018.154769

[46] https://www.enisa.europa.eu/topics/national-cyber-security-strategies/ncss-map/NCSSGR.pdf/

social inclusion for disabled people, focusing on people with deafblindness, in particular.

People with deafblindness are not recognised as a distinct eligible group with regard to disability provisions, which tend to be single impairment specific. Instead, people with deafblindness will access those services identifying as primarily as deaf or blind people. Importantly, existing disability provisions are limited to income maintenance (disability pensions/ welfare cash benefits), basic technical aids, and community-based rehabilitation services. Assistive technology, and/or accessibility solutions using new technology, are not funded by regular state health and welfare provisions, which negatively affects demand for them. The potential of new technologies to meet complex support needs for social participation and social inclusion is thereby missed.

On the other hand, there is opportunity to strengthen both demand and supply of new technologies by ensuring that public and private service providers comply with the revised national disability rights legal framework (Law 4488/2017). This involves designing and making available accessible common goods and services, with particular emphasis on access to digital information and communication technologies and mass media.

A range of projects/ research initiatives have been identified – albeit limited in number- using new technologies to address disabled user needs, building on existing accessibility legal frameworks particularly with regards to the physical environment, and/or digital content and services.

It is not clear however to what extent ethical issues with respect to disability equality, including personal data protection and cybersecurity, are comprehensively addressed by developers, and thus their current capacity to positively shape wider discourse, scientific knowledge and innovations in those respects is questionable. It is also understood that particularly research products tend not to directly translate into widely available applications, especially in a context of low supply of accessible new technologies in country.

Opportunities for diffusion are similarly limited and rather dispersed across the non-profit sector, including user led organisations/ groups, and Accessibility Labs in Higher Education Institutions. Where these exist, however, they consistently support access to information, equipment and applications, as well as opportunities for skills development on using new technologies among disabled people.

11. Recommendations

1. **Official Recognition, Data Collection and Needs Assessment:**

    1.1 Recognition of people with deafblindness as a distinct group with compound information and communication, and social protection needs in disability assessment procedures. Support relevant advocacy initiatives by representative/ grass roots organisations.

1.2 Disaggregate official administrative data (e.g. KEPA disability assessments, special and mainstream education, higher education institutions) as to number of people with both hearing and visual impairments.
1.3 Assess challenges in accessing education, employment/ vocational training and common goods and services in Greece currently.

2. **Strengthen supply and demand for new technologies addressing disabled user needs:**

2.1 Channel funding for assistive technology/ accessibility solutions through national disability assessment procedures and health provisions.
2.2 Channel funding for the provision of accessible goods and services (including smart applications), and reasonable adjustments, through European Structural Funds in both private and public sectors. This should be across fields such as employment/ vocational training, social protection, and education.
2.3 Establish national exhibition centres for new technologies (centralised and/or de-centralised).
2.4 Scale up digital/ ICT skills training, targeting disabled people, including use of smart applications and assistive technology.

3. **Mainstream disability equality in Research and Innovation Strategies, Data Protection and Cybersecurity:**

3.1 Steer Research and Innovation state budget into smart applications promoting social participation and social inclusion, actively involving users in design and evaluation of technological products.
3.2 Ensure a strong ethical framework with emphasis on non-discrimination/ universal design, privacy and safe use of online applications.