

Management Summary

This report was produced within the framework of the Interreg VI-A project FLEX, which focuses on integrating automated mobility services into public transport in the German–Dutch border region. FLEX brings together passenger organizations, municipalities, transport authorities, transport operators, technology providers, and research institutions from Germany and the Netherlands, and connects demonstration and operational contexts across three pilot locations: Vechta, the Province of Groningen, and Helmond.

Within the project, this report is part of Work Package 3, which focuses on research into passenger acceptance of automated transport systems. The report represents the first milestone of this work package and consolidates the current state of knowledge as a foundation for future empirical work, as well as for further requirements, implications, and interfaces within the FLEX project.

Methodologically, the report follows a three-part review architecture:

- The **project review** in Chapter 2 documents practical experience from pilot, demonstration, and deployment projects.
- The **study review** in Chapter 3 systematizes the scientific literature on acceptance.
- Chapter 4 deepens the analysis of **choice-based preference evidence** through a methodological sub-selection from the study corpus.

Both the project and study reviews follow a PRISMA-oriented search and selection strategy. Chapter 5 integrates the three strands into a cross-review synthesis.

The report does not include new empirical data collection; rather, it consolidates the existing body of knowledge across the three review strands. The data basis consists of:

- 55 projects
- 132 scientific studies
- 21 choice-based studies (sub-sample)

Across these strands, four central findings and knowledge gaps emerge:

1. **Acceptance is closely tied to trust and safety frameworks**
This includes trust in the vehicle, operator, and technology, as well as transparency in supervision and communication concepts.
2. **Acceptance depends not only on automation technology, but also on classic service quality factors**
These include travel time, fare, waiting time, access distance, reliability, and quality of connections.
3. **Pilot acceptance is not equivalent to everyday acceptance**
Initial evaluations after real test rides are often positive, but it remains unclear how stable these attitudes are over repeated, everyday use.
4. **Underrepresentation of specific contexts and user groups**
Rural-regional contexts, Dutch mobility contexts, and issues concerning vulnerable groups (including WMO-related mobility) and cross-site comparisons are insufficiently represented in the evidence base.

In addition to these converging findings, methodological differences exist between the three strands:

- **Trust** is treated as a theoretical construct in academic studies, observed as a contextual factor in project reports, and only partially captured in choice-based studies through attributes such as onboard staff or safety operators.

- **Willingness to pay** is most effectively measured using choice-based preference methods (e.g., DCE-like approaches).

From the synthesis, several open questions particularly relevant for FLEX emerge, including:

- The stability of acceptance over repeated use
- The role of real AV experience versus hypothetical scenarios
- The needs of vulnerable user groups
- Location-specific preferences across Vechta, the Province of Groningen, and Helmond

Based on the synthesis, the report derives key requirements for acceptable AV/CCAM services in four clusters:

- **Functional requirements:** travel time, cost, reliability, accessibility, and integration
- **Safety and trust requirements:** perceived safety, supervision concepts, emergency communication, and data protection
- **Usability, accessibility, and inclusion requirements,** including WMO-specific aspects in Helmond
- **Contextual and organizational requirements:** spatial context, integration into public transport, expectation management, and scalability

For future FLEX data collection, the report proposes a three-level research architecture:

1. Qualitative pre-studies
2. A cross-site comparative survey
3. A pilot-accompanying study in Helmond

Furthermore, the report provides linkages to other FLEX work packages, including:

- Governance and concession issues (AP1)
- Cross-border mobility integration (AP2)
- Impact evaluation (AP4)
- Demonstration and communication (AP5)

The validity of the report is explicitly limited to the corpora analyzed in the three review strands and does not represent the entire research or project landscape. Methodological heterogeneity, limited comparability of effect measures, and potential publication and documentation biases restrict generalizability.

The report is not designed as a meta-analysis, but as a **qualitative cross-review synthesis**. The requirements and implications derived should therefore be understood as preliminary and subject to empirical validation.

In the next phase of Work Package 3, these findings will be examined empirically at the three pilot locations—Vechta, the Province of Groningen, and Helmond—and adapted to local contexts.

Thus, the report serves as a bridge between the consolidated knowledge base from the review strands and the forthcoming empirical work within the FLEX project.