

Report on the digital accessibility assessment carried out on the project website

Deliverable 5.2

Version 1.3

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Authors:	Diego Visintin (IND)
	Marianne Viskanic (IND)
	Günther Ennemoser (IND)

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SuCoLo

List of abbreviations

AgID	Agenzia per l'Italia Digitale
EU	European Union
ICT	Information and communication technology
iOS	iPhone Operating System
IT	Information technology
PC	Personal computer
PDF	Portable document format
RTD	Responsabile Transizione Digitale
W3C	World Wide Web Consortium
WAI-ARIA	Web Accessibility Initiative - Accessible Rich Internet Applications
WCAG	Web Content Accessibility Guidelines

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Administrative information

Basic information on the SuCoLo project and this deliverable:

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	Sustainability InnoCenter (SIC), Sweden		
	VIABIRDS Technologies GmbH (VIA), Austria		
	Universität Leipzig (ULEI), Germany		
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Purpose of the document

Communication in the SuCoLo Project is conducted mainly online and should be accessible for the largest group of people possible. To communicate the project's activities and results in an accessible way, the SuCoLo homepage and its other digital products need to be analysed in detail. This document therefore also analyses and describes the functionality of the MOQO application, which is the cargo bike sharing booking platform used in the Merano research pilot. SuCoLo partner IND, who was recognised in 2017 by AgID (Agenzia per l'Italia Digitale) as a national competence centre for the assessment of digital accessibility (in particular, inclusive web accessibility), offers its complementary expertise in the SuCoLo project.

At international level, the World Wide Web Consortium (W3C for short) has developed guidelines for the accessibility of interfaces on the internet, which then became the current ISO standard and were adopted by the European Commission as a recommendation to the Member States. The main aim of these guidelines is to promote accessibility by not discouraging content creators from using photos, videos, etc., but rather to educate them on how to make multimedia content available and usable for a wider audience.

There are over 80 million people with disabilities in Europe who need easier access to websites and mobile applications. For this reason, the Council of Europe issued a stricter regulation on the accessibility of public administration websites and applications on 18 July 2016. Italy has also had the so-called 'Stanca Law' in force since 2004 with guidelines to facilitate access to digital information for people with disabilities. The aim of the law, which is based on the constitutional principle of equality, is to remove digital barriers.

By carrying out a digital accessibility assessment on the SuCoLo project website, the SuCoLo project can better recognise areas for improvement with regards to accessibility and make concrete improvements to make sure that SuCoLo activities, results and products are comprehensible for a wide audience, including those with disabilities. This document serves as a precursor to the translation of the project website into Easy to Read Language.

Executive Summary

This document is the report on the digital accessibility audit carried out on the SuCoLo website and the MOQO app, which is the cargo bike sharing booking platform used in the Merano research pilot. For the professional accessibility analysis, the IND Competence Centre used a special test procedure based on the Web Content Accessibility Guidelines (WCAG) 2.2 to ensure easier access to the project information.

The assessment of digital accessibility was carried out in four steps:

- 1. Test procedure with special software (IT accessibility)
- 2. Test group with people with disabilities (usability)
- 3. Evaluation
- 4. Reporting, to document digital barriers

The analysis carried out demonstrated several areas for improvement on both the SuCoLo website and the MOQO app in order to provide all project participants with barrier-free access to the digital information. Based on the analyses carried out, usability can now be significantly improved to attract a diverse audience for communicating SuCoLo's activities, products and results.

1. Possible technological barriers using digital devices

Nowadays, many activities on digital devices are carried out with the help of various technical aids. Also, the communication of the SuCoLo Project primarily takes place in the internet.

The first obstacle that can be encountered is the question of how to use these aids depending on the ability of the person concerned. In the case of motoric impairments, there are various models of computer mice and keyboards on the market: there are mouse emulators and even personal computer (PC) controls using the eyes for severe motoric impairments. For people with hearing impairments, there is software that transcribes what is said in real time. Furthermore there are applications for telephoning that transcribe the speaker's message and allow the hearing-impaired person to reply in writing.For users with visual impairments, there are video magnifiers that can be used to read a printed sheet of paper. These can also have a read-aloud function, allowing the person affected to have the content of the document read out loud. They can also read it into the PC, digitise it and edit it.

As well, computers also have personalisable accessibility settings standardised, such as increasing the colour contrast, enlarging the icons, slowing down the cursor movement times and much more. If this is not enough, there is special software that reads out what is currently on the screen; for example, a screen reader.

However, once the computer access barrier has been overcome, there are further digital barriers that limit access to digital information.

1.1 Digital accessibility

Similar to the built environment, where the aim is to avoid architectural barriers (such as a step), it is important to avoid digital barriers when programming a website. Italy is actually an important pioneer in this area ('Stanca Law' 2004¹) The legal requirements are now also based on EU directives (2016/2102²) and mainly oblige public administrations to make their websites digitally accessible, but also all other public bodies and private service providers that are co-financed with public funds or generate high turnover.

This is because their online services in particular must of course be usable for all people, including those who require special aids or configurations due to disabilities, and this affects

¹ Sintini, S. (2014). Legislation on eAccessibility: the Italian approach. National Centre for IT in Public Administration. <u>https://joinup.ec.europa.eu/sites/default/files/document/2014-12/media1907.pdf</u> ² Directive 2016/2102. On the accessibility of the websites and mobile applications of public sector bodies. European Parliament, Council of the European Union. <u>https://eur-lex.europa.eu/eli/dir/2016/2102/oj</u>

a great number of people. The applicable standards for digital accessibility are based on international guidelines, the so-called Web Content Accessibility Guidelines 2.2³ introduced in October 2023 and can be summarised in four main aspects:

1.1.1 Perceptibility

The website should have a very clear structure and clear menu navigation, and the font used should be easy to read. Additionally, the font size must be able to be enlarged if required. Sufficient contrast is also essential and, very importantly, the content must be able to be read aloud by a screen reader. Regarding inserted content such as photos, videos or audio files, alternatives must be made available, e.g. in the form of subtitles or videos in sign language. Videos or audio files should never start on their own, but the user must actively press the play button to start, pause or stop them.

1.1.2 Usability

The website should not only be navigable with the mouse, but also with the computer keyboard, for example.

1.1.3 Comprehensibility

The content of the website should be simple and easy to understand. In this respect, there is also certified Easy-to-read language for people with learning difficulties or people who do not understand the language well.

1.1.4 Robustness

The website should work well on all browsers and devices. This point also includes PDF documents; for example, it is not enough to simply scan a document in a photocopier to create it, because the result in this case is a photo without background information (meta data) - instead, a Word document, for example, must be digitally formatted into an accessible PDF document.

1.2 Description of the process of testing digital accessibility according to AgID

The assessment of digital accessibility consists of three phases:

1. **Technical/objective analysis:** using specific software, the source codes of online tools/digital applications are evaluated, where possible.

³ World Wide Web Consortium. (2023). Web Content Accessibility Guidelines (WCAG) 2.2. <u>https://www.w3.org/TR/WCAG22/</u>

- Subjective analysis (usability): in collaboration with the client, a specialised testing group has to be set up comprising experts in assistive technologies, visually impaired people, people with motoric disabilities (tetraplegia, paraplegia, spasms), people with learning impairments and elderly people (>70).
- 3. **Preparation of the final report** incorporating the accessibility aspects of the objective and subjective evaluation. The report lists the critical points encountered (errors and/or difficulties) and suggests possible improvements to ensure easier access and use of the platform for all potential users.
- 4. Delivery of report



Figure 1: Process of digital accessibility evaluation (Source: IND)

Once the necessary adjustments/modifications have been made to resolve the documented problems, a second final follow-up analysis may be required.

2. Digital accessibility carried out on the project website: www.sucolo.eu

2.1 Technical Analysis

2.1.1 Technical features

- System used: CMS WordPress (version 6.5.4 in June 2024),
- Language: PHP
- Database: MySQL
- Web Server: Apache HTTP Server

2.1.2 Sitemap

Main menu (site pages)

- 1. SuCoLo (home)
- 2. About
- 3. The SuCoLo Consortium
- 4. Resources
- 5. News & Events
- 6. Get in Touch

Footer menu (site pages)

- 1. Legal Notice
- 2. Privacy Policy

2.1.3 Analysis of common site components (templates, menus, content blocks, etc.)

The colour scheme of the active menu item, as well as that of the hover effect, presents insufficient contrast with the background: #afcb37/#ffffff = ratio 1.84. We recommend a ratio of at least 4.5, for example: #6b7f00/#ffffff.

Additionally, all menu item links lack the "title" attribute, which is necessary for accessible navigation by users using a screen reader. Furthermore, we strongly recommend the use of the WAI-ARIA ("Web Accessibility Initiative - Accessible Rich Internet Applications", which is a technical specification that provides a framework to improve the accessibility and interoperability of web content) attributes specifically for navigation with screen-readers, in this case the "aria-label" attribute.

Furthermore, the same note concerns the "SuCoLo" logo present in both the header and footer of the site which, although it uses a role ARIA attribute, lacks the "aria-label" and "alt" attributes. In general, keyboard navigation is difficult, especially due to the lack of visible focus on some of the selected elements.

The designated RTD (Responsabile Transizione Digitale) will have to take steps to compile the website accessibility declaration, as per the European regulation (Accessibility requirements for ICT products and services of the European Harmonized Standard), thus conforming to level "AA" of the WCAG-2.1 web accessibility guidelines. The statement, which must be sent for approval to the appropriate body (for Italy AgID - Agenzia per l'Italia Digitale) must then be made available for consultation on the website. The regulations also require that the website provides users with a feedback tool dedicated to reporting problems encountered, including accessibility problems. Such a tool can be a form, as well as an email contact that can be written to.

Transparente Verwaltung Privacy Policy Cookie Policy PNRR Dichiarazione di accessibilità Problem melden Impressum Themen

Figure 2: example of a footer menu with the accessibility commitment "Dichiarazione di accessibilita" (https://sspbozeneuropa.com/argomento/ssp-bozen-europa/)

	: Drucken / Teilen
Problem melden	
Helfen Sie uns, unsere Seite zu optimieren	
Sehr geehrte Besucher/in, haben Sie auf unseren Webseiten ein Problem oder nicht-barrierefreie Inhalte gefunden?	
Dann füllen Sie bitte das nachfolgende Formular aus und geben sie uns möglichst alle Informationen weiter die uns helfen können.	
Ihre Rückmeldungen und Vorschläge dienen dazu, das Webportal des Schulsprengels Bozen Europa hinsichtlich Funktionalität und Barrie optimieren.	erefreiheit zu
Die erhobenen Daten werden in keiner Weise an Dritte weitergegeben.	
Vielen Dank für Ihre Mithilfe.	
Dein Name	
Deine E-Mail-Adresse	
Betreff	

Figure 3: example of the form "indicate accessibility problems" to guarantee that users can signal difficulties (https://ssp-bozeneuropa.com/problem-melden/)

2.1.4 Home page

Titling hierarchy is okay, and contrasts are okay. As with the template, the links on the page, for example the logos in the partner gallery, lack the "title" attribute (and WAI-ARIA). Going further, the "Read more" buttons could also be improved by adding a WAI-ARIA attribute that briefly describes their contents. Furthermore, our team does not understand the usefulness of the "Load map" button, as it is not a video or audio which, according to the guidelines, should not start automatically. If the aim is to prevent the user who navigates from the keyboard from finding himself wandering among the map tools. There are other methods to avoid this, such as more precise navigation between the blocks (the skip content at the top of the page is sufficient, and therefore, the map can be skipped). Lastly, the partner gallery is difficult, if not impossible, to navigate via keyboard due to the lack of visible focus on the logo scroll keys.

Page: About

Incorrect titling hierarchy, as the H2 title "Facts and figures" is followed by an H4 title "Start Date: January 2024" (this should be fixed by changing it to H3). Contrasts are okay. As with the previous page (and, presumably, all other pages), the links are missing the necessary attributes (title and WAI-ARIA). Also, the images on the page do not have the "alt" attribute that describes them, which is absolutely necessary.

The "Learn more" button in the top box takes you to the goals content, which is just below – however, does this make sense on a relatively short page? The lens gallery presents the same navigation problems as the partner gallery on the homepage, activating the "show more" button from the keyboard with the enter key is fine.

Page: The SuCoLo Consortium

Incorrect titling hierarchy, as the H2 title "Project coordinator" is followed by the H4 titles of the partner sheets (solve by changing them to H3). Contrasts are okay. Even on this page, the links are not up to standard, as are the images.

Page: Resources (Content pending...)

Incorrect titling hierarchy, as the title "Resources" is an H2 (in the previous pages it is, rightly, an H1). The contrast of the text of the inactive tabs is not sufficient: #999999/#ffffff = ratio 2.85. We recommend a ratio of at least 4.5, for example: #767676/#fffffff. The links on this page are also not compliant.

Page: News & Events

Titling hierarchy is okay. On this page, a light green background has been added to the footer. Consequently, the menu links within it (dark green) are all insufficiently contrasted, it 15

is recommended to restore the white background. Furthermore, even if in this case it does not create problems, you must always be very careful when using texts over images, most of the time the result is not accessible. On the page, there is a form to subscribe to the project newsletter. It is well constructed (label attributes present, etc. etc.), but the only thing to fix is the visible focus on the radio buttons (*Sir, Madam, Neutral*), the same navigation between them (currently jumps from *Sir* to the first field of the form) and the possibility of deselecting them with the space bar. Even the "I have read the data protection notice" checkbox lacks visible focus and that of the "Submit" button is almost invisible. The email confirmation and message sent pages are okay (except as already noted for the template).

Page: Get in Touch

Incorrect titling hierarchy, the H1 title "Get in Touch" is followed by an H3 title "Michael Thelen, MA" (fix by changing it to H2). Contrasts are okay. Links usual problems. The present image (Michael Thelen), in addition to lacking the "alt" attribute, is unnecessarily large (2560x2560px for 770kb weight). It should be uploaded in the dimensions actually necessary.

Page: Legal notice

Titling hierarchy is okay. Contrasts are okay. For the rest, the usual recommendations.

Page: Privacy Policy

Titling hierarchy is okay. Contrasts are okay. For the rest, the usual recommendations. The "Your visits are not currently being tracked" checkbox. Check this box to enable (opt-in)." lacks visible focus.

2.2 Subjective analysis

For the subjective evaluation of digital accessibility, a general test of the whole homepage was made with Google *Talk Back* and iOS *Voice Over*.

All images and logos don't have any "alt" text. Therefore, the assistive device Google *Talk Back* takes the name of the file which is not the information the user needs. The results are very similar, even if *Voice Over* works a little bit better using the artificial intelligence describing images and logos where the "alt" text is missing, for example: "grey writing on white background and rainbow sign".

The sliders such as on the start homepage in the section "our consortium" or the "objectives of the project" in the menu page "about" are difficult to handle for people who use screen reader or other auxiliary aids: *Voice Over* continues to read the next automatically changing slides. The handling with Google *Talk Back* is a bit easier because it does read the sliders

only if the curser is on it. Navigating the whole page with sliders with the screen reader *Voice Over* is impossible, because it interrupts the read information to inform about the automatic slider change. Also, the language selection is impossible with Google *Talk Back* or Apple *Voice Over*.

2.2.1 General observations regarding the screen reader function

The external links are sometimes in English, sometimes in German, and sometimes in Italian. If possible, the link should lead to the page content in the selected language. This means, that if the user selected German, all links should be on German homepages. If German is not available, it should change to another language. This same problem exists also for the page of "IdeaSpace".

The language translation for many parts of the homepage is missing, such as for the buttons and most other elements on the website. This means, that if someone is navigating the page in German after selecting Google *Talk Back* / iOS *Voice Over*, the screen reader reads for example "show more" instead of "Mehr Informationen" or "load map" instead of "Kartenansicht". If the information the button "show more" opens is short, it should show directly the whole text. The "show more" button can so be avoided, and one barrier eliminated.



Figure 4: Screen shot of the slider section "objectives of the project" (<u>https://sucolo.eu</u>)

2.2.2 Accessibility test with a group of people

Therefore, a digital questionnaire for the working group (testers) was developed. The questions for this document were formulated after an accurate analysis of the website and the contained information about the SuCoLo project.

In addition to the general anagraphic data on the respective test person with regard to age, gender and mother tongue, the questionnaire also contained data on the type of disability, the terminal device used and, if applicable, the assistive device and operating system used.

In total, the questionnaire developed for the test subjects (participants in the working group, as described on page 5 in the evaluation procedure) contained a total of 8 specific solution tasks and 7 questions on the general functions.

In total, IND involved 11 test subjects. Some completed the questionnaire under observation, and some filled it in individually and submitted it. For this purpose, they received the questionnaire after a description of the project and a briefing on how to fill the questionnaire. People with visual impairments used the "Reverse colors to colors" function.

The results of the user survey (usability) on the subjective evaluation of the digital accessibility of the "SuCoLo" website are listed below in accordance with the sequence of questions:

Specific solution tasks

The participating test subjects were asked to observe themselves while navigating in order to document any difficulties as they undertook the specific tasks below. In addition, they were asked to use a watch to record the time required to complete each task and to record this in the questionnaire in seconds. Last but not least, they had to rate the perceived difficulty on a scale of 1 - 5 (where 1 = very difficult and 5 = very easy).

Task a.: Change the website language

The language selection is missing in the mobile view, and therefore, all users who tested the homepage with a mobile device cannot select any other language than English. As well, the language selection with the screen reader for blind people is not possible. The dropdown list doesn't open and no selection is possible.

Furthermore, the usability with tablet is better with iOS devices. The android devices have the possibility to select the language but it is very challenging and works only trying more often. Lastly, all other users working on apple or windows pc devices didn't have any problems solving this point.

Task b.: Find the pilot sites of the project

This task was easy and all people in the test group could solve it easily.

Task c.: Subscribe to the project newsletter

The form for the newsletter subscription is only in English. If the newsletter is planned only in English, it should be written here.

Task d.: Find the information about the project partner independent I.

The project partners are easy to find in the menu point "The SuCoLo Consortium" the links to the different partners are behind their logos. The alternative text red from screen reader, *Talk Back* or *Voice Over* is wrong, as the logos are named like the file for example: "image2027_...", the nomination should be "External Link: independent I.". Furthermore, as described before in Section 2.2 *Subjective analysis*, the links often lead to the homepage in a different language.

The mobile view the "SuCoLo consortium" page shows first the name of a partner, then the logo, then the logo of the next partner and underneath the name. This can be confusing for all users, but especially for visually impaired people.



Figure 5 Display of the SuCoLo project partners on the SuCoLo website (https://sucolo.eu/)

Task e.: Download the document "D2.1_inclusive_language"

4 people referred that the menu point "Resources" was not intuitive, and that they needed more time than actually required to find the document. Furthermore, the document is available only in the English language.

Task f.: Find the information about objective of the project n. 4

This information is contained in a slider which changes automatically every 5 seconds. Generally, the sliders are not the best solution in terms of accessibility, they are hardly navigable with keyboard and assistive devices in general. These automatic changes are not accessible and if absolutely necessary, there needs to be the possibility to switch it off.

Task g.: Find the information about the Content Officer

The legal notice page is available only in English, and also there are words in German. There should be a clear structure and every language should have its own page.

Task h.: Find the Idea Campaign and the jury

The link to the "IdeaSpace" page is in English also if a page in German is available.

Questionnaire concerning general functions

The participating test subjects were then asked to pay attention to specific functions and evaluate whether they found them easy or not. The answer possibilities were "yes", "no" and "in part".

Question a.: Is the menu clear and comprehensive?

In following diagram, the answers are demonstrated, with 27 percent saying that the menu was clear and intuitive, 55 percent say partially, and 18 percent say that it is not.



Figure 6: Graphic demonstration of question a.: Is the menu clear and comprehensive? (Source: IND)

In Italian, most testers communicated that "consorzio" and "risorse" are not clear. In German, "Ressourcen" is not clear. Furthermore, 2 test subjects would suggest to put the pilot projects in the main menu. Furthermore, some of the testers searched for the Newsletter in the menu point "Contact".

Question b.: are the contents and search results understandable and do they meet your expectations?

In following diagram, the answers are demonstrated, with a majority (82 percent) of test users stating that it is partially understandable and meet their expectations. 21



Figure 7: Graphic demonstration of Question b.: are the contents and search results understandable and do they meet your expectations? (Source: IND)

Most people who answered this question with "in part" had difficulties with the language which is not translated properly through the whole homepage. Three subjects in the test group are missing a search field for a better navigation.

Question c.: is the homepage visually appealing?

In following diagram, the answers are demonstrated, with a majority stating that the homepage is visually appealing or partially visually appealing (46 percent and 36 percent, respectively).



Figure 8: Graphic demonstration of Question c.: is the homepage visually appealing? (Source: IND)

Just under half of the users found the homepage visually appealing and other 36% find it in part visually appealing. Particularly, the testers over the age of 65 found the font size is too small.

Question d.: is the homepage in your opinion easy to navigate?

In following diagram, the answers are demonstrated. The majority of testers found the page navigation simple and the fields easy to use. The menu lists and the drop-down lists/fold-out menus cannot always be navigated using the keyboard. Many fields were not read out with the screen reader and some were only read out after a series of numbers that confused the user.



Figure 9: Graphic demonstration of Question d.: is the homepage in your opinion easy to navigate? (Source: IND)

Question e.: are the colour contrasts used for the font and background sufficient?

In following diagram, the answers are demonstrated. According to the results of the questionnaire, the color contrasts were sufficient; no one of the testers answered this question with "no". the missing answers and the "in part" answer refer to blind and elderly people. People with visual impairments used the reverse colors to colors function, which worked well.



Figure 10: Graphic demonstration of Question e.: are the color contrasts used for the font and background sufficient? (Source: IND)

3. Analysis of the PDF files on www.sucolo.eu

3.1 File:

D2.2_Data_catalogue_of_suitable_and_available_local_data_soucre s_datasets_final.pdf

Here, the title of the document (SimpliCITY DMP) is not meaningful at all; moreover, it is repeated for other published documents. As much as analysis through digital tools gives no problems in this regard, the titling of the content and the use of title tags should be reviewed and improved. The document has no bookmarks to facilitate navigation. Tables are incorrectly formatted, using the first row as the "header", despite the fact that it contains data (it should contain column headings). In general, however, it would be better to avoid using tables altogether. The image "Figure 1 City districts..." is devoid of alternative text. There is inappropriate nesting in the header on page 12.

3.2 File: D2.2_Data catalogue of suitable and available (local) data sources and data sets_simple language

The document does not present any major problems.

3.3 File: D2.1_Review_of_challenges_final

The title of the document (SimpliCITY DMP) is not meaningful at all; moreover, it is repeated for other published documents. As much as analysis through digital tools gives no problems in this regard, the titling of the content and the use of title tags should be reviewed and improved. The document has no bookmarks to facilitate navigation. Tables are incorrectly formatted, using the first row as "header" despite the fact that it contains data (it should contain column headings); in general, however, it would be preferable to avoid using tables altogether. Almost all of the images present, with the exception of the initial SuCoLo logo and "Figure 9 Walkability...," are devoid of alternative text. On pages 9, 11, 12 and 16 there is inappropriate nesting in the headings.

3.4 File: D2.1 Review of challenges_Final_Simple abstract_Logos

The title of the document is missing. Content titling is totally absent, as are bookmarks to facilitate navigation. The alternative texts of the images, although present, are not meaningful at all.

4. Accessibility of content

In order to reach and respond also to the needs of people with comprehension disabilities or users who do not know the language properly, we analysed the situation of the content understandability. The branching structure of the SuCoLo website complicates delivering one unique Easy-to-read-Language document including all contents and topics regarding the project. Therefore, IND, in collaboration with external experts for Easy-to-read-Language, developed an initial graphic proposal for the presentation of the landing page with a language selection in Easy-to-read-Language in the graphic below.

In the presence of a text with the above-mentioned characteristics, it is essential to work with colors, icons, and an intuitive structure to help users orient themselves and ensure the usability of the site by the easy language target group. All these components are considered in the graphic proposal below.



Figure 11: Graphic proposal for the homepage www.sucolo.eu with Easy-to-read-language 1

As you can see in the graphic proposal above, the main menu would contain the possibility to continue in difficult language in German, Italian or English. The difficult language would contain all research results and detailed information about the project.

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Figure 12: Graphic proposal for the homepage www.sucolo.eu with Easy-to-read-language 2

In order to find the searched information, the part for more information would be elaborated with different sections for each content. Every box should have a graphical representation which helps to understand the intended content. This part would be followed by the information about what the pilot project is. And lastly, how to rent the cargo bikes and use the MOQO app.

5. The MOQO app and its functionalities

The MOQO app is a shared mobility platform that allows users to rent various vehicles, including (cargo) bicycles, via an app. This app serves as the booking platform for cargo bike sharing in the SuCoLo research pilot in Merano. To start using the MOQO app, a user needs to create a new profile and register for the interesting offers. For the use of cargo bikes, a driver's license is not needed, and with that being said, the verification of it is not necessary. Regarding the bike hire, the MOQO app offers the following functions described below.

5.1 Vehicle search and availability

Users can use the app to find bikes in their neighbourhood. A map view is displayed showing the available bikes and stations. Filter functions help to sort bikes according to criteria such as availability, distance or bike type (e.g. e-bikes).

5.2 Bike booking

Bikes can be booked directly in the app. Availability is displayed in real time. Bookings can be made in advance or spontaneously when you are on site.

5.3 Activation and use

After booking, the bike can be unlocked via the app. To do this, there is a Bluetooth connection or a QR code scan function to open the bike's lock. The app displays the usage time, remaining rental period and kilometres.

5.4 Payment and billing

The costs for using the bike are displayed transparently directly in the app. There are various pricing models, such as per-minute, hourly or daily rates, which can be managed and paid for via the app. Payment methods include credit cards, PayPal or other local payment providers.

5.5 Return

The bikes can be parked at one of the stations or within a defined return area and returned via the app. The exact return process is guided in the app and the bike lock is locked digitally.

5.6 Support and help

If there are any problems during the drive, the app offers customer support that can be reached by chat or phone. There is also a damage and accident report if an incident occurs while using the bike.

5.7 User profile and history

All usage data such as drive history, cost overview and invoices can be accessed in the user profile. Users can also manage their personal information and payment methods there. These functions make the MOQO app a user-friendly tool for bike hire and enable flexible, digital and uncomplicated use.

6. Tests carried out on the MOQO App

The MOQO app is available for Android or iOS devices and accessible for free on Google play store and Apple store. The installation works without problems and is easy to handle, similar to many other applications available on the platforms.



Figure 13: Screenshot main Menu App MOQO: Right: Map View; Left: List of Vehicles (Source: MOQO)

The biggest problem that most apps have is the handling for people who use auxiliary means such as *Voice Over* iOS and Google *Talk Back*. The following tests were carried out testing all fields of the main pages with special attention to the alternative text read out from the app. 28

The tests were carried out on 23.09.2024 in German language on the application in general, since the cargo bike sharing modality part of the SuCoLo project is not yet available. The map itself on Figure 12 is not accessible for users with visual impairments or who are blind. Fortunately, the developers provide a list for an alternative use.

6.1 Testing MOQO with Google Talk Back

The MOQO app is generally accessible; however, there are a few small things which could work better using Google *Talk Back* :

- Once one has navigated the whole page, to get back to the main menu it is necessary to go back every single point. This problem is very common, but also very annoying for blind people.
- 2. The map is not really very accessible. On the single icons on the map, the alternative text is missing, so *Talk Back* says "indicator" without telling you what you actually see (a car, a bike or parking slot). The positive about this point is the alternative list, which can be used instead of the map. Unfortunately, after navigating the list to get to the menu list at the bottom, the user needs to navigate the whole page again. If the user wants to get to the search field "What vehicle to ride?", he needs to go back through the total list. In the surroundings, there are only 25 options. But, in some cases this might be more.
- 3. Very annoying is that while using this app with Google *Talk Back*, the screen goes in standby while using it.

7. Conclusion and Next Steps

The SuCoLo project aims to make its digital communication accessible to the widest possible audience by extending its reach to people with disabilities. This aligns with European and international guidelines for web accessibility, such as Web Content Accessibility Guidelines 2.2, European Commission legislation and Italy's "Stanca Law".

IND, recognized as a national competence center for digital accessibility assessment, conducted a four-step evaluation: a software-based testing using IT accessibility tools, usability testing with a group of people with disabilities and an evaluation of the results. The analysis revealed several areas for improvement on both the SuCoLo website and the MOQO app to provide barrier-free access to digital information for all project participants.

The next steps are to implement improvements based on these assessment findings to enhance usability and accessibility and to translate the project website into Easy to Read Language to further improve comprehension for a wider audience. This assessment and subsequent improvements will help ensure that SuCoLo's activities, results, and products are communicated effectively to a diverse audience, including those with disabilities.