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DANOVA NEXT

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Smart Transport Network for the accessibility of Passengers with disabilities and reduced mobility in the Danube Region through innovative services

DANOVA NEXT

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1. INTRODUCTION

Improved access to transport significantly enhances the quality of life for perosons with disabilities and reduced mobility (PRM). European and national strategic frameworks recognise that persons with disabilities and reduced mobility form an important user segment in the transport sector. However, the accessibility of physical spaces and information continues to present barriers for various user groups. The DANOVA NEXT project addresses not only the physical accessibility of transport infrastructure but also access to information and the provision of appropriate on-site assistance for persons with disabilities and reduced mobility.

To facilitate access to and use of the DANOVA NEXT results, this document briefly outlines the key findings and methodological approach in the form of guidelines to enable broad use of the results. It is intended as a practical resource for better understanding the results, experiences, and solutions of the DANOVA NEXT project. It includes a description of DANOVA NEXT achievements, particularly the assessment methodology, a description of the Self-assessment Tool and Web Application, instructions for joining the Joint Framework, and an overview of the DANOVA NEXT pilot implementations. First, key concepts for understanding different impairments and accessibility requirements are briefly explained.

Understanding requirements of blind and partially sighted persons

The term "visual impairment" includes blindness and partial sight. When a person has limitations or difficulties in interacting with the environment or performing tasks due to an impairment, this is referred to as a disability.

Depending on their residual vision and how efficiently they can use it, visually impaired persons have different requirements for the design of environments, products, and services to act and move around independently.

- Partially sighted persons primarily use their residual vision and need impressions and information that are clearly visible.
- Blind persons primarily use their hearing and sense of touch, relying on audible and tactile impressions and information.

To achieve accessibility for both partially sighted and blind persons, it is important to apply the "principle of multiple senses". This means that the design allows perception through two or more complementary senses (e.g. vision and touch, vision and hearing). It is essential to remember that accessibility for all persons with visual impairments requires that impressions and information are both clearly visible and also available audibly or tactilely. To ensure full accessibility for blind and partially sighted passengers, measures such as guidance systems and signage with good visual contrast, visual marking of

potential hazards, or good lighting are as indispensable as tactile guidance systems and signage, structural protection against potential hazards, or high-quality audio output.

Another principle that should always be applied to achieve accessibility for visually impaired persons is to strive for a certain level of uniformity. This presents a major challenge, especially when solutions are implemented in different countries with varying laws, standards, and customs. However, decision-making should at least consider that familiar circumstances, solutions, and technologies offer significant advantages for usability and accessibility.

Understanding requirements of deaf and hard of hearing persons

The term "hearing impairment" includes both deafness and being hard of hearing. When a person encounters barriers in communication or environmental interaction because of this impairment, it is considered a disability. Depending on the extent of their residual hearing and their preferred communication method, deaf and hard-of-hearing persons have specific requirements for the design of environments, products, and services to ensure they can participate and navigate independently.

- Hard-of-hearing persons primarily use their residual hearing, often supported by hearing aids or cochlear implants. They require clear acoustic environments, minimal background noise, and high-quality sound amplification.
- Deaf persons, including those who use sign language, primarily rely on their vision and sense of touch. They require information to be presented through visual signals, text, or tactile vibrations.

For full accessibility, the "principle of multiple senses" should be applied. In the context of hearing loss, this means ensuring that any information usually conveyed through sound is also available visually or through touch. True accessibility requires that alerts and information are not only audible but also clearly visible or detectable by vibration or touch.

For passengers who are deaf or hard of hearing, essential measures include visual information systems such as real-time text displays for announcements, clear signage, and high-quality video for sign language interpretation; acoustic optimisation, including induction loops (hearing loops) or systems that transmit sound directly to hearing aids, and the use of sound-absorbing materials to reduce distracting echoes. For safety and alerts, it is important to have visual emergency alarms (strobe lights) and tactile alerts (vibrating pagers or seats) installed to signal hazards or danger.

Understanding requirements of persons with reduced mobility

The term "reduced mobility" refers to any person whose mobility is limited due to physical disability (sensory or locomotor), intellectual impairment, age, or any other cause of disability when using transport. When the physical environment– such as steep gradients, narrow doorways, or lack of lifts – prevents a person from moving freely, this is referred to as a disability.

Depending on their specific physical capabilities and the assistive devices they use (such as wheelchairs, walkers, or canes), passengers with reduced mobility have varying requirements for the design of environments to ensure they can travel with dignity and independence.

- Wheelchair users require step-free access, wide pathways, and sufficient turning circles to manoeuvre. They rely on mechanical or motorised assistance and need surfaces that are firm, level, and slip resistant.
- Ambulatory persons with limitations (such as those using crutches, older persons, or persons with prosthetic limbs) may be able to walk but have difficulty with distances, balance, or stairs. They require support structures such as handrails, frequent resting points (seating), and reduced walking distances.

To achieve accessibility for all persons with reduced mobility, it is essential to apply the "principle of redundant access." This means that whenever a primary route includes a physical barrier, such as a staircase, a complementary, barrier-free alternative, such as a ramp or lift, must be provided. True accessibility ensures that these alternatives are not "back-door" solutions but are integrated into the main flow of the environment.

For passengers with reduced mobility, the following measures are essential:

- Step-free navigation: Lifts, ramps with gentle gradients, and level boarding between platforms and vehicles to eliminate gaps.
- Ergonomic design: Essential controls such as ticket machines, lift buttons, and door handles positioned at a height accessible to both standing and seated users.
- Supportive infrastructure: Continuous handrails on both sides of slopes and stairs, non-slip floor surfaces, and priority seating areas at regular intervals.
- Space clearances: Doorways and corridors wide enough to accommodate motorised wheelchairs and walking frames.

The Principle of Uniformity

Firstly, it is important to note that accessibility should not be confused with usability. Usability refers to whether the design is effective, efficient, and satisfying to use, while accessibility concerns whether all users can have an equivalent experience, regardless of how they interact with a product or service. Unlike user-friendliness, accessibility specifically addresses the needs of persons with disabilities. Persons with impairments may feel disabled if they lack adequate access to aids and services or encounter barriers such as inaccessible buildings or transport.

A major challenge in mobility design is the standardisation of infrastructure. Achieving a certain level of uniformity – such as consistent ramp slopes, standardised symbols, alert patterns, and predictable layouts for accessible seating – is crucial. When a passenger knows that a "Level Access" sign or a specific lift icon means the same thing in every station or country, it greatly reduces the physical and mental effort required to navigate, making independent travel possible for everyone. Navigating different public spaces or countries is significantly easier when symbols, alert patterns, and assistive technologies are consistent. For visually impaired passengers, standardised features such as tactile walking surface indicators (TWSIs), tactile orientation maps, large print and Braille signage, audio signage, and screen reader-friendly websites and applications make transport systems accessible.

2. DANOVA NEXT Assessment methodology

Within DANOVA NEXT, the focus has been on ensuring unhindered access to transport terminals (airports, ports, rail, tram, and bus stations), including physical access, access to information before and after travel, and access to services for passengers with impairments (blind and partially sighted persons, deaf and hard of hearing persons, and persons with mobility impairments). However, before improvements can be made, the current level of accessibility must be assessed. The DANOVA NEXT assessment methodology is based on the methodology for assessing accessibility for blind and partially sighted persons developed within the DANOVA project. This methodology was amended to include aspects important for deaf and hard of hearing persons, as well as for persons with reduced mobility. The DANOVA NEXT assessment methodology makes it possible to evaluate the accessibility of various transport terminals – from airports and ports to train and bus stations, and from large to smaller terminals considering the following passenger groups:

- blind and partially sighted persons (visual impairments),
- deaf and persons hard of hearing persons (hearing impairments),
- persons with reduced mobility (physical impairments).

The methodology analyses not only the physical accessibility of each transport terminal but also examines the policies and standards of each assessed site.

The assessment consists of three main segments:

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 establish minimum or required standards for accessibility. This is followed by an off-site assessment of the transportation terminal, during which the site's disability awareness policies, standards, and training are reviewed and evaluated. Access to information – such as websites, apps, phone services, and the availability of personalised assistive technologies – is also checked as part of the off-site assessment.

In the on-site assessment, the built environment is evaluated according to the principle of the transport chain, meaning the physical movement of passengers through the terminal, whether departing or arriving (approaching, moving through, or leaving the terminal). This movement is divided into modules to account for the different characteristics of each transport terminal. Customisation is achieved by applying predefined modules that can be combined to reflect the complexity of the location being assessed.

2.1. ASSESSMENT MODULES AND CRITERIA

Within DANOVA NEXT, assessment is organised into modules to make both the process and the results easier to understand. As mentioned earlier, there are two parts to the assessment: the off-site and the on-site assessment. The first part consists of seven modules related to access to information and codes of conduct, while the second part addresses the built environment and consists of eleven modules.

- Off-site assessment modules - Access to information and rules of conduct
    1. Accessibility policies
    2. Customer service standards
    3. Disability Awareness Training
    4. Website
    5. Smart-phone app
    6. Telephone services
    7. Personalized assistive technologies

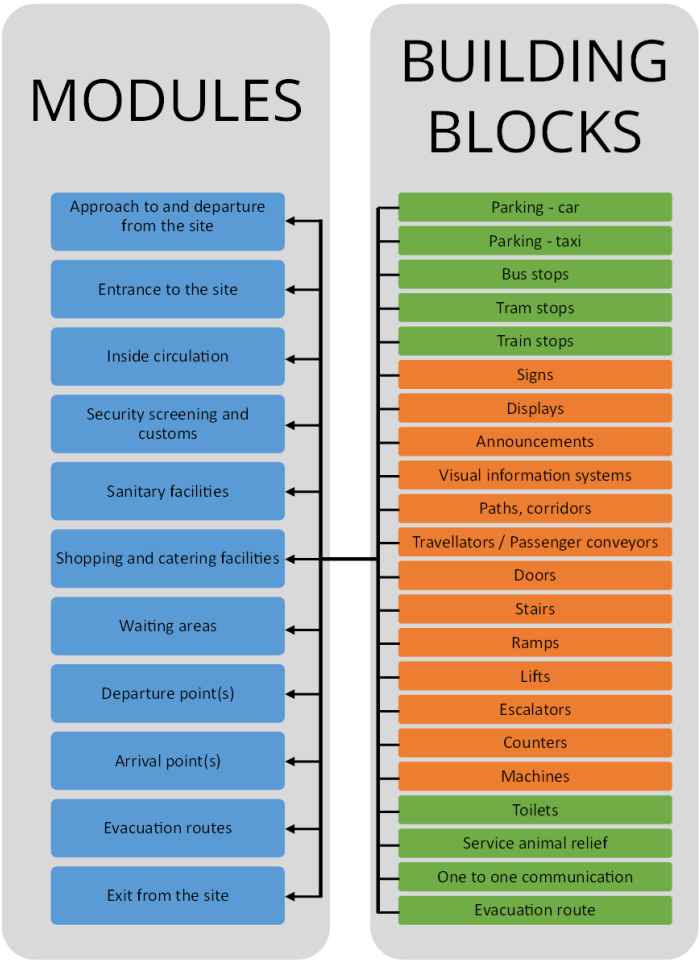
On-site assessment modules – Built environment

8. Approach and departure to and from the site
9. Entrance to the site
10. Inside circulation
11. Security screening and customs
12. Sanitary facilities
13. Shopping and catering facilities
14. Waiting areas
15. Departure point(s)
16. Arrival point(s)
17. Evacuation routes
18. Exit from the site

Each of these modules is built using DANOVA building blocks:

- Parking – car
- Parking – taxi
- Bus stops
- Tram stops
- Train stops
- Signs
- Displays
- Announcements
- Visual information systems
- Paths, corridors
- Travellators / Passenger conveyors
- Doors
- Stairs
- Ramps
- Lifts
- Escalators
- Counters
- Machines
- Toilets
- Service animal relief
- One to one communication
- Evacuation route

The building block shown above should be understood as a component from which modules can be created according to the specifics of each transport terminal. Each building block can be used multiple times in each module and in as many modules as necessary.



Relationship between DANOVA NEXT Modules and Building Blocks

The DANOVA NEXT Assessment methodology uses a five-point scale based on hazardousness, accessibility, and satisfaction criteria. Hazardousness criteria are applied to the built environment during on-site assessment, where bodily harm may occur. They are not used for off-site assessment, which includes access to information and rules of conduct.

DANOVA NEXT five-point scale:

1. **Hazardous, inaccessible, and unsatisfactory**
   If the evaluated element is dangerous and poses a hazard to persons with disabilities, is inaccessible, and is rated unsatisfactory by persons with disabilities, 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 persons with disabilities but does not pose a hazard to passengers with impairments in question, the element is rated as rank 2.
3. **Unsatisfactory but acceptable**
   The element is rated unsatisfactory by persons with disabilities but does not pose a hazard to the passengers with the impairments in question, nor is it inaccessible. The element is evaluated with rank 3.
4. **Accessible and acceptable**
   The element is rated as acceptable and accessible to persons with disabilities; the element
   is rated with rank 4.
5. **Accepted as a Best Practice**
   The element is rated as acceptable and accessible to persons with disabilities and demonstrates an exemplary approach to implementing standards. It is essential that the element is rated as exemplary by the expert or representatives of the passenger groups mentioned in the previous section. It is also crucial that the element functions effectively for the intended users; if the solution is highly innovative but does not work for persons with disabilities (for example, due to its complexity), it cannot receive the highest rating. The solution is effective and should be transferred and implemented elsewhere; the element is evaluated with a rank of 5.

The rating of individual elements forms the basis for recommendations in the form of proposed measures. All elements rated 1 have the highest priority, followed by those rated 2. A fully accessible transport terminal (airport, port, train, tram, or bus station) cannot have any elements rated 1 or 2; all ratings must be 3 or higher. The rating system used in the assessment grid is shown in the table below.

DANOVA NEXT 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 shown above, the assessment also includes the prioritisation of interventions as the main part of the assessment report. Based on the assessment grid, interventions must be proposed for all elements:

1. ranked 1 (Hazardous, Inaccessible and Unsatisfactory),
2. ranked 2 (Inaccessible and Unsatisfactory),
3. ranked 3 (Unsatisfactory but acceptable).

Interventions for elements ranked 1 (posing a danger to passengers) receive the highest priority; those for elements ranked 2 receive high priority; and those for elements ranked 3 receive moderate priority. If the assessment does not include any items rated 1, 2, or 3, the transportation terminal is rated fully accessible to persons with disabilities.

The main outcome of the assessment should be a list of proposed interventions grouped by priority. The interventions are ranked from most to least urgent, making it easier to prepare an action plan to improve the assessed site. The list of interventions proposed in the audit is intended for site managers to improve the assessed terminal.

2.2. ASSESSMENT PROCESS

Assessing the accessibility of a transport terminal is a multistep process that requires a dedicated audit team, as it cannot be managed by one person. The process begins with the organiser of the assessment gaining a thorough understanding of the DANOVA NEXT Assessment methodology.



DANOVA NEXT Assessment process

Before the assessment begins, members of the audit team must be trained in the use of the DANOVA NEXT Assessment methodology. The next step is to familiarise the team with the transportation terminal being assessed. Initial site visits must take place to enable audit team members to gain a basic understanding of the site. The process continues with the collection of information on national regulations and standards, rules of conduct (policies, standards, staff training information), and information sources (websites, apps, information or telephone services). Once all data have been collected, a review of national requirements follows, then an evaluation of the site's code of conduct covering three aspects: accessibility policies, customer service standards, and disability awareness training. In parallel, an assessment of access to information is carried out. This includes the website, dedicated smartphone app (if available), telephone services, and the possibility of using personalised assistive technology.

The assessment of the built environment is the central part of the audit. All areas of the transport terminal accessible to passengers are inspected, including restricted areas of airports and ports (passenger areas behind security checkpoints).

Once all three main segments have been evaluated, the evaluation report is prepared. Based on the findings, audit teams should make recommendations to improve the accessibility of the terminal.

2.3. ONLINE RESOURCES

The ***DANOVA NEXT - Assessment grid template*** is available at the DANOVA NEXT website.

https://interreg-danube.eu/storage/media/01KRE9AXPS268YS998TFWBVGSB.docx

DANOVA NEXT - Assessment grid template

Local DANOVA NEXT assessment reports are also available and can be downloaded in the DANOVA NEXT online library:

https://interreg-danube.eu/projects/danova-next/library?page=2

DANOVA NEXT – Local Assessment Reports

The published zip file contains local assessment reports for:

- Chisinau Airport (MD)
- Dubrovnik Airport (HR)
- Podgorica Airport (ME)
- Prague Airport (CZ)
- Sarajevo Airport (BA)
- Pula Port (HR)
- Bratislava public transport (SK)
- Maribor public transport (SI)

3. DANOVA NEXT SELF-ASSESSMENT TOOL

3.1. WHAT IT IS

The DANOVA NEXT Self-Assessment Tool was developed to help organisations throughout the Danube region audit their current accessibility standards. The tool provides immediate feedback and actionable insights, enabling users to bridge the gap between existing services and the specific needs of passengers with disabilities, while offering access to relevant resources for improvement.

The tool is intended for a wide range of organisations, including public authorities, service providers, infrastructure operators, and entities involved in mobility and tourism. This approach treats accessibility as a cross-cutting challenge that requires coordinated action throughout the entire passenger journey.

The final version incorporates Universal Design principles, making it suitable for a broader range of user needs and operational contexts. By linking technical evaluation with practical recommendations, the tool enables organisations to implement measurable improvements in accessibility across the Danube region.

Methodological approach

The methodology uses a self-assessment approach, where organisations evaluate their own practices to enable quick and scalable data collection. To maximise objectivity and minimise subjective interpretation, the questions are clear and specific. By using conditional logic, the tool provides tailored recommendations and a systematic overview of accessibility across different areas. This combination of scoring and practical guidance allows the tool to function both as an evaluation instrument and as a means to build organisational knowledge.

Structure and content of the assessment tool

The toolkit, available at **https://danova-next-toolkit.com**, provides a standardised framework for airports, ports, and urban transport hubs to assess and enhance their services for persons with disabilities. Its main aim is to support transport terminal managers and organisations in enhancing accessibility and identifying specific gaps in operational performance. The assessment is efficient, taking about 10 minutes to complete, and delivers immediate results based on the user's input. The system offers technical recommendations and best practices to help organisations meet EU accessibility standards and enhance the daily experience of passengers with disabilities.

Key benefits include:

- Personalised Feedback: Tailored suggestions based on quiz results to improve accessibility.
- Best Practices: Access to practical tips and strategies for enhancing the travel experience for all passengers.
- Inclusive Travel: Encouraging facilities to contribute to a more accessible and welcoming Danube region.
- Compliance Check: Ensuring alignment with the latest accessibility standards and regulations.
- Cost-Efficient Improvements: Identifying small changes with significant impact.

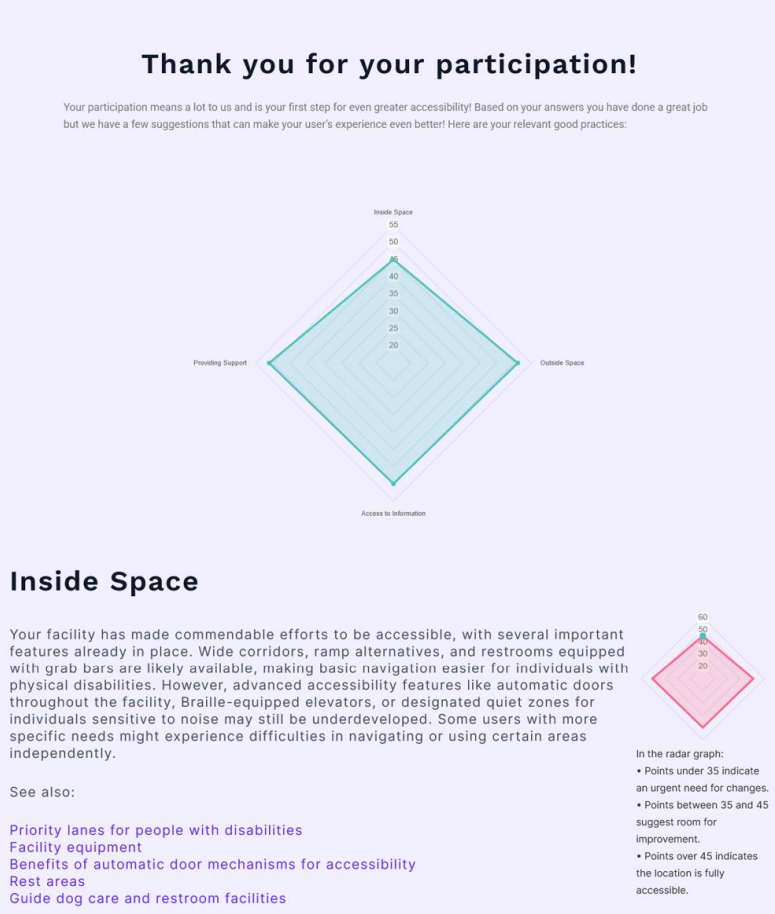
The tool consists of approximately 60 questions divided into individual sections. This structure enables a detailed audit of accessibility without requiring a significant time commitment, while still providing a comprehensive assessment. The questions are grouped into four key areas:

- Inside Space – accessibility of indoor environments and facilities.
- Outside Space – accessibility of external areas and infrastructure.
- Access to Information – availability and clarity of information, including digital accessibility.
- Providing Support – staff training, assistance services, and customer support.

Each question addresses practical accessibility requirements encountered in daily transport operations. The tool's interface offers optimised text sizes and visual contrast, along with a clear multi-section structure to enhance usability. To ensure full GDPR compliance, no personal data is collected. This allows organisations to complete the assessment anonymously, eliminating data privacy risks.

3.2. How it works

Upon completing the assessment, users receive immediate feedback through a visual summary and tailored recommendations. The spider diagram highlights strengths and areas for improvement, enabling users to identify priority actions quickly.



Report from the self-assessment tool

A key feature of the tool is its integration with the Know-How section, which serves as a repository of practical resources. Recommendations in the results are directly linked to relevant articles and guidance materials. These resource links open in separate tabs to ensure that assessment data remains accessible during review.

The knowledge hub has been updated to include specific examples, such as the placement of tactile maps or high-contrast signage. The content is tailored to provide transport operators with practical steps to improve accessibility. By combining the assessment with direct guidance, the tool not only identifies problems but also helps organisations address them.

Limitations

Although efficient, the self-assessment format relies on user-reported data, which can introduce subjective bias. The accuracy of the results therefore depends on the objectivity of the participating organisation.

Conclusion

The DANOVA NEXT Assessment Tool is a straightforward and effective self-assessment resource for airports, ports, and urban transport facilities. In approximately 10 minutes, an organisation gains a comprehensive overview of its facility's strengths and areas for improvement, with particular emphasis on accessibility for persons with disabilities.

The tool consists of a concise five-page questionnaire with targeted questions to evaluate operational efficiency and accessibility. Upon completion, the user receives tailored suggestions for improvement, along with links to relevant resources in the project's Know-How section for further guidance. No personal data is collected, ensuring a private and focused assessment experience.

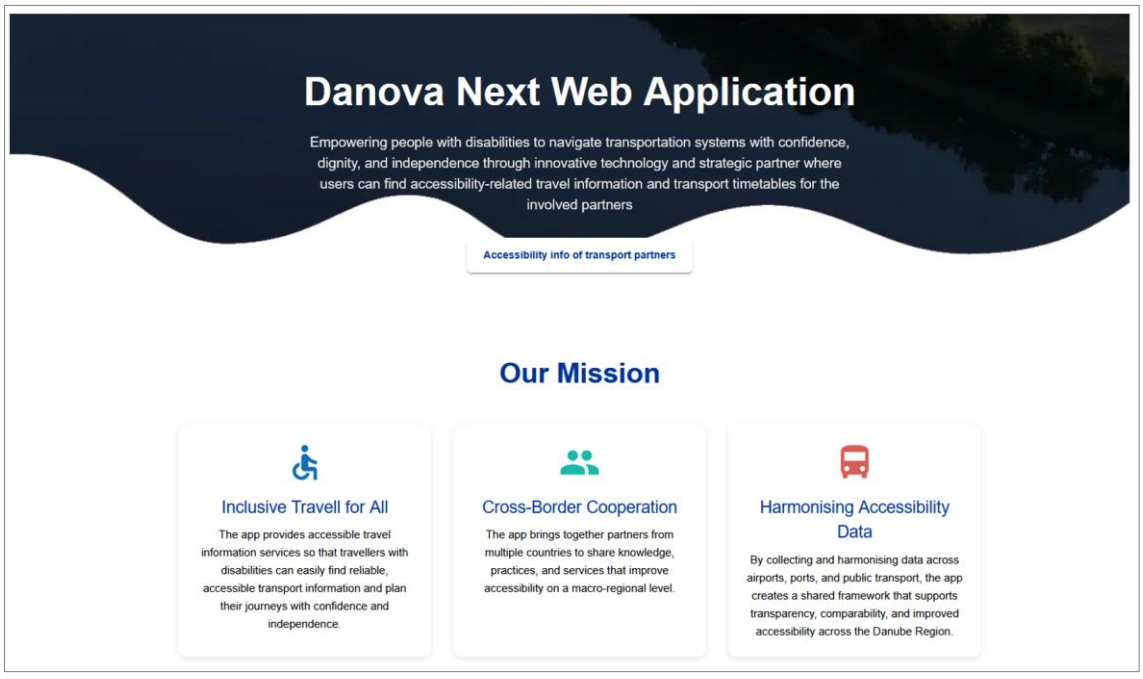
By combining a structured assessment framework with tailored feedback and integrated knowledge resources, the tool enables organisations to identify barriers, implement improvements, and contribute to the broader goal of creating inclusive and accessible environments throughout the Danube region.

4. DANOVA NEXT INTERACTIVE WEB APPLICATION

The DANOVA NEXT Interactive Web Application addresses key barriers to digital accessibility in transport systems across the Danube Region. These barriers include the quality and diversity of accessibility data, the availability of standardised formats to facilitate interoperability, and the accuracy and completeness of information available to PRM users. Without uniformity in collecting and sharing accessibility data, passengers often encounter inconsistencies that hinder their ability to navigate transport systems independently. Providing digital travel information in consistent, structured, and accessible formats is essential for improving user experience and enabling the deployment of innovative digital solutions.

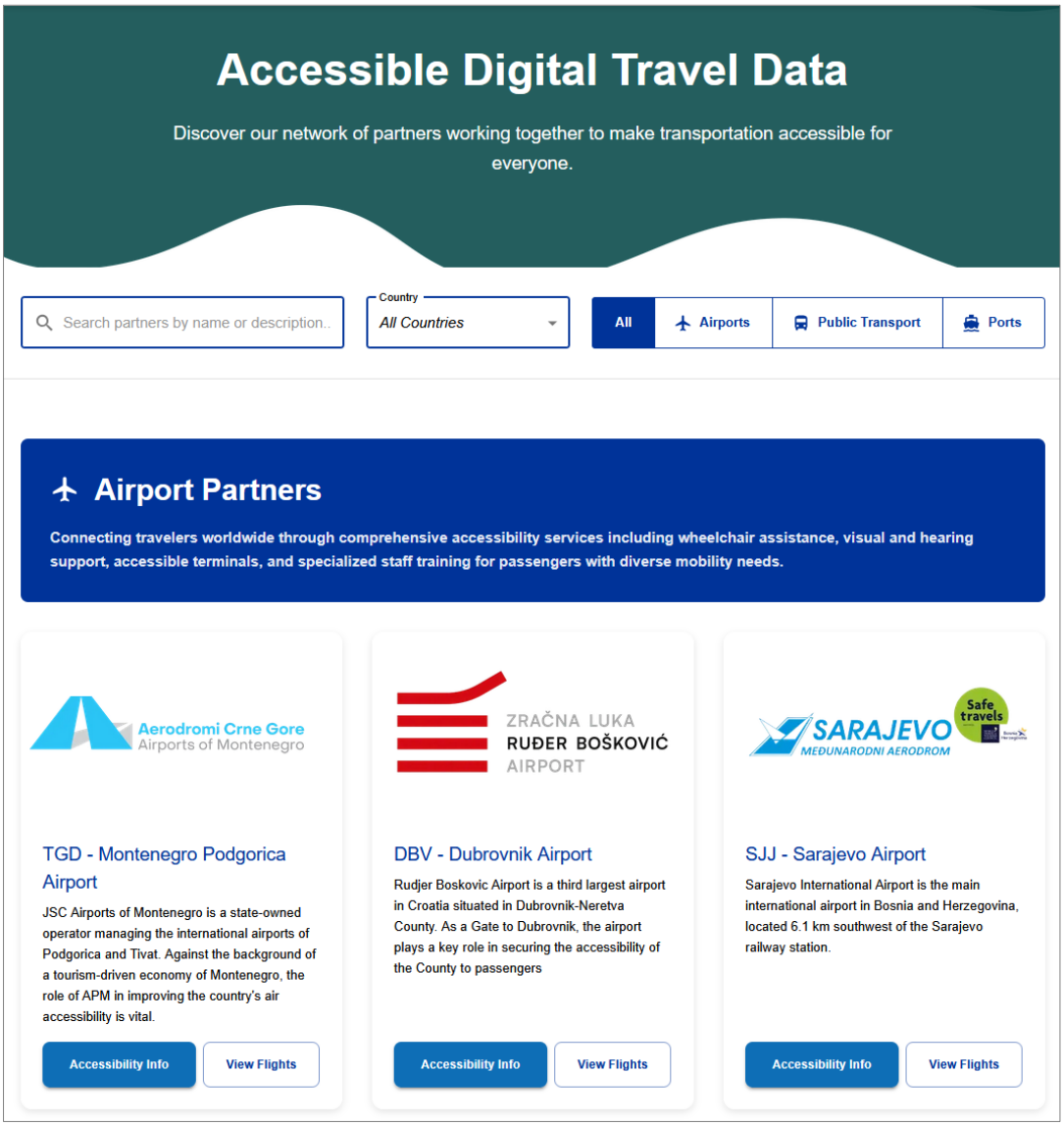
4.1. WHAT IT IS

The DANOVA NEXT Interactive Web Application acts as a central hub for accessible travel information throughout the Danube Region. It is designed to enable travellers with disabilities, including visual, hearing, physical, or cognitive impairments, to navigate complex transport systems independently. The DANOVA NEXT web application is available at **https://danovanext.com/**



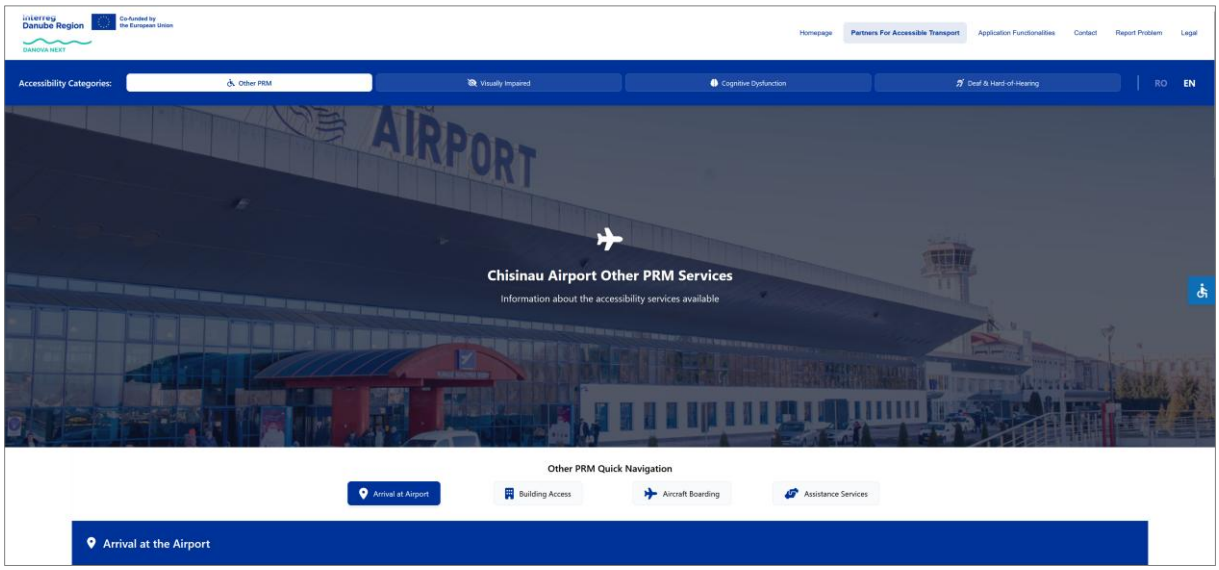
DANOVA NEXT web application Home page

The application integrates accessibility data from various transport hubs, including airports, ports, and urban public transport, and is developed in strict accordance with the Web Content Accessibility Guidelines (WCAG). It supports multimodal interaction, is fully navigable via keyboard, touch, or mouse, is optimised for screen readers with clear ARIA labels and auditory feedback and includes high-contrast modes and clear visual indicators for users with low vision.



DANOVA NEXT web application – transport terminal page

Its main aim is to provide up-to-date information on the accessibility of transport hubs, together with travel information services, enabling travellers with disabilities to easily find reliable, accessible transport information and plan their journeys with confidence and independence. The DANOVA NEXT web app collects and harmonises data from airports, ports, and public transport to offer fully accessible travel information services. It includes real-time flight data and accessibility services (such as wheelchair assistance and terminal navigation) at airports, information on the accessibility of buses, trams, and metros in cities, and details on maritime accessibility, adapted facilities, and boarding systems in ports. The accessibility data is organised by type of disability. Information is provided separately for passengers with visual impairments, hearing impairments, reduced mobility, and cognitive dysfunction.



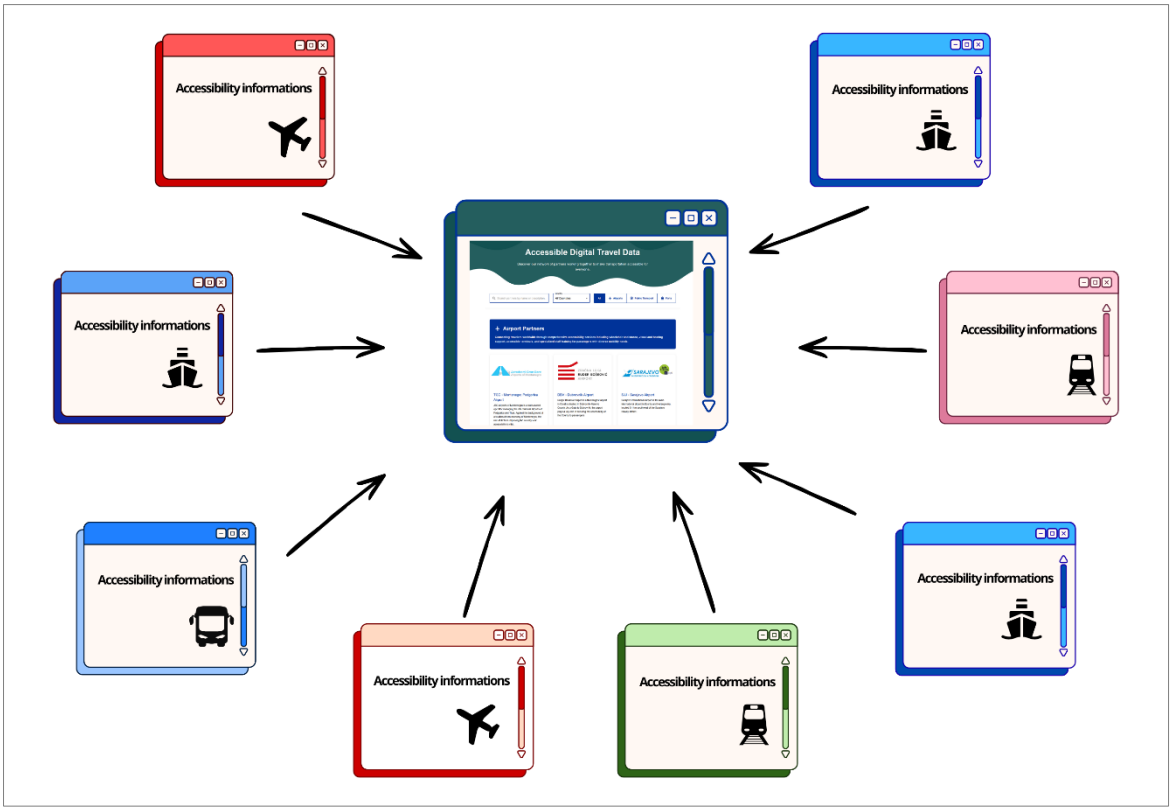
DANOVA NEXT web application – example of accessibility information for airport Chisinau

Sections on infrastructure (buildings, parking), transport means (vehicles, aeroplanes, vessels), and services (assistance for passengers, ticket machines, sign language interpretation, etc.) are included. The coherent and structured presentation of accessibility information enables passengers to obtain the necessary details and plan their journeys more easily.

4.2. How it works

The main innovation of the DANOVA NEXT web application lies not in the structure of the information, but in how accessibility information is obtained and kept up to date. One of the main features of the application is the back-end harmonisation of accessibility information.

A dedicated structure for accessibility information was developed to unify data from transport terminals. This is achieved by implementing a specific accessibility-focused web page on each transport terminal's website. A specific HTML template containing structured accessibility information about the terminal is embedded within the website. The HTML template has a predefined structure in which accessibility information is provided, and each element, such as accessibility status, contact information, or location, is assigned a unique ID. The HTML template is embedded in the transport terminal's website and is then used for information scraping by the DANOVA NEXT web application. This allows the DANOVA NEXT web application to replicate the information from the transport terminals' websites and publish it within the application.



DANOVA NEXT web application – information feed from local websites to the application

The user interface (UI) and user experience (UX) of the accessibility page nested within the terminal's website can be adapted to some extent, in terms of colours and layouts, to ensure it fits seamlessly into the terminal's website. The advantage of this approach is that transportation terminals only need to update their own webpage with accessibility information, and the up-to-date information will always be shown in the DANOVA NEXT web app.

4.3. How to join

The DANOVA NEXT web application currently (June 2026) displays accessibility data for the following transport terminals:

- Airport Budapest Ferenc Liszt International (HU)
- Airport Chisinau International (MD)
- Airport Dubrovnik (HR)
- Airport Podgorica International (ME)
- Airport Sarajevo International (BA)
- Port of Kotor (ME)
- Port of Pula (HR)
- Public transport Bratislava (SK)
- Public transport Maribor (SI)
- Public transport Prague (CZ)

The usability of the DANOVA NEXT web app depends on additional transport terminals joining and providing information to the app. The procedure for joining the DANOVA NEXT network and web application is described in the next chapter. The specific procedure for joining the DANOVA NEXT web application can be found in Annex 1.

5. DANOVA NEXT JOINT FRAMEWORK FOR PRM DIGITAL ACCESSIBILITY

5.1. WHAT IT IS

The DANOVA NEXT Joint framework extends beyond physical infrastructure by addressing the accessibility of digital travel information, ensuring that travel information is easy to perceive, use, and understand for all users. It identifies key areas for improvement, including the need for accurate real-time information, standardised data formats, and inclusive booking systems that accommodate users with impairments.

The framework has been developed through close cooperation between project partners, associations, and public authorities, incorporating user feedback and smart technologies to support a user-centred approach. It serves as a practical reference for strengthening cross-border collaboration and advancing inclusive, reliable, and accessible mobility services across the Danube Region.

Purpose and scope of the framework

The main objective of the Framework is to bring together transport operators and managers to work towards improving accessibility. It is intended for organisations that manage transport terminals or provide transport services, helping them enhance accessibility in their operations and services. The goal is to standardise digital data for schedules, routes, and terminal layouts, ensuring information is accessible and consistent, with a focus on the built environment, digital information, and support services for persons with disabilities.

To achieve this vision, the framework is built around several key objectives:

- **Standardising data formats:** The framework sets technical standards to ensure transport providers can easily exchange information. Without uniform formats, data remains fragmented, leading to inconsistent information that makes independent travel difficult for passengers.
- **Addressing critical barriers:** The toolkit targets specific gaps, such as fragmented data systems and the absence of real-time updates. It focuses on providing accurate information about station accessibility and service disruptions, such as out-of-order lifts.
- **Establishing a common roadmap:** The document offers a structured Implementation Road Map for developing digital tools using a user-centred design. This approach actively involves PRM users in the design, testing, and refinement phases to ensure solutions meet real-world needs.

- **Closing the innovation gap:** Through transnational cooperation, the framework integrates advanced technologies such as AI and IoT to modernise transport services in the Danube Region. The availability of reliable digital tools enables passengers with reduced mobility (PRM) to travel with greater autonomy, directly supporting social and economic participation.

Current network partners

The Smart Transport Network currently connects sixteen (16) partners who have formalized their participation through a Letter of Intent. The coordinating partner is Dubrovnik Airport. The ten (10) primary transport partners involved in the joint development are:

- **Airports:** Dubrovnik Airport (DBV), Budapest Airport (BUD), Airports of Montenegro (APM), Sarajevo International Airport (SIA) and Chisinau International Airport (IS AIC).
- **Urban Public Transport Providers:** Public Transport Company Bratislava (DPB), Czech Smart City Cluster (CSCC), and the Municipality of Maribor (MoM).
- **Ports:** Port of Kotor (PoK) and Pula Port Authority (LUP).
- **Target users partners:** Strategic input is provided by the Croatian Union of Associations of Persons with Disabilities (SOIH), the Austrian Federation of the Blind and Partially Sighted (BSVÖ), and the Romanian National Association of the Deaf (ANSR).

This partnership ensures that digital solutions, such as the DANOVA NEXT web application, align with the actual needs and daily experiences of passengers with disabilities.

Benefits of joining the network

Joining the Smart Transport Network offers significant strategic and operational benefits for transport facilities:

- **Transnational cooperation:** Partners can define reference frameworks and share best practices across borders to establish consistent accessibility standards throughout the region.
- **Knowledge transfer:** Membership allows continuous exchange of lessons learned and transfer of accessibility expertise to other regions in Europe.
- **Data integration and sharing:** Partners benefit from integrated data across different transport modes, which is essential for improving the multimodal journey experience. The DANOVA NEXT app acts as the central hub for this integration, consolidating real-time travel schedules, terminal layouts, and PRM booking services into a single user interface.
- **Enhancing intermodal connectivity:** The network promotes innovative concepts such as the "fly & cruise" collaboration between airports and ports to improve transitions for PRM passengers.
- **Regulatory and technical readiness:** Members are better equipped to adapt to emerging legal requirements and international standards (such as WCAG 2.2 and EN 301 549), and to integrate future technologies including AI-driven assistance and predictive analytics.
- **Improved reliability:** By providing reliable, real-time accessibility data, providers reduce traveller uncertainty, build trust, and encourage more frequent use of public transport services by passengers with reduced mobility (PRM).

Interested parties, including transport providers, technology companies, and advocacy groups, may participate in this initiative by joining the Smart Transport Network, established as a core element of the DANOVA NEXT framework.

The DANOVA NEXT Joint Framework serves as a vital blueprint for advancing inclusive and reliable mobility services across the Danube Region and beyond. By fostering transnational collaboration and standardising digital travel information, the framework bridges the innovation gap and ensures greater social and economic inclusion for passengers with reduced mobility. This initiative establishes a foundation for long-term sustainability and user trust, creating a more connected and equitable transport ecosystem for all travellers.

5.2. How to join

New organisations can join the Smart Transport Network through a formal process designed to promote transnational cooperation and inclusive mobility. There are three main ways for interested parties to become members:

- **Signing a Letter of Intent**: This is the official method to formalise participation. By signing this document, an organisation commits to developing and using project results within its own institution and disseminating those results to relevant stakeholders. Interested parties can engage directly with the coordinating partner, Dubrovnik Airport.
- **Engagement through existing partners**: Organisations can contact any of the 16 organisations that were part of the DANOVA NEXT partnership for further information.
- **Participation in local events**: Invitations to join the network are often extended during local focus groups, workshops, and transnational forums.

By joining, new members become part of a cooperative focused on sharing data, best practices, and standardised models to ensure a seamless and inclusive travel experience across the Danube Region and the rest of Europe. Organisations can also share their accessibility data through the DANOVA NEXT web app, as covered in the previous chapter. The next section explains the onboarding process in detail.

5.3. DANOVA NEXT Web Application - Partner Onboarding Process

Joining the DANOVA NEXT framework is primarily beneficial for organisations in the transportation sector seeking to improve the accessibility of their travel information. The platform is specifically designed to support airports, ports, and public transportation networks.

The framework is particularly suitable for the following types of organisations:

- Entities serving diverse passenger needs: Providers focused on making travel data accessible for persons with disabilities and elderly users benefit from this approach.
- Organisations seeking regulatory compliance: The platform offers a pre-built solution for organisations that must meet international accessibility standards, such as WCAG 2.1 Level AA and EN 301 549.
- Providers with complex data streams: Organisations managing real-time flight data (airports), intricate transit maps (public transport), or detailed service

schedules (ports) benefit from the platform's structured data transmission strategies.
- Transportation hubs requiring standardised navigation: Hubs needing to provide clear, well-organised accessibility information through a centralised network find value in the platform's subdomain-based architecture and standardised component library.

The framework serves organisations seeking to integrate their accessibility-focused information into a unified regional platform, rather than maintaining separate digital solutions.

The Onboarding Process

The onboarding process for the DANOVA NEXT web application integrates accessibility-focused transport data into a unified platform. It begins with a needs assessment and an initial consultation with organisational decision-makers to define the technical architecture for their specific subdomain. This is followed by a technical session with the developer's IT team to determine data transmission methods, such as API integrations for real-time flight data or JSON schemas for transit maps.

The implementation, led by the developer's technical team, involves content preparation, system integration, and internal testing. To streamline this stage, the following is provided:

- WCAG 2.1 (Level AA) and EN 301 549 compliant templates.
- A library of pre-tested accessible UI components (navigation, content blocks).
- A structured data collection toolkit to ensure all required information is gathered efficiently.

The standard end-to-end onboarding process is completed within four to five weeks, extending to seven weeks for more complex cases. Once deployed, the developer initiates quality assurance and validation. This step verifies technical functionality, content integrity, and ensures all components are fully accessible. After successful validation, the system enters the launch phase, during which the page is indexed within the DANOVA NEXT network and live data streams are activated.

Costs

Integrating new partners into the DANOVA NEXT web application incurs specific costs for each partner. These costs are negotiated individually between each interested organisation and the DANOVA NEXT web application developer. The onboarding fee is set at the contract stage and generally covers the full integration cycle, including consultations, technical resources, validation, and deployment support. After the technical planning phase, the developer provides written confirmation of the final cost, based on the volume of content and the complexity of the partner's data sources.

Detailed information on the onboarding process is provided in Annex 1: *DANOVA NEXT Web Application Partner Onboarding Process.*

6. DANOVA NEXT PILOTS' IMPLEMENTATION

The main component of the DANOVA NEXT project was to test various innovative solutions to improve access to terminals and travel information for passengers with impairments. The pilot actions of the DANOVA NEXT project were implemented at ten sites across the Danube region, comprising five airports, two seaports and three public transport systems:

- Budapest Airport (HU)
- Chisinau Airport (MD)
- Dubrovnik Airport (HR)
- Podgorica Airport (ME)
- Sarajevo Airport (BA)
- Kotor Port (ME)
- Pula Port (HR)
- Bratislava public transport (SK)
- Maribor public transport (SI)
- Prague public transport (CZ)



Location of DANOVA NEXT pilot sites

A range of measures and interventions was implemented at these diverse transport terminals, including large and small airports, seaports, and urban transport systems in large, medium, and small cities. As part of the pilot actions, various infrastructural improvements were made, such as lowered service counters, tactile walking surface indicators (TWSIs), call points for passengers with reduced mobility (PRMs), seating areas with designated seats for PRMs, and accessible parking. A significant part of the interventions involved the purchase and installation of specialised equipment, including standard, non-metallic, and evacuation wheelchairs, hearing loops and intercom systems, portable stair-climbing devices, inclined ramps for PRM passengers, low-floor electric vehicles for PRMs, tyflomaps, accessible information displays, and hardware and software for audio communication in ticket machines. Solutions were also implemented in digital information, such as a virtual stop departure board on the website, website upgrades to comply with WCAG 2.2 standards, indoor and outdoor navigation applications for PRMs, a Wayfinding and Information system, and the application Your Accessible Flight.

Various combinations of measures were implemented. All pilot activities included the implementation of the DANOVA NEXT web application (described in Chapter 4), the establishment of a disability advisory committee (an unofficial advisory group comprising members with various disabilities who regularly consult on regulatory compliance and inclusive design), and the organisation of thematic tables with target users and stakeholders addressing different aspects of improving travel for passengers with disabilities. The complete list of implemented measures and solutions for each transport terminal can be found in **Annex 2 - List of measures/solutions tested in pilot actions per transport partner.**

The experiences and lessons learned from the pilot actions are detailed in the appraisal report available for each site. However, for a general understanding of DANOVA NEXT pilot implementations, experiences, lessons learned, and replication recommendations are summarised below. These are grouped into the following four types of interventions:

- Built environment and equipment
- Digital solutions
- Organisational solutions
- Other interventions

Furthermore, the experiences and lessons learned are listed separately for each transport mode: airports, urban transport, and seaports. At the beginning of each subchapter, the key performance indicators (KPIs) measured in the pilot actions are presented. Detailed analyses of KPIs can be found in ***DANOVA NEXT Pilot Action Evaluation Report*** available in DANOVA NEXT Library https://interreg-danube.eu/projects/danova-next/library.

6.1. BUILT ENVIRONMENT AND EQUIPMENT

The partnership implemented various interventions in the infrastructure of the terminals and has installed or put into use new equipment to facilitate accessibility and usability of the transport terminals. Various solutions were implemented and equipment was installed, key performance indicators are shown in the table below.

Key performance indicators of pilot actions – measures and interventions related to the built environment and equipment

Implemented measure or solution	Key Performance Indicators (KPIs)	Before Implementation	After Implementation
TWSI and Braille Signage	- Absolute distance	**/** *(only additional installations were measured)*	**441 m** *(additional TWSIs)*
Hearing Loop Systems and Devices	- Absolute number of loops	**/** *(only additional installations were counted)*	**31**
Vertical ramp	- Absolute number of ramps	**/** *(only additional installations were counted)*	**1**
Portable stair-climbing device[1]	- Absolute number	**/**	**1**

[1] Public transport Bratislava only

Implemented measure or solution	Key Performance Indicators (KPIs)	Before Implementation	After Implementation
		(only additional installations were counted)	
(Non-Metallic) wheelchairs	- Absolute number	**0**	**53**
Specialized wheelchairs for aircraft boarding	- Absolute number	**1**	**4**
Adjusted corner and info desk for other PRMs	- Area covered compared to total area	**0 m2/289 m2** *(5/6 sales points)*	**144 m²/289 m²** *(6/6 sales points)*
Accessible Seating and rest areas[2]	- Absolute number of accessible areas - Percentage of accessible areas compared to all areas	- **3 basic** - **0 %**	- **1 basic + 2 priority** - **60 %**
Electric vehicle purchase	- Absolute number of vehicles	**1**	**5**
Tyflomaps for selected urban transport locations.[3]	- Absolute number of tyflomaps created	**0**	**4**

[2] Dubrovnik airport only
[3] Urban transport Prague only

6.1.1. Airports

The airport partners upgraded physical infrastructure and equipment to improve accessibility for passengers with physical and sensory disabilities. Common measures included procuring specialised mobility equipment: Airports of Montenegro, Dubrovnik, and Sarajevo focused on non-metallic wheelchairs for seamless security screening, while Sarajevo and Moldova introduced XXL models to accommodate diverse physical needs. Dubrovnik procured aisle chairs for aircraft boarding. Other interventions addressed assistive communication technology, with Airports of Montenegro and Dubrovnik installing induction loop systems at information desks, and Moldova implementing an intercom call-point system in parking and terminal areas. Specific physical modifications were made to remove barriers: Dubrovnik introduced a vertical PRM ramp for step-free circulation and a specialised PRM seating area, Budapest installed additional tactile walking surface indicators (TWSIs), and Airports of Montenegro installed a wheelchair-accessible Lost and Found counter and procured electric vehicles for airside transfers. To assist passengers with low vision, Moldova replaced Flight Information Display System (FIDS) monitors with high-contrast displays.

Problems Encountered

- *Challenges with procurement and administration:* public procurement rules caused delays in some cases or required certain tenders to be cancelled and relaunched. In one instance, an additional delay occurred due to the need to obtain mandatory approval from a national government agency.
- *Strategic and ethical adjustments:* in one instance, a plan to procure stair-climbing chairs was abandoned after consultations indicated that mechanical lifting equipment could compromise passenger dignity.
- *Operational and physical constraints:* installing equipment in security-restricted zones was challenging, requiring constant supervision and background checks for contractors. Equipment locations were revised several times due to airport terminal capacity limits.

Corrective Actions

- *Early market engagement:* market research and needs assessments should be conducted in advance to minimise procurement risks.

- *Flexible scheduling*: security-related installation issues were resolved by arranging contractor work during low-traffic periods.
- *Technical consultations*: timely consultations resulted in changes to plans – equipment considered less dignified was not procured and was replaced by the installation of an accessible counter for PRMs. In cases of regulatory issues, consultations and meetings with agencies and developers were used to address administrative matters and resolve delays.

6.1.2. Urban transport

Urban transport partners implemented physical infrastructure upgrades to remove barriers for passengers with physical and sensory disabilities. Bratislava procured a portable stair-climbing device and a compatible wheelchair to ensure access to ticket offices, as well as audio communication kits for ticket machines. In Prague, 12 fixed induction loop systems were installed at the Main Railway Station, and tactile orientation maps were produced for four major hubs. In Maribor, hearing loop and intercom systems were installed at service points, and service counters at the Main Bus Station were lowered to accommodate wheelchair users.

Problems encountered:

- *Electromagnetic interference:* electromagnetic "hum" in complex station environments was encountered, which in some cases disrupted the performance of induction loops.
- *Tactile design complexity:* balancing spatial accuracy and tactile readability for complex transport layouts on maps proved challenging.
- *Physical layout constraints: e*xisting ticket office layouts without partitions have limited the installation options for traditional hearing loop systems.

Corrective actions

- *On-site technical assessments:* pre-procurement measurements of electromagnetic conditions and spatial layouts were carried out to ensure technical feasibility.
- *Expert and user validation:* specialised consultants conducted on-site testing with disabled users to refine hearing loop settings and verify map legibility.
- *Hybrid technical solutions:* integrated hearing loop/intercom units were installed where spatial layouts prevented separate installations.

6.1.3. Ports

The port partners improved physical accessibility by upgrading infrastructure and procuring specialised assistive equipment. To enhance navigation, Pula installed tactile guidance strips near ticket sales points to lead visually impaired passengers to the maritime border crossing and designated an additional accessible parking space near the passenger terminal. Pula improved on-site information access by installing a custom display at a height of 85 cm to accommodate wheelchair users. Communication support was addressed through the installation of hearing loop technology: Kotor integrated a system at the terminal information desk, while Pula incorporated it directly into its accessible information display. For mobility and transfer, both partners acquired specialised equipment. Pula procured standard wheelchairs for emergency use and general on-site mobility. Kotor expanded its fleet with non-metallic wheelchairs designed to pass through security screening without triggering alarms, as well as two electric vehicles for transferring passengers between cruise ships and the terminal.

Problems Encountered

- *Niche technical requirements:* standard market solutions did not meet the specific height and accessibility requirements for information display, necessitating a custom-built solution and a more complex sourcing process.
- *Equipment integration:* the custom-built display had no software installed; made-to-order software was required.
- *Operational integration*: minor difficulties arose in aligning the use of new electric vehicles and specialised wheelchairs with safety and passenger handling procedures.
- *Procurement timelines:* market research and procurement of the specialised display took significantly longer than standard equipment procurement.

Corrective Actions

- *Market research and negotiation:* a custom-built display required 1.5 years of market research and negotiations with various providers before a manufacturer was found who built the display according to user-provided specifications.
- *Custom-made software* was developed to ensure the proper presentation of real-time data feeds on the display.

- *Procedural adjustments:* integration of newly procured electric vehicles and specialised wheelchairs was achieved through minor operational changes and staff training in the use of the vehicles.
- *Visual indicators*: specific signs or stickers were introduced on equipment to clearly mark it as suitable for persons with disabilities.

6.1.4. Replication Recommendations

Based on experience from pilot implementations, the following recommendations are made concerning the built environment and equipment:

- *Standardised compliance:* prioritisation of mobility equipment that fully complies with international standards such as ECAC Doc 30.
- *Institutional integration:* infrastructure and equipment should be formally added to the fixed asset register and included in regular maintenance programmes to ensure long-term functionality. If this is not possible, agreements should be established with infrastructure operators to define responsibilities for long-term maintenance and sustainability.
- *Site-specific assessments:* early evaluation of electromagnetic conditions for hearing loops and physical layouts is essential for technical feasibility.
- *Feasibility studies:* when planning the installation of hearing loops, carry out site-specific technical assessments of electromagnetic and acoustic conditions early in the planning phase.
- *Iterative prototyping:* use an iterative design process for tactile tools to ensure they remain legible when complex architectural plans are simplified.
- *Targeted modular upgrades:* focus on low-cost interventions such as TWSIs and basic mobility aids that can be integrated into existing terminal layouts without major reconstruction.

6.2. Digital Solutions

The partnership developed and integrated digital tools to provide structured, accessible travel information. A key shared achievement was the contribution to the DANOVA NEXT web application and related accessibility pages created for all pilot actions. Various other solutions were implemented, key performance indicators are shown in the table below.

Key performance indicators of pilot actions – measures and interventions related to the digital solutions

Implemented measure or solution	Key Performance Indicators (KPIs)	Before Implementation	After Implementation
DANOVA NEXT Web-App	- Number of transport terminals providing information on accessibility to the DANOVA NEXT web-app	**0**	**10**
Pilot Navigation App for barrier-free traveling (outdoor or indoor)[4]	- Number of apps	**0**	**3**
Improved IDS displays or monitors[5]	- Number of accessible displays compared to total number	**0**	**1**
Intercom System Installation	- Number of intercom systems	**0**	**9**

[4] Airports Budapest and Chisinau, urban transport Prague
[5] Port Pula only

Implemented measure or solution	Key Performance Indicators (KPIs)	Before Implementation	After Implementation
Upgrading monitors inside terminals[6]	- Number of accessible displays	**0**	**4**
Assistance management software (i.e. tracking software)[7]	- Number of installations	**0**	**1**
Voice-assisted interface in ticket vending machines.[8]	- Number of accessible machines compared to total number	**0/285**	**40/285**
Digital Information Totem with Sign Language Videos[7]	- Number of digital information totems with accessible information	**0**	**1**
E-Gate System[7]	- Number of E Gate Systems	**/** *(only additional installations were counted)*	**1**

[6] Airport Chisinau only
[7] Airport Sarajevo only
[8] Public transport Bratislava only

6.2.1. Airports

All airports have integrated the DANOVA NEXT web application into their travel information systems. Specific digital solutions were implemented to manage assistance and navigation. Sarajevo launched a centralised PRM software solution to automate assistance schedules and real-time task assignments for staff. Moldova introduced the "Your Accessible Flight" mobile app, which features AI-powered flight information and wheelchair compatibility verification. Budapest has launched the GateWay indoor navigation application. To improve orientation, Airports of Montenegro installed a digital totem with seven sign language videos explaining airport procedures.

Problems Encountered

- *Technical and integration costs:* unforeseen expenses arose from API integration and technical support, exceeding current maintenance contracts.
- *Managing complex technical deliveries:* the late-stage delivery of specialised equipment, such as e-gates and centralised software, requires an accelerated installation phase to ensure all systems are operational on time.
- Logistical disruptions: global supply chain issues caused significant delays in the delivery of specialised electronic equipment.

Corrective Actions

- *Internal resource allocation:* additional financing was provided for digital integration costs from internal resources.
- *Schedule revision:* implementation timelines were revised, and testing and validation activities were postponed.

6.2.2. Urban transport

The core output was the deployment of the DANOVA NEXT App, which provides structured, accessible travel information across the region. Additionally, Bratislava upgraded its website to WCAG 2.2 standards and launched a voice-assisted virtual stop departure board. Prague developed "Wheelapp.cz", a Progressive Web App (PWA) for personalised barrier-free routing using high-resolution terrain data. Maribor completed a comprehensive accessibility upgrade of the public transport operator's website.

Problems encountered:

- *Resource and coordination gaps*: personnel changes and the intensive effort required to coordinate technical contractors with transport operators caused moderate delays.

- *Data integration complexity for routing app*: integrating high-resolution terrain data (curb heights, slopes) into the routing engine was very complex and required algorithmic adjustments.

Corrective actions:

- *Formal cooperation frameworks*: cooperation agreements were used where necessary to clarify legal responsibilities between the city and the transport operator.
- *Strengthened internal coordination*: alternative communication channels and clear allocation of responsibilities maintained project continuity despite organisational changes.
- *Structured data validation for routing app*: the app was tested through iterative development cycles and rigorous validation procedures to ensure the accuracy of calculated routes.

6.2.3. Ports

To enhance digital accessibility, Pula and Kotor integrated the DANOVA NEXT web application into their travel information systems. Pula embedded the interface directly into its on-site accessible display and commissioned custom software to support text-to-speech features and multimodal schedules for catamaran, bus, and train services. Meanwhile, Kotor focused on validating maritime-specific data for the platform and developed video content using International Sign to provide universally accessible travel information.

Problems Encountered

- Delays in DANOVA NEXT app integration: caused by a complete reconstruction of the terminal's official website, which was underway at the same time.

Corrective Actions

- Coordinated testing: the compatibility of hardware (display) and custum-made software was rigorously tested before final deployment.

6.2.4. Replication Recommendations

Based on experience from pilot implementations, the following recommendations are made concerning the digital solutions:

- *User-centred co-creation: d*igital tools should be co-designed with disability advocacy groups to ensure they address real operational barriers.
- *Modular architecture:* solutions should use scalable frameworks to allow future expansion, such as adding international sign language content.
- *Maintenance contracts: s*ecure long-term maintenance agreements of at least two years to ensure post-project operational success.
- *Modular technical architecture*: design digital solutions with modular architectures to enable easy territorial expansion and data updates. Using modular frameworks ensures systems remain adaptable, allowing future integration of additional data layers or sign language content.
- *Continuous user testing: m*aintain active involvement of target users throughout development to ensure interfaces meet actual accessibility needs.
- *Integration of digital and physical infrastructure:* digital solutions should be implemented alongside physical infrastructure, as reliable access to information is essential for effective navigation.
- *Data quality standards for routing:* prioritise high-quality primary terrain data and standardised formats to ensure digital tools remain reliable and interoperable.

6.3. ORGANISATIONAL SOLUTIONS

All partners have established disability advisory committees in various organisational forms to facilitate communication and collaboration among stakeholders, which is key to eliminating service gaps. The disability advisory committees are groups regularly consulted on regulatory compliance, inclusive design, and all issues related to improving access to mobility services and infrastructure. Through these committees, thematic tables on specific topics were organised to support partners in implementing solutions for improved access. Key performance indicators are shown in the table below.

Key performance indicators of pilot actions – measures and interventions related to the organisational solutions

Implemented measure or solution	Key Performance Indicators (KPIs)	Before Implementation	After Implementation
Disability Advisory committee	- Number of advisory bodies created	**0**	**10**
Staff training programs	- Number of persons trained	**/** *(only additionally trained persons were counted)*	**458 persons**
Audits	- Number of audits performed	**/** *(only additional audits were counted)*	**3**

6.3.1. Airports

The airport partners implemented organisational measures focused on stakeholder engagement and capacity building. Moldova and Airports of Montenegro used or established Airport Facilitation Committees to integrate accessibility into formal aviation governance, while Dubrovnik, Budapest and Sarajevo held bilateral meetings and thematic tables with unions for the blind, deaf, and those with physical disabilities to involve them in pilot planning and evaluation. Staff training programmes were standardised across all partners – airports of Podgorica, Dubrovnik, Sarajevo, and Chisinau – to include awareness-raising for ground handling agents, border police, and customs officers regarding inclusive communication and passenger rights. To ensure sustainable internal expertise, Chisinau implemented a "Train the Trainer" model within its training programme.

Problems Encountered

- *Skill maintenance*: Specialised skills, such as sign language, can deteriorate without regular use, making integration into general training more practical than standalone courses.
- *Reducing manual errors*: Before the pilots, some airports relied on fragmented, manual coordination processes that were prone to errors during peak traffic.

Corrective Actions

- *Institutional integration:* accessibility training was formally incorporated into the regular, mandatory training syllabi approved by national aviation authorities.
- *Regular consultations:* a schedule for periodic meetings, such as every six months with advisory committees, was established to ensure continuous improvement.

6.3.2. Urban transport

Joint organisational outputs included establishing disability advisory committees and hosting thematic tables to facilitate stakeholder dialogue. Partners implemented staff training programmes, including training bus drivers in disability awareness and the operation of new assistive technologies in Maribor.

Problems encountered:

- *Stakeholder engagement gaps:* inconsistent engagement from some stakeholders, particularly during the critical implementation and testing phases, was identified.

- *Complex institutional approvals:* multi-step formal approvals are sometimes required for installations, involving legal and visual identity compliance.

Corrective actions

- *Institutional consultative bodies*: advisory committees were actively involved to ensure pilot measures remained aligned with expert standards and user expectations.
- *Contractual formalisation:* formal agreements were signed with stakeholders to define long-term roles and ensure management-level buy-in.
- Integrated operational training: training was incorporated into standard procedures to ensure staff could confidently assist passengers with new systems.

6.3.3. Ports

Organisational measures focused on staff training and formalising stakeholder engagement. To improve coordination, Pula worked with the local Commission for Persons with Disabilities to align pilot activities with city requirements, while Kotor held thematic meetings and testing sessions with the non-governmental organisation "I MI Boke" and the Resource Centre "Dr. Peruta Ivanović." Pula also arranged formal staff training led by the Regional Office of the Ombudsman for Persons with Disabilities, and Kotor introduced internal programmes to ensure staff could effectively use new assistive technologies.

Problems Encountered

- *Stakeholder availability*: some challenges in coordinating testing sessions arose due to the limited availability of users' representatives.

Corrective Actions

- *Participatory design*: input from persons with disabilities was fully incorporated during the pilots' preparation phase.
- *Flexible coordination:* enabled the completion of all validation sessions under real operational conditions through direct communication and adaptive scheduling.

6.3.4. Replication recommendations

Based on experience from pilot implementations, the following recommendations are made concerning the organisational solutions:

- *Early stakeholder involvement*: Involve target users and advocacy groups from the outset to improve the relevance and usability of implemented measures.
- *Permanent expert platforms/ participatory governance*: advisory groups should act as permanent consultative bodies to continuously monitor and advise on accessibility.
- *Continuous awareness*: integrate accessibility training into daily operations and onboarding, rather than treating it as a one-off event. Use "Train the Trainer" models and recurring training modules to maintain staff awareness and skills.

6.4. ONLINE RESOURCES

All pilot implementations are described in detail in the appraisal reports prepared for each site. The reports provide guidance on sustainability and replication for measures tested at each pilot site. All individual reports are available in the DANOVA NEXT library.

Key results available in DANOVA NEXT Library https://interreg-danube.eu/projects/danova-next/library.

- Pilot Action Evaluation Report
- Appraisal report on testing - Dubrovnik airport
- Appraisal report on testing - Budapest airport
- Appraisal report on testing – Airports of Montenegro
- Appraisal report on testing – Sarajevo airport
- Appraisal report on testing - Chisinau airport
- Appraisal report on testing – Port of Kotor
- Appraisal report on testing – Port of Pula
- Appraisal report on testing – Urban transport Bratislava
- Appraisal report on testing - Urban transport Maribor
- Appraisal report on testing - Urban transport Prague

7. ANNEX 1- DANOVA NEXT WEB APP ONBOARDING PROCESS

This document outlines the partner onboarding process for integrating accessibility-focused transportation information into the Danova Next Web Application.

The Danova Next platform is dedicated to providing accessible transportation information to all users. Our partners play a central role in making travel information accessible to persons with disabilities and elderly users across airports, ports, and public transportation networks.

7.1. THE ONBOARDING PROCESS

Phase 1: Initial Consultation Meeting

The onboarding journey begins with a dedicated kick-off meeting between DANOVA NEXT administrator team and new partner organization's decision-makers.

- Duration: 1–1.5 hours
- Participants: 1–2 partner stakeholders with decision making authority, a partner technical representative, and administrator technical team.

Agenda

- Platform Overview: introduction to Danova Next and accessibility standards.
- Needs Assessment: discussion of new partner's transportation type (airport, port, public transport) and accessibility requirements.
- Requirements: content requirements and user needs specific to new partner's organization.
- Architecture: explanation of the subdomain structure (accessibility.yourwebsite.com).
- Resources: distribution of onboarding materials (templates, component library, documentation).
- Next Steps: scheduling the Technical Meeting.

The proposal is available for 60 days from the date (May 2026) it was created.
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Phase 2: Technical Meeting

Following the consultation, administrator conducts a deep-dive session with new partner's IT and development team.

- Duration: 1.5–2 hours
- Participants: new partner's technical team and administrator technical team.

Agenda

- Demonstration: step-by-step demo of partner page setup and deployment.
- Structure: detailed explanation of page structure and component usage.
- Data Transmission Strategy: real-time flight data via API endpoints (for airports), transportation map data via JSON (for public transport), and service schedule / accessibility data integration (for ports).
- Review: walkthrough of the data collection spreadsheet and Q&A.

Phase 3: Partner Implementation

Partner's technical team implements the accessibility page using the resources provided. During this phase partner's team completes content gathering, system integration, and internal testing.

- Expected Duration: 1–2 weeks for standard implementations. Complex implementations involving live data feeds, multiple APIs, or non-standard data formats can extend to 3–4 weeks.
- Deliverable: completed accessibility page deployed to partner's subdomain.

Resources provided by administrator:

- Template Pages: fully structured, accessible page frameworks (WCAG 2.1 Level AA) ready for branding.
- Component Library: reusable, pre-tested accessible UI components (navigation, content components, list components, etc.)
- Data Collection Spreadsheet: comprehensive template identifying all required data points.

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- Technical Documentation: JSON schemas, API endpoint docs, and deployment guide based on partner type.
- Content Guidelines: best practices for accessible information organization

Phase 4: Quality Assurance & Validation

Once partner's page is deployed, administrator's team conducts a full validation review.

- Duration: 3–5 business days
- Deliverable: technical validation and approval for launch. Administrator verifys that everything is set correctly, that all required elements have been respected, and that the content matches the expected sections.

Validation Scope

- Technical Accessibility Check: verifying that components function correctly and have not been modified from their initial accessible state.
- Content Verification: ensuring all required accessibility information is well-structured, complete, and clearly organized.
- Real-Time Data Testing: verification of API connectivity and JSON map data accuracy (where applicable).

Phase 5: Launch & Integration

Upon successful validation, administrator proceeds with production deployment.

- Duration: 2–4 business days
- Outcome: partner organization joins the Danova Next network, with partner's accessibility page indexed, real-time data flowing where applicable.

Activities

- Official indexing of partner's accessibility page within the Danova Next application.
- Integration of real-time data sources into the main platform.
- Provision of ongoing technical support documentation.

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7.2. TIMELINE

The standard onboarding timeline is 4–5 weeks end-to-end, assuming no delays from the partner side. If partner's team has dedicated resources and content is ready at kick-off, the timeline can be compressed toward four weeks.

Complex implementations — involving live data feeds, multiple APIs, or non-standard data formats — extend Phase 3 by approximately two weeks, bringing the total timeline to 6–7 weeks. The revised timeline will be confirmed in writing following the Technical Meeting.

Timeline may also extend if the partner does not adhere to the standard procedures and provided templates.

DANOVA NEXT web application onboarding timeline

Week	Phase	Key Activities
1	**Kick-off**	Initial consultation; distribution of templates and component library; scheduling the technical meeting.
2	**Technical Planning**	Technical meeting; review of data structure and API requirements; spreadsheet planning.
3	**Implementation**	Partner development team implements the accessibility page; content gathering; live data integration testing.
4	**Quality Assurance**	Accessibility verification; content structure validation; approval for launch.
5	**Launch**	Final adjustments; production deployment; page indexing in Danova Next.

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7.3. Roles & Responsibilities

What DANOVA NEXT administrator provides:

- Template Page & Component Library: frameworks compliant with WCAG 2.1 Level AA and aligned with EN 301 549.
- Technical Documentation: JSON schemas, API documentation, and configuration instructions.
- Data Collection Spreadsheet: templates for organizing accessibility data.
- Consultation: two dedicated meetings (Kick-off and Technical).
- QA & Validation: full technical and content review prior to launch.
- Launch Support: production deployment and indexing within the Danova Next platform.

What new partner organization provides:

- Content & Data: compilation of all accessibility information specific to your organization.
- Data Integration: API connections (flight data) or JSON files (maps) where applicable.
- Technical Team: developers to manage implementation and attend the Technical Meeting.
- Internal Testing: feedback and adjustments during the QA process.
- Timely Communication: responses to clarification requests within 3 business days to keep the project on schedule.

7.4. Investment & Offer Terms

Onboarding Investment

Standard Onboarding Investment: 2,500 – 4,000 EUR per new partner.

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Pricing is upfront, transparent, and fixed at the contract stage. This investment covers the complete onboarding cycle: both meetings, all materials, validation, and deployment support.

The standard range applies to partners with standard accessibility requirements. Where exactly the project falls within this range is confirmed in writing after the Phase 2 Technical Meeting, based on the scope of content, the type of integration, and the complexity of your data sources.

Payment terms: 100% of the agreed fee is invoiced upon contract signature and payable within 14 days, before the Kick-off Meeting is scheduled. This ensures we can allocate dedicated team resources to your onboarding from day one.

When Pricing or Timeline May Vary

The pricing tier applies to partners following standard onboarding procedures and using the provided templates and components without significant modification. Final pricing and timeline may differ in the following cases:

- Complex live data: multiple real-time API integrations, high-frequency data feeds, or non-standard data structures.
- Custom integrations: legacy system connections, bespoke data formats, or proprietary protocols.
- Advanced map structures: large or non-standard transit network maps requiring custom JSON work.
- Deviation from standard procedures: if the partner chooses not to use the provided templates or components, additional development and validation time will be required.

In any of these cases, a revised quote and timeline will be issued in writing after the Phase 2 Technical Meeting and confirmed before any additional work begins.

Terms & Conditions

- Offer Validity: this offer is valid for 60 days from the date of issuance. Administrators reserve the right to adjust pricing for agreements finalized after this period.
- Partner Delays: the 4–5 week standard timeline (6–7 weeks for complex implementations) assumes timely partner participation. Delays in content

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delivery, technical responses, or stakeholder availability will extend the timeline accordingly without affecting the agreed price.

- Data Protection: all partner data is handled in accordance with GDPR. A Data Processing Agreement is available on request and will form part of the final contract.
- Final Contract: a binding quote and contract will be issued upon partner's written confirmation to proceed, defining the final price, scope, timeline, and all other terms and conditions.

Next Step: to move forward, please contact administrator technical team to schedule the Kick-off Meeting.

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8. ANNEX 2 - LIST OF MEASURES/SOLUTIONS TESTED IN PILOT ACTIONS PER TRANSPORT PARTNER

Measure / Solution	Airport Budapest	Airport Chisinau	Airport Dubrovnik	Airport Montenegro	Airport Sarajevo	Port of Kotor	Port of Pula	Urban Maribor	Urban Prague	Urban Bratislava
Danova Next App - testing	x	x	x	x	x	x	x	x	x	x
Disability advisory committee	x	x	x	x	x	x	x	x	x	x
Thematic tables	x	x	x	x	x	x	x	x	x	x
Website & Mobile accessibility	x	x	x	x	x	x	x	x	x	X
TWSIs and Braille signage	x						x			
Hearing loop systems and devices			x	x	x	x	x	x	x	
Vertical ramp			x							

Measure / Solution	Airport Budapest	Airport Chisinau	Airport Dubrovnik	Airport Montenegro	Airport Sarajevo	Port of Kotor	Port of Pula	Urban Maribor	Urban Prague	Urban Bratislava
Portable stair-climbing device										x
(Non-metallic) wheelchairs		x	x	x	x	x	x			
Specialized wheelchairs for aircraft boarding			x		x					
Adjusted corner and info desk for PRMs			x	x				x		x
Accessible seating and rest areas			x							
Electric vehicles purchase				x		x				

Measure / Solution	Airport Budapest	Airport Chisinau	Airport Dubrovnik	Airport Montenegro	Airport Sarajevo	Port of Kotor	Port of Pula	Urban Maribor	Urban Prague	Urban Bratislava
Tyflomaps for selected urban transport locations.									x	
Navigation App for barrier-free traveling (outdoor or Indoor)	x	x							x	
Improved FIDS displays							x			
Intercom system installation		x						x		
Upgrading monitors inside terminals		x								

Measure / Solution	Airport Budapest	Airport Chisinau	Airport Dubrovnik	Airport Montenegro	Airport Sarajevo	Port of Kotor	Port of Pula	Urban Maribor	Urban Prague	Urban Bratislava
Assistance management software (i.e. tracking software)					x					
Voice-assisted interface in ticket vending machines										x
Digital information totem with sign language videos				x						
E-Gate system					x					
Staff training programs		x	x	x	x		x	x		

Measure / Solution	Airport Budapest	Airport Chisinau	Airport Dubrovnik	Airport Montenegro	Airport Sarajevo	Port of Kotor	Port of Pula	Urban Maribor	Urban Prague	Urban Bratislava
Audits and support	x	x			x					