Automated. Connected. Electrified.

Electrification and digitalisation in Baden-Württemberg's automotive sector

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State Agency for New Mobility Solutions
and Automotive Baden-Württemberg

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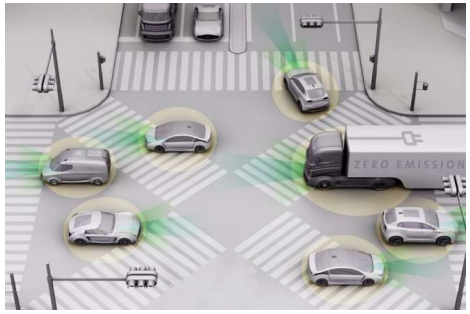
State Agency for New Mobility Solutions and Automotive Baden-Württemberg

- **central agency for innovation in future mobility solutions and automotive technologies of the State of Baden-Württemberg**
- **connected in a large partner network and joins the effort of shaping this deep-going transformation in technology to a successful outcome**

- **promoting networking of all players and funding options in the sectors of future mobility solutions**
- **coordinating the Strategic Dialogue for the Automotive Sector in Baden-Württemberg as a network across business sectors and issues**
- **cluster and network management for Cluster Electric Mobility South-West and Cluster Fuel Cell BW**
- **integrating in a targeted way small and medium-sized businesses in the innovation process**
- **initiating joint research projects throughout the whole value chain up to the point of application**
- **assisting municipalities and communities to advance electrification and digitalization of traffic.**
- **supporting suitable framework conditions in infrastructure, training/education and talent promotion**

Connected, Autonomous, Shared, Electric

The simultaneousness of changes leads to high complexity

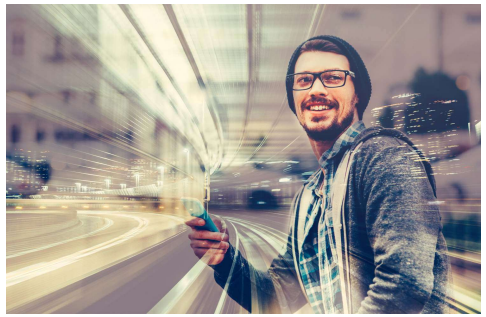


Connected

Autonomous

Electric

Shared



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Complexity of changes – major challenges

Electrification and digitalisation are advancing with increasing speed

…and have fundamental significance for the future of the automotive sector in Baden-Württemberg.

- How can we address the growing needs for mobility with climate and resource-friendly solutions?
- How can Baden-Württemberg develop from an internationally successful automotive industry hub to an internationally successful provider of innovative and intelligent mobility solutions?
- How to make electric, connected and automated mobility a meaningful key element for future urban development?

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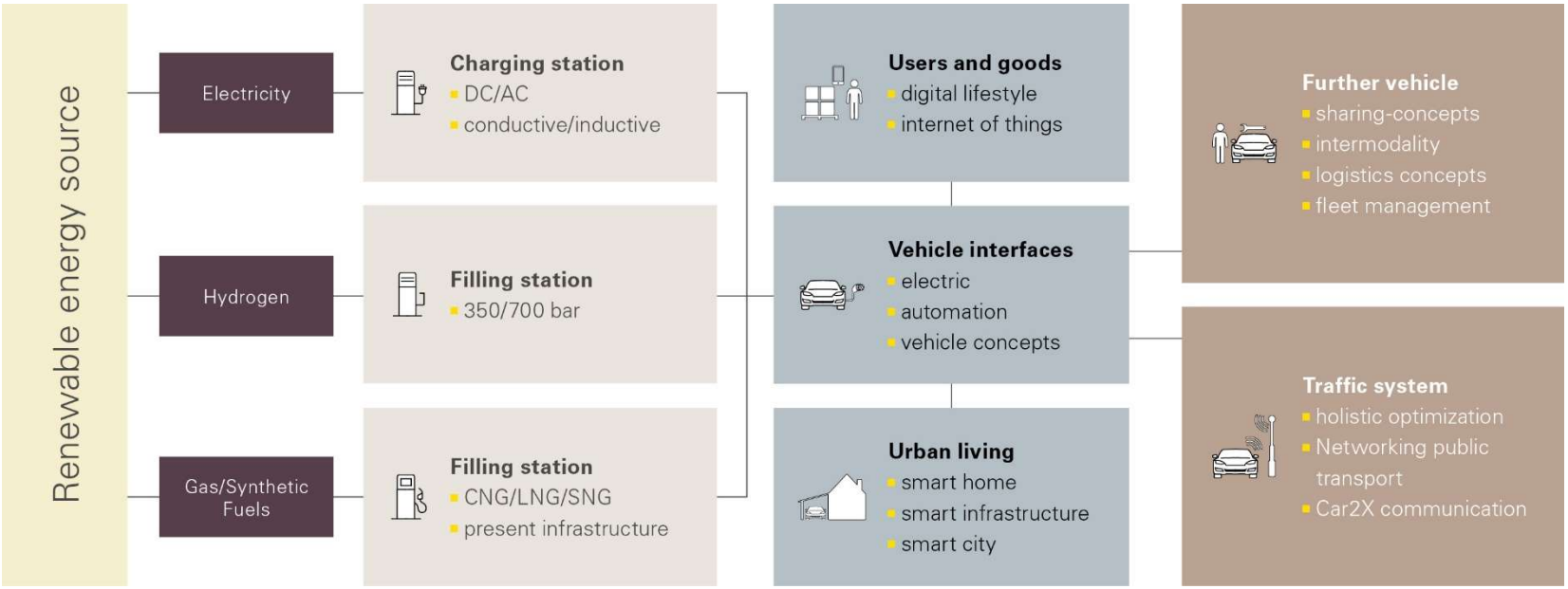
Future mobility solutions

Systemic approach



(source: Fraunhofer IAO, Systemanalyse BWe mobil 2013)

Future mobility solutions from Baden-Württemberg

Major cluster and network initiatives

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electric mobility south-west

cluster fuel cell BW

strategiedialog automobilwirtschaft BW

www.e-mobilbw.de

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Cluster Electric Mobility South-West

Industrialisation of future transport technologies

- **one of the most important regional alliances for future mobility solutions in Europe**
- **more than 160 partners from industry, research and the public sector**
- **50% of the industry partners are global players, 50% SME**
- **aim: advance the industrialisation of electric mobility**
- **Initiation of joint research projects**
- **knowledge transfer: events and scientific studies**
- **internationalisation with projects, matchmaking and delegation visits**

- **https://www.emobil-sw.de/en/**

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Overview: activities and projects

Examples

R&D Projects

- UNICARagil: joint project of Germany's leading universities in field of automated driving (https://www.unicaragil.de/en/)
- U-Shift: urban vehicle of the future (https://verkehrsforschung.dlr.de/en/projects/u-shift)
- MECView: Object recognition for highly and fully automated driving based on mobile edge computing
- KIsSME: artificial intelligence for selective near-real-time recordings of scenario and manoeuvre data in testhing highly automated vehicles
- ICT4CART: Information and Communication Technology Infrastructure for Connected and Automated Road Transport
- Smart Mobility: INTUITIVER, OpEr, SmartEPark, AutoRICH

Field Tests and Test Areas

- Test Area for Autonomous Driving Baden-Württemberg (TAF BW) in Karlsruhe, Heilbronn and Bruchsal
- Test Area for Autonomous Driving Friedrichshafen/Project ALFRIED
- Test Area for Autonomous Driving Ulm

- RaBus – Field test for automated operation of public transport buses in urban and rural areas
- AMEISE – Automated urban public transport bus in Waiblingen / Ameisenbühl
- EVA-Shuttle – connected and autonomous minibuses for the last mile from bus stops to the front door

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Working Group: Connected Test Areas for Autonomous Driving BW

Connecting regional test facilities for autonomous and connected driving

- **aim: creating knowledge transfer and synergy effects**
- **topics: e.g. connected infrastructure, cybersecurity, data exchange/interoperability**

- **Test Area for Autonomous Driving Baden-Württemberg (TAF BW) in Karlsruhe, Heilbronn and Bruchsal**
- **Test Area for Autonomous Driving Friedrichshafen**
- **Test Area for Autonomous Driving Ulm**
- **further test projects:**
  - RaBus – Field test for automated operation of public transport buses in urban and rural areas
  - AMEISE – Automated urban public transport bus in Waiblingen / Ameisenbühl

- **additional stakeholders according to thematic focus of discussions**

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Strategic Approach on Automated and Connected Driving

Strategic paper by the Strategic Dialogue for the Automotive Sector in Baden-Württemberg

Overall objective

- Improve mobility of people and goods
- Strengthen potentials for innovation value creation and employment in Baden-Württemberg

Sub-targets

- 1. Regulation and data
- 2. Transport and climate
- 3. Technology and research
- 4. Economy and employment
- 5. Ethics and civil society
- 6. Education and training

Measures

- 1. a-c
- 2. a-d
- ...

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Link: https://www.e-mobilbw.de/fileadmin/media/e-mobilbw/Publikationen/Broschueren/SDA_Strategie_zur_automatisierten_und_vernetzten_Mobilitaet.pdf

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Strategy for Automated and Connected Driving

Strategic paper by the Strategic Dialogue for the Automotive Sector in Baden-Württemberg

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Strategy for Automated and Connected Driving

Strategic paper by the Strategic Dialogue for the Automotive Sector in Baden-Württemberg

Measures

1. Regulation and data

- designing data transfer for research purposes: setting up a **Smart Mobility research data center**
- politically accelerate the **modernization of the type approval process** and the Road Traffic Act
- create **areas for experimentation and testing**

2. Transport and climate

- **field tests** with stakeholders from research, industry, municipalities and operators in urban and rural areas as well as for the transport of people and goods
- promote **dialogue with local planning authorities**
- create **necessary infrastructure for vehicle networking and autonomous driving functions**
- prepare robust **traffic forecasts** for the whole region, which depict the decisive relationships between autonomous driving and actual traffic using models and empirical support

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Link: https://www.e-mobilbw.de/fileadmin/media/e-mobilbw/Publikationen/Broschueren/SDA_Strategie_zur_automatisierten_und_vernetzten_Mobilitaet.pdf

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Thank you!

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