

LINA GULBINĖ

Information Accessibility for Persons with Disabilities in Lithuania: Regulation, Monitoring and Economic Aspects

The author analyses information accessibility for persons with disabilities in three scopes: Lithuanian legislation on information accessibility, the main criteria for monitoring information accessibility in Lithuania, and the economic value of information accessibility for Lithuanian citizens with reduced mobility and business.

LINA GULBINĖ

ORCID 0009-0004-4831-2107 / e-mail: lina.gulbine@ndt.lt

KEYWORDS: information accessibility, persons with disabilities, Lithuania, access to information

1 | International regulation

In 2010 The Republic of Lithuania ratified the United Nations Convention on the Rights of Persons with Disabilities (hereinafter – Convention). The purpose of the Convention is to promote, protect, and ensure the full and equal use of all human rights and fundamental freedoms by all persons with disabilities, as well as to promote respect for the inherent dignity of these persons. Article 4(1)(a) of the Convention stipulates that states must take all legislative, administrative, and other measures to implement the rights set forth. According to the provisions of Article 21 of the Convention, the states that have ratified the Convention, as well as the Republic of Lithuania, take all appropriate measures to ensure that persons with disabilities can enjoy freedom of expression, including the freedom to seek, receive, and disseminate information and ideas on an equal basis with other persons, by using all selected means of communication defined in Article 2 of the Convention.

The Convention is the main international document establishing and justifying the necessity of information accessibility, and the Directive (EU) 2016/2102 of the European Parliament and of the Council of October 26, 2016, on the accessibility of websites and mobile applications of public sector bodies (hereinafter – E-Accessibility directive) provides specific obligations regarding the accessibility of websites and mobile applications. The level of accessibility of the digital space is very diverse in the EU countries. Countries are guided by different standards. Therefore, the purpose of the E-Accessibility Directive is to harmonize the laws of the member states, and thus ensure at least a minimum level of accessibility of websites and mobile apps of public sector institutions. The E-Accessibility Directive obliges member states to comply with a uniform accessibility standard, ensure a monitoring mechanism, and educate the public about the benefits and necessity of accessibility.

Disability Strategy 2010–2020 aims to achieve equality, dignity, and equal opportunities for persons with disabilities in specific areas to which the Council of Europe can contribute. The purpose of the strategy is to guide and support the activities and measures aimed at implementing the Convention and carried out by the Council of Europe, its member states, and other stakeholders at both national and local levels. According to the 2017–2023 Council of Europe strategy, one of the most important priority areas in which the Council of Europe will operate will provide added value

to work in other regional and international contexts, accessibility, the most important component of which is access to information.

The Council of Europe, in its 2017–2023 disability strategy, asserts that different opportunities for individuals to receive and disseminate information and use information and communication technologies are knowledge gaps that lead to inequality. Accessibility can help close knowledge as a tool to promote media and information literacy, inclusion, and participation, and ultimately enable the enjoyment of other human rights. Human rights cannot be realized without information and opportunities to use them. For this reason, institutions of the Council of Europe, Member States and other relevant stakeholders must aim to promote the use of accessible and user-friendly means, methods, and forms of communication, including sign language, Braille, plain text, and other alternative and enhanced communication methods, throughout Europe. It is important to support the provision of information to persons with disabilities, to support their learning opportunities and safeguards through accessible means, methods, and forms of communication in Council communications, media reports, and online services, as well as at national and local levels, including parliaments, local and regional authorities, and private sector stakeholders, to use new information and communication technologies (ICT) safely and responsibly and to avoid their harmful side effects. Such side effects include, but are not limited to, cyberbullying, fraud, and sexual abuse or exploitation through social networking sites, especially against children with disabilities.

2021 International Telecommunications Union (a subsidiary organization of the United Nations) prepared a report on the ICT accessibility assessment for the European region^[1], in which all European Union members, as well as the Republic of Lithuania, are encouraged to set strategic goals for increasing the accessibility of information for people with disabilities and to create a mechanism for the organization and provision of accessible information for persons with disabilities and to regulate accessible information for persons with disabilities disability organization since the availability of information is one of the conditions for ensuring the independence, equality and dignified life of people with disabilities.

¹ https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Documents/Events/2020/AE20/event/D-PHCB-ICT_ACCESS_EUR.01-2021-PDF-E.pdf.

2 | National regulation

On November 28, 1991, the Law of the Republic of Lithuania on the Social Integration of the Disabled (hereinafter referred to as the Law) was adopted. According to Article 5, Part 1 of the Law, the system of social integration of persons with disabilities consists of the provision of medical, professional and social rehabilitation services, satisfaction of special needs with special assistance measures, supported employment for persons with disabilities, provision of social support, State Social Insurance Fund pensions and allocation and payment of benefits, allocation and payment of Mandatory Health Insurance Fund benefits, provision of educational services, ensuring equal opportunities to participate in culture, sports and other areas of public life.

The third article of the Law outlines the main principles of social integration of the disabled, at least two of which are directly related to the availability of information, i.e. the principle of equal opportunities, which states that „disabled people, like other members of society, are given the same opportunities for education, work, leisure time, participation in public, political and community life”, and the principle of accessibility, which states that „persons with disabilities are provided with conditions for activities in all areas of life and are provided with access to resources”^[2].

On January 11, 2000, the Law of the Republic of Lithuania on the Right to Receive Information from State and Municipal Institutions and Bodies^[3] was adopted. Article 5 states that „Information about the institution’s activities is public and is published on the institution’s website, as well as in a mobile application, if the institution has one, following the procedure established by the Government of the Republic of Lithuania. The institution’s website and mobile application must comply with the accessibility requirements established by the Government, except for the cases established by the Government when there are no automated or efficient and

² Law of the Republic of Lithuania on Social Integration of the Disabled (1991). <https://www.e-tar.lt/portal/lt/legalAct/TAR.199156E4E004/OzxwpqisAN>.

³ Law of the Republic of Lithuania on the right to receive information from state and municipal institutions and bodies (2000). <https://www.e-tar.lt/portal/lt/legalAct/TAR.FA13E28615F6/QwcywkrpeY>. It is important to mention that the Law of the Republic of Lithuania on the Right to Receive Information from State and Municipal Institutions and Bodies No. VIII-1524 Law on Amendment of Articles 1, 2, 3, 5, 6, 7, 12, 22 and Appendix of 2018 October 25 No. XIII-1590.

easily implemented ways to ensure access to certain information or when the institution does not control the content or accessibility requirements of websites and mobile applications, compliance with the requirements for accessibility of websites and mobile applications will result in the institution disproportionate burden". Article 6 stipulates that applicants must be assisted in exercising the right to receive documents. Accessibility is named as one of the principles of providing documents, which means that „favourable conditions must be created for applicants to use documents regardless of their activity goals and legal form, and if necessary, only the most necessary legal, technical and/or financial conditions for providing documents to applicants are established”.

On June 7, 2002 Resolution of the Government of the Republic of Lithuania No. 850 „On the approval of the National Program for Social Integration of People with Disabilities 2003–2012”^[4] (prolonged until 2015) and November 21, 2012 Resolution of the Government of the Republic of Lithuania No. 1408 „On the approval of the National Program for Social Integration of People with Disabilities 2013–2019”^[5], (prolonged until 2020). In both programs mentioned above, accessibility was considered as adaptation of the physical and informational) environment for people with disabilities. Action plan for deaf persons and persons with hearing impairment 2018–2020 was implemented in the framework of this National Program. It was aimed to ensure information accessibility for deaf persons and persons with hearing impairments.

On July 11, 2006, Law on Amendments to the Public Information Law of the Republic of Lithuania was adopted^[6]. Article 34 of this Law stipulates that public information is prepared and distributed in the state or other language according to this and the Law on the State Language and the resolutions of the State Lithuanian Language Commission. The information distributed must be accessible to people with disabilities.

⁴ Resolution of the Government of the Republic of Lithuania No. 850 „On the approval of the National Program for Social Integration of People with Disabilities 2003–2012” (2002). <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.168312>.

⁵ Resolution of the Government of the Republic of Lithuania No. 1408 „On the approval of the National Program for Social Integration of People with Disabilities 2013–2019” (2012). <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.437985>.

⁶ Law on Amendments to the Public Information Law of the Republic of Lithuania (2006). <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.280580>.

It is important to mention that on October 11, 2018, a proposal for changes to the Lithuanian National Radio and Television Law No. I-1571^[7] was registered in the Seimas (i.e., Lithuanian Parliament). By this proposal, Article 5 obliges that the TV programs broadcast by Lithuanian radio and television should be:

1. to be shown with Lithuanian subtitles – at least 50 % of the total broadcast time;
2. to be translated into Lithuanian sign language – at least 20 % of the total broadcasting time;
3. to be adapted to visually impaired persons – at least 10 % of the total broadcasting time.

The Seimas of the Republic of Lithuania approved the amendments to the law. The legal act was adopted on March 21, 2019 (Law No. XIII-2008 of the Republic of Lithuania amending Article 5 of the Law of the National Radio and Television of Lithuania No. I-1571) and entered into force from January 1, 2020.

According to data from the Lithuanian National Radio and Television, in 2019, the ratio between the broadcast time of subtitled TV programs and films shown on LRT programs and the total broadcast time was 9.67%. Therefore, not even one-fifth of the planned ratio according to the law of the Lithuanian National Radio and Television was reached (at least 50% of the total monthly broadcast time). In 2019, 721 hours of television information and other programs were translated into sign language. The ratio to the total broadcast time is 4.12 % (must be at least 20 % of the total monthly broadcast time). According to the Lithuanian National Radio and Television Law, the monthly volume of the broadcast of programs with Lithuanian subtitles, compared to the monthly volume of the LRT television programs with Lithuanian subtitles in 2019, must be increased by at least 5 % of the total broadcast time every year. For programs translated into sign language, the broadcasting volume must be increased every year by at least 1 % of the total broadcasting time. In this way, the volumes set in Lithuania's Law of the National Radio and Television should be reached, respectively, in 205 and 2178 years.

⁷ Law of the Republic of Lithuania on Lithuanian National Radio and Television (1996). <https://e-seimas.lrs.lt/portal/legalActEditions/lt/TAD/TAIS.31934>.

On May 23, 2013 the order of the Director of the Information Society Development Committee under the Ministry of Transport „Regarding the Amendments of the Order No T-40” On Approval of Methodological Recommendations for the Development, Testing and Evaluation of Websites Adapted to the Disabled „was issued by the Director of the Information Society Development Committee under the Government of the Republic of Lithuania on March 31, 2004”^[8] and changed Methodological Recommendations for the Development, Testing and Evaluation of Websites Adapted to the Disabled (hereinafter – the Order). This Order confirms the recommendations, which determine how disabled-friendly websites of state and municipal institutions and bodies should be developed, tested, and evaluated. The methodology is also approved, which determines how it is appropriate to evaluate the websites of already created and operating state and municipal institutions and bodies and determine their compliance with the Web Content Accessibility Guidelines 2.0 prepared by the W3 consortium.

In 2019, the Braille application standard „Accessible Design. The use of Braille on signs, equipment, and devices (ISO 17049:2013)” and its national supplement „The use of Braille in Lithuania” (signs written in literary Braille, mathematics, physics, chemistry, computer Braille, musical Braille, chess, and checkers Braille) was adopted. However, public information producers publishing publications and public information in Braille do not implement the provisions of the above-mentioned standard, and no institution responsible for supervising the implementation of the standard has been appointed^[9].

A developmental program for developing an environment suitable for disabled people in all areas of life^[10] was adopted in 2021. According to this program, three means for progress were developed and adopted: physical

⁸ The order of the Director of the Information Society Development Committee under the Ministry of Transport Regarding the Amendments of the Order No T-40 „On Approval of Methodological Recommendations for the Development, Testing and Evaluation of Websites Adapted to the Disabled” issued by the Director of the Information Society Development Committee under the Government of the Republic of Lithuania in 31st of March 2004 (2013). <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.450397>.

⁹ Lithuanian Library for Blind People. Major Braille Publishers Call for the Highest Quality Standards (2021). <https://www.labiblioteka.lt/naujienos/didziausi-leidejai-brailio-rastu-ragina-laikytiis-auksciausiu-kokybes-standartu/605>.

¹⁰ Developmental program for the development of an environment suitable for disabled people in all areas of life (2021).

environment accessibility, informational environment accessibility and accessibility of products and services. These means of progress aim to raise awareness in society, provide training for stakeholders, and establish a Knowledge Center with a poll of experts in the specific field.

In summary, accessibility can be said to be established in the country by legal acts. Any legal act does not describe an information provision in easy-to-read language. Obligations to provide information in an accessible manner are understood as information provision for visually and hearing-impaired persons. However, no legal act sets certain restrictions if the state institution or body does not comply with the provisions of those legal acts. Therefore, the accessibility of information in the country is still treated very negligently and we do not pay adequate attention to it.

3 | **Monitoring of information accessibility for persons with disabilities**

It should be mentioned that the Information Society Development Committee of the Ministry of Economic and Innovation of the Republic of Lithuania annually evaluates the compliance of the websites of state and municipal institutions and institutions with the general requirements, which also includes the accessibility criteria for the disabled. On its basis, it is assessed whether the Institution's website is adapted for use by the disabled, in accordance with the methodological recommendations for the development, testing and evaluation of the websites of state and municipal institutions and institutions adapted for the disabled, approved on March 31, 2004, by the Information Society Development Committee under the Director of the Ministry of Communications by order No. T-40. „On The Approval of Methodological Recommendations for the Development, Testing and Evaluation of Websites of State and Municipal Institutions and Bodies Accessible for the Disabled” (hereinafter referred to as the Description).

The Department annually collects information on various criteria for the implementation of the Convention. The criteria for information accessibility are:

- Number and ratio of websites in the public sector accessible to persons with disabilities.
- Sign language interpretation services for persons with disabilities.
- The broadcast time of subtitled television programs, movies, and the ratio of all the broadcasting time.
- Broadcast time of signed TV programs and films and ratio from all the broadcasting time.
- Broadcast time with audiovisual dubbing and ratio from all broadcast time.
- Informational articles provided on easy-to-read public sector websites and ratio of all articles on public websites.
- Movies and performances with audiovisual dubbing and % from all.

The information has been collected from 2017, so it allowed us to say that accessibility for deaf persons or persons with hearing impairments slowly increases in some areas, which could not be said about the accessibility of web pages and mobile applications. Whereas only three governmental and Presidency pages provide information that is easy to read, and one performance per year is provided for blind persons with audiovisual dubbing.

The results of the three-year research on the compliance of the websites of state and municipal institutions and bodies with the general requirements conducted by the Information Society Development Committee show that accessibility of websites in the country also decreased in 2019. They accounted for only 3.4 %. (Corresponded to AA level^[11]) (Table 1). In 2017–2019, there were only six websites were rated accessible throughout this period. In 2019, 2.2 % of the websites of government management institutions that publish information on their activities on the „My Government” portal were adapted for persons with disabilities.

¹¹ The set minimum contrast ratio is maintained, and the content continues to adjust when the screen orientation changes is rendered correctly, subtitles are synchronously displayed for live audio broadcasts, etc.

Table 1. Accessibility of websites of institutions and bodies evaluated in the public sector (corresponding to AA level)

	2017	2018	2019
The number of websites evaluated	1385	1098	1248
The number of accessible websites	68	38	42
Share of accessible websites (%)	5	3,5	3,4
Testing equipment	„Sort site by PowerMapper Software Version 3.03”, „Vamola a Checker validator Version 2.0”, „Checker by Inclusive Design Research Centre”	Vamola Validator	Vamola Validator

Source: Information Society Development Committee

4 | Evaluation of compliance with the General Requirements of the Websites of State and Municipal Institutions and Bodies 2018

For the evaluation in 2018, a list of 1098 institutions' websites, which are subject to the requirements of the Description, was compiled. During the analysis, it was found that the institutions met the requirements of the general provisions by up to 84 % (for comparison, in 2017 - 75.6%). When assessing accessibility for the disabled, the labelling of institutions' websites was checked. All addresses on the research list were also scanned by the Vamola Validator tool, which automatically determines whether the institution's website meets the requirements for disabled people. Although the percentage of compliance of all websites included in the evaluation with the requirements of the general provisions is quite high, a completely different situation emerged when the same websites were evaluated with respect to accessibility. Only 62 websites were found to meet the A requirement and only 38 institutions met the A requirement. This means that most websites are not accessible to people with disabilities, and only a small proportion meet the lowest (A) or average (AA) level of

accessibility. In the publication „Internet for all: a guide to preparing accessible digital information”, it is stated that these results of the evaluation carried out annually by the Information Society Development Committee under the Ministry of Communications of the Republic of Lithuania (now the Committee acts under the Ministry of Economic and Innovations of the Republic of Lithuania) do not reveal the real situation „because the testing is automatic, users are not included in the study” evaluated sites that were reported as compliant with target groups and turned out to be inaccessible to people with disabilities.

To determine the real situation of the accessibility of Lithuanian public sector websites for persons with disabilities, it was decided to conduct a separate study. A list of state and municipal institutions and bodies (hereinafter – Institutions) was compiled for this purpose. The institution’s web pages for accessibility analysis were selected according to the information provided on the contact and useful information website of state institutions of the Republic of Lithuania (see <http://www.lrvalstybe.lt>). A total of 80 websites of state and municipal institutions and bodies were evaluated. Institution’s websites were primarily evaluated by direct observation, that is, by reviewing the accessibility labelling of the Institution’s website for persons with disabilities. All website addresses were scanned using the Web Accessibility website accessibility testing tool, which automatically determines whether the Institution’s website meets accessibility requirements for the disabled. This tool was chosen under the 23 May 2013 guidance of the Information Society Development Committee under the Director of the Ministry of Transport in order No. T-72 On March 31, 2004, order No. T-40 of Information Society Development Committee under the Director of the Government of the Republic of Lithuania „Approval of Methodological Recommendations for Developing, Testing, and Evaluating Websites Adapted to the Disabled” – link provided in the amendment – www.w3.org/WAI/ER/tools. The Web Accessibility tool of choice is available at <https://www.webaccessibility.com/test>.

The results of the study showed that out of all 80 evaluated websites, only four (that is the Chancellery of the President of the Republic of Lithuania, Seimas of the Republic of Lithuania, Kaunas City Municipality and Šiauliai District Municipality) did not indicate any mistakes in accessibility of the website for the disabled. Most of the sites checked had a tag indicating an alternate version of the site. However, it should be noted that the labelling for disabled people was very different. In total, 16 different ways of labelling accessibility for the disabled have been identified. The most

common web accessibility marks were verbal (e.g. „disabled version” (22 cases), „disabled” (12 cases)) or symbolic (e.g. wheelchair icon (14 cases), glasses icon (9 cases)). It should be noted that many of the symbolic signs were orientated toward the visually impaired (e.g. glasses, a person with glasses, combinations of letters and words), and no sign reflecting the hearing disability was indicated on any of the websites. Since most web pages use markup to select different languages, such as English, Russian and others, and no Lithuanian Sign Language, which since May 4, 1995, by the resolution of the Government of the Republic of Lithuania No. 630 „Regarding the recognition of deaf sign language as a native language” is officially recognized as the native language of the deaf of the Republic of Lithuania. The Lithuanian Society of Deaf Persons suggests using a symbol of two hands, meaning sign language, for translation into Lithuanian Sign Language, and this label should be placed next to the signs of other languages. Such labelling is already used on the website of the Kaunas Artists’ House (see <http://kmmn.lt>).

It should also be noted that the marking of the sites evaluated in the analysis differed in the location and size of the mark. Although most sites placed their markup in the right corner of the site window, some placed the link in the centre or left side of the site. Such unequal positioning of markings makes it difficult for a disabled person to navigate the website, making it difficult to search for information or determine where it is located on the website. In addition, cases of labelling with extremely small sizes and insufficient contrast due to inappropriate colour selection have also been observed. One link to an accessible website version was found by selecting the other subsection in the website’s main menu topic list. This disparate and confusing labelling of website accessibility makes it difficult to access the necessary information by forcing a visitor with disabilities to search through separate links for information that would be accessed much more quickly and efficiently with a proper layout. It should be noted that the Order draws attention to uniform identification and states that „components that have the same functionality as other web pages of the website are identified in the same way”. The websites of state institutions and bodies (11 cases) used an analogous format for designing and managing web pages, so they had the same marking. On the contrary, the websites of municipal institutions and bodies were different, so the marking of the accessibility of information for the disabled was more varied. However, consistent and uniform markup in the same place would optimise website management and make access to information for people with disabilities more effective.

In the next stage of the analysis, using the Web Accessibility automatic website accessibility testing tool, the compliance of all 80 institutions' websites with ITTPR 2.0 was scanned and the following data were obtained: The compliance of the websites of state institutions and bodies is on average 78.1%, the websites of municipal institutions and institutions 76.15%, and the overall match for all sites is an average of 76.63%. Although these percentages are high, they only partially reflect the real accessibility of the websites of the institutions mentioned. On the one hand, this test covers only general information accessibility requirements without distinguishing the needs of the specific disability groups. On the other hand, the testing results may also be conditioned by the varying amount of digital content provided on the websites (for example, only one article was placed on some websites).

In the previously mentioned „Internet for all: the manual for the preparation of accessible digital information”, the automatic evaluation of websites was criticized when the opinion of users of target groups was not taken into account, and the Order also indicates that „the inclusion of disabled people in the evaluation procedure can help identify those aspects of website accessibility that the evaluator cannot notice”. Therefore, it was decided to use a target group of users with hearing disabilities to evaluate part of the automatically checked.

After the target group checked the accessibility of part of the content of the Institutions' websites for the deaf and hard of hearing, it became clear that the adaptability for these groups of users is rather weak: although the websites indicate an alternative version for the disabled, the textual information provided in them is more adapted for the visually impaired, i.e. the option to choose the font size, contrast strength, or text format that could be read to the user by an electronic text reader. However, none of the websites contained information presented to hearing-impaired users in Lithuanian sign language. It is important to note that people with hearing impairment face difficulties when they need to understand complex textual information. Understanding this information would be facilitated by a text presented in simple and uncomplicated syntactic constructions without elaborate expressions or complex terms. In other words, the third principle of comprehensibility specified in the guidelines for the accessibility of the content of Internet web pages must be followed, which states that the information presented on the web pages and the use of the user interface must be understandable. The European standards that can be used to present information in an easy-to-read and understandable manner can be found on this page: <https://easy-to-read.eu/lt/europeanstandards/>

Equally important is the principle of perception, according to which information should be presented to users in ways they perceive, and the presentation method most understood by users with hearing impairment is the Lithuanian sign language. It has statutory mother tongue status for deaf and hard-of-hearing people, for whom it is the primary language of communication. Therefore, a text presented in Lithuanian is equivalent to information presented in a foreign language, which requires quite a lot of effort. Since presenting all the information on the websites in Lithuanian sign language would be difficult, members of the target group expressed their needs. They submitted recommendations to translate only the most important, unchanging information into sign language: introduce the content of the website by presenting the main website menu or website structure in sign language, and thus provide instructions on how to navigate the website; translate information related to the priority areas of persons with disabilities, which are specified in the aforementioned UN Convention; translate important announcements, invitations to events, and frequently asked questions area. An excellent example of presenting information in sign language is available on the Kaunas Artists' House website. To translate the information on the website into Lithuanian sign language, you should contact the Lithuanian Sign Language Translation Center. It is also important to use a conventional sign for information presented in sign language to deaf and hard-of-hearing. An example of such labelling can be seen on the Kaunas Artists' House website. The focus group members stated that understanding the media or the soundtrack was the cause of the difficulty. The sites that were analyzed did not provide any media or soundtrack alternatives and did not provide clear captions describing the video. The target group recommended accurately naming media or audio track titles and providing audio information on the website with subtitles for the deaf and hard of hearing (hereinafter skn) or transcripts of dialogues. The focus group emphasized the software's functionality and the skn's quality. According to them, increasing the screen size in video players is often impossible, making it difficult to read skn. A proposal was made to use the YouTube platform for video material. It has also been observed that the video audio track plays automatically, which disturbs the hearing-impaired user. It is desirable to give the user the ability to turn on, reduce, or turn off the sound of the video content. Meanwhile, skn should be presented in accordance with text compression, synchronization, and positioning requirements. The focus group emphasized that the skn should include not only dialogues

but also music and significant background sounds; they should indicate the speakers or the language of different speakers should be clearly distinguished by colours, and the colour of the SKN should not blend with the background colours of the video material, the font size should be readable. A good example of SKN can be found in the video reports provided on the Vilnius University website.

5 | Report of Monitoring on the websites and mobile applications of Lithuanian public sector accessibility 2021

In 2021, the Monitoring of the public sector websites was implemented by the Information Society Development Committee under the Ministry of Economic and Innovation of the Republic of Lithuania (hereinafter – IVPK). The Monitoring report provides detailed information on the October 26, 2016 European Parliament and methods and their correlation with the standards referred to in Article 6 of Directive (EU) 2016/2102 and accessibility of websites and mobile applications. The prepared document defines the ongoing websites and mobile applications (hereinafter referred to as institutions or public sector institutions).

The sample size of the websites to be evaluated during the specified observation period was calculated according to Annex I 2.1 of the Commission Implementing Decision (EU) 2018/1524 point, considering the number of the country's population, which, based on the data provided by the Lithuanian Statistics Department in 2021. According to the data, there were 2,783,4631 inhabitants in 2021. By dividing the country's population to 2,800,000 inhabitants, a total of 148 were evaluated. One hundred and thirty-one websites were evaluated using a simplified monitoring method, and 17 websites/electronic service portals were evaluated using a comprehensive monitoring method. The sample size of websites is more than 13% and complies with the Commission's implementation decision (EU) 2018/1524 for setting a minimum monitoring sample.

A sampling of websites. It aimed at diverse, representative, and geographically balanced websites during the selection of the sample of websites. A sample of websites included different levels of administrative structures in the country. In the selection of the sample, defined websites

of priority groups, related to various services provided by public sector institutions of the country, in particular: social security, healthcare, transport, education, employment and taxation, environment, security, recreation and culture, housing and communal amenities, public order and security, and other websites of relevant services were included. The websites of priority groups were evaluated the majority, i.e. they made up 62 % of the entire selected evaluation sample.

Figure 1. Distribution of the research sample according to priority groups

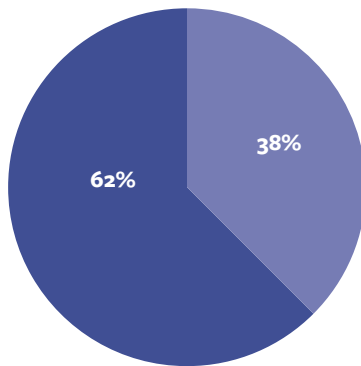
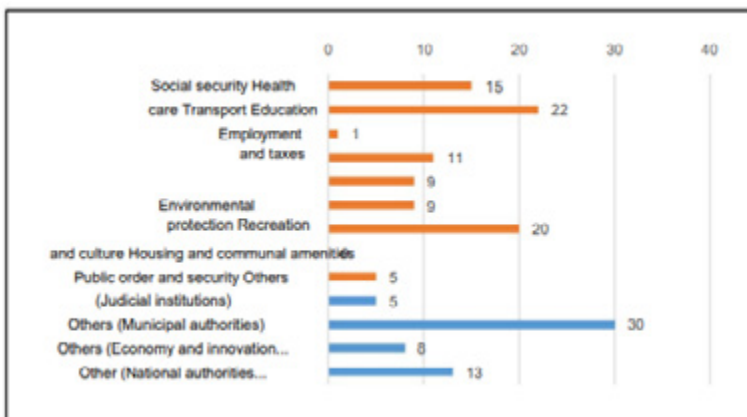


Figure 2. Distribution of the sample according to the areas of services provided by the institutions



A sampling of mobile applications. The mobile application sampling was designed to be diverse and representative. The selection of mobile applications to be evaluated was carried out by expert selection, and priority was given to the most popular of them, considering the purpose of the programs and the services provided. The selection of mobile applications also considered their different operating systems. The scope of the evaluation evaluated ten mobile applications for Android software and eight mobile applications for iOS software.

The simplified monitoring method was used to determine the non-compliance of websites with the Recommendations for the internet web page content accessibility (hereinafter – ITTPR 2.1) cases. Evaluation using the simplified monitoring method was carried out using and combining automated tools recommended by the W3C Web Accessibility Initiative:

- ARC Toolkit plugin for Chrome;
- Chrome plugin and/or Wave web service <https://wave.webaim.org/>;
- Colour Contrast Analyzer (CCA).

In the scope of the study, 131 subjects were evaluated using the method of simplified monitoring of the sampled website. Deficiencies in accessibility assessment were identified on 128 websites and no deficiencies were found on three websites. During the second evaluation stage, only those websites that informed that after the first phase of the study until the first term of October 2021, corrected identified deficiencies on websites were monitored repeatedly, i.e. 57 websites. Other websites were not repeatedly evaluated because they informed us that the work to ensure accessibility would take longer than the first monitoring period.

After summarizing the results obtained from the first stage of the research, on average, almost half of all websites had identified deficiencies as warnings. These discrepancies should be removed to conform to WCAG-EM good practice but are not critical. A third of the flaws consist of contrast errors: insufficient contrast ratio of text, buttons, links, headings, and other graphical user interface elements, and main and background colour is used. These errors must be removed because they affect the accessibility of websites and their content.

Figure 3. Structure of errors detected by automatic assessment tools

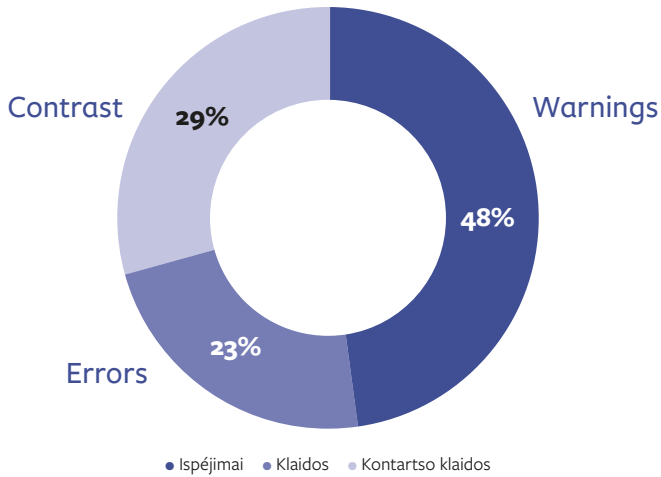
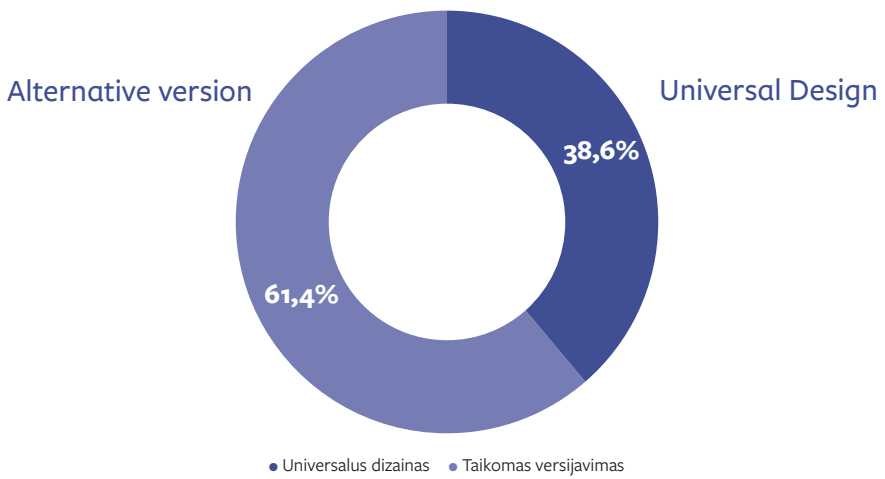


Figure 4. The way websites and content are customized

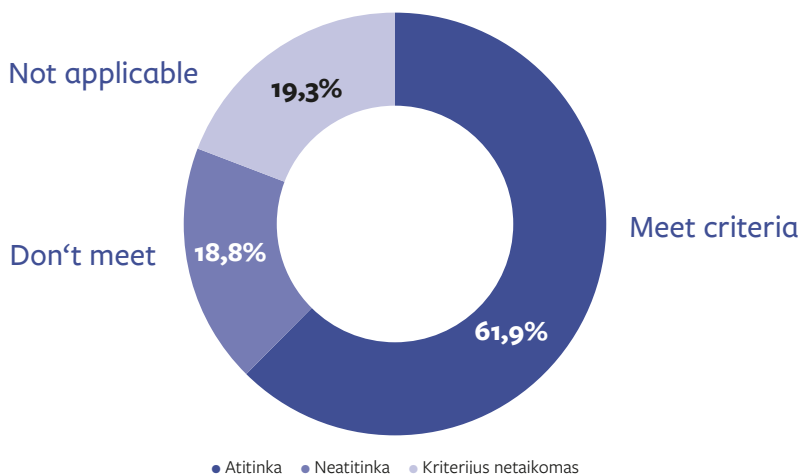


The Comprehensive monitoring approach applied to websites included the following stages: web definition of the scope of the website, analysis of the website, determination of the sample to be checked, selected sample testing and preparation of a report of evaluation findings. The detailed monitoring method was used to verify that the website meets all the requirements of the ITTPR 2.1 assessment criteria.

In the scope of the study carried out using the detailed monitoring method, 17 electronic service portals included in the research sample were evaluated. It should be noted that the detailed evaluation was used for the most important public portals for administrative electronic services. During the first round of evaluation, all portals were evaluated and had deficiencies in accessibility requirements. Only three portals were informed about correcting inconsistencies for reassessing during the second evaluation stage by the set deadline – October 1, 2021.

The aggregated data collected by the detailed monitoring evaluation method reveal that sites typically meet more than half of the ITTPR 2.1 success criteria, and less than a quarter of them are dissatisfied.

Figure 5. ITTPR 2.1 Compliance with success criteria



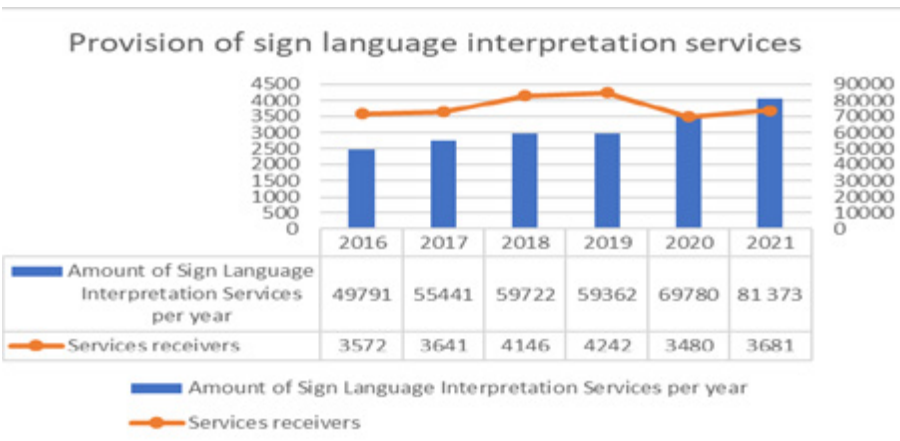
Although the monitoring methodology has been changed, it could be stated that the situation of internet accessibility is improving compared to the situation in 2018.

The Department of Persons with Disabilities Affairs under the Ministry of Social Security and Labour of The Republic of Lithuania (hereinafter – the Department) is responsible for the participation in the monitoring process of the United Nations Convention on the Rights of Persons with Disabilities (hereinafter – the Convention). The Department collects annual data for each Convention article, including data on information accessibility.

6 | Accessibility of information for deaf persons and persons with hearing impairments

Sign language interpretation services are free of charge and are provided by the governmental institution Lithuanian Sign Language Interpretation Center. From 2016 to 2021^[12], you can see that the COVID-19 pandemic significantly impacted sign language interpretation services because the main part of the interpretation services (76 %)^[13] was provided remotely by ICT technologies.

Figure 6. Provision of sign language interpretation services 2016–2021



¹² The Department of the Affairs of Persons with Disabilities under the Ministry of Social Security and Labour of The Republic of Lithuania, Report of the Convention of the Rights of Persons with Disabilities, 2021. <https://www.ndt.lt/wp-content/uploads/zTSI-Stebesenos-Ataskaita-9.pdf>.

¹³ The Department of the Affairs of Persons with Disabilities under the Ministry of Social Security and Labour of The Republic of Lithuania, Activity Report 2021. https://www.ndt.lt/wp-content/uploads/2021_NRD_veiklos_ataskaita_tikslinta.pdf.

Table 2. Broadcast time (in hours) of subtitled television programs and films shown on Lithuanian national radio and television programs

	2018	2019	2020	2021
Broadcast time of subtitled television programs, films	1210	1695	1816	610,1
Percent of all the time.	6,9	10,49	10,33	9,63
Broadcast time of signed tv programs and films			786	503,5
Percent of all the time.			4,8	7,95
Broadcast time with audiovisual dubbing		24	51	25
Percent of all the time.		0,15	0,29	0,39

The Pandemic increased the supply of sign language interpretation, whereas the time of subtitled programs and films decreased.

7 | Accessibility of information for persons with intellectual disability or cognitive disorders

In particular, Lithuania has no legal definitions regarding the provision of information in the „easy-to-read” language, which is particularly necessary for persons with intellectual disabilities.

Although there are requirements (in the Code of Criminal Procedure, the Law on Patients’ Rights and Compensation for Health Damages) regarding the understandable presentation of information, the opportunity to exercise freedom of expression, and freedom to express their opinions, including the freedom to seek, receive, and impart information and ideas on an equal basis with other persons with all selected means of communication defined in Article 2 of the Convention. Persons with intellectual disabilities cannot use legal information due to the lack of adapted content and publications in an easily readable language.

This year (2022), the Ministry of Social Security and Labour of The Republic of Lithuania submitted a new version of the Law of Social Integration of Persons with Disabilities (called – Law on Protection of Rights of Persons with Disabilities) to the Lithuanian Parliament for consideration and adoption. The new law stipulates the obligation for state and municipal institutions to provide information to persons with disabilities in formats accessible to them and will enter into force in 2024. Bylaws are

being prepared to ensure information availability and approve the methodology for preparing information in an easy-to-understand language.

8 | The economic value of information accessibility

Sociologists note that people with disabilities experience the greatest digital divide, undermining their opportunities to engage in public life and the labour market, pursue education and participate in public management processes^[14]. Public broadcaster subtitles or translates shows and films into sign language, but since Lithuanian sign language is recognized as the native language of the deaf, adaptation for the hearing impaired is low (17.58% of total broadcast time), especially compared to other countries (New Zealand – 98%, Republic of Latvia – 25%, Republic of Poland – 50%). The only theatre in the Republic of Lithuania with the necessary audio commentary equipment is the Kaunas National Drama Theatre (in 2018, during the preparation of the seventh performance with audio commentary in the same theatre, the demand had increased to 450 people with visual disabilities. Thus, one performance was no longer enough and is being shown twice). According to the research, more than 65% of disabled people want to go to the movies because they want to spend their free time with friends or family members (65.2%), want to participate in society (33%), and are interested in professional art (20.7%). However, even 33% of respondents say that they do not visit cinemas as often as they would like due to the inaccessibility of films^[15].

Rapid and continuous changes in the information technology and communication sectors are changing the way people interact, do business, use goods, services, and information, and communicate in general, so it is vital that all people benefit from technological advances and that no one is left behind, including individuals with complex disability and individual needs. Currently, many disabled people still have practically no access

¹⁴ Jolita Viluckienė, „Negalią turinčių IT vartotojų skaitmeninė atskirtis kaip socialinės nelygybės forma” *Filosofija. Sociologija*, nr 4 (2015): 314–321.

¹⁵ Increasing the accessibility of cultural services for people with disabilities: analysis of the current situation, 2018. <http://kurkl.lt/projektai/kulturos-prieinamumo-zmonems-su-negalia-didinimas/>.

to information and communication, so paying attention to appropriate and alternative ways, means, and forms of communication, conditions for using the printed word, and copyright issues is necessary. Taking this into account, people with visual, hearing, and intellectual disabilities need alternative information presentation methods. The study^[16] highlighted the contrast between consumers and producers – that consumers, regardless of the type of disability and functional capabilities, are looking for information about services and products on the Internet. In contrast, most of the participants in the service providers and product manufacturers group are convinced that disabled and elderly people cannot use information technology. As the main means of providing information to them, service providers use service and product presentations and presentations during gatherings of disabled and/or elderly communities.

According to the Ministry of Social Security and Labor data, 229 thousand people with disabilities lived in Lithuania in 2020. This is 8 % of the entire population of the country. It is noticeable that a significant part of them (67%) were persons of working age. Among them – 3 % of persons with hearing impairment, and 4 % with visual impairment.

However, the availability of information would serve an even larger number of Lithuanian residents: According to data from the Lithuanian Disability Forum and the Society for Persons with Intellectual Disability and Their Family Members ‘Viltis’, more than 420 thousand people would benefit from the availability of information. The information presented in the appropriate format is universally useful not only for individuals with disabilities but also for older persons, possibly with signs of dementia, experiencing functional disorders or temporary injuries, persons with lower literacy and representatives of national minorities experiencing language challenges, for whom Lithuanian is not their native language (The Ministry of Social Security and Labor, 2021).

Research conducted abroad shows that businesses in various fields invest in the availability of the information they provide to various target groups. It has been found to bring measurable added value to businesses. For example, world-famous companies like Barclays, Apple, and Microsoft

¹⁶ The Department of the Affairs of Persons with Disabilities under the Ministry of Social Security and Labour of The Republic of Lithuania, Analysis of the availability of services and suitability of products for all users living in Lithuania on the widest possible scale, 2019. <https://www.ndt.lt/wp-content/uploads/UD-tyrimas-ataskaita-2020-01-24-galutine.pdf>.

(according to www.w3.org) are already intensively taking care of this. A British company Click-Away Pound survey showed that up to 69% of respondents leave websites due to inaccessibility. Naturally, information about the company and goods and services provided online is becoming one of the first aspects that businesses care about (2019).

A concrete example of the company's profits and increased statistics is the radio program *This American Life*, which is broadcast by National Public Radio (NPR) in the United States. This show is heard by about 2.1 million people across the country every week. In 2011, in response to new media accessibility regulations announced by the US Federal Communications Commission (FCC), the broadcaster committed to transcribing all recorded radio broadcasts. A study lasting several months (2011) showed that transcribed texts brought visible benefits:

1. the rate of internet searches for radio shows increased by 6.86%;
2. easier understanding of information for non-native speakers for whom English is a second language;
3. visitors could use the transcribed texts in noisy or quiet environments;
4. it became possible to translate radio broadcasts into other languages more easily;
5. it became possible to search for a specific part of the text by associating it with a section of the audio recording.

Google Analytics showed that 7.23% of visitors viewed at least one transcribed text from the radio show, 4.18% of listeners, and a 3.89% of the number of links to the radio show online.

Businesses are convinced to take care of information availability by existing statistics and hypothetical studies that allow strategizing for the future and creating company marketing plans. In 2018, an article published by the American Institute of Research stated that the estimated total income of working-age people with disabilities in the United States is about \$500 billion. The article states that this target group is most likely to spend their money on online shopping and on the platforms that will be the most convenient for them and the most adapted to their needs. According to Forbes, 70% of Generation Y (Millennials) claim that they consider the values the manufacturer or supplier declares before buying a product. So each brand will likely gain more customers by promoting an ethical

approach. 86% of respondents said they would spend more if online stores were accessible to various society groups.

Such statistics from foreign countries and the developing strategic approach allow us to ask how the personal purchasing habits and experiences of consumers with disorders and disabilities change in Lithuania. What would be the priority directions of market changes and what benefits would this bring to the country's businesses?

The business sector in Lithuania usually takes care of the availability of information on the initiative and with the assistance of state institutions. For example, Lietuvos Geležinkeliai (Lithuanian Railways), a joint-stock company closely related to the state, has committed to adapting its infrastructure and training more appropriately for people with disabilities by 2024. December (Ministry of Transport, 2019). The joint-stock company undertakes to increase the accessibility of its services: providing accessible travel information and assistance to persons with disabilities on trains and railway stations.

In Lithuania, no studies have yet been conducted showing how improved access to information affects private institutions and companies. In preparation for fulfilling the obligations of new laws, the availability of information in those companies that are directly related to the state of Lithuania was started to be investigated. However, it is important to anticipate the benefits for all businesses that a voluntary decision to ensure the availability of their services and products would bring and what positive changes it would bring to everyday life and buying habits of people with individual needs.

The Department of the Affairs of Persons with Disabilities under the Ministry of Social Security and Labour of The Republic of Lithuania started a study to reveal possible changes in purchasing habits (behaviour) of target groups, various categories of goods and services if the hypothetical condition of full availability of information on purchased goods and services is ensured. The study was started in 2022 and will be finished in 2023. The target group consists of the following persons:

- With intellectual disability.
- With psychosocial disability.
- Persons with hearing impairments.
- Persons with vision impairments.
- Elderly persons.

The methodology: survey and focus groups. The initial result of the survey shows that:

- Most respondents agree that it is more likely that they will leave the inaccessible or uncomfortable online shop if they know that similar goods or services can be obtained in another, at least more accessible, online shop.
- More than half of the respondents prefer online shops to obtain inexpensive or everyday goods. More than half of them prefer to shop to in person and look at expensive goods, but buy them from online stores.
- Respondents spend from 50 to 300 euros per month by using online stores.
- Online stores are mostly popular among persons with vision impairments.
- Persons with intellectual disabilities have trouble using online stores to select goods and have an uneasy payment process, so they prefer ordinary stores.
- Persons with hearing impairments feel uncomfortable attending ordinary stores and communicating with the seller or shop/wo/man.
- People in the elderly age used online stores more actively than two years before.
- People of older age face difficulties in finding and reading descriptions of goods.
- This study (survey) will be the first in Lithuania to investigate such a niche – topic.

9 | Findings

The legislative basis of the Republic of Lithuania is appropriate for persons with hearing and visual disabilities. There is no legislation or obligation to provide information in easy-to-read language to people with intellectual disabilities or cognitive disorders. The common level and awareness of informational accessibility is increasing every year. Lithuanian businesses are unwilling to invest in information accessibility. At the same time, accessibility has ROI and pays off.

Bibliography

- The Department of the Affairs of Persons with Disabilities under the Ministry of Social Security and Labour of The Republic of Lithuania, Report of the Convention of the Rights of Persons with Disabilities, 2021. <https://www.ndt.lt/wp-content/uploads/ZTSI-Stebešenos-Ataskaita-9.pdf>.
- The Department of the Affairs of Persons with Disabilities under the Ministry of Social Security and Labour of The Republic of Lithuania, Activity Report 2021. https://www.ndt.lt/wp-content/uploads/2021_NRD_veiklos_ataskaita_tikslinta.pdf.
- The Department of the Affairs of Persons with Disabilities under the Ministry of Social Security and Labor of The Republic of Lithuania, Analysis of the availability of services and suitability of products for all users living in Lithuania on the widest possible scale, 2019. <https://www.ndt.lt/wp-content/uploads/UD-tyrimas-ataskaita-2020-01-24-galutine.pdf>.
- Developmental Program for the Development of an Environment Suitable for Disabled People in all Areas of Life (2021).
- Increasing the accessibility of cultural services for people with disabilities: analysis of the current situation, 2018. <http://kurkl.lt/projektai/kulturos-prieinamumo-zmonems-su-negalia-didinimas/>.
- The Internet for All: A Guide to Making Digital Information Accessible (Full Version) (2018). <https://www.lygybe.lt/data/public/uploads/2018/12/internetas-visiems.pdf>.
- Law of the Republic of Lithuania on the right to receive information from state and municipal institutions and bodies (2000). <https://www.e-tar.lt/portal/lt/legalAct/TAR.FA13E28615F6/QWCYWKrpEY>.
- Law of the Republic of Lithuania on Lithuanian National Radio and Television (1996). <https://e-seimas.lrs.lt/portal/legalActEditions/lt/TAD/TAIS.31934>.
- Law of the Republic of Lithuania on Social Integration of the Disabled (1991). <https://www.e-tar.lt/portal/lt/legalAct/TAR.199156E4E004/OzxpwpqisAN>.
- Law on Amendments to the Public Information Law of the Republic of Lithuania (2006). <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.280580>.
- Lithuanian Library for Blind People. Major Braille Publishers Call for the Highest Quality Standards (2021). <https://www.labiblioteka.lt/naujienos/didziausileidejai-brailio-rastu-ragina-laikytis-auksciausiu-kokybes-standartu/605>.
- The Order of the Director of the Information Society Development Committee under the Ministry of Transport Regarding the Amendments of the Order No T-40 „On Approval of Methodological Recommendations for the Development, Testing and Evaluation of Websites Adapted to the Disabled” issued by

the Director of the Information Society Development Committee under the Government of the Republic of Lithuania in March 31 2004 (2013). <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.450397>.

The Report Indicates that the Testing Tool was Chosen in Accordance with the Development of the Information Society of the Committee Under the Director of the Ministry of Transport in 2013. May 23 in order No. T-72.

Report on the Assessment on the Compliance with the General Requirements of the Websites of State and Municipal Institutions and Bodies (2018). <https://www.e-tar.lt/portal/lt/legalAct/f228ffc0438411ec992fe4cdfceb5666>.

Resolution of the Government of the Republic of Lithuania No. 850 „On the Approval of the National Program for Social Integration of People with Disabilities 2003-2012” (2002). <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.168312>.

Resolution of the Government of the Republic of Lithuania No. 1408 „On the Approval of the National Program for Social Integration of People with Disabilities 2013-2019” (2012). <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.437985>.

Resolution of the Government of the Republic of Lithuania no. 630 „On the recognition of deaf sign language as a native language”. <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.17838?jfwid=-fxdp7rct>.

Viluckienė Jolita, „Negalią turinčių IT vartotojų skaitmeninė atskirtis kaip socialinės nelygybės forma” *Filosofija. Sociologija*, No. 4 (2015): 314-321.

https://www.itu.int/en/ITU-D/Regional_Presence/Europe/Documents/Events/2020/AE20/event/D-PHCB-ICT_ACCESS_EUR.01-2021-PDF-E.pdf.

https://ivpk.lrv.lt/uploads/ivpk/documents/files/Veikla/Veiklos_sritys/Reikalavimai_interneto_svetainems/2018_m_tyrimas/Ataskaita.pdf.

