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Neue Länder

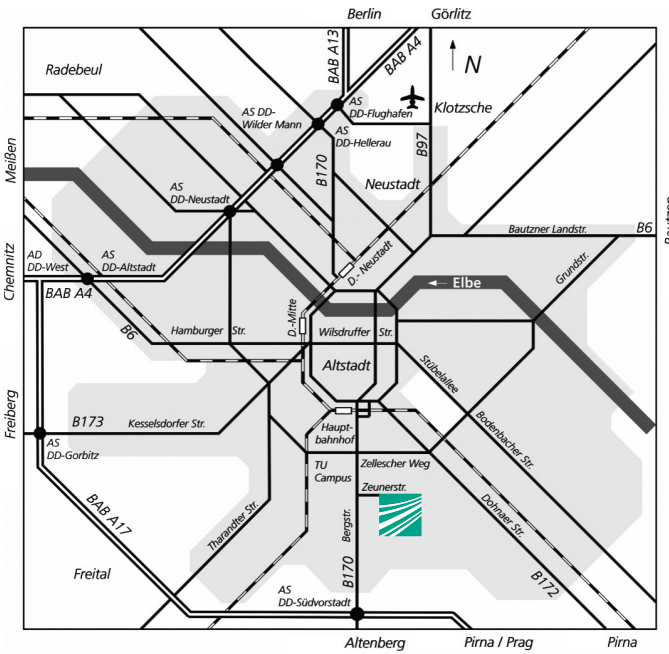
HOW TO GET TO THE INSTITUTE

Fraunhofer  
IVI

FRAUNHOFER INSTITUTE FOR TRANSPORTATION  
AND INFRASTRUCTURE SYSTEMS IVI



Design concepts by the Center for Industrial Design,  
Department Mechanical Engineering, TU Dresden



Use the link [www.ivi.fraunhofer.de](http://www.ivi.fraunhofer.de) to find a detailed description of how to get there.

For further information feel free to contact us.

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»AutoTram®«  
TRANSPORT SYSTEM  
OF THE FUTURE



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## IDEA

It has the capacity of a tram but nevertheless can be manoeuvred on normal streets like an articulated bus – the future AutoTram® Extra Grand.

This new generation of public transport vehicles is based on the AutoTram® concept developed by the Fraunhofer Institute for Transportation and Infrastructure Systems IVI. It combines the advantages of conventional bus and tram technologies into an intermediate public transport vehicle concept.

### The advantages

- High transport capacity (> 200 passengers)
- Variably configurable modular concept
- High operational flexibility
- Small vehicle swept path
- Low infrastructure costs
- Low environmental impact

make the AutoTram® Extra Grand to an ideal vehicle, which can be integrated into existing public transport systems.

## PROJECT

The AutoTram® Extra Grand is developed within a joint project funded by the German Federal Ministry for Education and Research in the framework of „Unternehmen Region – Innovative regionale Wachstumskerne“. The AutoTram® Extra Grand is expected to commence operation in Dresden in 2012.

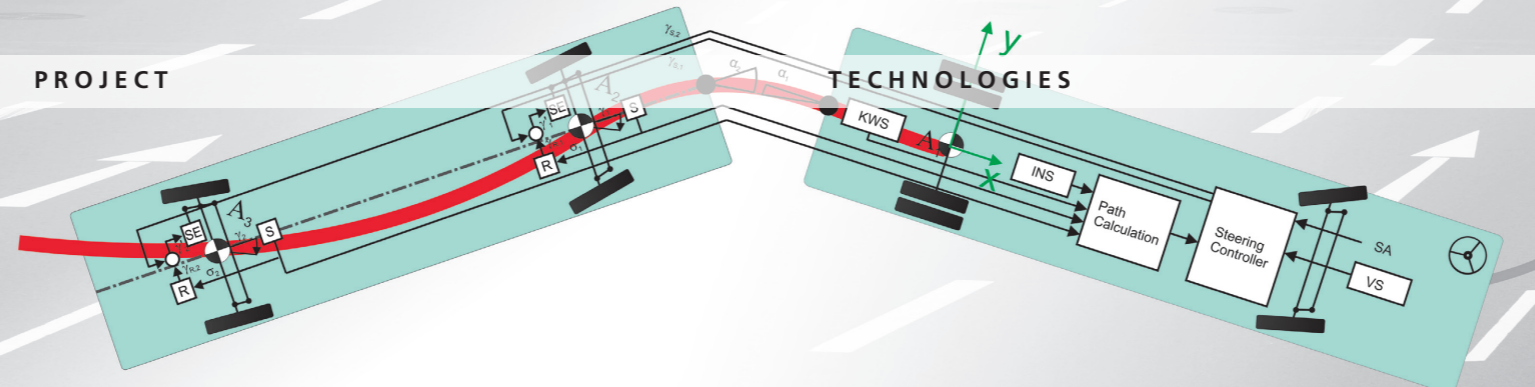
### Project Logo



### Participating Companies and Institutions

- Göppel Bus GmbH, Ehrenhain
- Fraunhofer IVI, Dresden
- Technische Universität Dresden
- WITTUR Electric Drives GmbH, Dresden
- Motion Control and Power Electronics GmbH, Dresden
- DEKRA Automobil GmbH, Kreischa
- Dresdner Verkehrsbetriebe AG

## TECHNOLOGIES

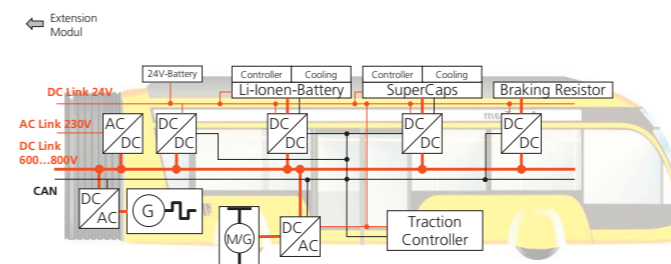


The drive line configuration of the AutoTram® is not only designed to meet the demands of public transport vehicles to be operated in environmentally sensitive areas but that also provide high availability and suitability for daily use. Using a series hybrid propulsion system the AutoTram® is highly suitable for future innovations in the fields of electric mobility and fuel cell technology.

### Drive Line Characteristics

- Series hybrid propulsion system
- Compact diesel electric power pack or fuel cell cluster as primary unit
- Dual energy storage unit for high recuperation rates
- Partial zero emission operation, e.g. near stops or within green zones
- Efficient electric drive motors
- Route dependent energy management
- Fast charge capability
- High safety standards

### Drive Line Configuration



## RANGE OF APPLICATIONS

Due to the advantages of the vehicle concept a wide range of applications in different fields of public transport is possible. The AutoTram® is a cost-efficient alternative to conventional transport systems if a high capacity, low environmental impact and above average flexibility are required.

### Supplement to conventional buses

- Lower environmental impact
- Higher transport capacity
- Low track width requirements
- Higher flexibility

### Alternative to trolley buses

- Comparable environmental standards
- Lower infrastructure costs
- Higher transport capacity
- More suitable for deviations

### Alternative to light rail concepts

- Comparable environmental standards and transport capacity
- Significantly lower infrastructure costs
- Distinctly lower life cycle costs

### Supplement to bus rapid transit systems

- Efficient public transport system
- High manoeuvrability
- Cost-efficient, flexible and environment-friendly