



# | Smart eMobility in Public Transport - Moving beyond.

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# Global megatrends will shape our lives in the coming decades ...

## Digitalization



By 2025, the digital universe will reach **175 zettabytes**

## Demographic change



The earth's population will increase from 7.7 billion people today to **9.7 billion** by 2050

## Climate change



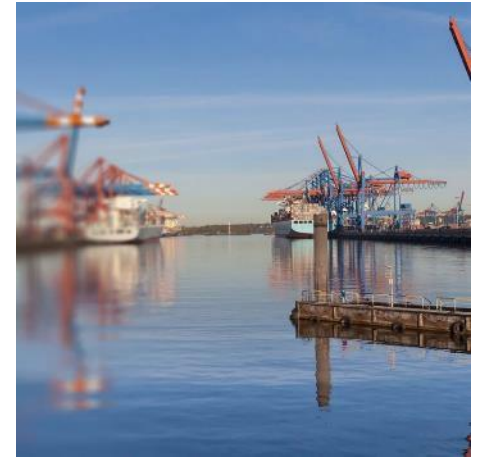
By 2050, a global temperature increase **of 2°C** is expected

## Urbanization



By 2050, **70 percent** of the world's population will live in cities (2018: 55 percent)

## Globalization



Due to increasing traffic, gas emissions will increase up to **60 percent** by 2050



... and increase the need for sustainable mobility solutions

By 2050  
**70%**

of the world's population  
will live in cities

**3X**

more passenger  
movement predicted  
globally by 2050\*, \*\*

More than  
**30%**

of global energy demand  
from transportation sector\*\*

**25%**

of global greenhouse gas  
(GHG) emissions from  
transportation sector\*\*

\* The pandemic is predicted not to affect this development in the long run.

\*\* Source: IEA Future of Rail Report.

# Smart e(mobility) – an holistic perspective on solutions for public transportation



Electric

- Rail electrification
- Battery and H2 rail solutions
- eBus solutions

Automated

- Assisted and automated train operations
- Autonomous shuttle / bus

Digital

- Digital twin
- Digital asset management
- Digital mobility platforms/Apps



**Make trains & infrastructure intelligent**

**Increase value sustainably over the entire lifecycle**

**Enhance passenger experience**

**Guarantee availability**





# Moving beyond.

Siemens Mobility motto

## Siemens Mobility vision

*We are global entrepreneurs,  
trusted by our partners  
to pioneer transportation,  
moving people sustainably  
and seamlessly  
from the first mile to the last.*

## Siemens Mobility facts

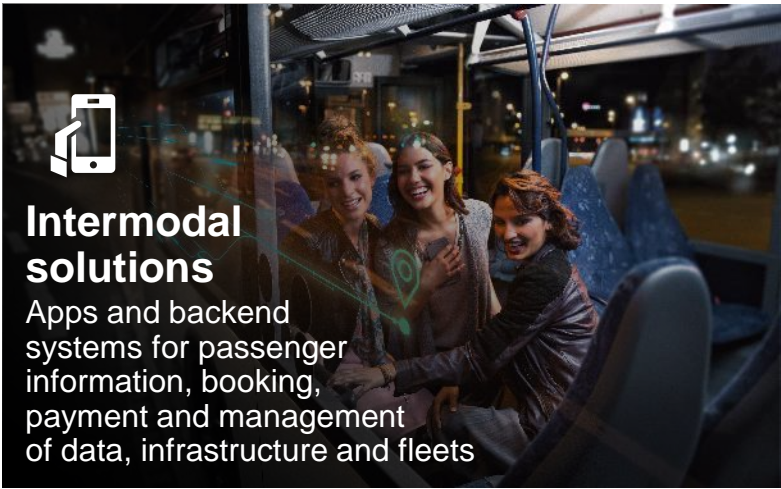
- *~40.000 employees worldwide*
- *> € 9bn revenue*
- *Industry leading profitability*




# Siemens Mobility: Smart solution portfolio to shape public transportation, today and tomorrow

A night-time aerial view of a multi-lane highway with glowing green lines indicating traffic flow and data points.

  
**Rail Infrastructure**  
Products and solutions for Rail Automation and Electrification

A group of three young women sitting on a train, looking at a smartphone together.

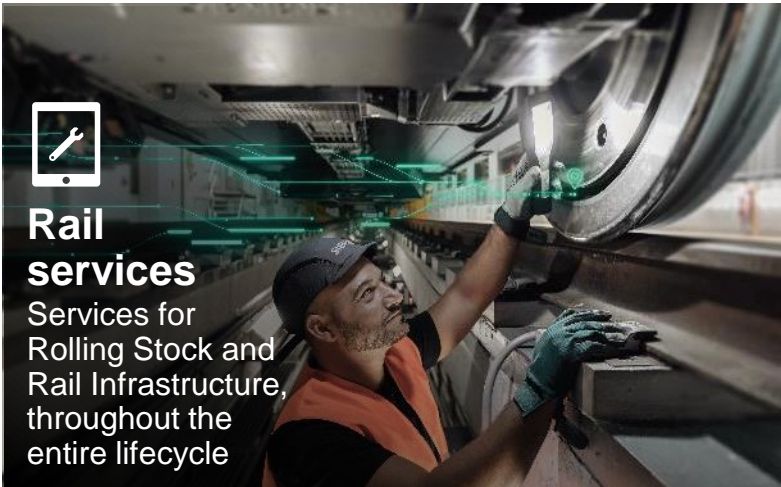
  
**Intermodal solutions**  
Apps and backend systems for passenger information, booking, payment and management of data, infrastructure and fleets


A high-angle view of a modern city with a train on an elevated track, surrounded by green digital overlays representing data and connectivity.

  
**Turnkey Projects**  
Complete turnkey rail solutions integrating the entire portfolio and beyond

A sleek, modern high-speed train traveling along a track next to a body of water, with green digital overlays indicating data and connectivity.

  
**Rolling stock**  
Short-distance, regional and long-distance rolling stock, product and system solutions for passenger and freight transport

A close-up of a train wheel and track, with a worker in an orange safety vest and cap inspecting it.

  
**Rail services**  
Services for Rolling Stock and Rail Infrastructure, throughout the entire lifecycle

An aerial view of a complex highway interchange with green digital overlays representing traffic flow and data points.

  
**Intelligent traffic systems**  
Solutions for Intelligent Traffic Management



# New Drive Systems

Battery power and fuel cells for sustainable regional rail - from pilot projects to passenger service



2019

**Desiro ML Cityjet eco**  
prototype for ÖBB



2020-22

**Mireo Plus B**  
Ortenau, Brandenburg,  
Denmark



2018

**Test bench**  
operation of fuel cell



2020-22

**Mireo Plus H**  
H2goesRail with DB  
Passen. service in Bavaria

# eBus Depot Hamburg

Sustainable charging infrastructure  
and lifecycle services for  
Hamburg's eBus fleet





# S-Bahn Hamburg, Germany

First highly automated S-Bahn  
pilot in Germany with ATO over  
ETCS (Level 2)





# Norwegian Railway Network

Complete digitalization with  
one central interlocking for  
an entire country





# Rhein Ruhr Express, Germany

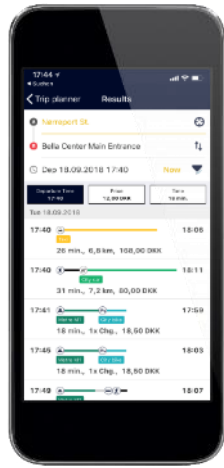
Digitally networked, high-performance mobility solution for the roughly ten million people living in the Rhine-Ruhr metropolitan region





# Multimodal Trip Planning and Booking

Denmark






# Key success factors to come from smart eMobility vision to reality

## Let's discuss with Siemens Mobility



**Early-on discussion**, as trusted partner



**Solution-focus**, including HW, SW, as-a-service models, innovative financing



**Digitalization as key driver** to make the most out of existing infrastructures



**Open ecosystem approach**, from project delivery to solution design to R&D



**Localization of value chain elements**, incl. R&D, digital solution experts, etc.

### Key figures of Siemens Mobility Kft

- **Revenue** 17,4 milliard HUF
- **Employees** 245 heads
- **Presence in Hungary** for almost 135 years
- **Close collaboration with local industry**
- **Country head:** laszlo.ludvig@siemens.com

### Selected projects... 1887 to 2022

- **First tram line** in Budapest (1887)
  - **Advanced driver assistance** for tram
  - **Automatic train control** for Metro 2/4
  - **115 electric locomotives** for Hungarian State Railway (2022)
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