REPORT

ON THE MONITORING OF THE ACCESSIBILITY OF WEBSITES AND MOBILE APPLICATIONS OF PUBLIC SECTOR BODIES CARRIED OUT DURING THE FIRST MONITORING PERIOD IN THE REPUBLIC OF BULGARIA

Sofia, November 2021

CONTENTS

1. EXECUTIVE SUMMARY

This report presents the outcomes of the monitoring of the accessibility of websites and mobile applications of public sector bodies in the Republic of Bulgaria carried out during the first monitoring period (1 January 2020—22 December 2021 for websites and 23 June 2021 — 22 December 2021 for mobile applications). The report has been prepared in accordance with the arrangements for reporting by Member States to the European Commission (EC) established by Commission Implementing Decision (EU) 2018/1524 of 11 October 2018.

The document includes a description of the monitoring activities performed, providing information on the size and selection of the samples, the requirements of the standard to be verified, the software tools used and the monitoring outcomes of the different monitoring methods for websites and mobile applications. The report also covers information on the use of the implementation procedure and additional measures taken to facilitate the implementation of the accessibility requirements.

The monitoring of the compliance of the websites and mobile applications of the public sector bodies with the accessibility requirements was performed on the basis of the monitoring methodology established by Commission Implementing Decision (EU) 2018/1524 of 11 October 2018 and the requirements of the harmonized European standard EN 301 549 V2.1.2 (2018-08) Accessibility requirements for ICT products and services.

The implementation of the functions on monitoring and enforcement of the requirements of Directive (EU) 2016/2102 by the State e-Government Agency (SEGA) is in accordance with the Methodology for monitoring and verifying the accessibility of the content of websites and mobile applications. The methodology has been developed by the Agency and is fully in line with Implementing Decision (EU) 2018/1524. It is accompanied by appendices describing checks for accessibility assessment, accessibility testing tools, web pages sampling approach and sample verification. The appendices also contain inspection check lists, models of carried out inspection reports, model accessibility statement, recommendations to user interfaces, a procedure and a check list for reviewing preliminary burden assessments. The methodology for monitoring and verifying the accessibility of the content of websites and mobile applications together with the Appendices to it are publicly available at: https://e-gov.bg/wps/portal/agency/home/%D0%B0ccessibility-websites/web-access-documentation.

2. DESCRIPTION OF THE MONITORING ACTIVITIES

At the heart of the monitoring and verification of websites and mobile applications is the harmonized European standard EN 301 549 V2.1.2 (2018-08) (BDS EN 301 549 V2.1.2: 2018 Requirements for accessibility of ICT products and services), as a reference standard which guarantees a minimum level of accessibility.

The monitoring activities carried out include:

- planning (determination of monitoring periods; size of samples from websites and mobile applications to be monitored depending on the period and the monitoring method; determination of the composition of the samples in accordance with the selection criteria according to the requirements specified in item 2.2 and item 2.3 of Annex I to Implementing Decision (EU) 2018/1524[1]);

- tests (by both methods — simplified and in-depth monitoring) and evaluation (assessment of accessibility requirements is evidenced by direct reference to the requirements of the harmonized standard);

- documentation (according to the Appendices to the Methodology), summarization and analysis of the outcomes;

- Implementation of a mechanism to assist organizations with identified deficiencies.

2.1. General information

During the first monitoring period, websites and mobile applications of public sector bodies were monitored as follows:

- in the period 01 November 2020 — 31 July 2021 — monitoring of websites using the simplified monitoring method;

- in the period 01 April 2021 — 31 July 2021 — monitoring of websites using the in-depth monitoring method;

- in the period 01 July 2021 — 25 September 2021 — monitoring of mobile applications using the in-depth monitoring method;

The body responsible for the monitoring and enforcement of the requirements of Directive (EU) 2016/2102 for the Republic of Bulgaria is the State e-Government Agency.

2.2. Composition of the sample

The size and selection of samples from the websites and mobile applications subject to monitoring comply with the requirements of item 2 of Annex I to Implementing Decision (EU) 2018/1524[2].

The number of websites and mobile applications to be monitored in the first period was determined in view of the population of the country (a total of 7,000,039 inhabitants as of

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[1] https://eur-lex.europa.eu/eli/dec_impl/2018/1524/oj?locale=bg
[2] https://eur-lex.europa.eu/eli/dec_impl/2018/1524/oj?locale=bg

31 December 2018 according to the National Statistical Institute) — a total of 241 websites and 13 mobile applications. The sample size, depending on the monitoring method, is as follows:

- 220 websites monitored using the simplified monitoring method;

- 21 websites monitored through the in-depth monitoring method;

- 13 mobile applications monitored using the in-depth monitoring method.

The selection of websites is in line with the requirement to achieve diversity, representativeness and geographical balance of distribution and relevance to stakeholders.

The sample covered state websites (from different levels of administration), regional, local and other websites, as follows:

- state websites — 40;

- regional websites (NUTS1, NUTS2, NUTS3[3]) — 20;

- local websites (LAU1, LAU2[4]) — 40;

- Websites of public law bodies that do not belong to the above three categories, 120.

The sampled websites provide as many services as possible in different sectors of public life, including:

- social protection — sites of pension insurance companies; sites of commissions and agencies — for social assistance, for child protection, for consumer protection, for protection against discrimination; sites of associations of persons with disabilities;

- healthcare — sites of health care institutions: hospitals, laboratories, medical centres;

- transport — carriers' sites: bus, trolleybus, railway passenger transport, metro;

- education — sites of regional departments of education, universities, schools;

- employment and tax system — sites of agencies, institutes and ministries;

- environmental protection — websites of ministries;

- culture and recreation — sites of cultural institutions: operas, theatres, cultural complexes, libraries;

- housing and utility services — sites of water supply and sewerage operators, district heating companies, electricity distribution companies;

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[3] According to the classification of territorial units for statistical purposes in Bulgaria
 NUTS 1 — Level 1 regions; NUTS 2 — Statistical regions; NUT 3 — Regions
[4] LAU 1 — Municipalities; LAU 2 — Settlements

- Public order and safety — sites of directorates for combating organized crime, fire safety and protection of the population, insurance companies, and ministries.

Sites of mobile operators, banks, courier companies, certification service providers were also included in the sample.

The following were taken into account when selecting **the sample for mobile applications**:

When inspecting mobile applications (software testing), it is necessary for each criterion to have a verification method, verification tools, rules for successful fulfilment of the criterion, as well as rules or scenarios for non-fulfilment of the criterion. After the analysis of the adaptive technological characteristics of the assistive technologies used by persons with disabilities in mobile applications in the Republic of Bulgaria, it was found that:

- IPhone/iOS is not used by a significant number of persons with disabilities because it is not possible to install the Gergana speech synthesizer in Bulgarian and they use a Russian speech synthesizer, respectively;

- for the Android-Google operating system as a screen reader (accessibility services for Android-Google), Talkback (built-in Android screen reader) is used since it is easy to use and is supported by all mobile phones using the Android operating system.

The inspections of the mobile applications are aimed at the Native Android App (JAVA) open functionality, as each criterion is objectively checked for compliance and the possibility of assessment according to the Understanding section of WCAG 2.1 for the relevant criteria. The selection of the sample for mobile applications is based on the highest usability by persons with disabilities and the number of services offered.

2.3. Correlation with standards, technical specifications and tools used for monitoring

The inspections used materials from W3C (World Wide Web Consortium), W3C Web Accessibility Initiative (WAI), WebAim and applied technologies presented in the scientific community in order to achieve clarity and understanding of the findings.

Mapping, in the form of a correlation table, demonstrating how the monitoring and the tests applied cover the requirements referred to in the standards and technical specifications provided for in Article 6 of Directive (EU) 2016/2102 is presented in the Annex to the report.

Using the simplified monitoring method, 220 websites were checked to detect non-compliance with the requirements of the harmonized standard EN 301 549 V2.1.2 (2018-08) using automatic tools. The monitoring included tests on 22 requirements of the harmonized standard/success criteria of WCAG 2.1 from level A and level AA, according to the four principles of accessibility: perceivable, operable, understandable and robust.

Using the in-depth monitoring method, 21 websites were checked for compliance with the requirements of the harmonized standard EN 301 549 V2.1.2 (2018-08), which refers to WCAG 2.1 level of compliance AA (the site is accessible, but there are significant difficulties when used by persons with specific needs).

The performed analysis reflects only the compliance with the standard of the specific representative sample of 21 websites. The quality and style content of the monitored pages are not assessed during the inspection, as a result of which the analyses are subjective insofar as the findings on time and some of the criteria related to the standard are subjective due to the verification mechanism defined in the methodology, and namely verification is performed for a certain period of time.

In the course of the inspections it was found that some of the criteria of the standard are subjective themselves and therefore the summary of the outcomes includes several different techniques of evaluation and analysis which aim to increase objectivity.

In the performed inspections and analyses, a complex approach was used which is entirely based on the standard taking into account the principles: perceivable, operable, understandable and robust. The principle of aggregation is formulated according to the requirements of the standard, where the only and sufficient condition is that one element of one page of the statistical sample does not meet the standard to consider that the entire website does not meet the standard criteria.

When performing **inspections on mobile applications**, it is important to note that during checks for Android operating system, we do not have direct access to the application code and cannot evaluate it. All assistive technologies for screen reading also go through the Android's accessibility API. This interface is also not directly accessible and is usually used to develop accessibility services. In the testing process under standard EN 301 549 V2.1.2, an intermediate link, such as the accessibility API/accessibility services, appears between the evaluator and the application.

As mentioned above, in Bulgaria iPhone/iOS is not widely used by persons with disabilities, because a specialized Bulgarian speech synthesizer cannot be installed and a Russian speech synthesizer must be used which outcomes in difficulties for individuals. SpeechLab speech synthesizer, developed by the Bulgarian Association of Computational Linguistics, is widely used, but it does not offer an iPhone/iOS version. When testing mobile applications on Android operating system — Talkback is used — the built-in Android reader which is supported by all Android phones in all versions of the operating system. After the analysis, it was found that very rarely and mostly very old applications are in the category of closed functionality (can not be read by Talkback).

WAVE Web Accessibility Evaluation Tool (WAVE Chrome extension) is mainly used to perform the verifications under the **simplified monitoring method** to detect non-compliance with the accessibility requirements with automated tests. In addition, testing was performed with other software tools such as W3 HTML Validator (https://validator.w3.org/), Tingtun Checker (http://checkers.eiii.eu/), Lighthouse Lighthouse Report Viewer.

Taking into account the fact that automated testing can generate false or misleading outcomes, including false positives, as well as the impossibility to automatically detect non-compliance, a combined approach to testing was adopted with additional manual checks by the verification experts and user testing by persons with disabilities.

The testing process included end users for whom accessibility is essential — persons with various disabilities: visually impaired and blind, with cognitive and motor impairment. In order to obtain the most accurate accessibility analysis possible, with the assistance of the member organizations of the National Council for People with Disabilities at the Council of Ministers, experienced users were involved, including IT specialists who had previously participated in similar tests. With the help of questionnaires, they analysed the accessibility of existing websites of public sector bodies. The included issues were related to visual presentation, navigation, active elements, animated texts, etc., and in line with the principles, guidelines and criteria in the WCAG Web Content Accessibility Guidelines 2.1. Visually impaired users used assistive technologies: screen reader with speech synthesizer.

All 220 websites planned for the first reporting period were checked by persons with disabilities, where 184 were checked using a screen reader with speech synthesizer, 44 — by a person with a motor disability, and 45 — by a person with a cognitive impairment. In this way, actual issues with the accessibility and usability of websites for certain disabilities were identified.

Using the simplified monitoring method the inspection covered, for each website, a sample of web pages which includes the home page, pages that contain information about the organization; essential information provided by the organization; the accessibility statement or policy; feedback form/contacts and site map. The specific number of web pages to be analysed is determined by the size and complexity of the website.

In the course of the inspections, testing of each web page of the selected sample with automatic tools, analysis of accessibility by users with disabilities and manual testing by the expert was performed, and for each checked website a report was prepared with completed check list and attached generated reports from the automatic tools.

In case of detected non-compliance, the inspected organization was provided with explanations and instructions for their elimination.

When performing the verification under the **in-depth monitoring method**, all 21 websites in the sample were tested with automated tools, assistive technologies and manual testing. Testing of a website with automated tools is done with automated tools through software products and web-based tools that check (a single) web page(s) or an entire website. Several automated tools were used in the testing process, each of which reports errors or omissions in an element of the website, such as images, titles, colour matching, text alignment, etc. Some of the tools, through automated code analysis, show errors in the sequence, other operate in a mode where — through intervention of the specialist who checks the website — systematize the information from the code which simplifies the analysis and significantly reduces verification time. Each of the automatic tools used generates a final document containing the number of elements checked and the number of errors in them, or the row and column of the error in the page code are specified. When performing the inspections, in addition to testing with automatic tools, testing was also performed by the inspection expert using the other methods. Automated tool checking significantly reduces verification time and identifies obvious problems, but it is not possible to make a comprehensive analysis or suggest situational problems that occur during the actual use of the website. Therefore, checks with automatic tools can only serve to highlight basic discrepancies that need to be further analysed during testing by people. As automatic tools can generate incorrect or misleading outcomes, after automatic testing the result must be checked by experts who assess whether the outcomes of the automatic tool have been correctly interpreted. The analyses of the websites verified by the in-depth monitoring method were obtained using the following automated tools:

- WAVE Web Accessibility Evaluation Tool (http://wave.webaim.org/)

- W3 HTML Validator (https://validator.w3.org/)

- Lighthouse Report Viewer (https://googlechrome.github.io/lighthouse/viewer/)

- axeDev keyboard Test (https://www.deque.com/axe/devtools/)

- PAC Test (https://www.access-for-all.ch/en/)

- Text spacing bookmarklet (Text spacing 1.4.12) (https://codepen.io/stevef/full/YLMqbo)

- Google Chrome Devtools — Version 90.0.4430.212 (Official Build) (64-bit) — (https://www.google.com/chrome/)

- Mozilla Firefox Web Developer Tools — firefox 88.0.1 (64-bit) — (https://download.mozilla.org/?product=firefox-latest-ssl&os=win64&lang=en-US)

- Microsoft Edge Developers Tools — Version 90.0.818.62 — (https://www.microsoft.com/bg-bg/edge

Assistive technologies testing of websites is carried out in order to prepare an analysis consistent with the end user perspective (person from the target group). Assistive technologies

provide functionality for different groups of people with disabilities, such as: multiple ways of presenting content (e.g. synthesized speech or enlarged text), multiple ways of entering content (e.g. by voice), additional mechanisms for navigation or orientation and content conversions (e.g. to increase the accessibility of tables, etc.). The assistive technologies used in the verification process are a screen reader and a speech synthesizer.

Manual testing by experts — When using automatic tools, problems are found that are most often observed in the implementation of textual alternatives of elements or errors are reported in determining the language in which the site is accessible to the user. For example: A Bulgarian website lists alternative texts in English that cause switching of the speech synthesizer of assistive devices (screen reader), as it is different for different languages. It is this type of error that cannot be diagnosed automatically and that is extremely unpleasant for the user. HTML and CSS validation methods are used to analyse all available website resources. The structural elements and spelling are checked. The approach applied in the verification process is identification of the following elements for each website:

- all common web pages and web page states identified as the main web pages of the site;
- all functional pages of the website that contain any essential functionality that identifies the essence of the website;
- web pages defining the variety of types of subpages of the site, including one web page of each type;
- web pages with content provided by using additional web technologies;
- web pages leading to other portals or forms in order to fully cover the user-initiated process;
- Documents attached in PDF format or other, providing essential information related to the main functionality of the website.

The analysis includes 50 criteria for success, of which 30 level A and 20 level AA. The criteria are distributed according to the principles of accessibility.

Identified web technologies that are relied upon for compliance include basic web technologies such as HTML and CSS, assistive web technologies such as JavaScript, and specific web technologies such as SMIL, SVG and PDF.

Testing of mobile applications — all 13 mobile applications in the sample were tested with automatic tools (a tool for determining contrast is used), with assistive technologies (screen reader) and manually (by operating the application without a screen reader). The Understanding section of WCAG 2.1 was used to evaluate the criteria.

3. MONITORING OUTCOMES

3.1. Detailed outcomes

3.1.1. Outcomes of an applied website simplified monitoring method

(a) a comprehensive description of the monitoring outcomes, including measurement data

Using the simplified monitoring method, the outcomes of the automated tools for each of the web pages in the sample were further verified by manual verification. To detect some potential discrepancies such as: whether adequate alternative text was provided, whether the titles (of pages, regions, headings) were sufficiently informative, whether the language of the website was correctly determined, was assessed relying entirely on human expertise. In these cases, the answers of blind users who used a screen reader were also particularly important.

The summarized outcomes showed that most discrepancies are identified in relation to the following criteria:

Requirement of the harmonised standard		% of monitored sites with established non-compliance
9.1.1.1 (A)	Non-text content	88%
9.1.3.1 (A)	Information and relationships	51%
9.1.4.3 (AA)	Contrast (minimum requirements)	87%
9.2.1.1 (A)	Keyboard	21%
9.2.4.2 (A)	Page title	18%
9.2.4.4 (A)	Purpose of link (in context)	81%
9.2.4.6 (AA)	Headings and labels	70%
9.3.1.1 (A)	Page language	29%
9.3.3.2 (A)	Labels or instructions	35%
9.4.1.2 (A)	Name, role, value	32%
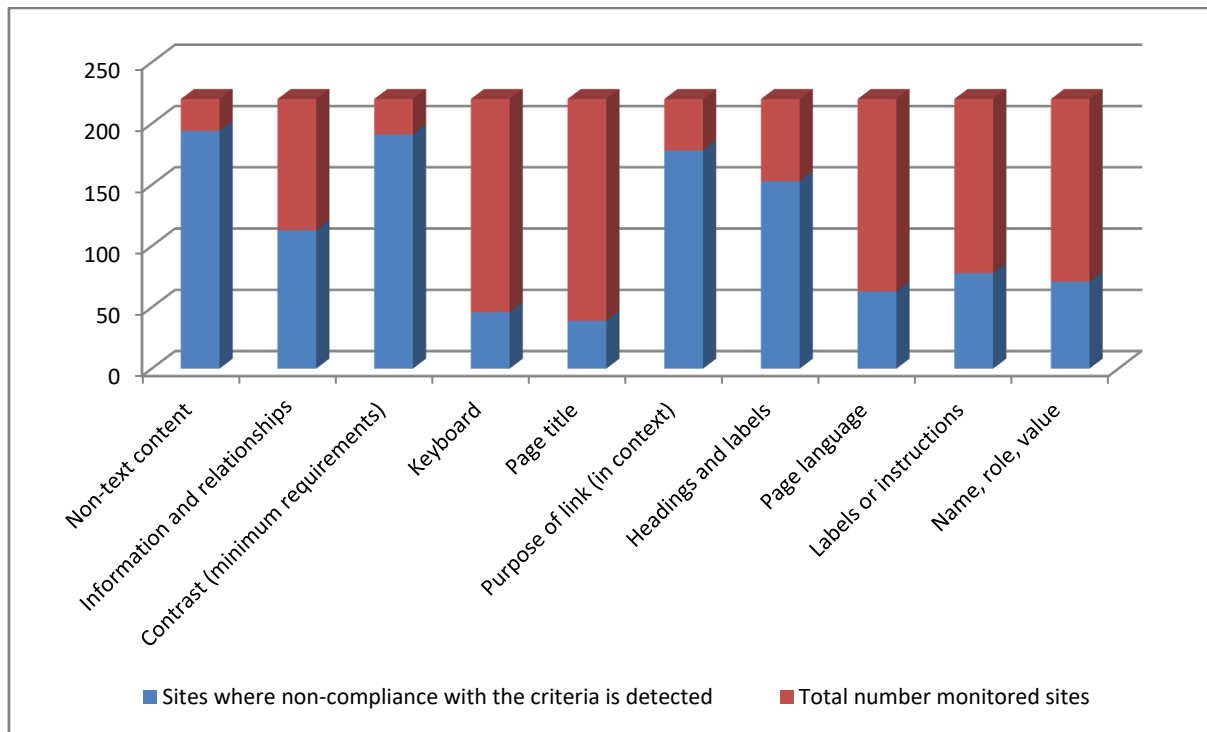
Fig. 1 Criteria under which most discrepancies are detected

For the monitored websites, in addition to detecting non-compliance with the requirements of the standard, an inspection was performed for the fulfilment of the obligation of the organizations to publish an accessibility statement in a prominent place on their official websites. The review for the availability of accessibility statements found that only 12% of the monitored websites had published such statement, and some of the statements were not prepared according to the required model. In a significant part of the checked statements there is a lack of description of the inaccessible content, and instead indication of requirements that are not applicable to the available content of the site.

In addition, when reviewing the websites, a check was made for the availability of a website map and whether it is accessible to visually impaired users using a screen reader, as well as a check whether the documents downloaded from the sites are in an accessible format for a screen reader.

In order to perform a comparative analysis, when documenting the outcomes of the website inspection, the values reported by Tingtun Checker and Lighthouse Report Viewer in terms of accessibility and successfully passed tests at the time of the assessment were also recorded. Tests with Tingtun Checker show that 44% of all monitored websites fall in the range of 85—95 (i.e. some tests failed)[5], about 1/4 — in the range of 95—100, where 9 sites in this group have

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[5] On the benchmark scale of Tingtun Checker tool

successfully passed all tests of the tool (maximum score 100 on the scale). For 5% of websites, most tests failed.

(b) Qualitative analysis of the monitoring out comes

The analysis of the test outcomes under the simplified monitoring method reveals non-compliance with the requirements of the standards and technical specifications referred to in Article 6 of Directive (EU) 2016/2102.

The analysis showed that for most of the websites there were barriers to accessibility with regard to the following components:

- Images (9.1.1.1 Non-text content (A))

Errors detected:

- no equivalent alternative text is provided for images and active images (links, buttons) that conveys content or information useful for the interaction — lack of alt attribute; inappropriate alternative text, including texts in English or the image file name included, or the path to the file; empty alt attribute for non-decorative images; for example, often links to social media are without accessible text;

- Incorrectly marked decorative images so that they remain hidden from assistive technologies (via (null) alt text (alt = ""), ARIA role = "presentation").

A serious accessibility issue is the use of CAPCHA[6] without an accessible alternative. This protection without available alternative forms becomes an insurmountable barrier for users who are blind or deafblind and deprives them of the right, in specific cases, to send a signal or submit a feedback form through the site, or to access a service. Providing an audio alternative is a solution for blind users with a screen reader, but the use of English speech, as found on some sites, is unacceptable for the Bulgarian user.

- Labels, instructions (9.1.3.1 Information and relationships (A), 9.3.3.2 Labels or instructions (A))

Errors detected: labels that are not programmatically associated to their corresponding text fields in forms (feedback forms, alerts, etc.) and unlabeled fields (e.g. for the keyword entry field in the search form) so that to be possible to visually and audibly to perceive the purpose of the field and what input information is expected from the user.

The use of the placeholder attribute as the only method to provide a label for a text box is noted.

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[6] Designed to establish that content is accessed by a human, not a computer

- Keyboard (9.2.1.1 Keyboard (A))

Errors detected: pages with elements that can be only activated with the mouse and do not allow keyboard access. For example, links in the navigation menu of the type 'on mouse over', a button to send in a feedback form (as a result of which a user who does not use a mouse can not send the form independently), etc.

- Contrast ratio (9.1.4.3 Contrast (minimum requirements) (AA))

Combinations between text and its background are used which do not provide sufficient contrast as required by the standard (for small text — at least 4:1.5, for large text — at least 3:1). Low contrast is the most common error in almost all sites.

- Links (9.2.4.4 Purpose of a link (in a context) (A), 9.1.1.1 Non-text content (A))

Errors detected:

- links to text that does not clearly describe the purpose of the link — e.g. 'Information', 'See more', 'More information', 'Details', 'Read more' and similar; links to different video content, but all with 'video' text;

- Links with names '? p=1383', '? p=1378' and similar, which do not indicate the action that will be performed when activating them (empty links);

- links included with href attribute, without text content (such as text or text alternative) or without a label that identifies the purpose (aria-label or aria-labelledby); for example, links to social media;

- Structure (Information and relationships 9.1.3.1 (A), 2.4.6 Headings and labels (AA) 4.1.2. Name, role, value (A))

Gaps have been identified in marking the structure of a site through semantic headings:

- incorrect hierarchy of nested headings — some sites use headings from different levels, but in many cases the hierarchy is not properly followed: skipping levels; no level 1 heading for the main topic of the page; main heading of level 2 or lower instead of level 1; level 1 heading with the same content in multiple pages, without another main heading;

- structure that does not properly present the main topics of the page and the subtopics;

- Empty headings (headings without content).

The use of only headings of (a) certain level(s) which is observed on some of the sites, without full and consistent use of headings, makes their use meaningless, as in practice they do not provide effective navigation and quick access to the main content of page, as well as the ability to skip menus and ads which is their real purpose.

Inappropriate names of regions have been identified that do not give a clear idea of the location as well as the orientation of the screen reader users in the content (e.g. multiple navigation regions on a site which are reported as 'navigation region', 'Breadcrumb navigation region' and 'Footer menu navigation region').

Excessive use of regions, headings and lists (found on single sites) creates confusion among users when trying to navigate these elements with the keyboard shortcuts of the screen reader, and navigating through the arrows causes inconvenience and loss of time; the recommendation in these cases is to optimize the structural elements so as to differentiate the site with fewer blocks.

- Page language (9.3.1.1. (A))

Errors detected:

- unidentified main language of a page (no HTML lang attribute);

- Language of a page that does not match the identified language — pages with basic content in Bulgarian, for which the language is incorrectly defined as English (<html lang = "en">).

- Page title (9.2.4.2. (A))

Errors detected:

- title that does not adequately and informatively describe the content of the page;

- Page title which is not clear to distinguish it from other pages on the site. For example, pages that contain only the name of the organization; unnecessarily long titles on some places; in single sites the <title> element is left blank, resulting in the page URL (useless text); sites with the same title for all pages of the site.

- Titles that do not correspond to the good practice to start with the information unique to the page (first the page-specific information and then site-specific information), e.g. start with the name of the organization.

Part of the checked pages contain downloadable documents, a significant part of which are inaccessible to users with a screen reader — some of them are completely unreadable (e.g. pdf files with scanned images), some are readable, but their accessibility is at the lowest level (the text can be read, but there is no accessible navigation or PDF tags for example) and is subject to improvement.

The outcomes of the site map check showed that 35% of websites have a site map, mostly in accessible HTML format.

Some of these discrepancies were not detected as errors by the automated tool (in some cases they are indicated in the generated report as Alerts), but were identified as a result of the manual verification by an expert and a user using a screen reader.

3.1.2. Outcomes of applied website in-depth monitoring method

(a) a comprehensive description of the monitoring outcomes, including measurement data;

Review of criteria testing (automatic/manual/with screen reader):

Requirement	Criterion	Tested automatically Yes/No	Used automatic tools	Tested manually Yes/No	Tested with screen reader Yes/No
Non-text content	9.1.1.1 (A)	Yes	Wave, Axe tool	Yes	No
Audio-only and video-only (pre-recorded)	9.1.2.1 (A)	No	Not in use	Yes	No
Captions (pre-recorded)	9.1.2.2 (A)	No	Not in use	Yes	No
Audio description or media alternative (pre-recorded)	9.1.2.3 (A)	No	Not in use	Yes	No
Captions (live)	9.1.2.4 (AA)	No	Not in use	Yes	No
Audio description (pre-recorded)	9.1.2.5 (AA)	No	Not in use	Yes	No
Information and relationships	9.1.3.1 (A)	Yes	Wave, Axe tool	Yes	Yes
Meaningful sequence	9.1.3.2 (A)	No	Not in use	Yes	Yes
Sensory characteristics	9.1.3.3 (A)	No	Not in use	Yes	No
Orientation	9.1.3.4 (AA)	No	Not in use	Yes	No

Requirement	Criterion	Tested automatically Yes/No	Used automatic tools	Tested manually Yes/No	Tested with screen reader Yes/No
Identify input fields purpose	9.1.3.5 (AA)	No	Not in use	Yes	No
Use of colour	9.1.4.1 (A)	No	Not in use	Yes	No
Resize and reflow	9.1.4.10 (AA)	No	Not in use	Yes	No
Non-text objects contrast	9.1.4.11 (AA)	No	Not in use	Yes	No
Text spacing	9.1.4.12 (AA)	Yes	Text Spacing	Yes	No
Content on hover or focus	9.1.4.13 (AA)	No	Not in use	Yes	No
Audio control	9.1.4.2 (A)	No	Not in use	Yes	No
Contrast (minimum requirements)	9.1.4.3 (AA)	Yes	Contrast checker	Yes	No
Resize text	9.1.4.4 (AA)	No	Not in use	Yes	No
Images of text	9.1.4.5 (AA)	No	Not in use	Yes	No
Keyboard	9.2.1.1 (A)	Yes	Wave, Axe tool	Yes	Yes
No keyboard trap	9.2.1.2 (A)	No	Not in use	Yes	No
Character key shortcuts	9.2.1.4 (A)	No	Not in use	Yes	No
Timing adjustable	9.2.2.1 (A)	No	Not in use	Yes	No

Requirement	Criterion	Tested automatically Yes/No	Used automatic tools	Tested manually Yes/No	Tested with screen reader Yes/No
Pause, stop, hide	9.2.2.2 (A)	No	Not in use	Yes	No
Three flashes or below flashes threshold	9.2.3.1 (A)	No	Not in use	Yes	No
Bypass blocks of information	9.2.4.1 (A)	Yes	Wave	Yes	Yes
Page title	9.2.4.2 (A)	Yes	Wave, Axe tool	Yes	Yes
Focus Placement Order	9.2.4.3 (A)	No	Not in use	Yes	Yes
Purpose of link (in context)	9.2.4.4 (A)	Yes	Wave, Axe tool	Yes	Yes
Multiple way	9.2.4.5 (AA)	No	Not in use	Yes	No
Headings and labels	9.2.4.6 (AA)	No	Not in use	Yes	Yes
Visible focus	9.2.4.7 (AA)	No	Not in use	Yes	No
Pointer gestures/cursor	9.2.5.1 (A)	No	Not in use	Yes	No
Turn off pointer gestures/cursor	9.2.5.2 (A)	No	Not in use	Yes	No
Label in name	9.2.5.3 (A)	No	Not in use	Yes	Yes
Actuation through motion	9.2.5.4 (A)	No	Not in use	Yes	No

Requirement	Criterion	Tested automatically Yes/No	Used automatic tools	Tested manually Yes/No	Tested with screen reader Yes/No
Page language	9.3.1.1. (A)	Yes	Wave, Axe tool	Yes	Yes
Language of parts	9.3.1.2 (AA)	Yes	Wave	Yes	Yes
On focus	9.3.2.1 (A)	No	Not in use	Yes	No
Automatic change on input	9.3.2.2 (A)	No	Not in use	Yes	No
Consistent navigation	9.3.2.3 (AA)	No	Not in use	Yes	No
Consistent identification	9.3.2.4 (AA)	No	Not in use	Yes	No
Error identification	9.3.3.1(A)	No	Not in use	Yes	Yes
Labels or instructions	9.3.3.2 (A)	No	Not in use	Yes	Yes
Suggestion for error fixing	9.3.3.3 (AA)	No	Not in use	Yes	Yes
Error prevention (legal, financial, data)	9.3.3.4 (AA)	No	Not in use	Yes	Yes
Parsing	9.4.1.1 (A)	Yes	HTML Validator	Yes	Yes
Name, role, value	9.4.1.2 (A)	Yes	Wave, Axe tool	Yes	Yes
Status messages	9.4.1.3 (AA)	No	Not in use	Yes	No

We present the outcomes of the analysis according to the requirements of the standard in a correlation table (ratio of websites conformance / non-conformance):

Requirement / success criterion included in the analysis	Criterion	Sites (%) Conforming	Sites (%) Non-conforming
Non-text content	9.1.1.1 (A)	9.52%	90.48%
Audio-only and video-only (pre-recorded)	9.1.2.1 (A)	0%	4.76%
Captions (pre-recorded)	9.1.2.2 (A)	4.76%	19.05%
Audio description or media alternative	9.1.2.3 (A)	4.76%	9.52%
Captions (live)	9.1.2.4 (AA)	0%	0%
Audio description (pre-recorded)	9.1.2.5 (AA)	0%	9.52%
Information and relationships	9.1.3.1 (A)	28.57%	71.43%
Meaningful sequence	9.1.3.2 (A)	90.48%	9.52%
Sensory characteristics	9.1.3.3 (A)	14.29%	0%
Orientation	9.1.3.4 (AA)	90.48%	0%
Identify input fields purpose	9.1.3.5 (AA)	33.33%	0%
Use of colour	9.1.4.1 (A)	23.81%	0%
Audio control	9.1.4.2 (A)	42.86%	14.29%
Contrast (minimum requirements)	9.1.4.3 (AA)	47.62%	42.86%
Resize text	9.1.4.4 (AA)	71.43%	28.57%
Images of text	9.1.4.5 (AA)	19.05%	19.05%
Resize and reflow	9.1.4.10 (AA)	28.57%	9.52%
Non-text objects contrast	9.1.4.11 (AA)	38.10%	52.38%

Requirement / success criterion included in the analysis	Criterion	Sites (%) Conforming	Sites (%) Non-conforming
Text spacing	9.1.4.12 (AA)	85.71%	14.29%
Content on hover or focus	9.1.4.13 (AA)	4.76%	38.10%
Keyboard	9.2.1.1 (A)	28.57%	71.43%
No keyboard trap	9.2.1.2 (A)	57.14%	4.76%
Character key shortcuts	9.2.1.4 (A)	4.76%	4.76%
Timing adjustable	9.2.2.1 (A)	0%	0%
Pause, stop, hide	9.2.2.2 (A)	4.76%	4.76%
Three flashes or below flashes threshold	9.2.3.1 (A)	14.29%	0%
Bypass blocks of information	9.2.4.1 (A)	28.57%	66.67%
Page title	9.2.4.2 (A)	42.86%	57.14%
Focus Placement Order	9.2.4.3 (A)	33.33%	33.33%
Purpose of link (in context)	9.2.4.4 (A)	14.29%	85.71%
Multiple way	9.2.4.5 (AA)	85.71%	14.29%
Headings and labels	9.2.4.6 (AA)	76.49%	9.52%
Visible focus	9.2.4.7 (AA)	28.57%	71.43%
Pointer gestures/cursor	9.2.5.1 (A)	0%	0%
Turn off pointer gestures/cursor	9.2.5.2 (A)	0%	0%
Label in name	9.2.5.3 (A)	38.10%	0%
Actuation through motion	9.2.5.4 (A)	0%	4.76%

Requirement / success criterion included in the analysis	Criterion	Sites (%) Conforming	Sites (%) Non-conforming
Page language	9.3.1.1. (A)	38.10%	61.90%
Language of parts	9.3.1.2 (AA)	9.52%	28.57%
On focus	9.3.2.1 (A)	23.81%	0%
Automatic change on input	9.3.2.2 (A)	14.29%	9.52%
Consistent navigation	9.3.2.3 (AA)	66.67%	33.33%
Consistent identification	9.3.2.4 (AA)	66.67%	0%
Error identification	9.3.3.1(A)	9.52%	9.52%
Labels or instructions	9.3.3.2 (A)	19.05%	47.62%
Suggestion for error fixing	9.3.3.3 (AA)	14.29%	0%
Error prevention (legal, financial, data)	9.3.3.4 (AA)	0%	0%
Parsing	9.4.1.1 (A)	47.62%	52.38%
Name, role, value	9.4.1.2 (A)	4.76%	95.24%
Status messages	9.4.1.3 (AA)	4.76%	0%

(b) qualitative analysis of the monitoring outcomes

The analysis of the test outcomes under the in-depth monitoring method reveals non-compliance with the requirements of the standards and technical specifications referred to in Article 6 of Directive (EU) 2016/2102.

The analysis of conformance / non-conformance by criteria shows that the most common discrepancies are related to the following criteria:

- 9.1.1.1 (A) Non-text content — in 90.48% of the sites non-conformity with this criterion is established. The main errors are: lack of alternative text of non-text content (most often images or graphically presented information); alternative text of a decorative image (placing

alternative text on a decorative image or not marking it appropriately leads to non-compliance with the criterion);

- 9.1.3.1 (A) Information and relationships — in 71.43% of the inspected sites non-compliance with this criterion was found. The main errors are:

- Use of structural elements for decorative purposes — most often these are heading elements. For the correct perception of the information by persons using a screen reader, the use of heading elements must correspond to the structure of the content and be used hierarchically. Using only h3 elements for example (without using the h1, h2 hierarchy) just because they are formatted with colour and font size is an example of decorative use of structural elements;

- Not using structural elements when the content is structured. Most often this is not using <ul> elements when the content is a list. Another example is the formatting of tabular information without the use of <table> <th> elements. This error makes the information incomprehensible to blind users.

- 9.4.1.2 (A) Name, role, value — in 95% of the inspected sites non-compliance with this criterion was found. The main errors are the lack of a program-recognizable name or role of an interface element.

3.1.3. Outcomes of applied mobile applications in-depth monitoring method

(a) a comprehensive description of the monitoring outcomes, including measurement data

The inspection of the mobile applications is aimed at the Native Android App (JAVA) open functionality, as each criterion in the check-list can be objectively checked for compliance and can be assessed according to the Understanding section of WCAG 2.1 for the relevant criteria.

Requirement	Criterion	Tested automatically Yes/No	Used automatic tools	Tested manually Yes/No	Tested with screen reader Yes/No
Non-text content	11.1.1.1.1 (A)	No	Not in use	Yes	Yes
Audio-only and video-only (pre-recorded)	11.1.2.1.1 (A)	No	Not in use	Yes	Yes
Captions (pre-recorded)	11.1.2.2 (A)	No	Not in use	Yes	Yes
Information and relationships	11.1.3.1.1 (A)	No	Not in use	Yes	Yes

Requirement	Criterion	Tested automatically Yes/No	Used automatic tools	Tested manually Yes/No	Tested with screen reader Yes/No
Sensory characteristics	11.1.3.3 (A)	No	Not in use	Yes	No
Orientation	11.1.3.4 (AA)	No	Not in use	Yes	No
Identify input fields purpose	11.1.3.5 (AA)	No	Not in use	Yes	Yes
Use of colour	11.1.4.1 (A)	No	Not in use	Yes	No
Audio control	11.1.4.2 (A)	No	Not in use	Yes	No
Contrast (minimum requirements)	11.1.4.3 (AA)	Yes	contrastchecker.com	Yes	No
Images of text	11.1.4.5.1 (AA)	No	Not in use	Yes	No
Non-text objects contrast	11.1.4.11 (AA)	Yes	contrastchecker.com	Yes	No
Content on hover or focus	11.1.4.13 (AA)	No	Not in use	Yes	No
Timing adjustable	11.2.2.1 (A)	No	Not in use	Yes	No
Pause, stop, hide	11.2.2.2 (A)	No	Not in use	Yes	No
Three flashes or below flashes threshold	11.2.3.1 (A)	No	Not in use	Yes	No
Purpose of link (in context)	11.2.4.4 (A)	No	Not in use	Yes	Yes
Headings and labels	11.2.4.6 (AA)	No	Not in use	Yes	Yes

Requirement	Criterion	Tested automatically Yes/No	Used automatic tools	Tested manually Yes/No	Tested with screen reader Yes/No
Pointer gestures/cursor	11.2.5.1 (A)	No	Not in use	Yes	No
Turn off pointer gestures/cursor	11.2.5.2 (A)	No	Not in use	Yes	No
Actuation through motion	11.2.5.4 (A)	No	Not in use	Yes	No
Automatic change on input	11.3.2.2 (A)	No	Not in use	Yes	No
Error identification	11.3.3.1.1(A)	No	Not in use	Yes	Yes
Error prevention (legal, financial, data)	11.3.3.4 (AA)	No	Not in use	Yes	Yes
Name, role, value	11.4.1.2.1(A)	No	Not in use	Yes	Yes
Open to accessibility technologies	11.5.2	No	Not in use	Yes	Yes
No disruption when using accessibility technologies	11.6.2	No	Not in use	Yes	Yes
User settings	11.7	No	Not in use	Yes	No

We present the outcomes of the analysis according to the requirements of the standard in a correlation table (ratio of websites conformance / non-conformance):

Requirement	Criterion	Conforming (%)	Non-conforming (%)
Non-text content	11.1.1.1.1 (A)	46.15	38.46

Requirement	Criterion	Conforming (%)	Non-conforming (%)
Audio-only and video-only (pre-recorded)	11.1.2.1.1 (A)	7.69	0.00
Captions (pre-recorded)	11.1.2.2 (A)	7.69	7.69
Information and relationships	11.1.3.1.1 (A)	61.54	23.08
Sensory characteristics	11.1.3.3 (A)	23.08	7.69
Orientation	11.1.3.4 (AA)	84.62	0.00
Identify input fields purpose	11.1.3.5 (AA)	69.23	7.69
Use of colour	11.1.4.1 (A)	23.08	0.00
Audio control	11.1.4.2 (A)	7.69	7.69
Contrast (minimum requirements)	11.1.4.3 (AA)	30.77	46.15
Images of text	11.1.4.5.1 (AA)	7.69	0.00
Non-text objects contrast	11.1.4.11 (AA)	61.54	23.08
Content on hover or focus	11.1.4.13 (AA)	0.00	0.00
Timing adjustable	11.2.2.1 (A)	0.00	0.00
Pause, stop, hide	11.2.2.2 (A)	7.69	0.00
Three flashes or below flashes threshold	11.2.3.1 (A)	0.00	0.00
Purpose of link (in context)	11.2.4.4 (A)	53.85	7.69
Headings and labels	11.2.4.6 (AA)	38.46	0.00

Requirement	Criterion	Conforming (%)	Non-conforming (%)
Pointer gestures/cursor	11.2.5.1 (A)	7.69	0.00
Turn off pointer gestures/cursor	11.2.5.2 (A)	7.69	0.00
Actuation through motion	11.2.5.4 (A)	7.69	0.00
Automatic change on input	11.3.2.2 (A)	0.00	0.00
Error identification	11.3.3.1.1(A)	23.08	0.00
Error prevention (legal, financial, data)	11.3.3.4 (AA)	0.00	0.00
Name, role, value	11.4.1.2.1(A)	0.00	84.62
Open to accessibility technologies	11.5.2	92.31	7.69
No disruption when using accessibility technologies	11.6.2	84.62	7.69
User settings	11.7	0.00	0.00

(b) Findings of frequent or serious non-compliance with the requirements of the standards and technical specifications referred to in Article 6 of Directive (EU) 2016/2102;

None of the 13 mobile applications tested meets the requirements for compliance with the standard. The analysis shows that the most common discrepancies are related to criteria:

- 9.4.1.2 (A) Name, role, value — in 84.6% of the inspected applications non-compliance with this criterion was found. Lack of a program-recognizable name or role of an interface element. Most often, these are menu buttons that do not have a name or the name does not match the function of the button.

- 11.1.4.3 (AA) Contrast (minimum) — in 46% of the inspected applications non-compliance with this criterion was found. The contrast between text and background is less than 4.5:1. The standard (EN 301 549 V2.1.2 (2018-08)) for criterion 11.1.4.3 states that the same

compliance requirements apply as WCAG 2.1 Success Criterion 1.4.3 Contrast (Minimum). The problem is that there are two minimum valuesof contrast depending on the font size in WCAG 2.1 Success Criterion 1.4.3 Contrast (Minimum): 4.5:1 — total for the criterion and 3:1 for large text. For mobile applications and software in general, the definition of 'large text' cannot be applied objectively (font size cannot be measured in pt).

3.2. Changes from one monitoring period to the next regarding the overall accessibility of monitored websites and mobile applications

Most of the organizations focused on creating an alternative version of the site in order to meet the standard and increase the accessibility of websites (https://www.mi.government.bg, https://www.uni-plovdiv.bg, https://www.mtitc.government.bg/). The analysis shows that the creation of an alternative version will lead to full compliance with standard EN 301 549, if all the requirements are met in order to consider and evaluate one version as an alternative.

In some of the websites there is use of technologies to increase the accessibility of the website by creating or using ready-made tools for additional functionality that improves accessibility (websites of ahu.mlsp.goverment.bg, mlsp.government.bg). The technological functionality is based on established good practices and includes:

- increase/decrease the size of the text;

- contrast enhancement;

- increase part of the site;

- Colour management.

The analysis shows that the use of such type of tools does not significantly improve compliance with the standard. Most technology functionalities are available by default in all browsers.

A re-inspection of the monitored websites in November showed an increase in the number of websites with published accessibility statement (30%) and websites with a site map (55% of the websites).

4. USE OF THE IMPLEMENTATION PROCEDURE AND END USER FEEDBACK

In order to create an effective mechanism for implementation of the Directive, the procedure for submitting signals and complaints for violation of the requirements for content accessibility of

website or mobile application of public sector bodies (entity under Article 1, paragraph 1 and 2 of the Electronic Governance Act) is regulated by law[7].

As the first stage of notification of an irregularity, the signal is sent to the relevant obliged entity. The obliged entity itself describes the procedure and the deadlines within which it considers signals from citizens and organizations for violations of accessibility requirements and publishes it as part of the accessibility statement on its website/mobile application. As a second stage, the possibility for filing a complaint to the Chairman of the State e-Government Agency is regulated, if the entity under Article 1, paragraph 1 or 2 of EGA does not respond in time to a signal submitted to it, or does not take measures to eliminate the violation of accessibility specified in the response to the signal.

When considering the complaint, the chairman of SEGA may give mandatory instructions by a decision if he establishes a violation of the requirements for accessibility of the content, indicating the term for their implementation by the entity under Article 1, paragraph 1 and 2, or reject it if violation is not established.

In the process of resolving problems related to the accessibility of websites and mobile applications, the Minister of Labour and Social Policy is also obliged, at the request of the Chairman of SEGA, to present a binding opinion on issues of non-technical nature and related to the specific needs of persons with disabilities when such issues arise during monitoring, inspections and reviews or in the handling of complaints.

5. CONTENT RELATED TO ADDITIONAL MEASURES

SEGA announces amendments to the policy for accessibility of websites and mobile applications through the agency's website and through correspondence directly with public sector bodies or through their associations and councils. In accordance with the amendments, the Methodology for monitoring and inspecting the accessibility of the content of websites and mobile applications and all appendices to it is kept up to date.

In order to reduce the costs of administrations in the implementation of e-governance policies, the State e-Government Agency has created an opportunity to develop a portal site through a template developed in accordance with the accessibility requirements. Currently, the administrations have at their disposal the service 'Developing a federated portal' which is a cloud

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[7] Electronic Governance Act

solution for building multiple portal websites within a single infrastructure. The platform allows each portal website in the infrastructure to be developed through a template maintained by SEGA employees. The templates allow relative personalization of the appearance of the website, but retain the structure in order to facilitate the end user and create a unified visual online identity of government institutions. Any administration wishing to use the created template should take action to submit a model application. Information about the service, the demonstration version of the developed universal template portals, General terms and conditions for developing and maintaining a federated portal in the infrastructure of the Single portal for access to electronic administrative services and model application are published on the official website of the State e-Government Agency on address: https://e-gov.bg/wps/portal/agency/systems/info-systems/egovbg or http://unifiedmodel.egov.bg/wps/portal/unified-model/for administrations/municipalities/municipalities/.

From the websites inspected, the National Revenue Agency uses a template provided by SEGA.

The launch of the monitoring and verification activities put the topic of web accessibility on the organizations' agenda. The information received by SEGA from the inspected organizations shows that the necessary actions are being taken to eliminate the discrepancies within the set deadline and to maintain accessible content. As a result of an in-depth review of the accessibility of their websites, some of the organizations planned and developed entirely new websites.

In order to raise awareness, the State e-Government Agency has created a special space on its website (https://e-gov.bg/wps/portal/agency/home), where it publishes current news, documents and useful links (https://e-gov.bg/wps/portal/agency/home/%D0%B0ccessibility-websites/web-access). To facilitate the use of the standard EN 301 549 V2.1.2: 2018 and the Guidelines for accessibility of web content WCAG 2.1 by developers, administrations and organizations providing public services, SEGA translated the standard into Bulgarian.

SEGA initiated practice and involved persons with disabilities in the inspections for accessibility of websites, for which it received support from the Ministry of Labour and Social Policy, the National Council for People with Disabilities at the Council of Ministers, the Institute of Public Administration (https://www.ipa. government.bg/bg/dobra_praktika/privlichane-na-hora-s-uvrezhdaniya-v-izvrshvane-na-proverki-za-dostpnost-na-ueb) and various non-governmental organizations.

Annex to the Report on the monitoring of the accessibility of websites and mobile applications of public sector bodies carried out during the first monitoring period in the Republic of Bulgaria

- **Simplified monitoring of websites (inspection check-list)**

No.	Name of inspected element	Requirement/success criterion included in the inspection	What is inspected	Finding Yes/No/N/A	Note
1.	Text alternatives for images (providing text alternatives for each non-text content)	Non-text content 9.1.1.1 (A)	1.1. Images, form image buttons, and image map hot spots have appropriate, equivalent alternate text		
			1.2. Linked images have descriptive alternative text		
			1.3. Images that do not convey content — decorative or contain content that is already conveyed in text are given null alt text (alt="") or implemented as CSS backgrounds. (Decorative images must be hidden from screen readers (e.g. null alt attribute, ARIA role = presentation))		
			1.4. Equivalent alternatives to complex images are provided in context or on a separate linked page		
			1.5. Form buttons have a descriptive value		
			1.6. Form inputs have associated text labels (with content)		

No.	Name of inspected element	Requirement/success criterion included in the inspection	What is inspected	Finding Yes/No/N/A	Note
			1.7. Embedded multimedia is identified via accessible text		
			1.8. Frames are appropriately titled		
			Additional clarification: All image content presented to the user must have a text alternative that serves the equivalent purpose		
2.	Check of basic structure	Information and relationships 9.1.3.1 (A)	2.1. Semantic markup is used to designate headings (<h1>), regions/landmarks, lists (, , and <dl>), emphasized or special text (<strong>, <code>, <abbr>, <blockquote>, for example), etc. Semantic markup is used appropriately		
			2.2. Tables are used for tabular data and data cells are associated with their headers. Data table captions, if present, are associated to data tables		
			2.3. Text labels are associated with form input elements. Related form elements are grouped with fieldset/legend. ARIA labelling may be used when standard HTML is insufficient		
3.	Contrast ration (minimum)	Contrast (minimum requirements) 9.1.4.3 (AA)	3.1. Text and images of text have a contrast ratio of at least 4.5:1.		

No.	Name of inspected element	Requirement/success criterion included in the inspection	What is inspected	Finding Yes/No/N/A	Note
			3.2. Large text — at least 18 point (24px) or 14 point (18.66px) and bold has a contrast ratio of at least 3:1		
4.	Resize text by conventional approaches to browser	Resize text 9.1.4.4 (AA)	4.1. The text is actually zoomed (e.g. no text images)		
			4.2. The content is not cut, reduced or unclear		
			4.3. The content does not overlap		
			4.4. Interactive elements (such as form controls) are visible and usable		
			4.5. No horizontal scrolling is required		
		Images of text 9.1.4.5 (AA)	4.6. If the same visual presentation can be made using text alone, an image is not used to present that text		
5.	Moving, flashing, or blinking content	Pause, stop, hide 9.2.2.2 (A)	5.1. Automatic moving, flashing, blinking or scrolling of content that lasts more than 5 seconds can be paused, stopped or hidden by the user		
			5.2. Automatic content updates can be paused, stopped or hidden by the user, or the user can manually control the update time		

No.	Name of inspected element	Requirement/success criterion included in the inspection	What is inspected	Finding Yes/No/N/A	Note
		Three flashes or below flashes threshold 9.2.3.1 (A)	5.3. No page content flashes more than 3 times per second unless that flashing content is sufficiently small and the flashes are of low contrast and do not contain too much red. Common thresholds for flashes and red flashes must be checked		
6.	Pages title	Page title 9.2.4.2 (A)	6.1. Page title briefly, adequately and informatively describes the content of the page		
			6.2. Page title adequately distinguishes the page from other pages, different from other pages on the website		
			6.3. Unique information is first placed in the title of the page		
7. 1 1	Descriptive links	Purpose of link (in context) (A) 9.2.4.4	7.1. Each link contains text that describes the purpose of the link (no links to text such as: 'click here', 'here', 'more', 'read more', 'information')		
			7.2. No links included with href attribute, without text content (such as text or text alternative) and without a label that identifies the purpose (aria-label or aria-labelledby);		
			7.3. The text alternative to the images included in the links is different from the text content of the link		
			7.4. Links or buttons defined by WAI-ARIA have a corresponding label		

No.	Name of inspected element	Requirement/success criterion included in the inspection	What is inspected	Finding Yes/No/N/A	Note
8.	Headings and labels	Headings and labels 9.2.4.6 (AA)	8.1. Page headings and labels for form and interactive controls are informative.		
			8.2. All text that looks like a heading is marked up as a heading		
			8.3. All text that is marked up as a heading is really a conceptual section heading.		
			8.4. The headings hierarchy is meaningful and there is correct heading hierarchy		
9. 1 2	Identification of basic language	Page language 9.3.1.1. (A)	9.1. The language of the page is identified using the lang attribute (e.g., <html lang="bg">)		
			9.2. Page language matches the identified language		
10.	Forms, labels and error identification	Error identification 9.3.3.1 (A)	10.1. Required form elements that require a specific format, value, or length provide this information within the element's label.		
			10.2. Form validation errors are efficient, intuitive, and accessible. The error is clearly identified, quick access to the problematic element is provided, and the user can easily fix the error and resubmit the form		
		Labels or instructions	10.3. Sufficient labels, cues, and instructions for required interactive elements are provided via		

No.	Name of inspected element	Requirement/success criterion included in the inspection	What is inspected	Finding Yes/No/N/A	Note
		9.3.3.2 (A)	instructions, examples, properly positioned form labels, and/or fieldset/ legends		
		Name, role, value 9.4.1.2 (A)	10.4. The names of the regions and frames suggest what they contain		
11.	Multimedia (video/audio) alternatives	Audio-only and video-only (pre-recorded) 9.1.2.1 (A)	11.1. A transcript of relevant content is provided for non-live audio-only (audio podcasts, MP3 files, etc.).		
			11.2. A transcript or audio description of relevant content is provided for non-live video-only, unless the video is decorative		
		Captions (pre-recorded) 9.1.2.2 (A)	11.3. Synchronized captions are provided for non-live video (YouTube videos, etc.)		
		Audio description or media alternative (pre-recorded) 9.1.2.3 (A)	11.4. A transcript or audio description is provided for pre-recorded video		
		Audio control 9.1.4.2 (A)	11.5. If audio automatically plays on a page for more than 3 seconds, it can be easily stopped or its volume adjusted		
			Note: If audio or video is marked as an alternative to web content (for example, an audio version or		

No.	Name of inspected element	Requirement/success criterion included in the inspection	What is inspected	Finding Yes/No/N/A	Note
			sign language on a web page), the web content itself serves as an alternative. Alternatives (video/audio) need to be provided for media based on time alternatives		
12.	Keyboard access and visual focus	Keyboard 9.2.1.1 (A)	12.1. All page functionality is available using the keyboard (links, buttons, form fields, controls in media players), unless the functionality cannot be accomplished in any known way using a keyboard (e.g., free hand drawing).		
			12.2. Page-specified shortcut keys and accesskeys (accesskey should typically be avoided) do not conflict with existing browser and screen reader shortcuts.		
		No keyboard trap 9.2.1.2 (A)	12.3. Keyboard focus is never locked or trapped at one particular page element. The user can navigate to and from all page elements using only the keyboard		
		Focus Placement Order 9.2.4.3 (A)	12.4. The navigation order of links, form elements, etc. is logical and intuitive		
		Visible focus 9.2.4.7 (AA)	12.5. It is visually apparent which page element has the current keyboard focus (i.e., as you tab through the page, you can see where you are)		
			Result Tingtun Checker		
			Result from Lighthouse Checker		

No.	Name of inspected element	Requirement/success criterion included in the inspection	What is inspected	Finding Yes/No/N/A	Note
			Has accessibility statement		
			Has accessibility statement and it's according model		
			Has site map		
			Has site map and it's in accessible HTML format		

Requirement of the harmonised standard included in the simplified monitoring	User needs that is satisfies
9.1.1.1 (A) Non-text content	without vision, limited vision, without hearing limited hearing, limited cognition
9.1.2.1 (A) Audio-only and video-only (pre-recorded)	without vision, limited vision, without hearing, limited hearing limited cognition
9.1.2.2 (A) Captions (pre-recorded)	without hearing, limited hearing limited cognition
9.1.2.3 (A) Audio description or media alternative (pre-recorded)	without vision limited vision, limited cognition
9.1.3.1 (A) Information and relationships	without vision, limited vision, limited cognition
9.1.4.2 (A) Audio control	without vision, limited hearing, limited cognition
9.1.4.3 (AA) Contrast (minimum)	limited vision, without perception of colour, limited cognition
9.1.4.4 (AA) Resize text	limited vision, limited manipulation or strength
9.1.4.5 (AA) Images of text	limited vision, without perception of colour
9.2.1.1 (A) Keyboard	without vision, limited vision, without vocal capability, limited manipulation or strength
9.2.1.2 (A) No keyboard trap	without vision, limited vision, without vocal capability, limited manipulation or strength
9.2.2.2 (A) Pause, stop, hide	without vision, limited vision, limited manipulation or strength, without hearing, with limited hearing
9.2.3.1 (A) Three flashes or below flashes threshold	the need to minimize photosensitive seizure triggers

9.2.4.2 (A) Page title	without vision, limited vision, limited manipulation or strength, usage with limited cognition
9.2.4.3 (A) Focus Placement Order	without vision, limited vision, without hearing, usage without vocal capability, limited cognition
9.2.4.4 (A) Purpose of link (in context)	without vision, limited vision, limited manipulation or strength, limited cognition usage without vocal capability
9.2.4.6 (AA) Headings and labels	without vision, limited vision, without vocal capability, without hearing, limited manipulation or strength, limited cognition
9.2.4.7 (AA) Visible focus	without vision, limited vision, without vocal capability, limited manipulation or strength, limited cognition
9.3.1.1 (A) Page language	without vision, limited vision, without hearing limited hearing, limited cognition
9.3.3.1(A) Error identification	without vision, limited vision, without hearing limited hearing, limited cognition
9.3.3.2 (A) Labels or instructions	without vision, limited vision, without vocal capability, limited manipulation or strength, limited cognition
9.4.1.2 (A) Name, role, value	without vision, limited vision, limited manipulation or strength

- **In-depth monitoring of websites (inspection check-list)**

Requirement	Criterion	Finding (Yes/No/N/A)	Technical clarification / error code
Non-text content	9.1.1.1 (A)		
Audio-only and video-only (pre-recorded)	9.1.2.1 (A)		
Captions (pre-recorded)	9.1.2.2 (A)		
Audio description or media alternative (pre-recorded)	9.1.2.3 (A)		
Captions (live)	9.1.2.4 (AA)		
Audio description (pre-recorded)	9.1.2.5 (AA)		
Information and relationships	9.1.3.1 (A)		
Meaningful sequence	9.1.3.2 (A)		
Sensory characteristics	9.1.3.3 (A)		
Orientation	9.1.3.4 (AA)		
Identify input fields purpose	9.1.3.5 (AA)		
Use of colour	9.1.4.1 (A)		
Audio control	9.1.4.2 (A)		
Contrast (minimum requirements)	9.1.4.3 (AA)		
Resize text	9.1.4.4 (AA)		
Images of text	9.1.4.5 (AA)		
Resize and reflow	9.1.4.10 (AA)		
Non-text objects contrast	9.1.4.11 (AA)		
Text spacing	9.1.4.12 (AA)		
Content on hover or focus	9.1.4.13 (AA)		
Keyboard	9.2.1.1 (A)		
No keyboard trap	9.2.1.2 (A)		
Character key shortcuts	9.2.1.4 (A)		
Timing adjustable	9.2.2.1 (A)		

Requirement	Criterion	Finding (Yes/No/N/A)	Technical clarification / error code
Pause, stop, hide	9.2.2.2 (A)		
Three flashes or below flashes threshold	9.2.3.1 (A)		
Bypass blocks of information	9.2.4.1 (A)		
Page title	9.2.4.2 (A)		
Focus Placement Order	9.2.4.3 (A)		
Purpose of link (in context)	9.2.4.4 (A)		
Multiple way	9.2.4.5 (AA)		
Headings and labels	9.2.4.6 (AA)		
Visible focus	9.2.4.7 (AA)		
Pointer gestures/cursor	9.2.5.1 (A)		
Turn off pointer gestures/cursor	9.2.5.2 (A)		
Label in name	9.2.5.3 (A)		
Actuation through motion	9.2.5.4 (A)		
Page language	9.3.1.1. (A)		
Language of parts	9.3.1.2 (AA)		
On focus	9.3.2.1 (A)		
Automatic change on input	9.3.2.2 (A)		
Consistent navigation	9.3.2.3 (AA)		
Consistent identification	9.3.2.4 (AA)		
Error identification	9.3.3.1(A)		
Labels or instructions	9.3.3.2 (A)		
Suggestion for error fixing	9.3.3.3 (AA)		
Error prevention (legal, financial, data)	9.3.3.4 (AA)		
Parsing	9.4.1.1 (A)		
Name, role, value	9.4.1.2 (A)		
Status messages	9.4.1.3 (AA)		

Clarifications on the criteria of the harmonized standard EN 301 549 V2.1.2 (2018-08)

Requirement/success criterion included in the inspection	Criterion	Explanations of what is being checked
Non-text content	**9.1.1.1 (A)**	Images, form image buttons, and image map hot spots have appropriate, equivalent alternate text.
Audio-only and video-only (pre-recorded)	**9.1.2.1 (A)**	A transcript of relevant audio/video content is provided on file (pre-recorded, non-live).
Captions (pre-recorded)	**9.1.2.2 (A)**	Synchronized captions are provided for non-active video (pre-recorded, non-live).
Audio description or media alternative	**9.1.2.3 (A)**	Pre-recorded video transcript or audio description is provided (pre-recorded, non-live).
Captions (live)	**9.1.2.4 (AA)**	Subtitles are provided to describe the audio/video content that is being broadcast live.
Audio description (pre-recorded)	**9.1.2.5 (AA)**	Descriptive explanations in the form of audio content are provided for video content synchronously. (pre-recorded, non-live).
Information and relationships	**9.1.3.1 (A)**	The information, structure and links between them can be 'programmatically' (through software tools) defined or available in descriptive text.
Meaningful sequence	**9.1.3.2 (A)**	When the sequence of presentation of the content affects its meaning, the site provides the opportunity to manage this sequence programmatically (through software tools).
Sensory characteristics	**9.1.3.3 (A)**	The instructions provided for the purpose of understanding and working with the content do not rely solely on sensory and material characteristics such as shape, colour, size, place of visualization, spatial orientation and sound.

Requirement/success criterion included in the inspection	Criterion	Explanations of what is being checked
Orientation	**9.1.3.4 (AA)**	The content provided on the site is not limited in appearance and orientation only in one direction or only on one display, Allows you to change the orientation to portrait and landscape and does not depend on the size of the display on which it is displayed.
Identify input fields purpose	**9.1.3.5 (AA)**	The meaning of the input field, which collects information about the user, provides the opportunity to be software modified when the field serves purposes described in the section 'Input Purposes for User Interface Components' of the standard.
Use of colour	**9.1.4.1 (A)**	When colours are used, they should not be the only visual means as a way to determine user action, an indication of a response from a user, or a marker to distinguish a visual element. For the above, there should be an alternative way of distinguishing other than the use of colour.
Audio control	**9.1.4.2 (A)**	If audio automatically plays on a page for more than 3 seconds, it should be easily possible to stop it or its volume to be adjusted.
Contrast (minimum requirements)	**9.1.4.3 (AA)**	Text and images of text have a contrast ratio of at least 4.5:1.
Resize text	**9.1.4.4 (AA)**	The size of the text can be changed up to 200% without the use of additional technologies and without loss of content or functionality.
Images of text	**9.1.4.5 (AA)**	Interactive elements (such as form controls) are visible and usable.
Resize and reflow	**9.1.4.10 (AA)**	The content can be provided without loss of information or functional characteristics and without the obligatory need for horizontal and vertical scrolling.
Non-text objects contrast	**9.1.4.11 (AA)**	The visually rendered content has a 3:1 contrast ratio between adjacent colours
Text spacing	**9.1.4.12 (AA)**	For content created using HTML-related languages (markup languages) that support stylistic change (CSS), no loss of content and functionality is allowed.

Requirement/success criterion included in the inspection	Criterion	Explanations of what is being checked
Content on hover or focus	**9.1.4.13 (AA)**	When mouse movement on an object or focusing content via the keyboard visualizes additional objects in the content that otherwise remain hidden
Keyboard	**9.2.1.1 (A)**	All the functionality of the page is accessible with the help of the keyboard without any time limit for pressing the shortcut key.
No keyboard trap	**9.2.1.2 (A)**	Shortcut keys and accesskeys do not conflict with existing browser and screen reader shortcut keys.
Character key shortcuts	**9.2.1.4 (A)**	If the keyboard shortcut is implemented in the content, using only letters, punctuation, numbers or symbols, then a mechanism must be available to turn off or change the keyboard shortcut. Another option is to be active only when the subject is in focus.
Timing adjustable	**9.2.2.1 (A)**	For any content that is provided for a limited time, the user must be able to turn off the limit, set the display limit, increase the display limit.
Pause, stop, hide	**9.2.2.2 (A)**	Automatic content updates can be paused, stopped or hidden by the user, or the user can manually control the update time
Three flashes or below flashes threshold	**9.2.3.1 (A)**	No page content flashes more than 3 times per second unless that flashing content is sufficiently small and the flashes are of low contrast and do not contain too much red. Common thresholds for flashes and red flashes must be checked.
Bypass blocks of information	**9.2.4.1 (A)**	There is a content management mechanism that allows skipping content blocks that are repeated many times.
Page title	**9.2.4.2 (A)**	The website has a title that describes it briefly, adequately and informatively and allows it to be distinguished from other pages.
Focus Placement Order	**9.2.4.3 (A)**	Keyboard focus is never locked or trapped at one particular page element. The user can navigate to and from all page elements using only the keyboard.

Requirement/success criterion included in the inspection	Criterion	Explanations of what is being checked
Purpose of link (in context)	9.2.4.4 (A)	The purpose of each link on the page can be determined by the name of the link itself or by the name of the link in combination with an additional element that can be defined programmatically.
Multiple way	9.2.4.5 (AA)	More than one way is possible to access a web page or group of web pages.
Headings and labels	9.2.4.6 (AA)	Page headings and labels for form controls are informative and meaningful.
Visible focus	9.2.4.7 (AA)	It is visually apparent which page element has the current keyboard focus (i.e., as you tab through the page only with keyboard, you can see where you are).
Pointer gestures/cursor	9.2.5.1 (A)	All control gestures that require 'writing' a curve with the cursor have an alternative (gesture, key) to perform that does not require writing a curve.
Turn off pointer gestures/cursor	9.2.5.2 (A)	All cursor/pointer control gestures must be able to be adjusted accordingly.
Label in name	9.2.5.3 (A)	For content objects with labels that contain text or images of text, the name of the label itself must contain the text that is visually represented in the image.
Actuation through motion	9.2.5.4 (A)	Functionality that is controlled by device movement or user movement to have alternative control available in the user interface. The management of the same functionality should provide the option to turn it off in order to prevent accidental user actions.
Page language	9.3.1.1. (A)	The default language on each page can be programmatically (software) defined.
Language of parts	9.3.1.2 (AA)	The language of each phrase or part of a text must allow it to be software-modified (translated for a different language, etc.), with the exception of object names, technical terms, words from an indefinable language, and words and phrases that have specific contextual meaning.

Requirement/success criterion included in the inspection	Criterion	Explanations of what is being checked
On focus	9.3.2.1 (A)	When any element is in focus, the focusing event should not cause a change in the context of the content.
Automatic change on input	9.3.2.2 (A)	Changing the setting of any component of the interface does not cause the contextual content to change automatically unless the user is notified in advance of these automatic changes.
Consistent navigation	9.3.2.3 (AA)	Navigation mechanisms that are repeated on multiple pages in a group should be structured in the same way for all pages in the group, unless the user requests otherwise.
Consistent identification	9.3.2.4 (AA)	Components that have identical functionality in a given group of pages must be able to be recognized equally (to be identical identically) for each individual page.
Error identification	9.3.3.1(A)	If automatic verification of form completion is maintained and such an error is detected, it must be shown to the user in text form and the user can read it.
Labels or instructions	9.3.3.2 (A)	Labels, cues, and instructions are provided to the user in an accessible form for filling in elements of the page or when filling in forms.
Suggestion for error fixing	9.3.3.3 (AA)	If an input error is detected and it is possible to correct it automatically, the user should be aware of possible corrections, unless this poses a security risk.
Error prevention (legal, financial, data)	9.3.3.4 (AA)	For web pages that bind the user with legal consequences or financial transactions, as well as those that manage data of the user himself (store, delete, change), must meet the following conditions: * Each operation must be reversible * Each answer can be corrected * The user to be given the opportunity to correct the entered data before sending * Give the user the opportunity to confirm the data before sending

Requirement/success criterion included in the inspection	Criterion	Explanations of what is being checked
Parsing	**9.4.1.1 (A)**	For content created using HTML-related languages (markup languages), the elements are arranged according to the level and the use of duplicate IDs is avoided.
Name, role, value	**9.4.1.2 (A)**	For all components of the user interface, including those that are automatically generated, the name and role of the component can be determined programmatically. Make user notifications available when these components change automatically.
Status messages	**9.4.1.3 (AA)**	For content created using HTML-related languages (markup languages), status and state messages should be software-specific to the user's role and characteristics, including whether they use assistive technologies without receiving focus.

- **In-depth monitoring of mobile applications (inspection check-list)**

Requirement	Criterion	Finding	Technical clarifications
Non-text content	11.1.1.1.1 (A)		
Audio-only and video-only (pre-recorded)	11.1.2.1.1 (A)		
Captions (pre-recorded)	11.1.2.2 (A)		
Information and relationships	11.1.3.1.1 (A)		
Sensory characteristics	11.1.3.3 (A)		
Orientation	11.1.3.4 (AA)		
Identify input fields purpose	11.1.3.5 (AA)		
Use of colour	11.1.4.1 (A)		
Audio control	11.1.4.2 (A)		
Contrast (minimum requirements)	11.1.4.3 (AA)		
Images of text	11.1.4.5.1 (AA)		
Non-text objects contrast	11.1.4.11 (AA)		
Content on hover or focus	11.1.4.13 (AA)		
Timing adjustable	11.2.2.1 (A)		
Pause, stop, hide	11.2.2.2 (A)		
Three flashes or below flashes threshold	11.2.3.1 (A)		
Purpose of link (in context)	11.2.4.4 (A)		
Headings and labels	11.2.4.6 (AA)		
Pointer gestures/cursor	11.2.5.1 (A)		
Turn off pointer gestures/cursor	11.2.5.2 (A)		
Actuation through motion	11.2.5.4 (A)		
Automatic change on input	11.3.2.2 (A)		
Error identification	11.3.3.1.1(A)		

Requirement	Criterion	Finding	Technical clarifications
Error prevention (legal, financial, data)	11.3.3.4 (AA)		
Name, role, value	11.4.1.2.1(A)		
Open to accessibility technologies	11.5.2		
No disruption when using accessibility technologies	11.6.2		
User settings	11.7		