bridgeXR

Breaking Barriers for Accessible and Inclusive Journeys through eXtended Reality

Walking to the nearest bus stop, navigating a station, changing trains—for people with disabilities, traveling by public transport can feel like an obstacle course. As a result, they travel less and participate less in society. This must and *can* change. At BridgeXR, we identify obstacles and remove them. We use eXtended Reality technology, Universal Design principles, and customized training programs to create accessible and inclusive journeys.

When? From 2026 to 2030

Who? 35 public and private organizations

- Delft University of Technology
- University of Groningen
- Erasmus Medical Center
- HAN University of Applied Sciences
- KiM Netherlands Institute for Transport Policy Analysis
- SWOV
- CROW
- Ministry of Infrastructure and Water Management
- Ministry of Health, Welfare and Sport
- Province of South Holland
- Metropolitan Region Rotterdam The Hague
- Amsterdam Regional Transport Authority
- Municipality of Amsterdam
- Municipality of Rotterdam
- NS
- ProRail
- EBS
- GVB
- HTM
- Rotterdam The Hague Airport
- TU Delft Campus
- Goudappel
- Haskoning
- Heijmans
- Intergo
- Sweco
- Eyedog
- Steffie
- Changefied
- Dreamwaves
- Ieder(in)
- Rijndam
- Rove
- Ruimte voor Lopen
- Visio

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Five Ways to Accessible and Inclusive Travel

The Dutch transport system and public spaces do not sufficiently meet the needs of travelers with disabilities. Given that there are more than two million people in the Netherlands with disabilities, this is a pressing issue. At BridgeXR, we have defined five courses of action to tackle it.

Understand

What barriers do people with disabilities face during travel? We review existing knowledge through a literature study and fill gaps with new research. This includes a national survey, interviews, and observations of travelers equiped with eye-tracking glasses. We combine these insights into a predictive model that identifies obstacles and assesses the impact of interventions.

Design

We develop tools that help governments, public transport companies, and project developers design inclusive infrastructure and signage. These include a Universal Design-based framework and a Virtual Reality toolkit for simulating and testing designs—allowing adjustments to be evaluated before physical implementation.

Train

Part of the solution lies in empowering and training people with disabilities. We are developing Virtual Reality training scenarios, Mixed Reality solutions, and personalized eXtended Reality programs. We are also exploring wearable technology and machine learning to deliver tailored training for travelers.

Change

To create lasting improvements, accessibility and inclusivity must be embedded in the DNA of governments and transport operators. To support this, we are developing a Theory of Change framework with long-term goals, conditions, and change processes. We are also creating benchmarks and indicators to evaluate accessibility, forming the basis for digital ‘accessibility maps’.

Learn

In three use cases—**Multimodal Urban Transport**, **Commuting on Campus**, and **Long-Distance Travel by Air**—we apply our tools and insights in practice. These pilots emphasize co-creation, shared learning, and knowledge exchange. To support this, we are developing learning resources and training modules.

Want to know more? www.bridgexr.nl

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