

SIEMENS

Ingenuity for life

Shared Autonomous Mobility

AD-DRT Bus Shuttle System

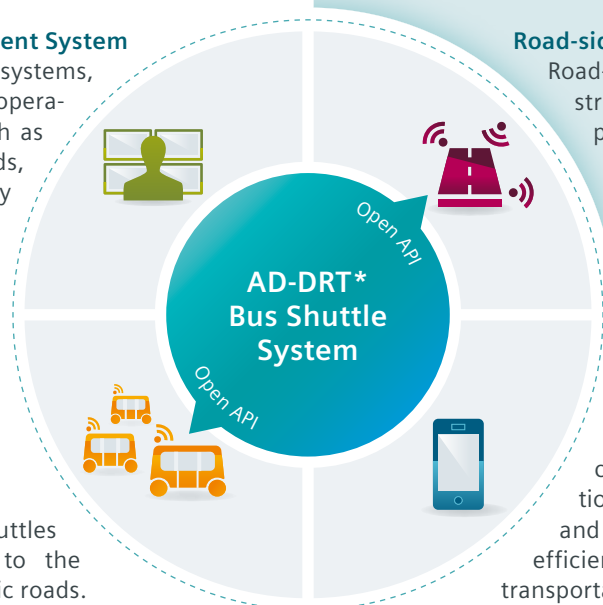
[siemens.com/autonomousdriving](https://www.siemens.com/autonomousdriving)

Cloud-based Mobility Management System

Includes different management systems, processes and interfaces for the operation of autonomous shuttles such as a shuttle management, dashboards, incident handling and emergency monitoring.

Fleets of AVs

Consists of autonomous bus shuttles provided by partners tailored to the needs of public transport on public roads.



90% less traffic

through shared autonomous
and public transport (ITF)

Road-side Services

Road-side services (intelligent infrastructure) enhance environmental perception by providing real-time road status information to facilitate safe and efficient driving.

Intermodal User Apps

App including backend system collects passenger requests and calculates transport recommendations in real time, solving the first and last mile and offer smooth and efficient trips including all modes of transportation.

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*) AD-DRT = Autonomous Driving Demand Responsive Transport

Key benefits



~90% *road accidents can be avoided by using autonomous vehicles (McKinsey)*

Transport System Improvements

Road-side services support autonomous shuttle with additional valuable information in order to:

- Improve functional safety of the system by achieving a safety integrity level (up to SIL 3)
- Enable and optimize the overall performance of the vehicle speed, which should lead to 50 km/h without a safety driver
- Integrate vehicles in existing public transport offerings because of higher speed including the optimization of a vehicle's behavior
- Increase the availability of shuttles for higher asset utilization and overall transport efficiency

Safety & Homologation

- Redundancy and enhanced environmental perception leads to higher safety and road efficiency
- AD-DRT system is vehicle agnostic, independent from any vehicle supplier
- Digital twin simulation with Simcenter Prescan allows fast and resource-saving verification and validation within the development
- Faster system homologation aspected due to two out of two logic (two sources for driving decision making: vehicle and road-side services)



Expected **50%** *faster homologation process compared to systems without road-side services (Siemens Mobility)*



up to **50%** *more throughput due to efficient management systems with connected assets such as autonomous bus shuttles (smartcityexpo)*

Cloud-based Mobility Management System

One software suite for the entire operation of AV shuttles:

- Software as a service: Flexible and scalable implementation
- Open communication protocol enables vehicle manufacturers for easy integration
- Standardized interfaces and connectivity to 3rd party systems

Eco-system of partners



Published by
Siemens Mobility GmbH

Otto-Hahn-Ring 6
81739 Munich, Germany

contact.mobility@siemens.com

TH 166-200109

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