

AUTOMATED ON-DEMAND SHUTTLES AND HAMBURG'S SCALING ENDEAVOUR



Mediaserver Hamburg / Maxim Schulz

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MOIA



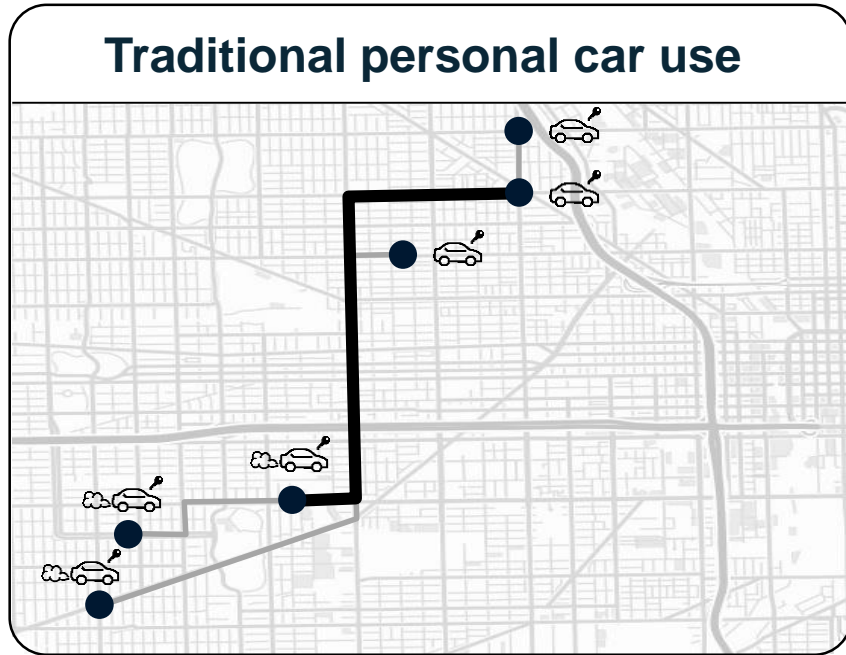
DLR

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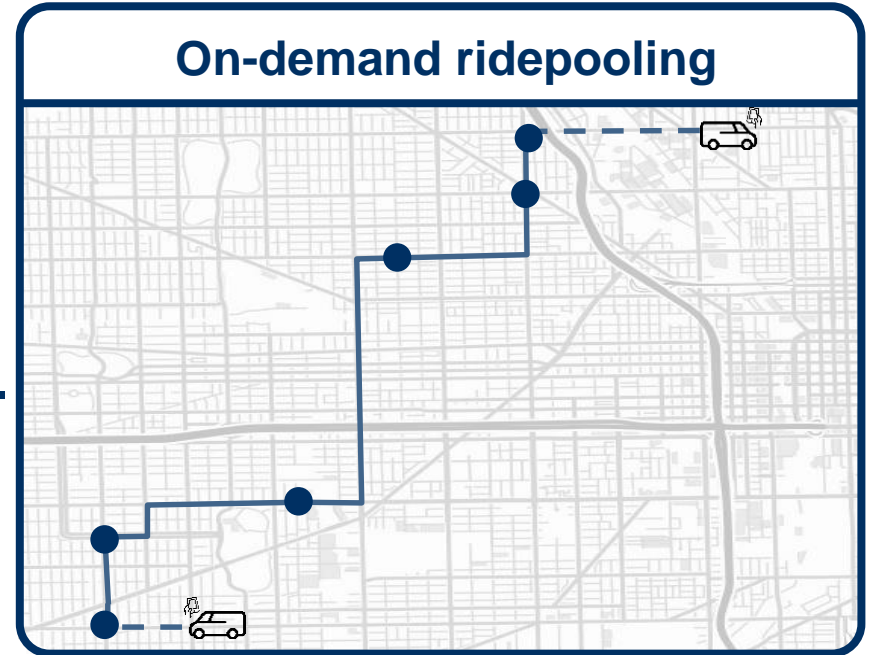


Hamburg

ON-DEMAND SHUTTLES (RIDEPOOLING) EFFICIENTLY BUNDLE INDIVIDUAL RIDE REQUESTS INTO SHARED ROUTES



vs.



10 KEY SOCIETAL BENEFITS OF AUTONOMOUS RIDEPOOLING

Decreased:

1. Car ownership
2. Parking space requirements
3. Congestion
4. CO₂ emissions, air pollutants
5. Energy consumption
6. Transport costs

Increased:

7. Accessibility and social equity
8. Public transportation
9. Safety
10. Community building



References

DLR projects: AutomoVer, UrMo Digital

DLR articles: Kolarova & Cherchi, 2021; Galich & Stark, 2021; Milakis & Seibert, 2023

AUTONOMOUS DRIVING IS EVOLVING WITH A CURRENT FOCUS ON RIDE HAILING BUSINESSES

Ride Hailing

Cruise

San Francisco, Austin, Phoenix
(soon 24/7)



cruise.com

Waymo

San Francisco, Phoenix, soon LA
(soon 24/7)



waymo.com

Baidu

Beijing, Wuhan, Chongqing
(7:00-23:00)



iot-automotive.news

Private cars

Tesla

Autopilot & FSD (L3)
Upcoming Autosteer city streets



tesla.com

Ride Pooling



moia.io

- About 700 (mainly driver-operated) services globally
- B2G/B2B projects dominate
- US, Germany and Japan
- 12 months funding period
- 10 vehicles per project
- The market consolidates

THE SCALING ENDEAVOUR OF RIDEPOOLING IN HAMBURG: FROM A DRIVER-OPERATED TO AN AUTONOMOUS SERVICE



Ridepooling
with large driver –
operated fleet

TODAY



Adding initial
autonomous
vehicles to turn
them into tools for
mobility

Till 2025



Scaling the
experience

2025+






1

LARGE FLEET RIDEPOOLING IN HAMBURG INITIATED AND IMPACT SCIENTIFICALLY VALIDATED

Key findings from study |

Sustainable mobility transition achievable in combination of:

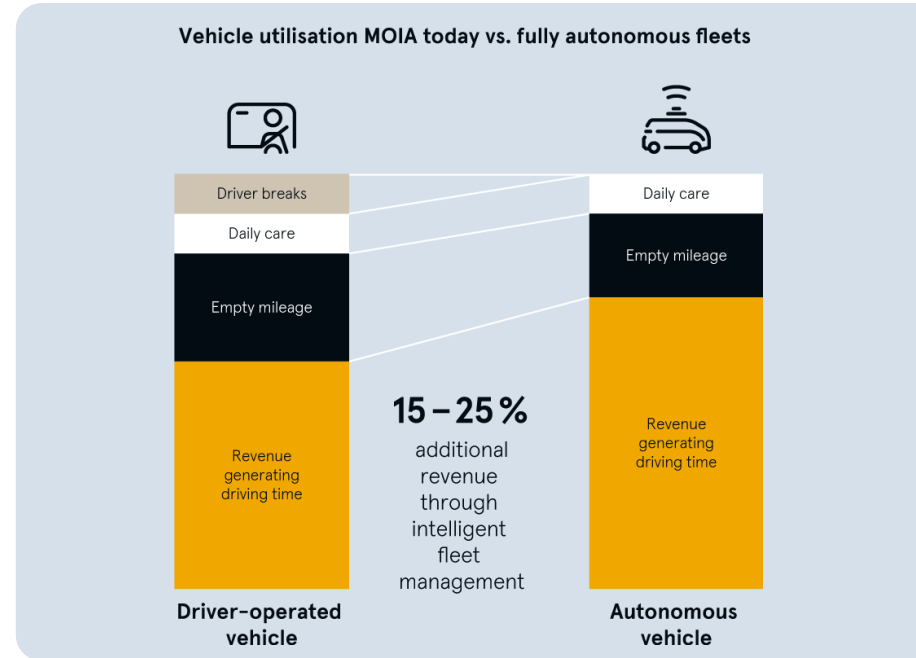
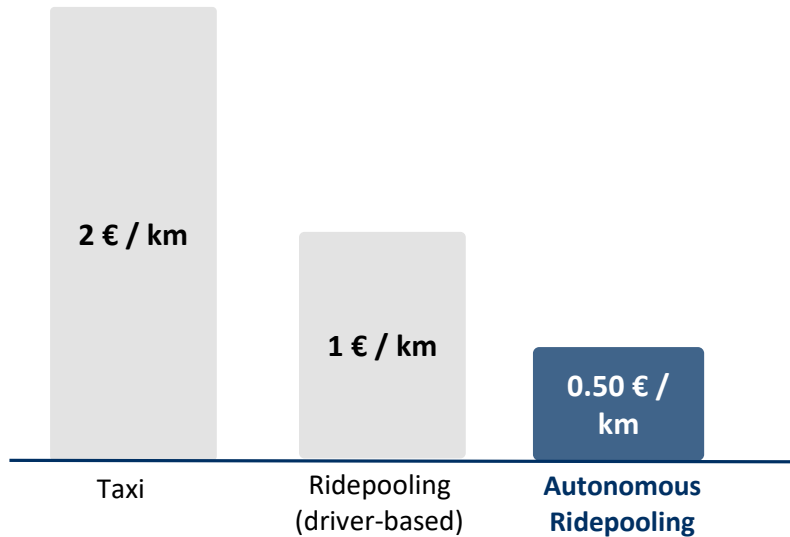
-  A strong public transportation system
-  On-demand solutions such as ridepooling
-  Political push-measures to disincentivise personal car use are necessary

Ridepooling creates synergies with public transportation (through multimodal use patterns) and a **more attractive public transportation option**



1

AUTONOMOUS DRIVING REQUIRED TO LEAD TO MORE AFFORDABLE AND EFFICIENT SERVICES

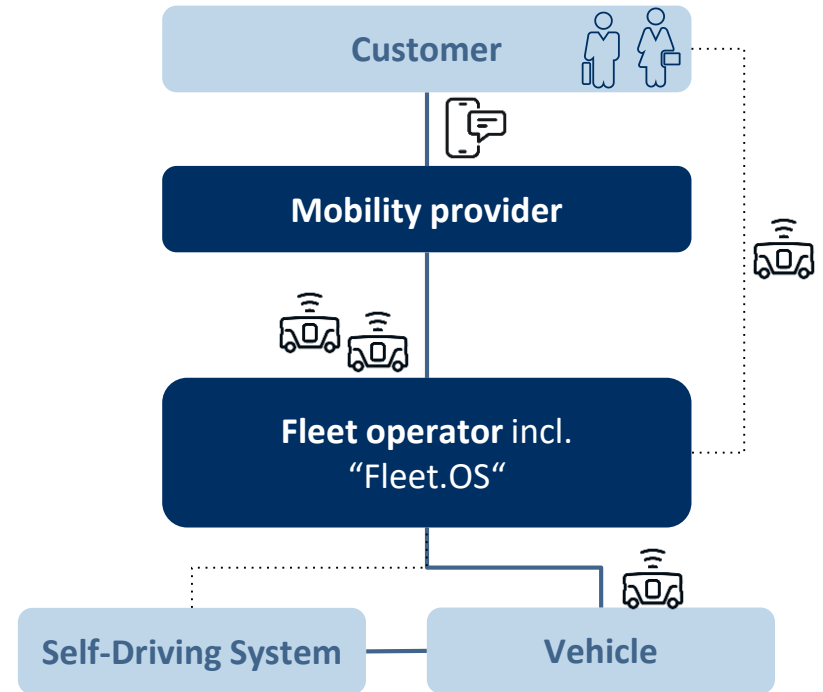


2

TURNING AUTONOMOUS VEHICLES INTO TOOLS FOR MOBILITY

Building fleet and service technology that allow use of autonomous vehicles that is...

- customer and service centered
- safe
- reliable
- Flexible/integrative
- ready for concession
- Efficient



10 FACTORS INFLUENCING SOCIETAL ACCEPTANCE OF AUTOMATED ON-DEMAND SHUTTLES

1. Price
2. Travel time
3. Activities on-the-move (enjoyment, productivity, health)
4. Convenience (app, location, time)
5. Reliability (dependable service, min. wait times)
- 6. Regulations / (tax) incentives**
7. Privacy
8. Trust and Safety (technology, other passengers)
9. Environmental awareness (attitudes, social norms)
10. Cultural norms

Regulatory framework for autonomous ridepooling in Germany:

Autonome-Fahrzeuge-Genehmigungs- und-Betriebsverordnung (AFGBV) *since July 2022*

Regulates autonomous vehicles, fleets, and operations

Personenbeförderungsgesetz (PBefG) *updated in 2021*

Creates a new market for ridepooling, both commercially and as part of public transportation

References

DLR projects: DiVA, AutomoVer, UrMo Digital

DLR articles: Stark & Galich, 2020; Kuhnimhof & Eisenmann, 2021; Milakis & Müller, 2021

3

SAFE AND EFFICIENT OPERATIONS OF AUTONOMOUS VEHICLES

Initiation phase

Small, **limited service area for autonomous vehicles**

Few AD vehicles

Closed User Group Testing



Driver-operated vehicles still dominate appearance

Expansion phase

Larger, but still **limited service area for AD fleet**

Mixed AD fleet with two different vehicle types

Increased fleet sizes



Increased accessibility of autonomous vehicles

Growth phase

City-wide AD operations

Up to 10,000 mixed-vehicle AD fleet

Gradual phase-out of driver-operated vehicles



Impacting modal mix and providing city-wide service

WE WOULD BE HAPPY TO WELCOME YOU IN HAMBURG IN 2025

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Felix Breitstadt, MOIA



Mediaserver Hamburg / Andreas Vallbracht

MOIA



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