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Connecting urban & suburban areas

Munich,2025

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Our Goal: To better connect *urban* and *suburban* areas through inclusive and smart/safe *AV integration*

The Problem

Suburban zones often lack efficient, connected transport options to urban areas.

Our vision

- **Bridge the mobility gap with AVs that support flexible, first and last-mile travel.**
- **VISION zero/ Safety**

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Our Journey

🚆 Setting Off: Munich to Hamburg (14/06)

🧠 4 student researchers from 4 countries

🌍 Immersed in Innovation: Hamburg Fieldwork (15/06 – 18/06)

Interviews and meetings conducted

🚄 Crossing Borders: Hamburg to Copenhagen (19/06)

Long Trip

🌱 Exploring Sustainable Mobility: Copenhagen (19/06 – 24/06)

Interviews and meetings conducted

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Contacts and interviews: Projects

Zukunftstaxi

ALIKE

HOLON

U - Shift

LINC

Greenhopper

HEAT

Monocab

MOIA

Mobility Testbed

AHOI

Kira

Pantograph Charging

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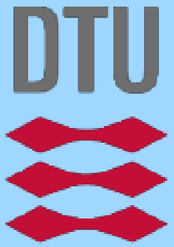
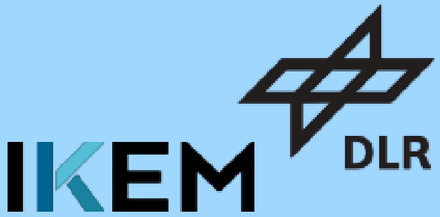
Contacts and interviews: Organizations





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Daily users quotes

- 7 interviews in Hamburg
- 5 in Copenhagen

“We love technology here.” - Young adult

“I don’t trust it; I would never let my son use it.”
- Mom of a toddler

“It’s the future, it can’t be denied.” - Elderly

“ I don’t understand the concept;
I need more informative workshops.”
- Adult

“If the Government allows it, then it must be safe.”
- Elderly

“I want to be the first one to try it”
- Teenager

“We can’t stop others from using it.”
- Elderly

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Insights and learnings

Technology

- Ready for Level 4
- AV tech show adaptability
- Not only private or Public Transport: logistics

Policy & Law

- Law can be used in favor of trials
- Adapt AV to current infrastructure
- Here to complement transit, not against it
- EU: common rules, common roads?

Ethics & Users Perspective:

- There’s willingness in people
- Trust in governement bodies is essential
- Share live info with users : key
- Labour: help in transition

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Barriers

~80 identified

Regulatory Barriers:

- Lack of standards: HD maps for navigation
- Permit requirements: Insufficient guidelines

Technical Barriers:

- Technical maturity: Operational Design Domain
- Operational aspects: Disruptions

Infrastructural Barriers:

- Digital infrastructure: Data exchange systems, RSUs
- Road network

Ethical Barriers:

- User accessibility: Elderly and the disabled
- Privacy concern: Continuous surveillance
- Social impact: Driver displacement, public acceptance

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Case study: problems in suburban areas

Low population density makes PT expensive

Limited and infrequent public transport options

High car dependency due to poor PT accessibility

Overall: higher cost for mobilizing fewer people

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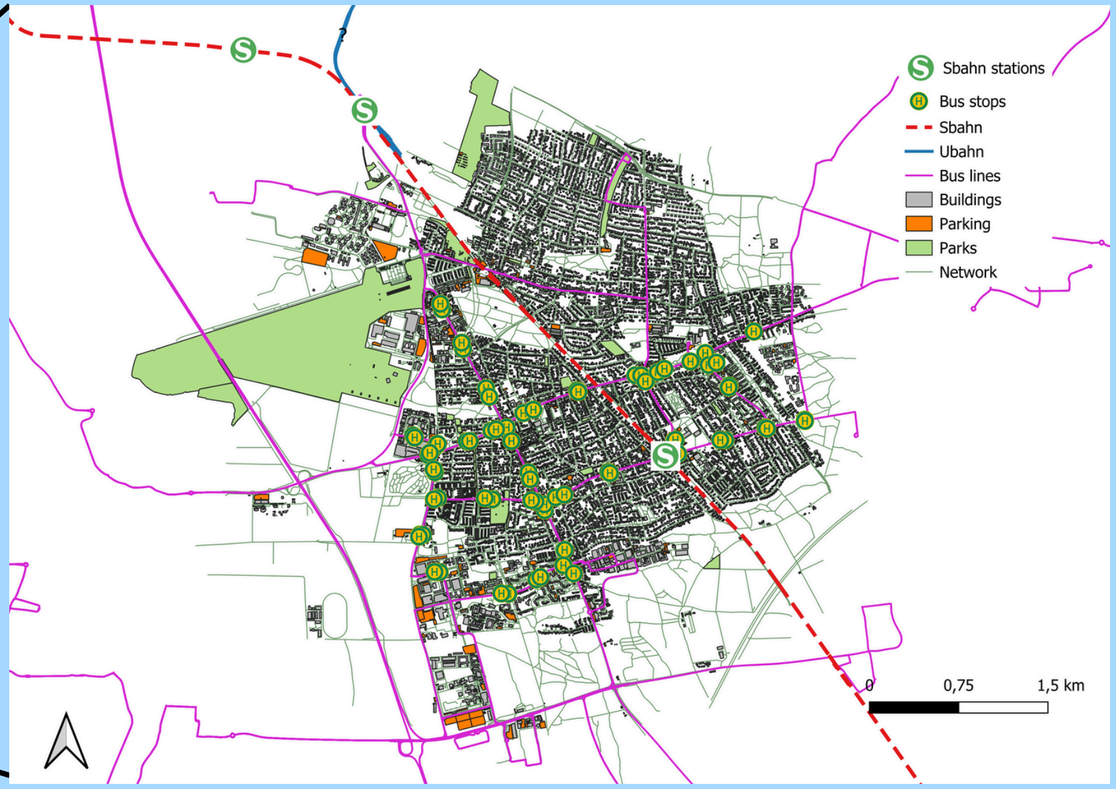
A real case: Isolated area from PT



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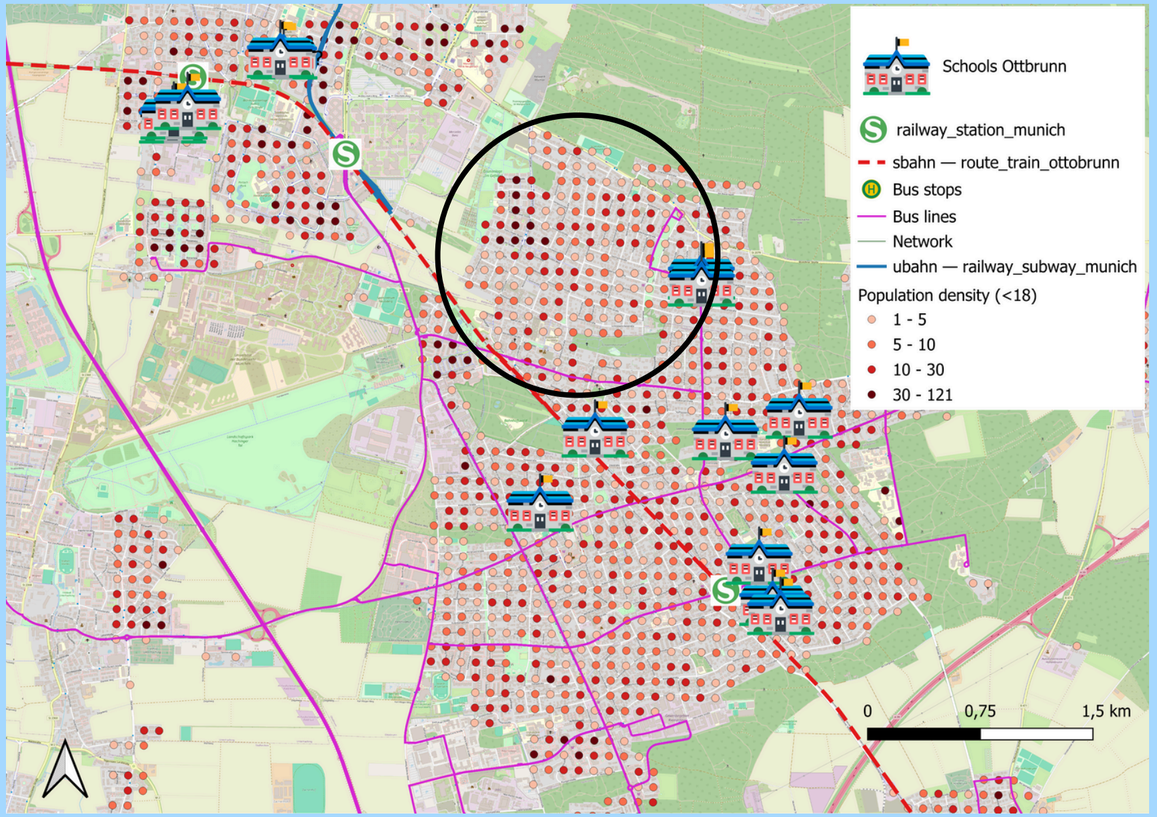
A real case: Isolated area from PT

High Car Dependence in the Area



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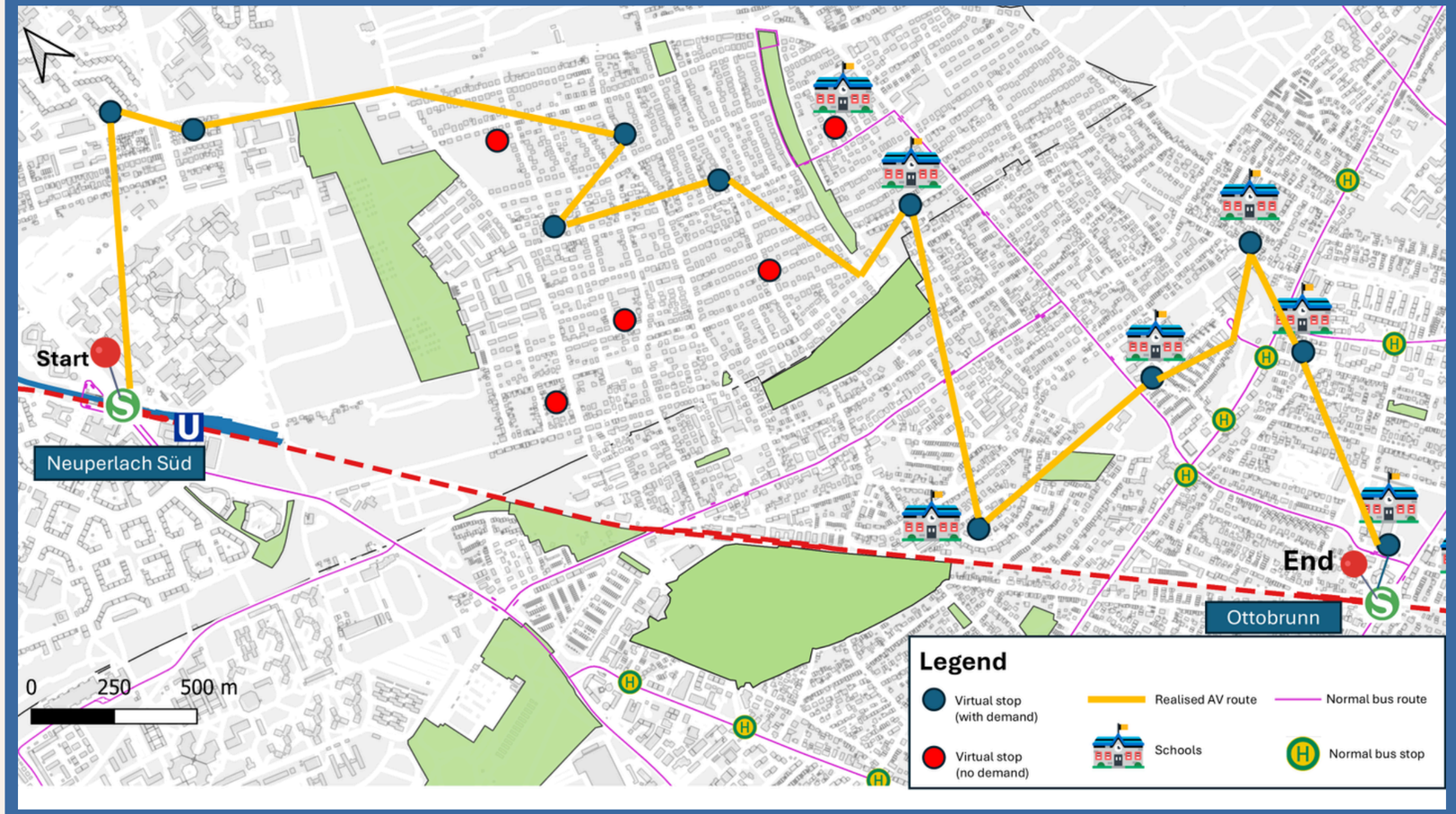
Solution

- **On-demand booking** via app (MVGO)
- **Flexible routing** with no fixed lines, except for morning school service
- **Virtual stops** within walking distance
- Seamless **integration** with Munich's public transport system (MVV)
- Real-time **vehicle tracking** via app
- **Accessibility** features for vulnerable groups
- **Pilot** focused on general users as well as schools in the Neuperlach Süd–Ottobrunn corridor

A demand-responsive autonomous public transport



Waldperlach district

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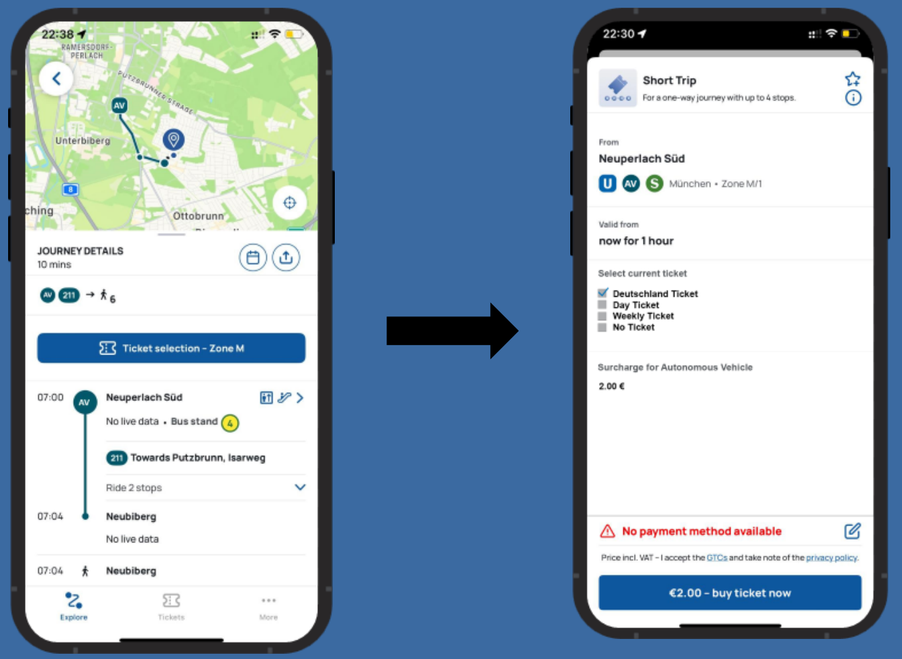
User experience

- Trip planning
- Booking
- Scheduling (Date & Time Selection)
- Real-Time Tracking
- Ticket Purchase / Payment through MVGO app



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Expected Outcome

10
Autonomous Shuttles

15
People/shuttle Capacity

7
Schools

300
Students served per cycle-shuttle

60%
Potential reduction in car trips [Based on daily users answers]

40%
Reduction in injury-causing crashes [PatentPC , 2019]

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Thank you!

Feel free to approach us at our small corner! You'll spot the poster and our prototype on display