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Assessment methodology

Innovative transportation services for blind and partially sighted passengers in Danube region
DANOVA

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Coordinating partner	*University of Maribor*
Contributors	*Katja Hanžič, Nina Pavletič, Sara Chiba, Tomislav Letnik, Maršenka Marksel, Stane Božičnik, Metka Dernovšek, Doris Ossberger, Mladena Funtek*
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Table of Contents

1. INTRODUCTION

Visual impairment is a broad term that refers to any degree of vision loss that affects a person's ability to perform the usual activities of daily living and that cannot be corrected to normal vision, even if the person wears glasses or contact lenses. It is not a disease itself, but a result of disease, injury, or other trauma that affects the structures and functions of the visual system. The term "visual impairment" includes blindness and the term "visually impaired" is used to refer to both blind and partially sighted persons. When a person experiences limitations and impairments in interacting with the environment and/or performing tasks due to an impairment, we speak of a disability.

People with visual impairments may feel disabled if they do not have adequate access to supports and services and face barriers such as discrimination or inaccessible buildings or transportation. It has been estimated that 96% of the transport system in the EU is still not fully accessible to blind and partially sighted people (European Blind Union) and that accessibility is extremely low in many countries in the Danube Region. Furthermore, significant differences in the level of accessibility between countries and also between cities/regions within a country have been identified. As a result, over 30 million blind and partially sighted people cannot travel independently.

For blind and partially sighted passengers, the lack of accessibility features such as tactile surface indicators (TWSI), tactile orientation maps, large print and Braille signage, audio signage, screen reader friendly websites and applications makes it extremely difficult and, in some cases, impossible to use conventional transportation systems (airplanes, buses, trains, public transportation). In these cases, they rely on the assistance of a sighted person (their personal assistant, member of a staff or a random passer-by), which ensures their ability to travel, but still imposes some limitations compared to the travel experiences of sighted people.

Although there are laws, regulations, and procedures both at EU and country level, enforcement of these rules is often a problem and most countries in the Danube Region have difficulties in fully implementing the standards. The reasons are very often: lack of expertise of authorities in ensuring accessibility, general compliance of legislations in public tendering procedures, insufficient allocation of resources, etc.

DANOVA aims to improve the accessibility of airports, seaports, train stations and bus terminals for blind and partially sighted people by developing a range of new services and skills to enable full access to all transport information, facilities, and services. To improve the accessibility of transportation terminals, an assessment of the current status is required. Therefore, the DANOVA assessment methodology has been developed. The methodology will guide the assessment process at all test sites by providing information on all elements that need to be considered. The *Assessment grid* and *Assessment report* will assist the transportation terminal manager in developing an action plan addressing the most critical accessibility issues.

2. ABOUT THE ASSESSMENT METHODOLOGY

For people who are blind or partially sighted, travelling by public transportation can be challenging. Making public transport and transport facilities accessible and easy to use for people with visual impairments should not be neglected, as people with disabilities are often completely dependent on public transport. In the context of DANOVA, we focus on unhindered access to transport terminals (airports, ports, train/tram and bus stations), which includes physical access, access to pre- and post-travel access to information, and access to services to support blind and partially sighted persons. The main aim of the assessment methodology presented here is to provide a common methodological approach to assessing the level of accessibility for visually impaired passengers in all the areas involved. This methodology does not include accessibility assessment for passengers with other types of disabilities (e.g., wheelchair users).

But first, let us discuss the concept of accessibility, which is sometimes confused with usability. Even though these two terms overlap and are both part of the user experience, there is an important difference between them. Usability is concerned with whether designs are effective, efficient, and satisfying to use. Accessibility, on the other hand, is concerned with whether all users can access an equivalent user experience no matter how they encounter a product or service. Unlike usability, accessibility focuses on people with disabilities. DANOVA's goal is to improve the accessibility of existing public transport terminals for blind and partially sighted passengers. To achieve this, we need to assess the current level of accessibility of each participating mode of transport to identify deficiencies as well as examples of best practices that could be implemented elsewhere. A common assessment methodology has been developed to evaluate the accessibility of different transport terminals, from airports and ports to train and bus stations, from large terminals to smaller ones. The methodology not only addresses the physical accessibility of each transport terminal, but also aims to verify the policies and standards of each assessed site, as well as compliance with national regulations. Thus, the methodology consists of three main segments (see Figure 1):

1. review of national environment (regulations)
2. off-site assessment (access to information and rules of conduct)
3. on-site assessment (built environment assessment).

The methodology begins with a review of national regulations that set minimum or required standards for accessibility. National regulations vary from country to country, and this is reflected in the current state of transport terminals - what is required in one country is not necessarily required in another. Therefore, national regulations need to be reviewed and the implementation of these regulations needs to be checked.

The off-site assessment of the transportation terminal will review and evaluate the site's disability awareness policies, standards, and training. Access to information will also be reviewed as part of the off-site assessment. This includes access to information about the transportation terminal before and after the trip, such as websites, apps, phone services, and the availability of personalized assistive technologies.

In on-site assessment, the built environment is assessed (the building(s) themselves). This assessment follows the transport chain that follows the physical movement of passengers through the terminal, whether they are departing or arriving (approaching -> moving through the terminal -> leaving the terminal). This movement is further divided into modules (based on travel segments) to be evaluated.

In this part, the different character of each transport terminal can be considered, because each module is to be assembled from predefined building blocks that allow different levels of complexity of each site. Modules, building blocks and relationships between them are presented in detail in the following chapters of this methodology.

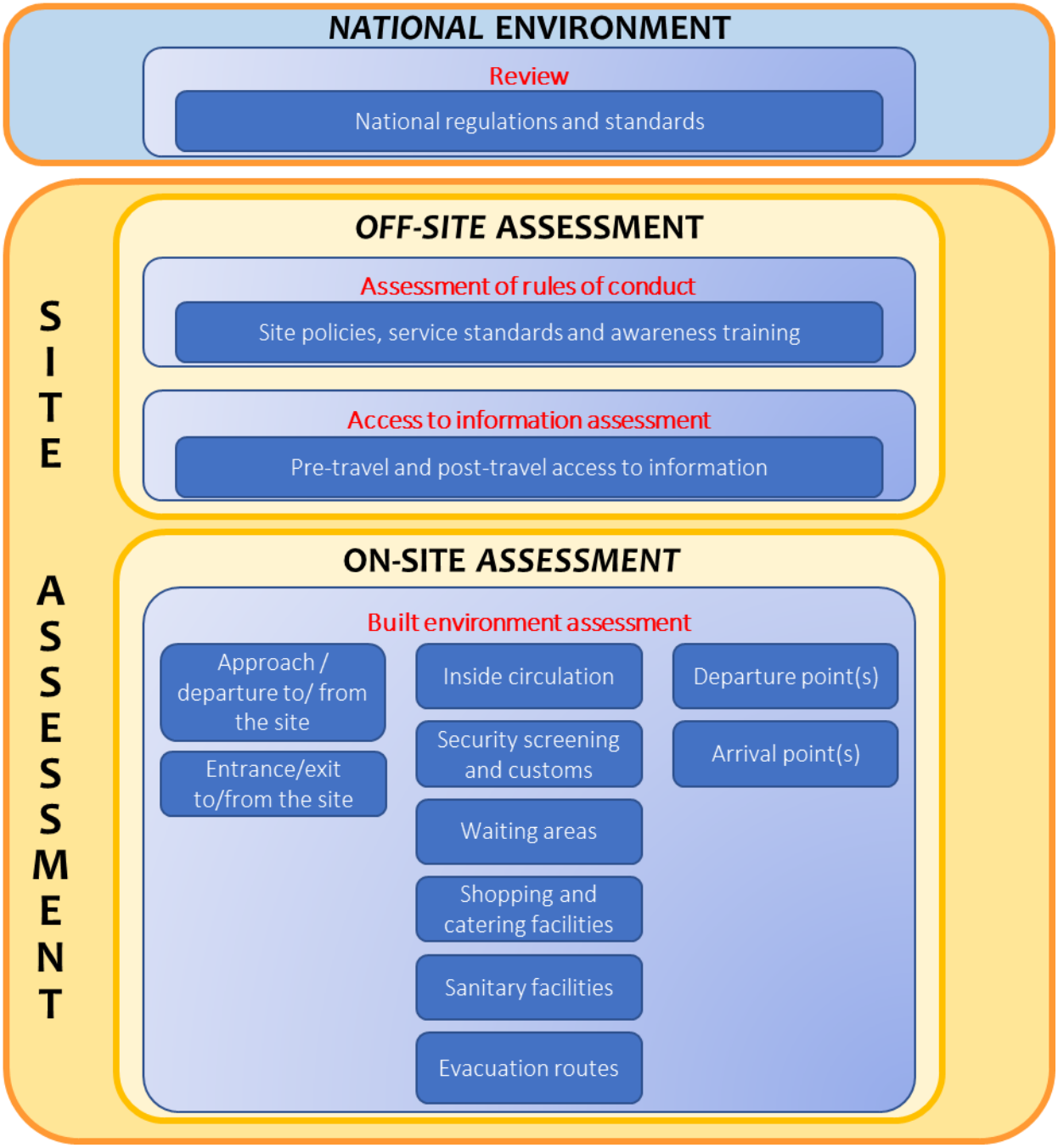

Figure 1: Three segments of DANOVA assessment methodology

An individual chapter is dedicated to each of the three segments of the DANOVA assessment methodology including all details that are thus not discussed here.

2.1. ASSESSMENT PROCEDURE

2.1.1. Audit team

Assessing the accessibility of a transport terminal requires a dedicated audit team, as this is not a task for a single person. The number of people involved depends on the size of the transportation terminal and its complexity, but the team should be large enough to be manageable. The minimum number of people on the audit team is two, ideally the team should consist of four people:

1. **representative of the transport terminal** (provides background knowledge of the building, operational procedures, specific legislation etc., and grants access to restricted areas accessible to passengers)
2. **expert in the field of accessibility for visually impaired persons** (should act as a team leader to coordinate the work of the audit team)
3. representative(s) of blind and partially sighted persons (The person may also be the expert in the field. It would be ideal to have two representatives – **one blind person** and **one partially sighted person**.

The involvement of an **expert in the field of accessibility for visually impaired persons is necessary** because he or she will be able to assess all aspects related to the physical environment (including light, colour contrast, sound, and noise) and access to information and communication. It is critical that this expert is familiar with the differences between blind and partially sighted individuals in terms of how they get around, perform daily living tasks, access information, etc., and the resulting variety of applicable accessibility features.

It is also strongly recommended that **one blind person and one partially sighted person participate in the audit** and bring additional experience to the team. One of the two must be a person who is very independent in everyday life and has personal experience in orientation and mobility or independent travel. The blind person will be able to assess tactile, auditory features, Braille, screen readers, etc., while the partially sighted person will be able to assess light and colour contrasts, etc.

Conducting the accessibility assessment can also be an opportunity to raise awareness. Including transport terminal managers on the audit team provides an opportunity to improve their understanding of accessibility, universal design, and the barriers that visually impaired people face when using transport terminals. This can also encourage greater support and longer-term sustainability.

2.1.2. Training

As part of DANOVA, online training is organized to develop the skills and knowledge of audit team members so that they can carry out assessments to the best of their ability. The DANOVA training will include an overview of the methodological approach, the assessment phases, explanations of the questionnaire and its use, assessment criteria and practical examples. Principles of universal design will be presented along with references for further information. The training will provide auditors with sufficient knowledge and information to conduct the site assessment independently.

2.1.3.Preliminary familiarization with the audited site

Before any type of assessment can begin, audit team members must be familiarized with the transportation terminal being assessed. An initial site visit will allow audit team members to gain a basic understanding of the site being audited. If the site manager is not part of the team, he or she should be contacted, and the purpose of the audit explained. Access to information and the site's policies must also be discussed, as these will form part of the assessment.

2.1.4. Collection of Information

To carry out the site accessibility assessment, three types of information need to be obtained:

1. National regulations and standards
2. Site's rules of conduct (policies, standards, information about staff training)
3. Information sources (webpage, apps, information/telephone services)

This information must be obtained from a variety of sources and from the site itself. In gathering this information, it is highly advisable to review the assessment grid (tables) for each segment - the questions to be answered will indicate what needs to be gathered in order to answer the questions and assess each segment. For the assessment of the built environment, the floor plan of the transport terminal must be obtained.

2.1.5. Review of national requirements

At this stage, the audit team must complete Table 2: Collection of national regulations in relation to blind and partially sighted passengers. The team members should be familiarized with the national regulations and standards to be able to assess compliance at the site in later phases.

2.1.6. Assessment of site's rules of conduct

The assessment of the site's code of conduct covers three different aspects:

- accessibility policies – see Table 3: Accessibility policies assessment
- customer service standards – see Table 4: Customer service standards assessment

disability awareness trainings – see Table 5: Disability awareness training assessment In order to assess the above, all relevant information need to be gathered. For a proper assessment, the audit team needs to gather information also through interviews with staff/managers of the transport terminal.

2.1.7.Assessment of access to information

There are four different elements to consider when evaluating access to information on the website:

- Website - see Table 6: Website assessment
- Smart-phone app – see Table 7: Smart-phone app assessment
- Telephone services – see Table 8: Telephone services assessment
- Personalized assistive technologies – see Table 9: Personalized assistive technologies assessment

For website and smartphone app compliance with W3C standard levels A/ AA or AAA should be verified. For websites and smartphone apps, compliance with W3C standard levels A/ AA or AAA should be checked. For terminals that operate a stand-alone website (dedicated website for the terminal in question, e.g., airport or port), an external expert must be engaged. He/she will verify the compliance of the website with W3C standard levels A/ AA or AAA. For terminals that do not have a standalone website, but only a dedicated webpage within a corporate website (such as bus, tram or train stations), hiring an external expert is only recommended, alternatively the assessment can be done with online tools. The same applies to apps - terminals that operate their own app (e.g., airports, ports) should engage an external expert to assess compliance with the W3C level A/ AA or AAA standard. Third-party apps are not subject to the assessment.

The audit team should also check whether the site offers information (and reservation of special services for people with disabilities, if applicable) via the phone and whether personal assistive technologies are available or can be used at the transport terminal. For details see chapter Pre- and post-travel access to information.

2.1.8. Built environment assessment

The assessment of the built environment is the main part of the audit. To perform this assessment, all areas of the transport terminal that are accessible to passengers must be inspected in person. This means that the audit team must visit the site and have access to all areas used by passengers. This also means that **access to restricted areas of airports and ports** (passenger areas behind security checkpoints) **must be agreed in advance** with the transport terminal managers. **Permission for access must be obtained together with permission for filming and photography**.

The assessment of the built environment is the main part of the audit. To carry out this assessment, all areas of the transport terminal that are accessible to passengers must be visited in person. This means that the audit team must visit the site and have access to all areas used by passengers. This also means that **access to restricted areas of airports and ports** (passenger areas behind security checkpoints) **must be agreed in advance** with the transport terminal managers. **Permission for access must be obtained together with permission for filming and photography**. Detailed information can be found in chapter 4.2 On-site assessment.

2.1.9.Compilation of assessment report and prioritisation of proposed interventions

After all, three main segments have been evaluated, the evaluation report should be prepared. The report consists of a brief presentation of the transportation terminal, a prioritization of the measures and an evaluation grid (all tables used for the evaluation). The main part of the report is the prioritization of the measures resulting from the assessment. This prioritization list is to be used by the transportation terminal manager to create an action plan of interventions and to address the most critical issues as soon as possible. Details are defined in chapter 5 Assessment report.

2.2. ASSESSMENT CRITERIA

To facilitate implementation, understanding of the report, and prioritization of actions, rating system will be used to evaluate each element with evaluation criteria. The evaluation criteria are as follows:

1. Hazardous, inaccessible, and unsatisfactory
   If the evaluated element is dangerous and poses a hazard to blind and/or partially sighted persons, and if the rated element is inaccessible, and if it is rated unsatisfactory by blind and/or partially sighted persons, the element receives the lowest rank (1) and is given the highest priority for intervention. Note that all three conditions must be met to assign the lowest rank 1.

2. Inaccessible and unsatisfactory
   If the rated element is inaccessible and assessed as unsatisfactory by blind and/or partially sighted persons but does not pose a hazard to passengers with visual impairments, the element is rated with rank 2.

3. Unsatisfactory but acceptable
   The element is rated unsatisfactory by blind and/or partially sighted persons but does not pose a hazard to passengers with visual impairments nor is the element inaccessible. The element is evaluated with rank 3.

4. Accessible and acceptable
   The element is rated as acceptable and accessible to blind and partially sighted persons; the element is rated with rank 4.

5. Accepted as a Best Practice
   The element is rated as acceptable and accessible to blind and partially sighted persons and shows a very exemplary way of implementing standards. It is very important that the element is rated as exemplary by the expert or representative(s) of the visually impaired. It is very important that the element works for the intended user(s) - if the solution is very innovative but does not work for visually impaired people (e.g., due to its complexity), it cannot be given the highest rank. The solution is something that works and can/should be transferred and implemented elsewhere; the element is evaluated with rank 5.

All elements rated 1 are assigned highest priority for intervention, followed by elements rated 2. The fully accessible transport terminal (airport, port, train/tram and bus station) cannot have elements rated 1 or 2, all ranks must be 3 or higher. The rating system is shown in the table below.

Table 1: Assessment rating system

Evaluation rank	Evaluation Criteria	Symbol	Priority for intervention
1	Hazardous, Inaccessible and Unsatisfactory		Highest
2	Inaccessible and Unsatisfactory		High
3	Unsatisfactory but acceptable		Moderate
4	Accessible and Acceptable		Low
5	Accepted as a Best Practice		None

As can be seen from the table above, symbols are used to represent the ranking of each element to provide easier and quicker insight into how each item is scored. In the scoring grid the audit team should use the symbol, for **scoring rank 1 and 2 a comment must be added explaining in detail why rank 1 or 2 was given**.

3. NATIONAL ENVIRONMENT

3.1. GLOBAL AND EUROPEAN STANDARDS

When it comes to access to transportation and mobility services for blind and partially sighted persons it is important to be aware of existing global standards. In many cases, national regulations may require compliance with certain ISO or other standards - some of the best known are listed below:

Global regulations:

- UN Convention on the Rights of Persons with Disabilities
- The Standard Rules on the Equalization of Opportunities for Persons with Disabilities (UN)

European legislation

- European Disability Strategy 2010-2020
- EU regulation No. 1107/2006 concerning the rights of disabled persons and persons with reduced mobility when travelling by air
- EU regulation 1300/2014 on the technical specifications for interoperability relating to accessibility of the Union's rail system for persons with disabilities and persons with reduced mobility (PRM TSI 4.4.1 – accessibility of train stations, PRM TSI 4.2.1 – car parking markings, PRM TSI 4.2.1.2 – obstacle-free routes interconnecting public areas of infrastructure)
- EU Regulation 1177/2010 concerning the rights of passengers when travelling by sea and inland waterway and amending Regulation (EC) No 2006/2004
- EU Directive 2019/882 on the accessibility requirements for products and services

Global standards:

- ISO 17049, Accessible design — Application of braille on signage, equipment, and appliances
- ISO 21542, Building construction — Accessibility and usability of the built environment
- ISO 23599, Assistive products for blind and visually-impaired persons —Tactile walking surface indicators (TWSIs)

European standards:

- EN 16584-1 Railway applications - Design for PRM use - General requirements - Part 1: Contrast
- EN 16584-2 Railway applications - Design for PRM use - General requirements - Part 2: Information
- EN 16584-3 Railway applications - Design for PRM use - General requirements - Part 3: Optical and friction characteristics
- EN 17210 Accessibility and usability of the built environment - Functional requirements
- EN 17161 Design for All - Accessibility following a Design for All approach in products, goods and services - Extending the range of users
- EN 12464-1 Light and lighting - Lighting of work places - Part 1: Indoor work places
- EN 12464-1 Light and lighting - Lighting of work places - Part 2: Outdoor work places

Within the audit there are no specific questions on global and European standards, but it is important that you know them.

3.2. NATIONAL REGULATIONS

As part of the audit, you will be asked to identify national regulations that relate to accessibility for blind and partially sighted persons. National regulations refer to national standards and technical requirements or may refer to European (EN) and/or ISO or other standards. All relevant national regulations need to be listed as compliance with national regulations should be checked for each site under investigation. It is important to know what rules and regulations apply in your country to accessibility of transport for blind and partially sighted passengers and what standards govern accessibility of the built environment, products and equipment, internet accessibility, access to information and special services. The national regulations must be identified and listed in the collection of national regulations relating to blind and partially sighted persons.

Table 2: Collection of national regulations in relation to blind and partially sighted persons

Title/Name	Year adopted	Compulsory or recommended[1]	Related to EU/global standard (yes/no)	If yes, specify which one

[1] If the document is of mandatory nature (meaning that it is compulsory) please state *"Compulsory"*. If the document provides guidelines/recommendations and it is not obligatory to comply with it, please state *"Recommended"*.

4. SITE ASSESSMENT

4.1. OFF-SITE ASSESSMENT

4.1.1. Site policies, service standards and awareness training

Policies, standards, and codes of conduct can create barriers for blind and partially sighted passengers, but they can also help remove them. Therefore, the assessment of the audited site's accessibility policies, customer service standards, and staff training is part of the DANOVA audit.

Accessibility policies

The existence of accessibility policies should be reviewed, with a focus on accessibility policies for blind and partially sighted persons. Implementation and monitoring of implementation are also part of the assessment, as shown in the following table.

Table 3: Accessibility policies assessment

Accessibility policies			Assessment	Comments
Do policies on accessibility exist?	yes/no	briefly describe		
Do policies on accessibility include blind and partially sighted persons?	yes/no	briefly describe		
How are the policies implemented?	briefly describe			
How is the implementation monitored	briefly describe			
Does staff policy specifically require the staff to assist persons with visual impairments?	briefly describe			
Has the staff been trained to assist persons with visual impairments in evacuation?	briefly describe			

Customer service standards

Transportation facilities and mobility services typically administer customer service standards. These should be reviewed with a focus on accessibility standards (including their implementation and monitoring) for blind and partially sighted persons.

Table 4: Customer service standards assessment

Customer service standards			Assessment	Comments
Do customer service standards exist?	yes/no	briefly describe		
Do customer service standards include blind and partially sighted persons?	yes/no	briefly describe		
How are these service standards implemented?	briefly describe			
How is the implementation monitored?	briefly describe			

Disability Awareness Training

It is important that staff of transportation facilities understands the needs of passengers with reduced mobility (including blind and partially sighted persons) and are able to respond appropriately to their needs. One of the most effective ways of achieving this is through the delivery of an appropriate training programme. When reviewing disability awareness training, the focus should be on visual impairment awareness training, as each disability is specific and complex. If the training addresses all disability types at once, the training is not at an appropriate level. Comprehensive training should be provided for each specific disability - **we are specifically looking for visual impairment training provided by representatives of blind and partially sighted persons or experts in the field of visual impairment (experts who are competent and/or authorised to provide this specific training, usually trained by organisations of blind and partially sighted persons**). Only if this type of training is provided can the training be rated 4 or 5. Other general training is acceptable but cannot be rated higher than 3.

Table 5: Disability awareness training assessment

Disability awareness training			Assessment	Comments
Is disability awareness training of staff members performed?	yes/no	briefly describe		
Is every staff member trained?	yes/no	briefly describe If no: who is trained and who is not?		
Which aspects are covered in training?	briefly describe, delete those that are not included in the training • Legislation - employment and customer service • Challenging stereotypes and assumptions • Relating to people with disabilities - language and etiquette (how to adequately communicate, support and guide a person with disability) • Working with people with disabilities - practical skills and use of equipment • Inclusive working - removing barriers in practices, policies and procedures • Universal design - removing barriers in the physical environment; and • Inclusive information - removing barriers in communication and information provision			
Are specialized staff trainings performed (e.g., support for blind and visually impaired persons, for people with hearing disabilities, support for persons with reduced mobility etc)	Yes/no - if yes, specify which trainings (for which group) are implemented.			
Is visual impairment awareness training implemented?	Yes/no - if yes, specify who is the training provided by – is it by representatives of blind/partially sighted community, experts?			

Pre- and post-travel access to information

Website

Websites are an important source of information and can help passengers better plan their journeys, especially for passengers with disabilities. The key to an accessible website is the proper use of HTML for structure and CSS for layout and the Web Content Accessibility Guidelines (WC3) is the standard for accessible websites. For terminals that operate a stand-alone website, an external expert must be hired to verify the website's compliance with the W3C standard Levels A/ AA or AAA. For terminals with a stand-alone website within a corporate website, the commissioning of an external expert is only recommended; alternatively, the assessment can be carried out using online tools.

Table 6: Website assessment

Website			Assessment	Comments
Does the audited site have its own website (stand-alone website)?	yes/no			
Is website of the audited site compliant with W3C levels A/AA or AAA? (for stand-alone websites expert assessment is mandatory, for webpages within corporate websites, online tools can be used https://www.experte.com/accessibility to check accessibility of main webpage)	yes/no/n.a.	If NO – are there plans to make it compliant?		☐ Compliance checked by the expert (if YES, tick the box, leave empty if checked with online tool)
Does the website provide information on the building (including accessible paths and facilities etc.) in suitable format (text).	yes/no/n. a. For instance detailed directions to support orientation in and around the building, access statement .			
Are there any online services accessible (e.g., live chat online)?	yes/no/n. a.			
Are there any services offered at the audited site for blind and partially sighted persons) that can be booked online (e.g., personal assistance?). Is the application for booking them fully accessible	yes/no/n. a.			
If forms need to be filled in, they can be filled electronically through an accessible software.	yes/no/n. a.			

Smart-phone app

Similar to websites, many transport facilities (especially larger ones like airports) have launched their own smartphone apps to make access information easier for their passengers. If such an app exists, it should be assessed as part of the audit, the assessment of conformance to standard W3C levels A/ AA or AAA must be performed by an external expert. Note that only apps managed by the transportation facility itself are to be assessed, third-party apps are not subject to the assessment.

Table 7: Smart-phone app assessment

Smart-phone app			Assessment	Comments
Does the audited site have its own smart-phone app?	yes/no			
Is the app of the audited site compliant with W3C levels A/AA or AAA? (for apps managed by the audited terminal expert assessment is mandatory, third party apps are not subject of assessment)	yes/no/n. a.	If NO – are there plans to make it compliant?		☐ Compliance checked by the expert (if YES, tick the box, leave empty if checked with online tool)
Does the app provide information on the building (including accessible paths and facilities etc.) in suitable format (text).	yes/no/n. a. For instance detailed directions to support orientation in and around the building, access statement.			
Are there any online services accessible (e.g., live chat online)?	yes/no/n. a.			
Are there any services offered at the audited site for blind and partially sighted persons) that can be booked via app (e.g., personal assistance?). Is the application for booking them fully accessible?	yes/no/n. a.			
If forms need to be filled in, they can be filled electronically through an accessible software?	yes/no/n. a.			

Telephone services

Access to information and services via the telephone remains very important, as not all passengers are able to access information via the Internet. It should therefore be checked whether the audited site offers telephone services for access to information in accordance with the following table.

Table 8: Telephone services assessment

Telephone services			Assessment	Comments
Are there any telephone services available?	Yes/no	If yes, please specify e.g.: - live information on arrivals/departure - information on how to access the site - booking of assistance for blind and partially sighted persons -		
If yes, are the services available 24/7?	Yes/no	If no, specify hours in which service is available (e.g., 6.00 – 22.00)		

Personalized assistive technologies

Assistive technologies are examples of software/devices that can help blind or partially sighted persons to be more independent. Assistive technologies come in different shapes and forms, within this segment we only discuss personalized assistive technologies that can help individuals with a visual impairment navigate independently within the audited site. We examine whether the audited site offers or supports a service (such as AIRA) in which a remote agent guides a passenger via smartphone or smart glasses video feed.

Table 9: Personalized assistive technologies assessment

Personalized assistive technologies			Assessment	Comments
Does the audited site support/enable use of personalized assistive technologies (such as AIRA)?	Yes/no	If Yes – please provide brief description		

4.2. ON-SITE ASSESSMENT

The on-site assessment follows the so-called mobility chain - which is the logical sequence of each individual trip that includes pre-travel activities (such as obtaining relevant information for trip planning), travel to the transport service location, the trip itself (using the chosen mode of transport) and post-travel activities (providing feedback, etc.). In the context of DANOVA, we are only concerned with the stationary part of the mobility chain - i.e., transport terminals (airports, ports, train/tram and bus stations) and not with the on-board experience during the journey. Therefore, we have organized the on-site assessment in the following modules, which follow the logic of the mobility chain. Before going into the detailed description of the on-site assessment and the modules, some basic understanding of built environment should be explained.

In general, the built environment of the sites reviewed should be designed, constructed, and managed to facilitate orientation. Orientation involves finding your way, avoiding obstacles that could cause hazards, and knowing when you have reached your destination. Orientation is facilitated by differences in acoustics, surface materials, light, and colour. In very complex places, appropriate visual, auditory and tactile information should also be provided to assist orientation and wayfinding. The design should indicate the use of the building elements. Additional lighting or visual contrast and tactile information, such as a change of material or tactile walking surface indicators (TWSIs), should be provided at key decision points to assist orientation and wayfinding. To support visually impaired passengers, the paths to be walked should be clearly illuminated (different luminance compared to the surroundings).

The path to, around, and between buildings should be level and firm. Obstructions such as objects attached to walls, bollards, pillars or free-standing posts, or signs along the path should be avoided. Unavoidable freestanding posts or pillars within access routes must be clearly visually marked and equipped with appropriate tactile safeguards or markings.

When hazards cannot be avoided on the direct line of the pedestrian path, such as stairs, escalators, moving walks and travellators or ramps, tactile walking indicators and visual markings shall be provided.

Clearance along a pathway must be always maintained. Any objects protruding into an access path must be clearly visible and detectable with a white cane.

The main horizontal circulation design shall be level on each floor to ensure that the building is accessible to all. Horizontal circulation should be without steps where possible; in particular, single steps in places where they are not expected are problematic for everyone. Where steps are in place ramps or lifts should be provided. Buildings should be designed, constructed, and managed so that the internal layout is accessible and easily understood. All aspects of horizontal circulation, including corridors, should be designed to facilitate ease of movement for all people.

Paths should intersect at right angles as much as possible and be easy to follow. To facilitate orientation and mobility for people with visual impairments, routes should have boundaries that are identifiable with a white cane or underfoot, as well as visual contrast with the surrounding area. For orientation and wayfinding in very complex buildings and over large areas, tactile walking surface indicators and visual, audible, and tactile information, including exit and evacuation instructions, can be used.

Adequate lighting is essential not only for visually impaired passengers but also for other (elderly) passengers with low vision. Therefore, all routes should be equipped with sufficient artificial lighting to facilitate the perception of changes in level or gradient. The positioning of luminaires should not cause

glare, reflection, or shadowing. Lighting should facilitate wayfinding: building elements should be marked by increased illumination. Lighting at critical locations such as entrances, corridors, stairways, grade changes, and workstations should facilitate their recognition. The following table shows the minimum illuminance levels according to the ISO standard. Nevertheless, national requirements/laws must be considered when conducting an audit. The adequacy of illuminance levels should be assessed by the expert team member, recommended values are shown in Table 10 below.

Table 10: Minimum light level in different areas according to ISO 21542 Standard

Area	Lux
Horizontal surfaces indoors	100
Stairs, ramps, escalators, travellators, moving walks	150 – 200
Habitable spaces	300 – 500
Visual task with small details or low contrast	1.000

With this basic considerations about bulit environment accessibility in mind, DANOVA modules are explained below.

4.2.1. Modules

As mentioned earlier, the modules follow the logic of passengers moving through the transport terminal on departure and on arrival.

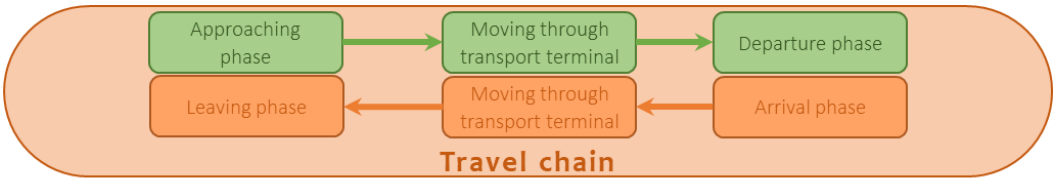

Figure 2: DANOVA build environment assessment chain

The audit team should always have in mind the way passengers move through the transport terminal and take these movements into account when assessing the accessibility of the site. For this purpose, the assessment is composed of eleven modules:

1. Approach and departure to and from the site
2. Entrance to the site
3. Inside circulation
4. Security screening and customs
5. Sanitary facilities
6. Shopping and catering facilities
7. Waiting areas
8. Departure point(s)
9. Arrival point(s)
10. Evacuation routes
11. Exit from the site

Within each module several different aspects/elements of accessibility should be reviewed depending on the complexity and size of the site being reviewed. These aspects are organized as individual building blocks to be assessed within each module. It is the responsibility of the audit team to add all relevant building blocks to each module, depending on the size and complexity of the transportation terminal. Note that the same building block can and should be added to multiple modules, as often as the complexity of the audited site requires (e.g., displays and signage are located throughout the audited site, so they should be added to each module). Particular attention needs to be paid to departure and arrival points - especially in airports, departure and arrival points (facilities) are separate, so they need to be audited individually. In the case of ports, train/tram, and bus stations, where the arrival and departure points are not separate but are one and the same, they only need to be audited once. The modules of the DANOVA built environment assessment are described below.

Approach and departure to and from the site

It deals with the routes used by the passengers to get to/from the location under consideration. This includes car parks, taxi stops, public transport stops and the route to/from the car park and stops to the terminal itself.

Entrance to the site

Dedicated to assessing the main entrance to the transport terminal. In case of airports/ports with multiple terminals, each of them should be assessed separately.

Inside circulation

It includes vertical and horizontal circulation within the audited site. It should follow the logical way in which passengers move through the building (from the entrance to the departure point, as well as from the arrival points to the exit).

Security screening and customs[2]

If the transport terminal has a security cheque and/or customs, these must be audited in terms of accessibility.

Sanitary facilities

It includes the assessment of sanitary facilities for passengers and for guide dogs and assistance animals, where these are available (for large transport terminals such as airports).

Shopping and catering facilities

Accessibility assessment of all shopping and catering facilities within the audited site.

Waiting areas

Waiting areas at departure points and other waiting areas at the audited site.

[2] Optional module to be used only for assessment of transport terminals with these facilities (airports, ports)

Departure point(s)

Assessment of all departure points for each mode of transport within the transport terminal - gates at airports and ports, platforms at train stations and bus stations.

Arrival point(s)[3]

Assessment of all arrival points for dedicated transport mode within the transport terminal – gates at the airports and ports, platforms at train stations and bus stations.

Evacuation routes

Assessment of evacuation routes from the transport terminal.

Exit from the site[4]

Dedicated to assessing the main exit from the transport terminal. In case of airports/ports with multiple terminals, each of them should be assessed separately.

As mentioned earlier, modules are built using DANOVA building blocks. Building blocks are elements of the built environment to be assessed. For each individual building block, an assessment table is created in which various aspects of that building block are assessed. The DANOVA building blocks and their relationship to the DANOVA modules are shown in Figure 3.

The selection of the building blocks to be added to each module is the sole responsibility of the audit team. Therefore, prior familiarization with the transportation terminal is of utmost importance. An on-site visit before the actual assessment allows the audit team to prepare adequately.

[3] Where departure and arrival points are not separated (train and bus stations) only one assessment ought to be made

[4] Where entrance and exit are not separated (train and bust stations) only one assessment ought to be made

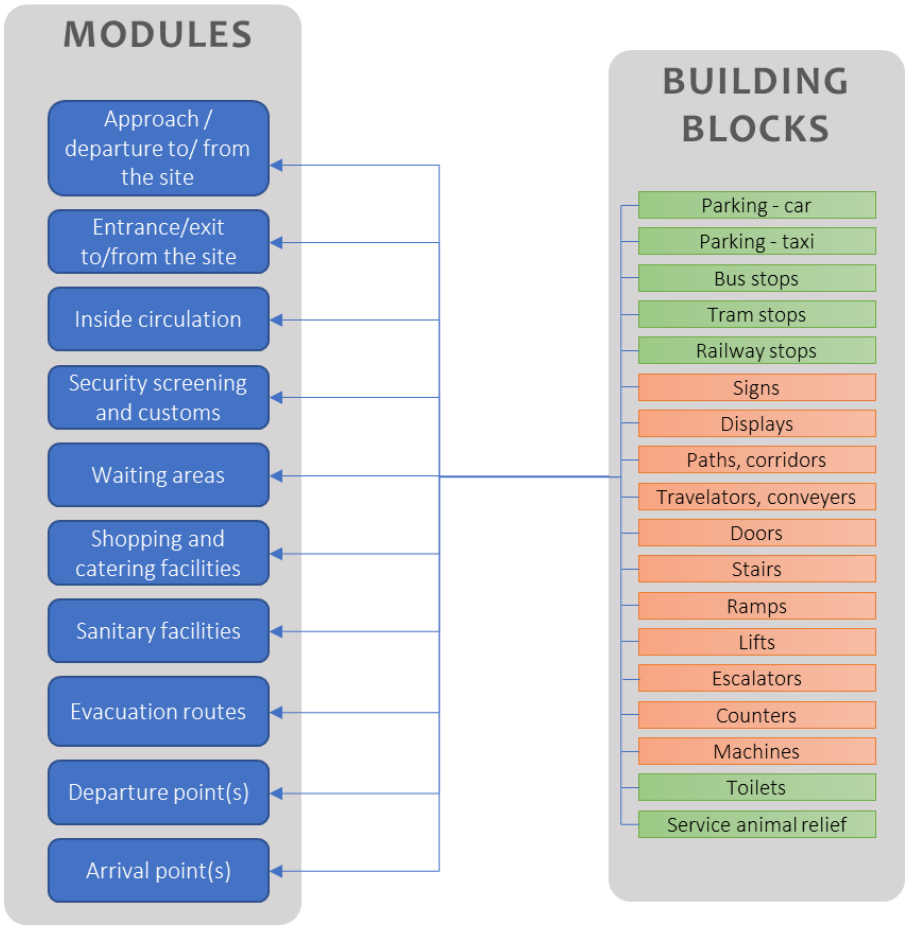

Figure 3: Relationship between DANOVA modules and building blocks

Building blocks

The building blocks to be assessed as part of the audit are described below. Please note that the descriptions below are based on the ISO 21542 standard and are aligned with the EN17210 standard, while national regulations may set different requirements. Always check conformity with national regulations and only then assess suitability for use from the point of view of the visually impaired users.

The audit team has sole authority when it comes to evaluating individual elements or solutions. The **audit team is encouraged to use the comments section as often as possible - especially in cases where the usability of a particular element/solution deviates from the norm**. In cases where the element/solution is considered adequate, good, or even best practice from the perspective of visually impaired passengers, the element should be classified as such, even if the requirement called for in the question is not met (e.g., the answer to the question is "no"). Similarly, if the element/solution complies with the (national) regulations but is not particularly useful for visually impaired passengers, the audit team should provide an appropriate rating together with an explanation in the comments section.

Parking - car

Designated parking spaces should be located as close as possible to the main entrance, and the route from the accessible parking to the main entrance should be rather short (25 meters according to ISO standard) A suitable tactile walking surface indicator (TWSIs) should be provided. It is important that the locations of designated parking spaces are clearly signposted at the entrance to the site or car park, with information directing people to the designated parking spaces and other accessible facilities.

National regulations apply and therefore compliance with national regulations should be checked. Parking areas must be assessed in relation to the following:

- availability,
- appropriateness of signage (contrast, size, etc.),
- guidance from parking to main entrance including TWSIs,
- adequate lightning and absence of glare.

Table 11: Building block – PARKING - CAR

PARKING - CAR		Assessment	Comments
Is a car-park available for visitors?	Yes/No		
Is the car-park clearly signed?	Yes/No		
Are there accessible parking bays reserved for persons with disabilities?	Yes/No		
Are the bays compliant with national regulations in terms of: - size - location - signage	Yes/No		
Are the bays located at the main (or accessible) entrance?	Yes/No		
Is there TWSIs guidance in the parking area? Routes guiding from parking area to entry points of buildings and emergency routes.	Yes/No		
Is lighting adequate with no glare?	Yes/No		

Parking – taxi

Designated parking areas for taxis and large vehicles, such as vans, should be provided for dropping off and picking up passengers, preferably near the main accessible entrance. Drop-off areas for vehicles should be provided with a curb ramp.

Drop-off/pick-up areas for taxis should be evaluated in terms of:

- availability,
- appropriateness of signage (contrast, size, etc.),
- guidance from parking to main entrance including TWSIs,
- adequate lightning and absence of glare.

Table 12: Building block – PARKING - TAXI

PARKING - TAXI		Assessment	Comments
Are there accessible taxi parking bays reserved for persons with disabilities?	Yes/No		
Are the bays located at the main (accessible) entrance?	Yes/No		
Are the bays compliant with national regulations in terms of: - size - location - signage	Yes/No		
Is there TWSIs guidance in from taxi parking? Specifically, routes guiding from parking area to entry points of buildings and emergency routes.	Yes/No		
Is lighting adequate with no glare?	Yes/No		

Public transport (bus, tram, train)

All public transportation stops within the assessed site shall be evaluated. The alighting (disembarking) areas must be accessible and equipped for persons with disabilities, the space should be level, covered, and out of the traffic lane. The public transport stops should have a step-free path to the entrance and crossing the roadway on the way to the entrance should not be required for people with disabilities. Public transport stops should be evaluated in terms of.:

- availability,
- appropriateness of signage (contrast, size, etc.),
- guidance from parking to main entrance including TWSIs,
- adequate lightning and absence of glare.

Each of the modes of public transport stops should be assessed separately (a building block should be added for each transport mode available at the assessed location).

Table 13: Building block – BUS STOPS

BUS STOPS		Assessment	Comments
Are alighting (disembarking) areas equipped for persons with disabilities?	Yes/No		
Is the space levelled, covered and out of the traffic lane?	Yes/No		
Does it have a step free route leading to entrance?	Yes/No		
Does not require the disabled person to cross the traffic lane?	Yes/No		
Does it have a TWSIs guidance path including directional, hazard warning and positional tiles directing to the entrance?	Yes/No		
There is adequate lighting and no glare.	Yes/No		
Are there acoustic information systems at place?	Yes/No		

Table 14: Building block – TRAM STOPS

TRAM STOPS		Assessment	Comments
Are alighting (disembarking) tram stops equipped for persons with disabilities?	Yes/No		
Is the space levelled, covered and out of the traffic lane?	Yes/No		
Does it have a step free route leading to entrance?	Yes/No		
Does not require the disabled person to cross the traffic lane?	Yes/No		
Does it have a TWSIs guidance path including directional, hazard warning and positional tiles directing till the entrance?	Yes/No		
There is adequate lighting and no glare.	Yes/No		
Are there acoustic information systems at place?	Yes/No		

Table 15: Building block – TRAIN STOPS

TRAIN STOPS		Assessment	Comments
Are alighting (disembarking) train stops equipped for persons with disabilities?	Yes/No		
Is the space levelled, covered and out of the traffic lane?	Yes/No		
Does it have a step free route leading to entrance?	Yes/No		
Does not require the disabled person to cross the traffic lane?	Yes/No		
Does it have a TWSIs guidance path including directional, hazard warning and positional tiles directing till the entrance?	Yes/No		
There is adequate lighting and no glare.	Yes/No		
Are there acoustic information systems at place?	Yes/No		

Wayfinding - signage and displays

Directional signs and orientation signs are essential for navigation within the site for all passengers. Directional signs should clearly direct people to facilities. They should be placed where directional decisions are made and provide a logical sequence of orientation from the starting point to various destinations. They should be repeated, not too often, but each time there is a possibility of a change of direction.

Signs should be legible and understandable to people with visual impairments or other impairments. Well-lit, clear, and legible signs should be placed at a uniform height. Information with text should be supplemented with graphic symbols to facilitate understanding by all. Guidance (information provided on signs) should be in relief and Braille.

An excessive number of signs in close proximity should be avoided, as should visual materials placed too close to wall-mounted signs (e.g., posters, schedules, etc.). If Braille is used as a supplement to or independent of tactile signs, it should be easy to find. Important assessment elements of Braille signage are placement (not placed too low or too high to be properly reached and felt) and size (standardized braille cell size and dot height) to ensure legibility. Size and placement are also important for any raised elements (e.g., relief letters).

To facilitate orientation and ensure safe use of an environment, adjacent surfaces, information, and potential hazards must provide a recognisable visual contrast. Different colours should be used to identify doors, different floors, or departments in a building to assist individuals with cognitive impairment. Combinations of reds and greens should be avoided. For detailed information on colour, fonts, contrasts, etc., please refer to the "EBU CLEAR PRINT GUIDELINES".

Table 16: Building block – SIGNS

SIGNS		Assessment	Comments
Are visual directional signs placed in a way to constitute a logical orientation sequence from the starting point to different points of destination?	Yes/No		
Are visual signs easily understandable (designed to be simple and easy to interpret, the message is unambiguous)	Yes/No		
Are visual signs readable and legible for people with visual impairments?	Yes/No (check size, colours, fonts, and contrast; If NO, please specify what is inadequate (is it colour, font, size, contrast)		
Are visual signs well illuminated with no glare?	Yes/No		
Is sufficient and adequate tactile guidance (e.g., TWSIs) provided along the relevant paths?	Yes/No It is up to the audit team to decide whether the tactile guidance is sufficient and adequate in the investigated context		
Are orientational signs accompanied with signs/information in relief (raised lettering)?	Yes/No		
Is information in relief (raised lettering) appropriately placed and of standardized size?	Yes/No		
Are orientational signs accompanied with signs/information in Braille?	Yes/No		
Are Braille signs appropriately placed and of standardized size?	Yes/No		
Is a complementary audible information system provided?	Yes/No		

Table 17: Building block – DISPLAYS

DISPLAYS		Assessment	Comments
Is information on displays easily understandable (designed to be simple and easy to interpret, the message is unambiguous)	Yes/No		
Are displays readable and legible for partially sighted people?	Yes/No (check size, colours, fonts, and contrast; If NO, please specify what is inadequate (is it colour, font, size, contrast)		
Are displays well illuminated with no glare?	Yes/No		
Is tactile guidance (TWSIs) available alongside displays?	Yes/No		
Is there sufficient visual guidance (signage, visibility of display etc.) available to detect display easily?	Yes/No		
Is it possible to get very close to the display to read the information?	Yes/No		

Horizontal circulation

Horizontal circulation includes pathways, corridors, and all spaces where people move horizontally. In general, all floor coverings should be firm and slip-resistant, both dry and wet. Floor and wall surfaces should be free of glare. The improper use of floor and wall coverings and the placement of mirrors and glazing can cause confusing reflections and must be avoided. General design requirements for colour and visual contrast should also be considered (for detailed information on colours and wayfinding, see "Trust Housing Association - Colour & Wayfinding".

Table 18: Building block – PATHS, CORRIDORS

PATHS, CORRIDORS		Assessment	Comments
Is the floor slip-resistant in both wet and dry conditions?	Yes/No		
Is the floor level or with gradient according to regulations or standard (gentle slope (EN standard) or slope no more than 1:12 or a cross slope no more than 1:50 in the pathway (ISO standard))?	Yes/No		
Is there a colour contrast between the floor, walls, doors, and the ceiling?	Yes/No		
Is there adequate light and no glare?	Yes/No		
Is the path free of any barriers or obstacles?	Yes/No		
Are the paths maintained and kept free of unwanted barriers such as furniture, plants etc.?	Yes/No		
Is the path equipped with adequate tactile guidance (e.g., TWSIs) including directional, hazard warning and positional tiles provided for independent navigation?	Yes/No It is up to the audit team to decide whether the tactile guidance is sufficient and adequate in the investigated context		
Is the path equipped with acoustic guidance?	Yes/No		

Table 19: Building block – TRAVELLATORS

TRAVELLATORS / PASSENGER CONVEYERS		Assessment	Comments
Is the travellator equipped with adequate warning for users with visual impairments (detectable visual and tactile contrasting warning surface extending in front of the travelator)?	Yes/No		
For large premises only: Are tactile warning strips (TWSIs) provided at the beginning and end?	Yes/No		
Is the speed adequately slow?	Yes/No		
Are colour contrasted moving handrails provided on both sides of the travellator?	Yes/No		
Are there tactile and Braille markings provided?	Yes/No		
If travelators start automatically, the visual and acoustic signals indication start and direction of travel are in place?	Yes/No		
Is the stop button easily reachable and clearly indicated (in case of emergency)?	Yes/No		
Is the travellator illuminated appropriately without a glare?	Yes/No		

Horizontal circulation includes the assessment of doors. Buildings intended for public use should preferably have automatic or controlled doors. Doors should not impede the flow of people or create a collision hazard. The door should never obstruct the escape route.

Glazed (glass) walls and fully glazed doors should be clearly marked with visual indicators as they are very disorienting for partially sighted people. Visual indicators consisting of two separate colours are recommended to allow for lighting conditions and backgrounds to be considered. Silvered or highly reflective glass should be avoided, and freestanding edges of glazed screens should have a stripe that visually contrasts with the environment against which they are seen.

If a revolving door is used, a complementary accessible door must be provided immediately adjacent to the revolving door and be always available for use. The accessible door may be a swing, sliding or folding door and may be automatic, manual or electric. It should be clearly marked and signposted to show that it is accessible.

Table 20: Building block – DOORS

DOORS		Assessment	Comments
Are automatic (preferably sliding) doors provided?	Yes/No (If NO, state the type - manual doors (swing both ways), manual doors (open in/out), revolving automatic doors, revolving manual doors		
There are no thresholds present at the door (ISO standard: less than 15 mm high).	Yes/No		
Do door frames contrast with the wall?	Yes/No		
In case the doors are glass doors – do they have colour contrasting edging and door handles?	Yes/No		
Are Braille and tactile signs (TWSIs) provided at a door?	Yes/No		
Are Braille signs appropriately placed and of standardized size?	Yes/No		

Vertical circulation

Vertical circulation within buildings refers to the movement of people between floors in a multi-storey building or between buildings where a change of level is required. Vertical movement is facilitated by stairs, ramps, escalators, or lifts (including lifting platforms). **National regulations need to be thoroughly reviewed** as they are likely to specify in detail elements of vertical circulation in public buildings. Nevertheless, the main accessibility standards are listed below.

STAIRS: The rise and tread of steps within flights should be uniform. Spiral and curved stairs are not recommended. The riser of a step is not open and there is no nosing. There should be a visual contrast between landings and the top and bottom step of a flight of stairs. There should be visual contrast (e.g., warning line with a single strip without a break), if TWSIs are in place at the approach they should be placed with sufficient lead. TWSIs may be required under national regulations - placement may vary as to whether TWSIs are required on each stair, on each set of stairs, at the bottom and top of the stairs, or only at the top of the stairs. If TWSIs are used, they should be present across the full width of the stair and the attention pattern should not reduce visual recognition of the first and last steps of the flight. Raised text or tactile symbols shall be unobtrusively and permanently placed or fixed on the handrails as they are an important source of information for people with visual impairment, e.g., indication of the floor number, direction of fire evacuation, location of final fire exits, etc.

Table 21: STAIRS

STAIRS		Assessment	Comments
Are the stairs' height and width according to regulations?	Yes/No		
Are steps uniform in width and height?	Yes/No		
Are the stairs continuous without any abrupt breaks and gaps?	Yes/No		
Is there a visual contrast (e.g., colour contrasting strip) at the edge of the steps?	Yes/No		
Is there adequate illumination on the stairs with no glare?	Yes/No		
Is the floor surface of the steps non-slippery and non-glary?	Yes/No		
Do the stairs have handrails on both sides that are continuous on the landing?	Yes/No		
Do handrails contrast in colour from the adjacent background wall and the floor?	Yes/No		
Is the under-stair area cordoned off to avoid accidents?	Yes/No		

RAMPS: provide an accessible route between elevation changes. There should be a handrail on each side of a ramp. Ramps must have an appropriate gradient and length between landings where necessary to allow comfortable, safe, and independent use by a wide range of users. The gradient of a ramp shall be constant. Internal ramps should be avoided where possible. Check national regulations if TWSIs are required at the top or bottom of ramps.

Table 22: Building block – RAMPS

RAMPS		Assessment	Comments
Is a ramp provided as an alternate route to the stairs?	Yes/No		
Is the ramp gradient and width in line with national regulations or standard (gentle slope (EN standard), not steeper than 1:12, not less than 1800 wide (ISO standard))?	Yes/No		
Handrails are provided on both sides of the ramp and are continuous on the landing.	Yes/No		
Handrails contrast in colour from the adjacent background	Yes/No		
The ramp is well illuminated with no glare?	Yes/No		
The floor surface is non-slippery and non-glary?	Yes/No		

LIFTS

The colour and tone of the lift entrances should contrast with surrounding wall finishes. There shall be at least one handrail in the car, placed horizontally on the same side as the car operating panel; it is recommended that a handrail be provided on each car wall.

Interior walls shall have a non-reflective, matte finish in a colour and tone contrasting with the floor. The car floor shall be rigid, not too dark, slip resistant and have a non-reflective, matte finish.

Placement of the control devices for operation shall be reachable and usable by all persons. Controls and information, including numerals and symbols on pushbuttons, shall be accessible and readily usable by blind and partially sighted persons, so that partially sighted persons can see and read and blind persons can feel and understand the function of individual buttons. Controls shall have a high-contrast design to the surrounding wall so that they can be easily located. An audible signal or voice announcement should announce the opening/closing of the doors, the floor number/location, and the direction of travel (up/down).

Table 23: Building block – LIFTS

LIFTS		Assessment	Comments
There is signage directing to the accessible lift?	Yes/No		
There is floor number and floor directory signage clearly visible?	Yes/No		
There is step free access from the entrance to the lift?	Yes/No		
The control panel has buttons and not a touch panel?	Yes/No		
The lift controls (including alarms / speakers / phones) have a good contrast, and are self-illuminating?	Yes/No		
The lift controls (including alarms / speakers / phones) have raised numbers and are in Braille also?	Yes/No		
There is a visual and an audio floor announcement system in the lift?	Yes/No		
The lift call buttons and floor numbers outside the lift on each floor are in Braille and raised Lettering.	Yes/No		
The floor finish is non-slippery?	Yes/No		
The walls are non-reflective?	Yes/No		
There is adequate lighting and no glare.	Yes/No		
The emergency information given inside the lift is mounted at eye level?	Yes/No		
The emergency information given inside the lift is in accessible format (font size, colour, contrast)?	Yes/No		
The emergency information given inside the lift is in Braille?	Yes/No		
There are TWSIs leading directly to the entrance of the lifts?	Yes/No		

ESCALATORS: For blind and partially sighted people, the escalator surface should be visually distinct from the approach, audible signals or recorded messages indicating the beginning and end of the escalator should be used. TWSIs must also be placed here. Lifts should be located in close proximity to escalators and should be easy to find.

Table 24: Building block – ESCALATORS

ESCALATORS		Assessment	Comments
Is the escalator equipped with adequate warning for users with visual impairments (detectable visual and tactile contrasting warning surface extending in front of the escalator)?	Yes/No		
For large premises only: Are tactile warning strips provided at the beginning and end?	Yes/No		
Is the speed adequately slow?	Yes/No		
Are colour contrasted moving handrails provided on both sides of the escalator?	Yes/No		
Is there an audio indicator indicating moving up/down with the escalator?	Yes/No		
If escalators start automatically, the visual and acoustic signals indicating start and direction of travel are in place?	Yes/No		
Is the stop button easily reachable and clearly indicated (in case of emergency)? Is the escalator illuminated appropriately without a glare?	Yes/No		
Are escalators properly marked with TWSIs and or Braille?	Yes/No		
Is there sufficient visual guidance available to find the escalator easily?	Yes/No		

Counters

Counters, reception and information desks, baggage drop-off counters should be located and clearly marked so that they can be easily identified from the entrance. Carpeting, entrance flooring, or tactile walking surface indicators may be helpful in locating reception counters for people with visual impairments. Such products should be designed to minimise tripping and slipping hazards. Service counters and reception desks should have visual contrast with their surroundings to emphasise their location, and certain areas such as writing areas should have good visual contrast. General design requirements for colour and visual contrast should be considered.

Table 25: Building block – COUNTERS

COUNTERS		Assessment	Comments
Does the counter contrast in colour with the adjacent background?	Yes/No		
Is the counter-top adequately illuminated?	Yes/No		
Is the counter to surface non-reflective?	Yes/No		
Is there sufficient visual guidance (signage, visibility of the doors etc.) available to detect and identify the counter easily?	Yes/No		
In case of glass empanelled counter is there a microphone that is used by the staff?	Yes/No		
Is there live assistance available at the counter to guide persons to their destination?	Yes/No		
TWSIs lead directly to the counters – or – there is one counter designated to all people with disabilities and it is equipped with accessibility features?	Yes/No		

Machines

Ticket and vending machines present a particular challenge to visually impaired people. The operation (all switches and controls) of the vending machine should be easy to understand. Glare from sun, artificial light and street lighting on the screen shall be avoided.

In general, touch screen ticket vending machines (and vending machines at train/bus stations, etc.) should not be the only type of ticket vending machine because they are inaccessible to people with impaired vision, especially blind people. If touch screen vending machines are equipped with accessibility features such as audio output, adjustable screen colours/sizes, additional keypads, etc., they could be accessible to visually impaired persons.

Table 26: Building block – MACHINES

MACHINES		Assessment	Comments
Controls are colour-contrasted?	Yes/No		
There is no use of only touch panel switches.	Yes/No		
In case only machines with touch panel are available, staff is present at all time to help passengers?	Yes/No		
Information on controls and switches is in relief (embossed letters/ symbols accompanied with Braille information) for tactile reading?	Yes/No		
Is there sufficient visual guidance (signage, visibility of the machine) available to detect the machine easily?	Yes/No		

Sanitary facilities

There should be no openings under or above the door. Accessible toilets and sanitary facilities shall be clearly identifiable and adequate signage shall be provided using recognised international symbols. At least one toilet shall be a unisex toilet to allow for assistance by both sexes. The door should open outwards. If the door opens inwards, there shall be a means of opening or removing the door from the outside.

Table 27: Building block – TOILETS

TOILETS		Assessment	Comments
Accessible toiles are available on all floors of the building?	Yes/No		
Accessible toilets are clearly marked?	Yes/No		
The accessible toiles have signs in Braille?	Yes/No		
Toilet door must be outward opening, double hinged or sliding type.	Yes/No		
The floor-surface of the toilet is non-slippery?	Yes/No		
The toilet is well illuminated with no glare?	Yes/No		
There is a colour contrast between the floor, wall and sanitary fittings?	Yes/No		
Is there an alarm system within easy reach to alert persons outside, in case of emergency?	Yes/No		
The door can be locked from inside but also released from outside in case of emergency	Yes/No		
It is kept clean and well-maintained.	Yes/No		
Is there sufficient visual guidance (signage, visibility of the doors etc.) available to detect and identify the toilets easily?	Yes/No		

RELIEF FACILITIES FOR GUIDE DOGS AND ASSISTANCE DOGS

Within or near large transportation facilities, a relief facility for guide and assistance dogs should be provided. A secure area should be provided near the building for use as a relief facility for dogs. The dog relief area should be fenced, and the entrance gate to the fenced area should be easy to operate and have a secure closure. The surface should be concrete, with a smooth surface to facilitate cleaning and a slight slope to aid drainage. A waste bin and a supply of plastic bags near the entrance should be provided. An accessible "Assistance Dogs Only " sign should be posted. The area should be cleaned regularly and well maintained. At airports, large train stations, and in areas where assistance dogs may be confined for extended periods of time, watering facilities shall be provided, with fresh, cool water readily available.

Table 28: Building block – SERVICE ANIMAL RELIEF

SERVICE ANIMAL RELIEF		Assessment	Comments
Are animal relief areas available?	Yes/No		
Are animal relief areas dedicated to service animals available?	Yes/No		
Are animal relief areas clearly marked?	Yes/No		
Do animal relief areas have signs in Braille?	Yes/No		
Are animal relief areas securely fenced in?	Yes/No		
Are the gates easy to operate with secure catch?	Yes/No		
The floor-surface is non-slippery and easy to clean?	Yes/No		
The relief area is appropriately illuminated with no glare?	Yes/No		
It is kept clean and well-maintained.	Yes/No		
Is there sufficient visual guidance (signage, visibility of the doors etc.) available to detect and identify the relief areas easily?	Yes/No		
For large premises only: are drinking facilities for dogs provided?	Yes/No		

Evacuation routes

Accessibility of a building encompasses independent, dignified, and safe use for all users on an equal basis. It also includes safe evacuation routes during an emergency first to a 'place of relative safety' e.g., within another horizontally located safe fire compartment of the building, and further on to a 'place of safety', which is remote from the building.

Independent evacuation via accessible, safe, and intuitive horizontal routes away from the hazard (scene of fire, explosion etc.) to the next adjoining safe compartment, a 'place(s) of relative safety', available for all occupants is preferable. Vertical evacuation via stairs, ramps or lifts to a 'place of safety' is more stressful and challenging than horizontal evacuation, particularly for people with mobility impairments or other health problems, who may rely on assistance.

National regulations should be thoroughly checked as they might differ from country to country.

In general, the emergency evacuation plan and all evacuation routes need to be checked – if the plan is displayed in accessible format (tactile orientation plan), if dedicated orientation information (e.g., visual, tactile information and audio signals) are in place, if the evacuation routes are clearly marked and recognisable, if the routes are freely passable (without any obstacles) with no doors opening into the evacuation route etc. Colour contrasts, handrails, step edge markings, contrasting nosing on stairs, different textured floor coverings of evacuation routes should be checked.

Fire evacuation routes, including all areas of rescue assistance, must be always kept clear.

Table 29: Evacuation route

EVACUATION ROUTE		Assessment	Comments
Does emergency evacuation provision consider people with disabilities?	Yes/No		
Are evacuation plans and building maps available in tactile braille formats?	Yes/No		
Are evacuation plans prominently displayed on all floors?	Yes/No		
Are the plans of right size and easy to read (font, contrast, illumination)?	Yes/No		
Do the plans contrast well against the background wall?	Yes/No		
Do the plans have "you are here" point identified on it?	Yes/No		
Are accessible evacuation routes and the refuge points shown on the plan?	Yes/No		
Is there a step free or ramped accessible evacuation route identified?	Yes/No		
Is accessible evacuation route equipped with TWSIs?	Yes/No		
Is the alerting system both visual and audible?	Yes/No		
Are the routes clear and unobstructed?	Yes/No		
Are tactile markings provided on handrails and walls on the evacuation route on stairway and corridors to guide persons with vision impairments to the final exit door?	Yes/No		

5. ASSESSMENT REPORT

After the audit team has evaluated the transportation terminal, the assessment report must be prepared. The report consists of three chapters:

- short introduction of assessed transport terminal.
- prioritization of interventions.
- assessment grid (all tables used for assessment).

5.1. SHORT INTRODUCTION OF TRANSPORT TERMINAL

In the short introduction a brief description of the transport terminal is given. It comprises of:

- Short description (a paragraph or two about the terminal)
- Location (location on the map)
- Type of terminal (airport, port, train, or bus station)
- Size of terminal (passenger traffic per year)
- Photos (few photos of the terminal)

5.2. PRIORITIZATION OF INTERVENTIONS

The prioritization of interventions is the main part of the assessment report. Based on the assessment grid, interventions are proposed for all elements rated 1 (Hazardous, Inaccessible and Unsatisfactory) and 2 (Inaccessible and Unsatisfactory). The proposed interventions may be general in nature or very specific, depending on the problems identified. Most likely a specific element will be rated 1, for example a particular ramp may be too steep or not adequately marked. In this case, an intervention is suggested for that specific ramp at a specific location. However, if all ramps at the transport terminal are inappropriate and dangerous, a general suggestion for intervention may be given. The highest priority for interventions should be given to the elements rated 1 that need urgent attention. Interventions must be proposed for all elements:

1. ranked with 1 (Hazardous, Inaccessible and Unsatisfactory) – highest priority for interventions.
2. ranked with 2 (Inaccessible and Unsatisfactory) - medium priority for interventions.
3. ranked with 3 (Unsatisfactory but acceptable) – low priority for interventions.

This priority list should assist the transportation terminal manager in developing an action plan for interventions to address the most critical accessibility issues. If the assessment does not include items rated 1, 2, and 3, the transportation terminal is rated as fully accessible to persons who are blind and partially sighted.

5.3. ASSESSMENT GRID

The final part of the report is the scoring grid, which contains all the scoring tables. The tables must be organized within the DANOVA modules and provide the reader with a systematic overview of all items assessed. Additional comments are not required.

6. REFERENCES

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