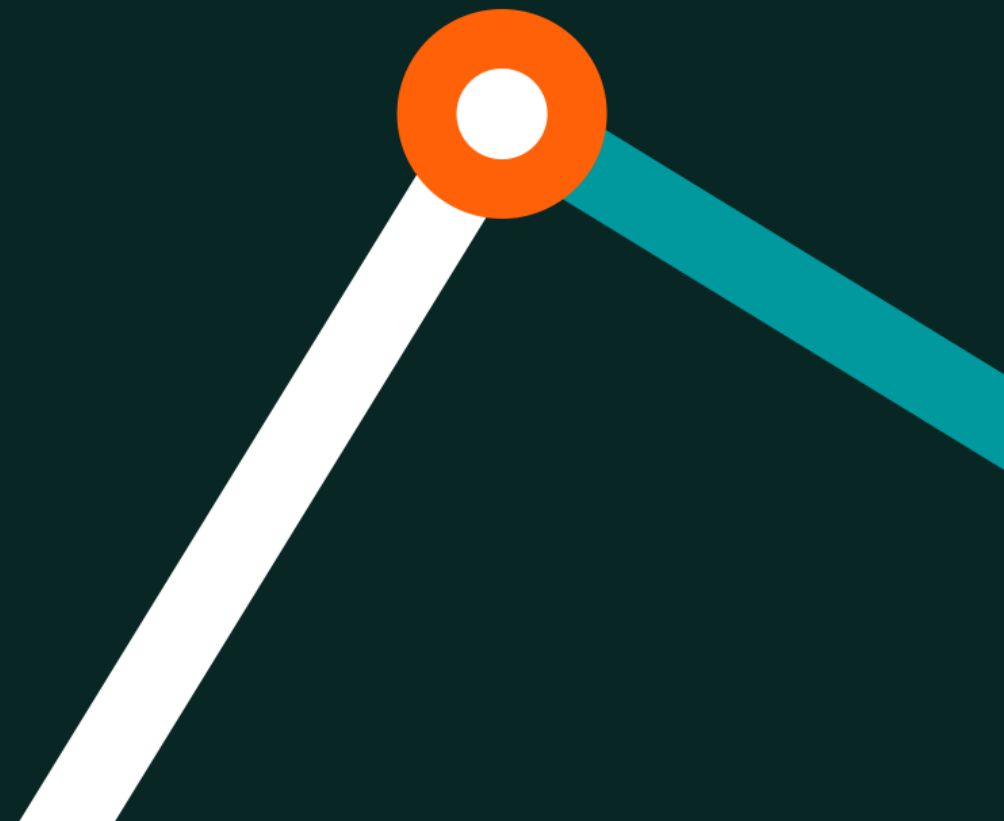
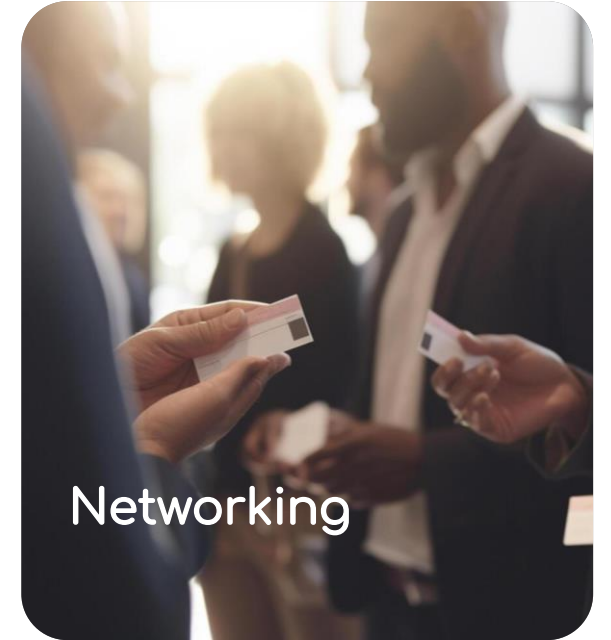


Architectures & Tools for Future Mobility

Final event of the autotech.agil project
September, 11, 2025



Program Today



Opening & Expert Presentations

Greetings from the
Funding Authority

Engelbert Beyer

The autotech.agil
Mobility System

Raphael van Kempen

Live Demonstrations

Technical Exhibition

Poster Sessions



Opening

Introduction by the
Project Coordinator

Prof. Dr. Lutz Eckstein

Pitches for
Expert Sessions

Engelbert Beyer

Head of Technology-Oriented
Research for Innovation

German Federal Ministry of Research,
Technology and Space
(BMFTR)



Engelbert Beyer

*Unterabteilungsleiter Technologieorientierte Forschung für Innovationen
im Bundesministerium für Forschung, Technologie und Raumfahrt*

Prof. Dr. Lutz Eckstein

Project Coordinator

Chair and Director of the
Institute for Automotive Engineering
at RWTH Aachen University

Status Quo



Source: <https://www.youtube.com/watch?v=8ebjO1HWQ9Q>



Source: <https://www.youtube.com/watch?v=lrZV4XVaSi4>

The European Answer: Collaboration

Source: europa.eu



European Connected and Autonomous Vehicle Alliance (ECAVA)

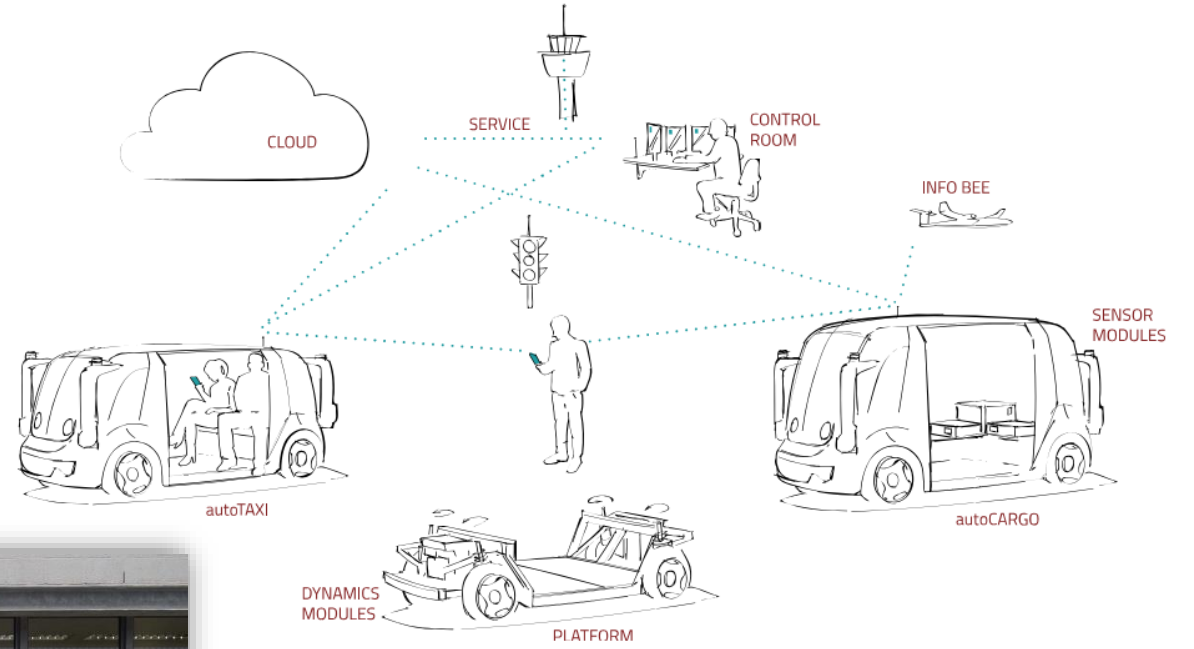
Terms of Reference

August 2025

A screenshot of a web page from the German Association of the Automotive Industry (VDA). The page has a green header with the VDA logo and navigation links: "News", "Topics", "Press", "Members", "Association". There are also icons for search, a shopping cart, and a language dropdown set to "EN". The main headline is "Automotive industry signs Memorandum of Understanding for joint software development based on open source" in white text on a green background. Below the headline, it says "Press release". The date "Ludwigsburg, June 24, 2025" is on the left. The main text reads: "Collaboration for more speed, efficiency, and security in software development and the basis for an open and collaborative ecosystem". At the bottom, it says "Source: [VDA](https://vda.de)" and "With the support of the German Association of the Automotive Industry (VDA), 11 companies in the automotive industry have agreed on pre-competitive cooperation in open source software development." There is a share icon in the bottom right corner of the article area.

From UNICARagil to autotech.agil

2018
UNICARagil
Project Kick-off

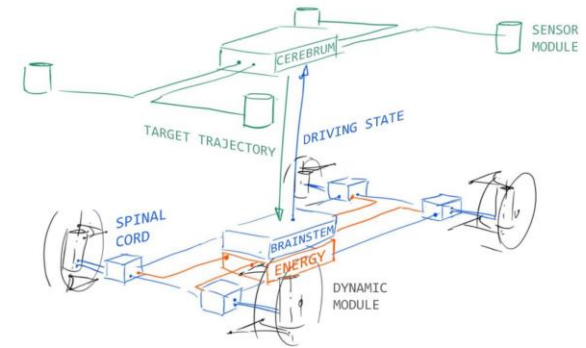
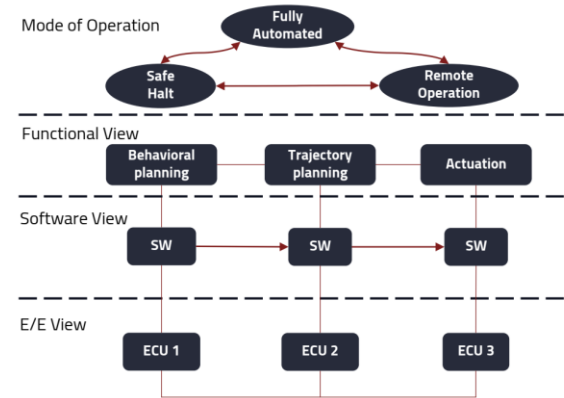
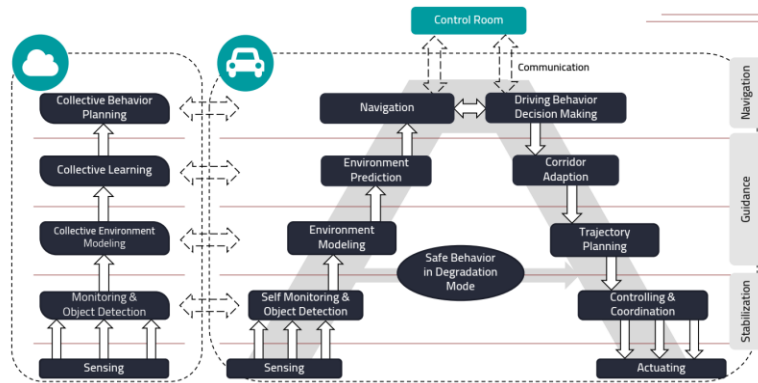


Architectures for Driverless Vehicles



www.unicaragil.de

2018
UNICARagil
Project Kick-off



2020
UNICARagil
Mid-term Event



UNICARagil Results

- Four full-size vehicle prototypes for public transport, cargo, taxi & private use
- Zonal E/E architecture inspired by human nervous system
- Service-oriented software architecture including HPC and embedded hardware
- SAE Level 4 Automated Driving System including control room and risk minimal maneuver (AFGBV-compliant)



2023
UNICARagil
Final Event



autotech.agil – A Strong Basis



Network of Leading Universities and Industry Partners



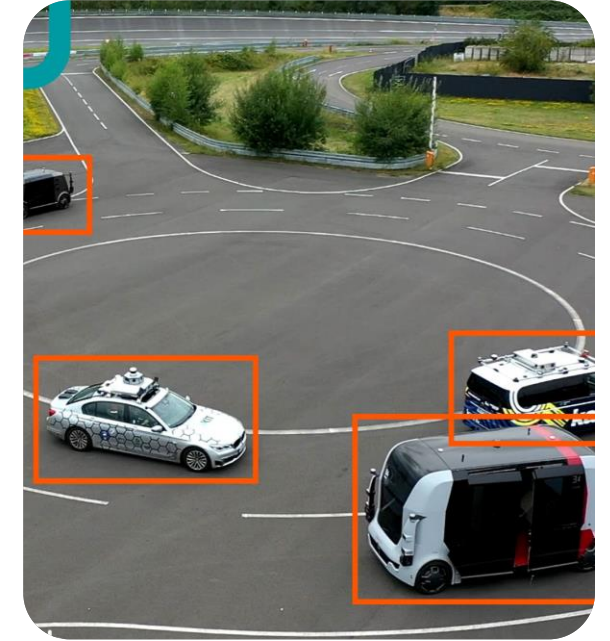
Collaborative Software Development

**autotech.
agil**

11 Repositories
995 Stars
129 Forks

github.com/autotech-agil

Open-Source Software Building Blocks



Prototype of a Future Mobility System

Raphael van Kempen

Project Manager

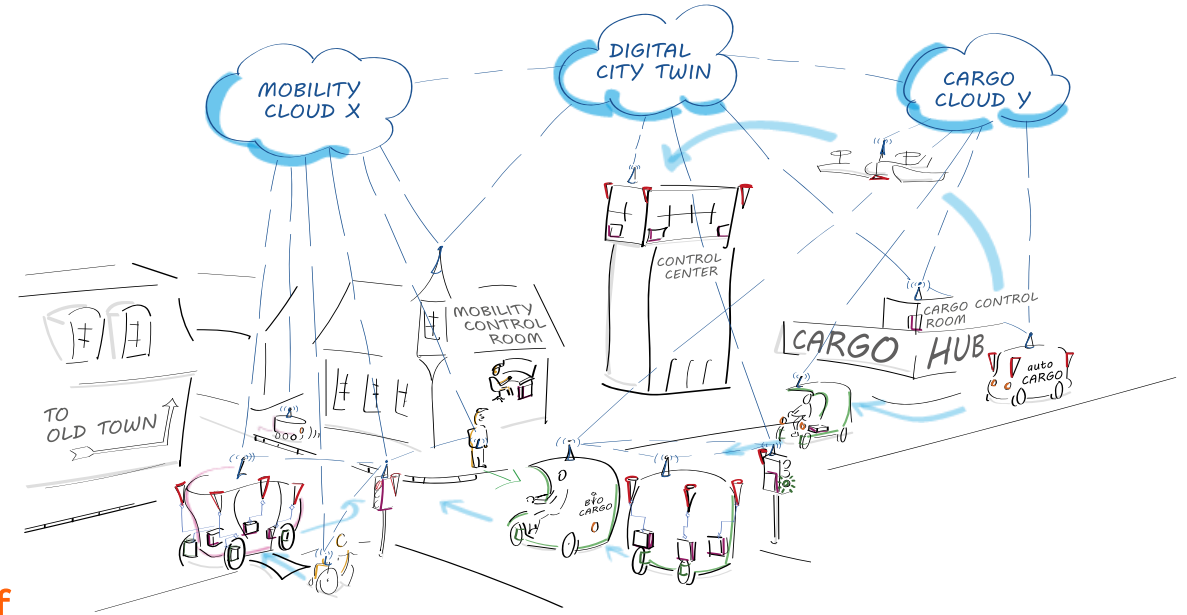
Research Associate at the
Institute for Automotive Engineering
at RWTH Aachen University

autotech.agil

Extended Consortium & System

2018
UNICARagil
Project Kick-off

2022
autotech.agil
Project Kick-off



2020
UNICARagil
Mid-term Event



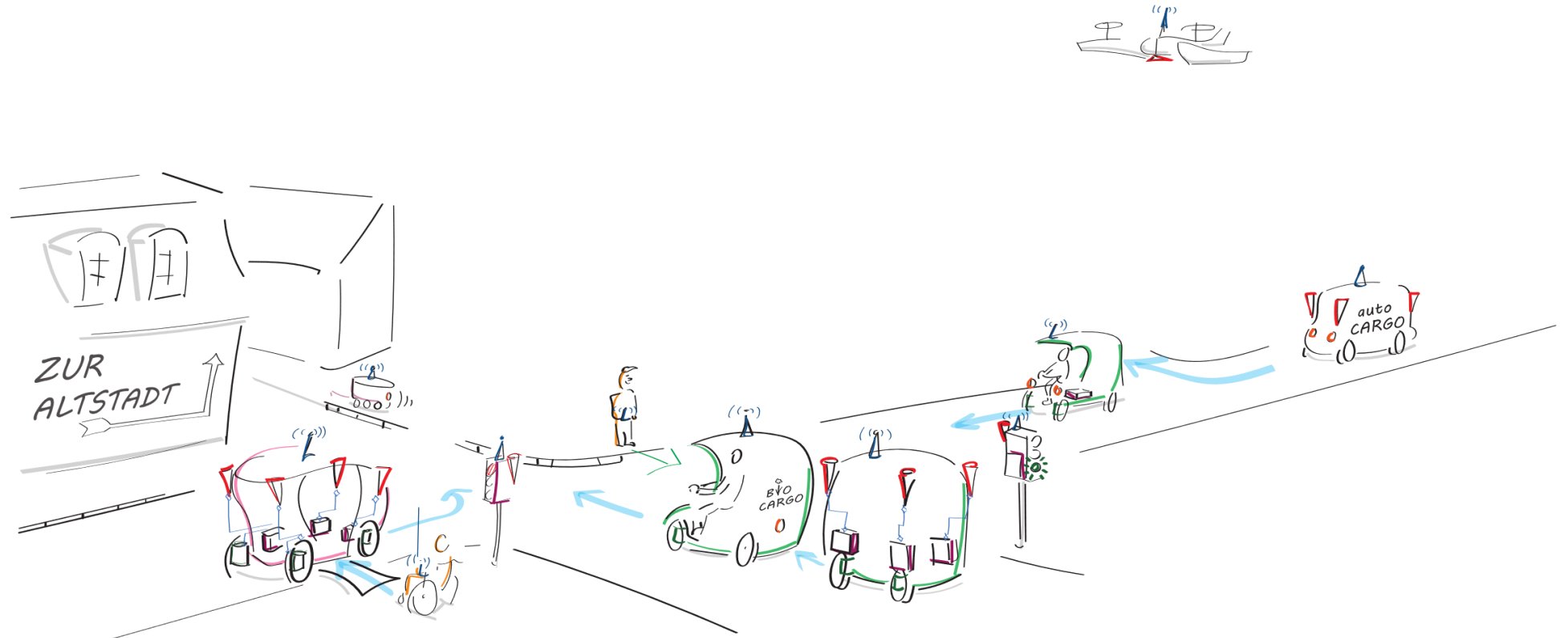
autotech.agil

A Cooperation of



*Associated Partners

We Focus on Relevant Use Cases



Public Transport at its Limit



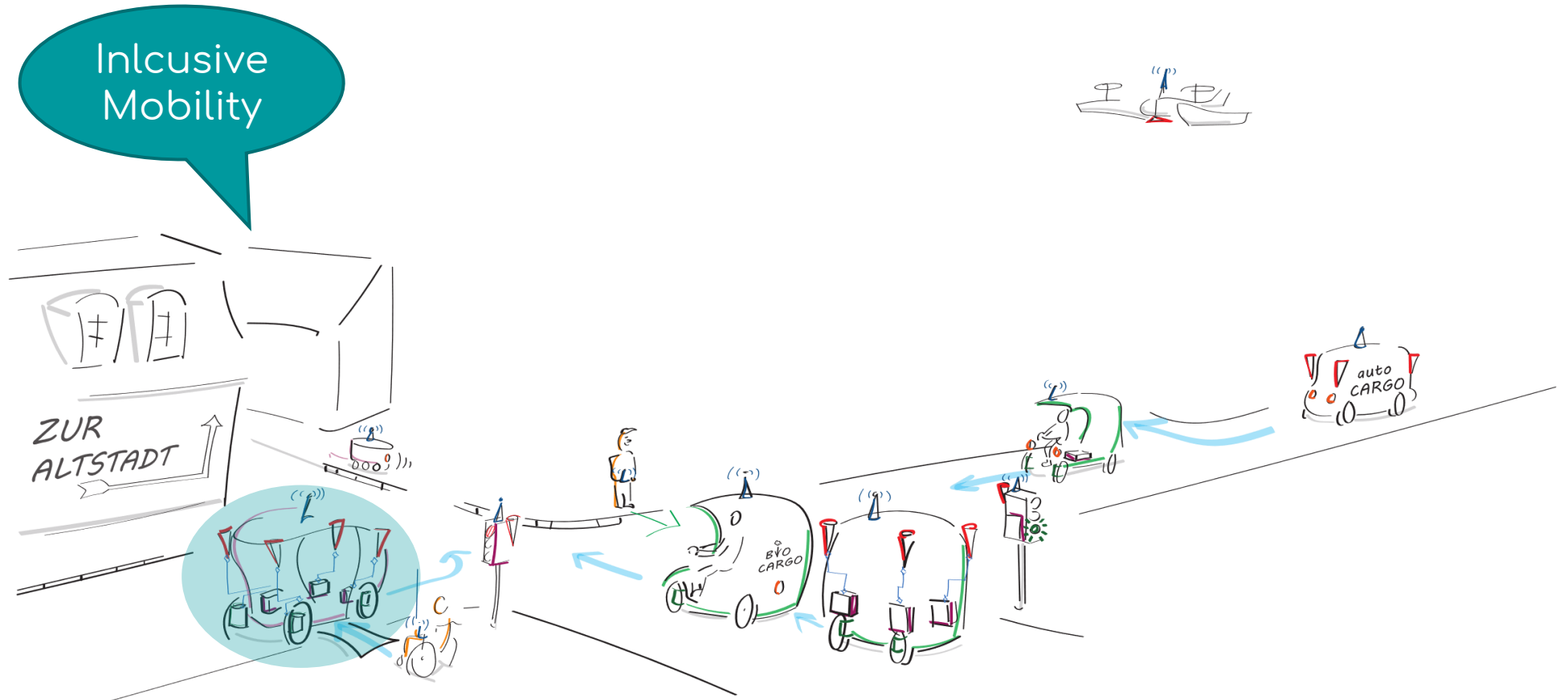
 tagesschau 

 ▶ Inland ▶ Verband warnt: Personalmangel gefährdet ÖPNV-Ausbau



Verband warnt
Personalmangel gefährdet ÖPNV-Ausbau
Stand: 21.06.2024 11:45 Uhr

We Focus on Relevant Use Cases



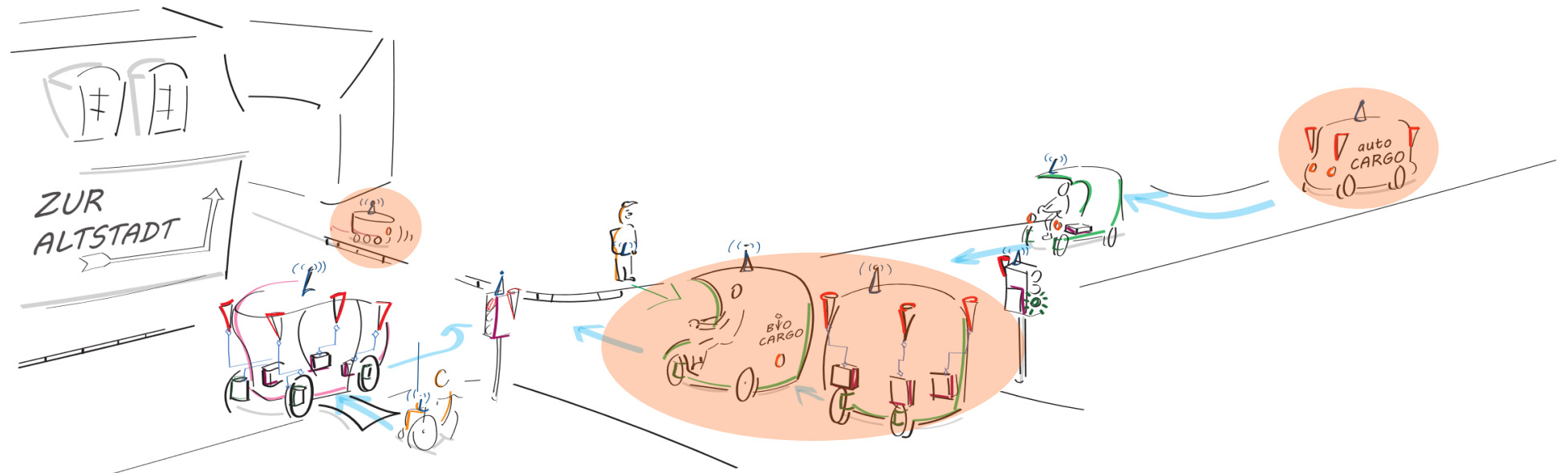
Delivery Traffic Strains Traffic System



Images: [Aachener Zeitung](#), [Esslinger Zeitung](#)

We Focus on Relevant Use Cases

Efficient
Parcel Delivery



Vulnerable Road Users Need Special Protection

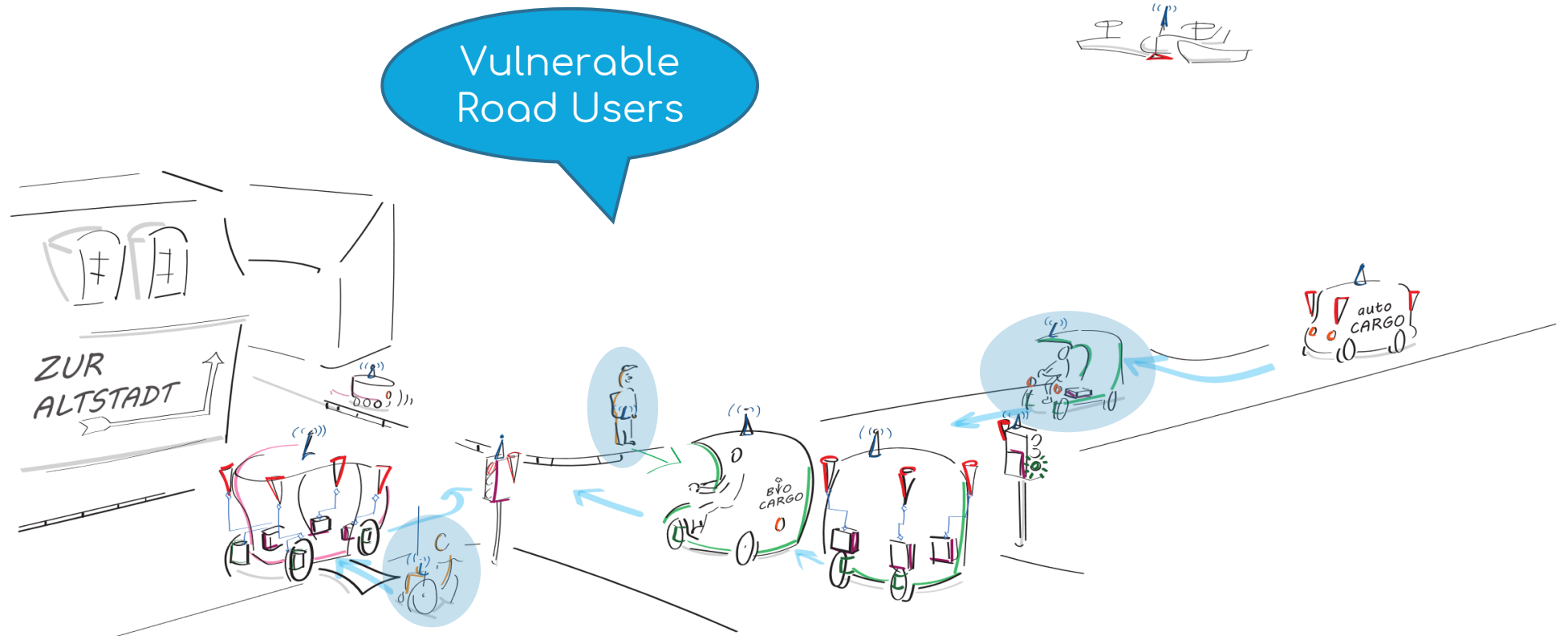


Eischott ↑
2 km
~~Brechtort~~

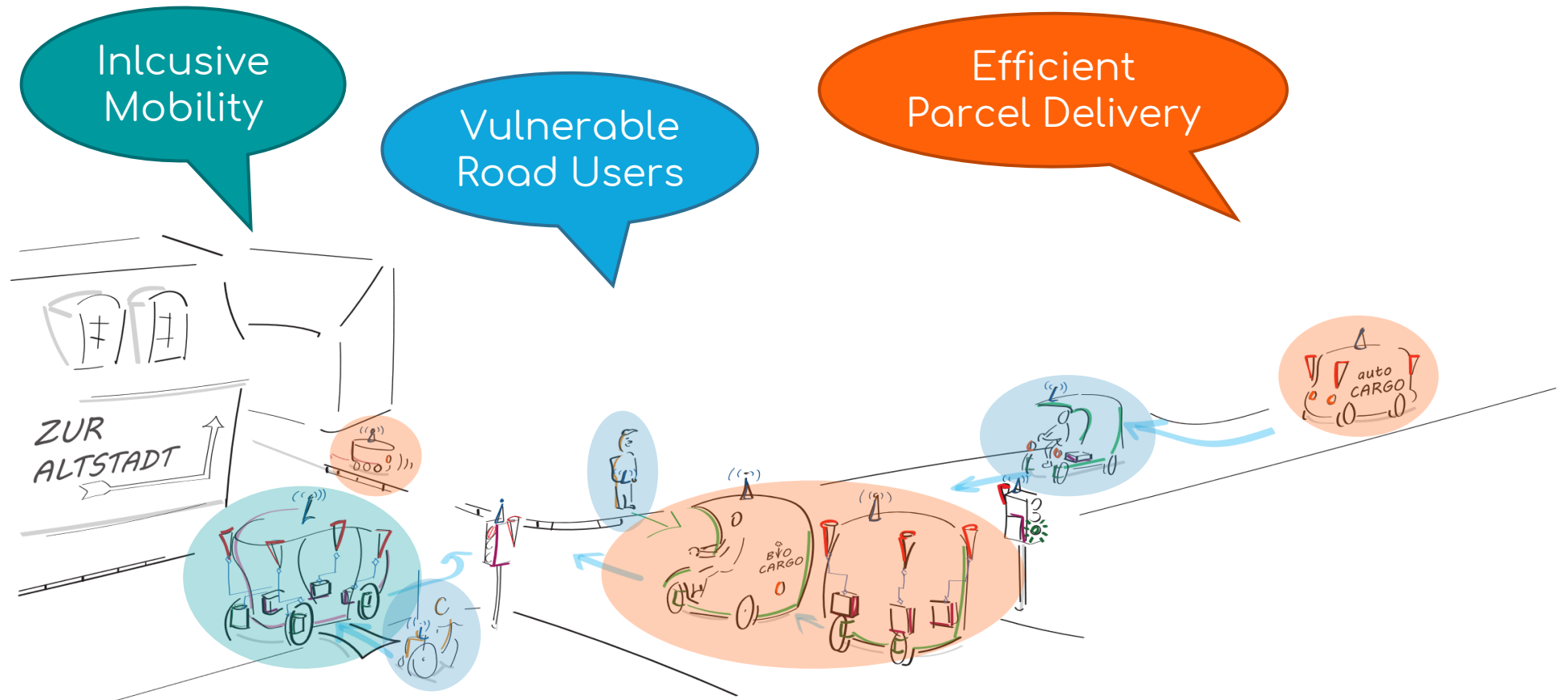


Images: [Süddeutsche](#), [Altmark Zeitung](#)

We Focus on Relevant Use Cases



We Focus on Relevant Use Cases



Mobility Providers offer Barrier-free Services



Logistics Providers Deliver Efficiently



Economic vs. sovereign interests

"Generation Amazon" verursacht Verkehrs-Chaos

Sie parken mitten auf der Straße: Wie Paket-Dienste Städte verstopfen



Transporter von DPD, UPS und DHL parken, um Pakete auszuliefern
dpa

Frankfurt will Chaos beim Lieferverkehr bändigen

19.07.2022, 06:00 Uhr

Von: [Dennis Pfeiffer-Goldmann](#)

 Kommentare

 Drucken

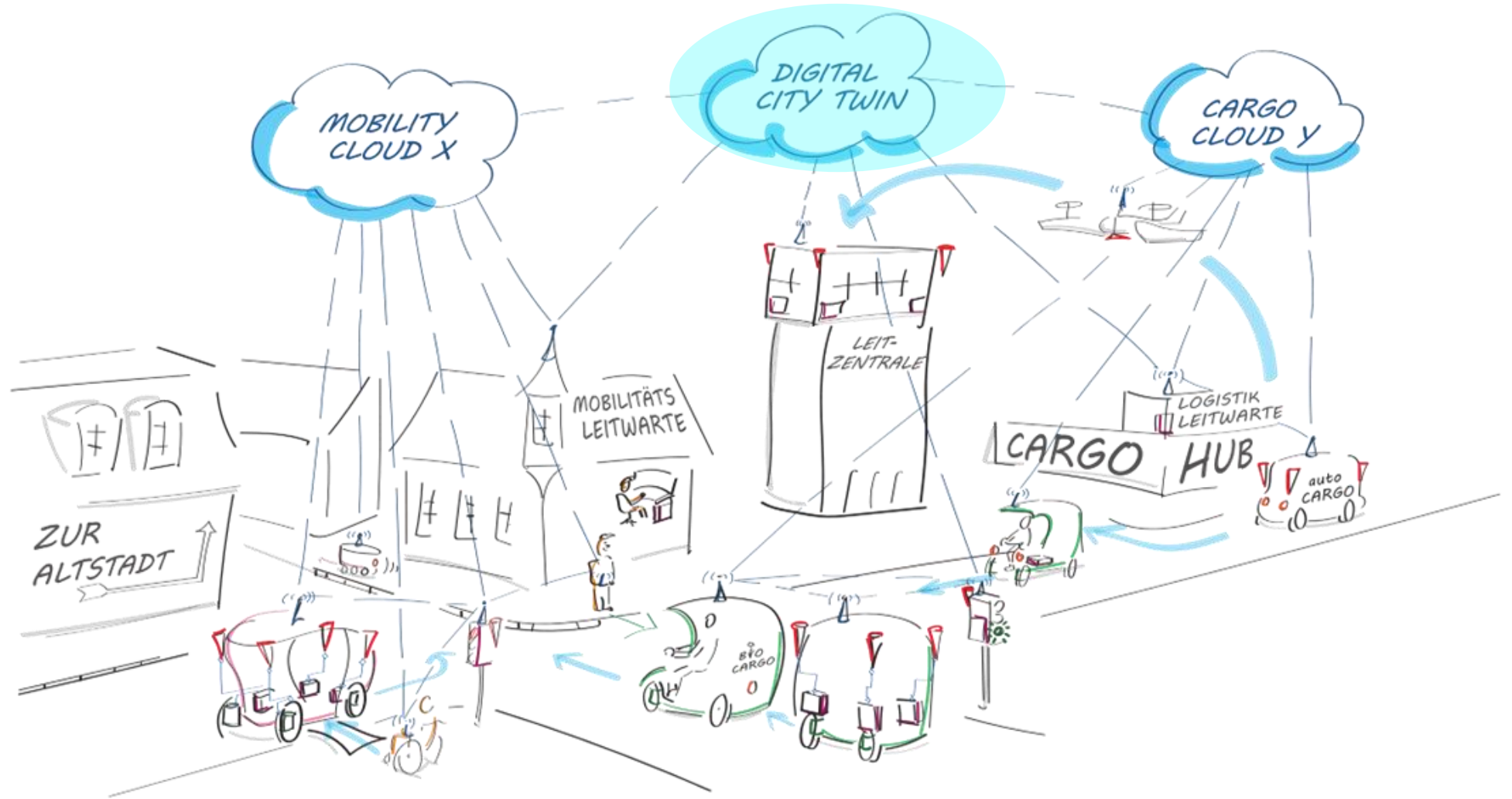


Da ist die Fußgängerzone kaum noch zu erkennen: So voll geparkt von Lieferanten und Handwerkern ist die Freßgass am Vormittag. © Dennis Pfeiffer-Goldmann

Municipality coordinates Digital Twin of Traffic

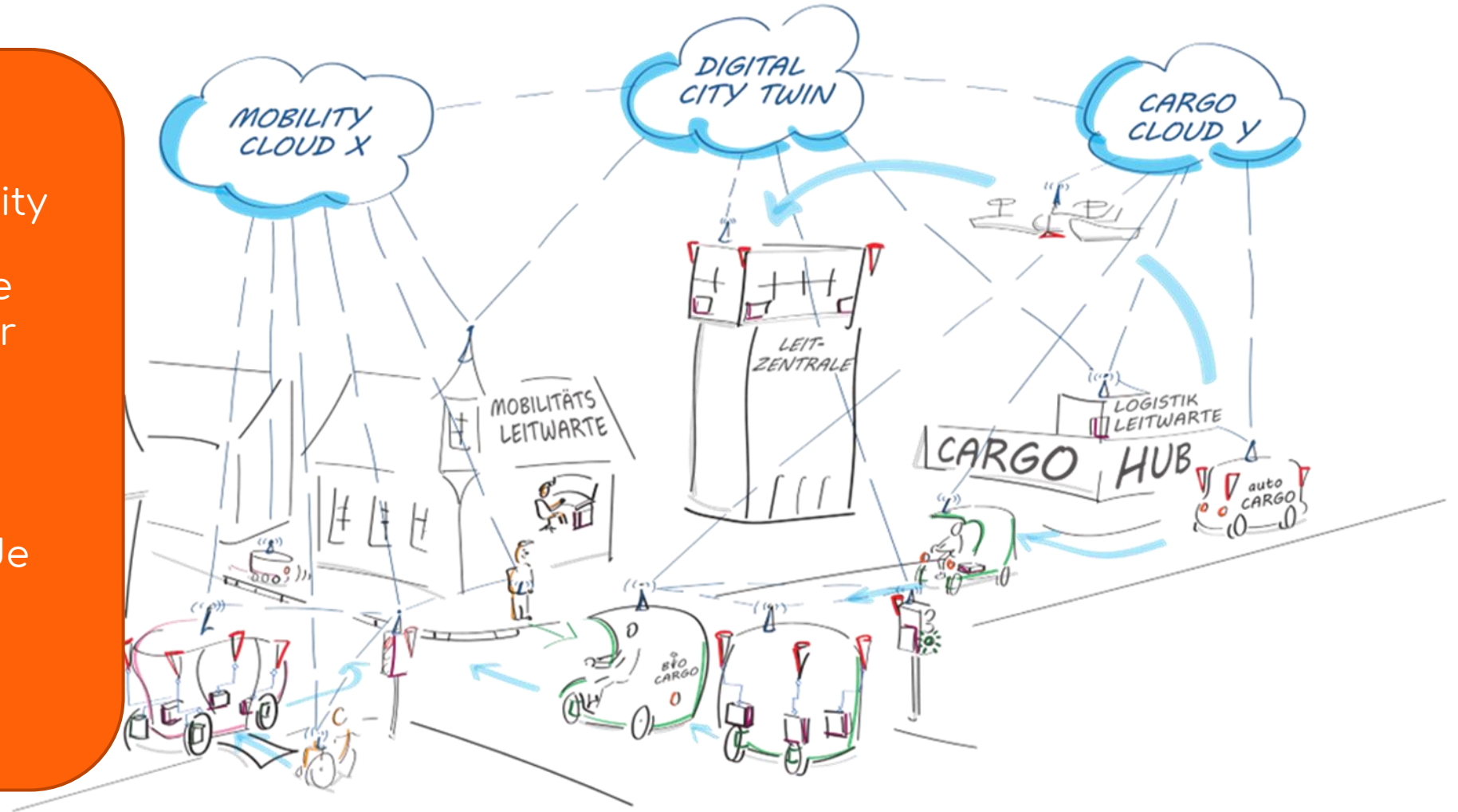


Connectivity is a Key Enabler



The autotech.agil Mobility Ecosystem

- ✓ Prototype of Connected and Automated Mobility
- ✓ Modular Software Building Blocks for Vehicles and Infrastructure
- ✓ In-Vehicle & V2X Interfaces as Code
- ✓ Open-Source Development Toolchain



Let's Make this Vision a Reality



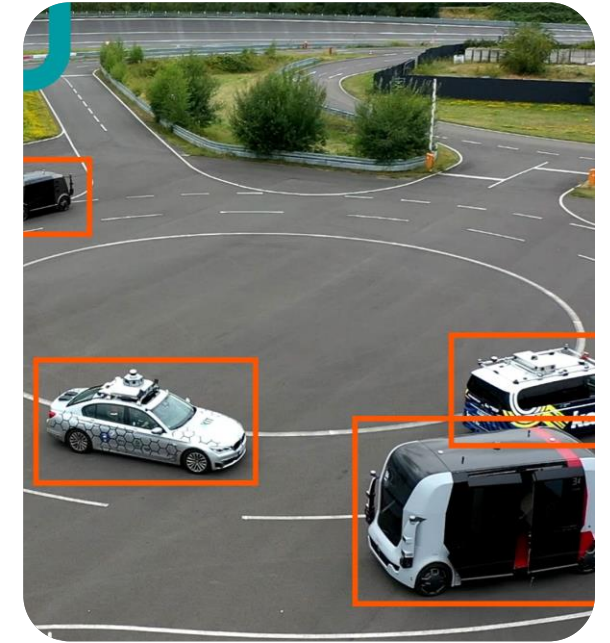
Expand the
Network of Experts



Develop Software
in Collaboration



Establish Open-
Source Community



Scalable Operation
in Model Regions