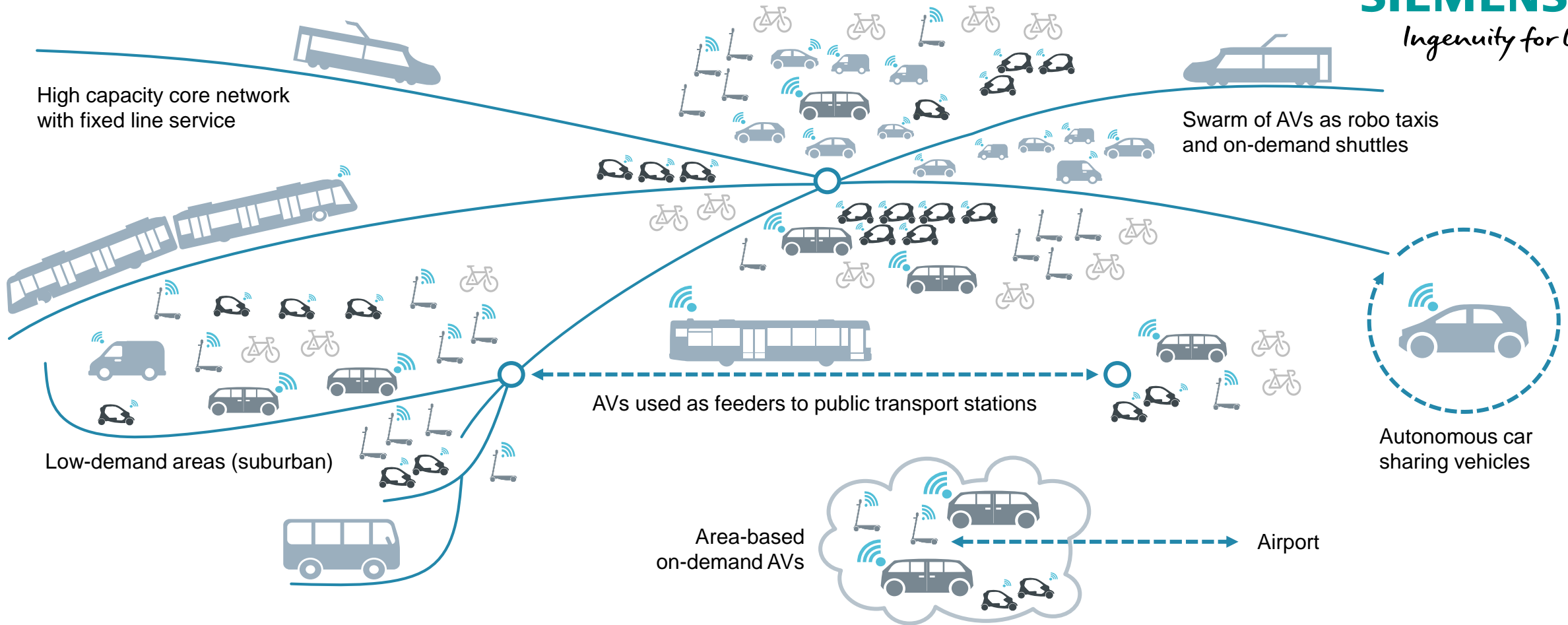


Innovationen im Verkehrsmanagement, einem Schlüsselelement für MaaS

Marcus Zwick, Head of Innovative Mobility Solutions



BB M 617



Source: UITP

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February 2019

Innovative Mobility Solutions

The need for an Optimized Transportation System is greater than ever before

SIEMENS
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Vehicles with combustion engine



Electric vehicles



Autonomous vehicles



Uber/Lyft vehicles



Machine-controlled vehicles on the road must be as safe as those on railways

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Individuality/
Flexibility



Safety



Efficiency



Full Vehicle
autonomy



An Optimized Transport System supported by self-driving vehicles will help to master the future of mobility



Enable level 5 of autonomous driving

We increase the total number of scenarios (complex traffic scenarios).

Number of AV-deadlock situation is 0.

Enhanced ease of traffic

Improved safety for complex traffic conditions

We reduce the deceleration of AVs to the required minimum (-1,5m/s²) (Safety / Comfort)

We avoid critical situations before they occur (emergency braking vs. comfort breaking).

Enabling individual public transportation on the road

We increase the average speed within complex traffic scenarios under each and every condition.

We increase the capacity (throughput) of an intersection (#vehicles/hours).

Our vision – cities will manage the complete mobility ecosystem to achieve its throughput, pollution, safety and energy targets



Cities will manage and inspire...

Centrally managed traffic towards city strategy and KPIs

Point-to-point connectivity seamless across all modes

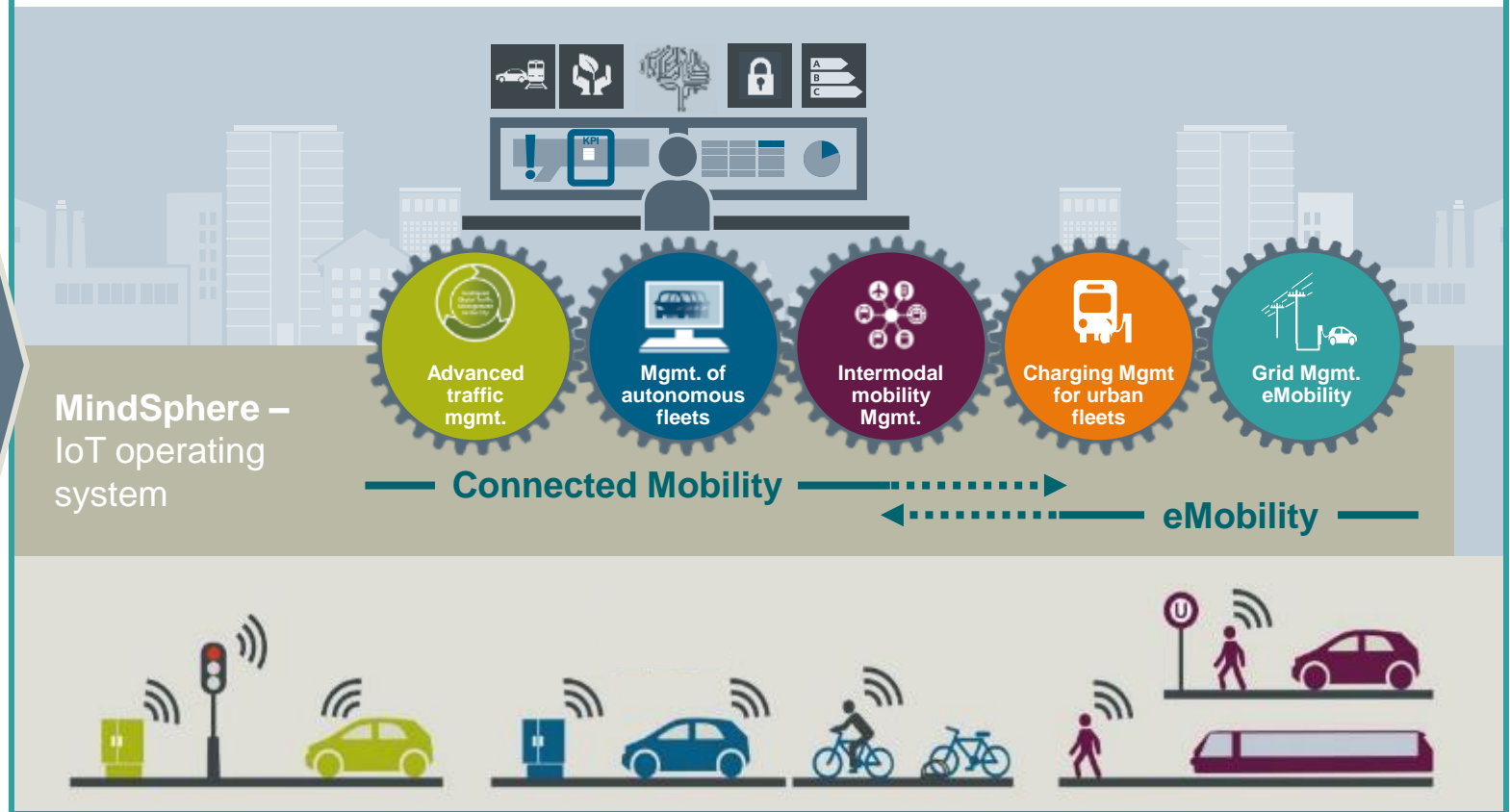
Demand responsive with flexible routes and schedules

Fully automated SDVs only differentiated by user groups and capacity

Mainly shared fleets, as a service and open to various fleet operators

All electric / hydrogen with 100% renewable power

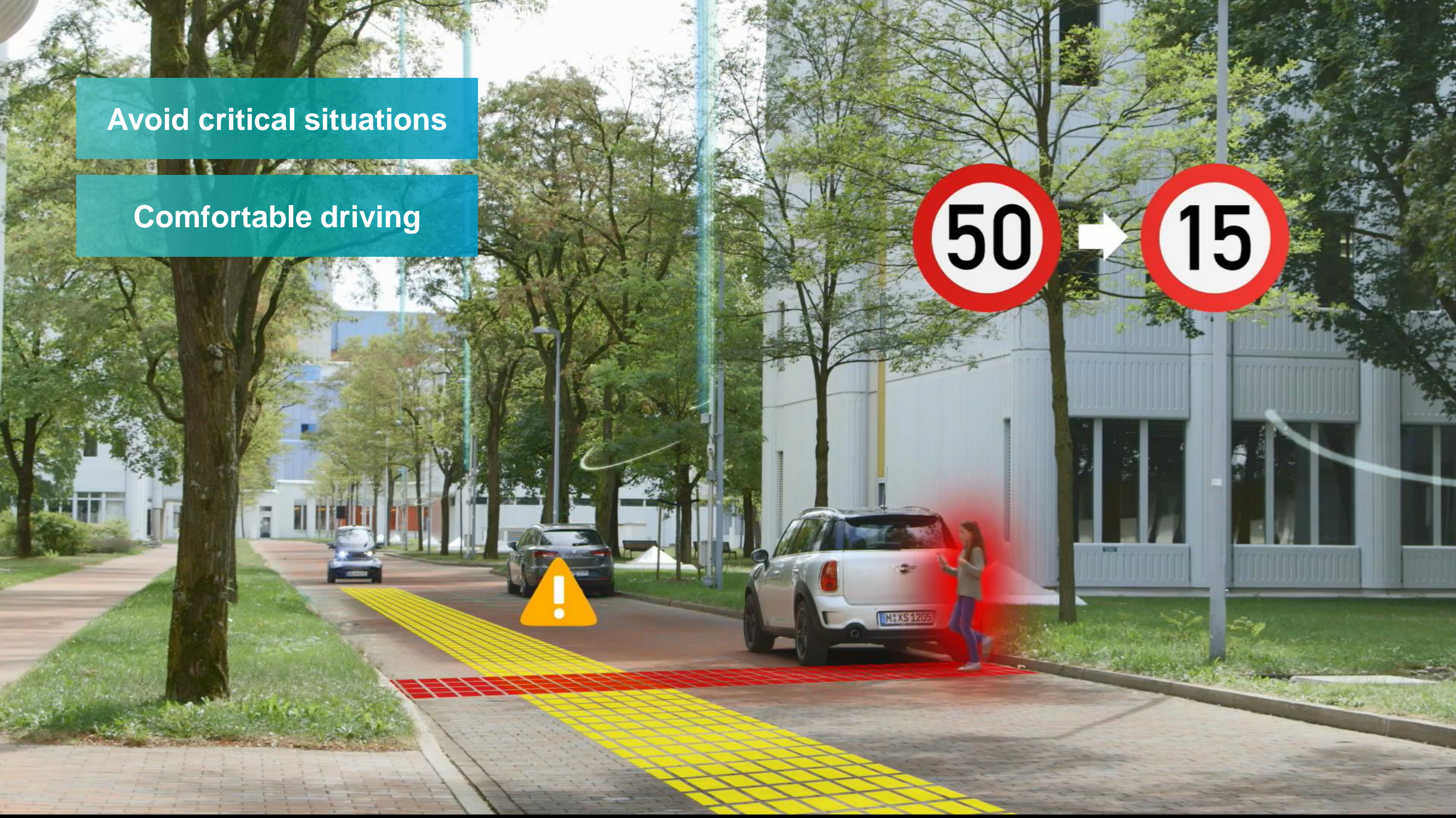
Mobility Operating System - mOS

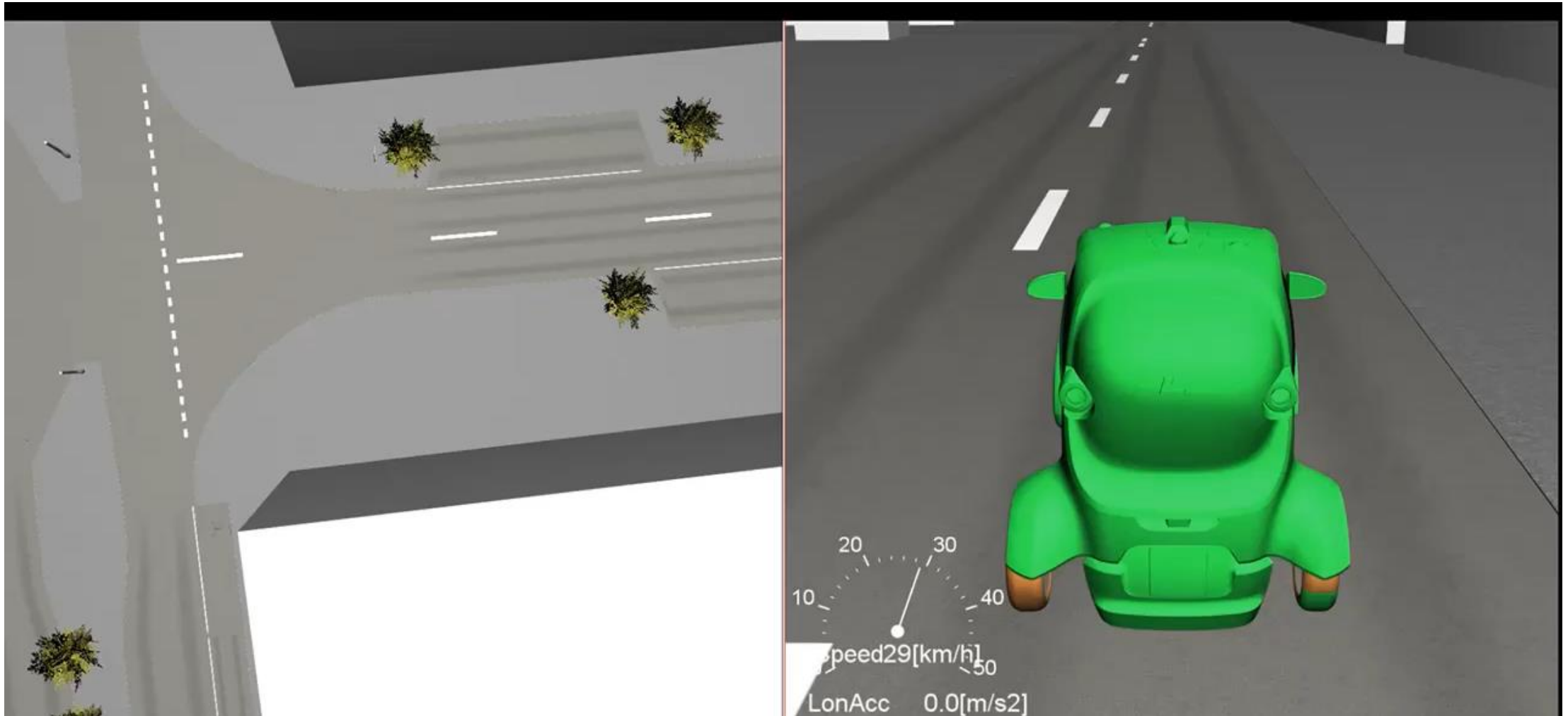




Avoid critical situations

Comfortable driving







Camera

RTLS

Road Site Unit

WLAN access point

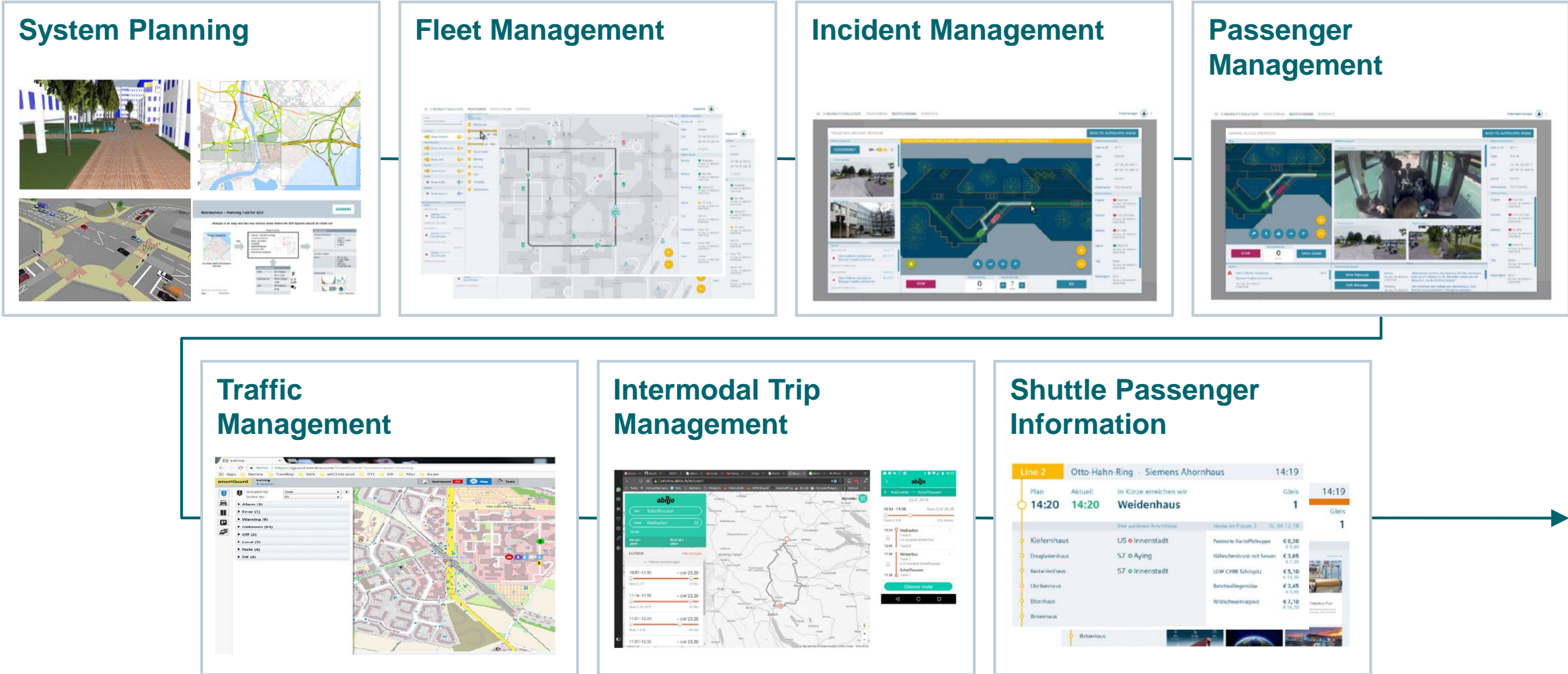
Radar

Lidar

Vision towards a fully
integrated smart
infrastructure installation



“SDV Suite” for the complete life cycle

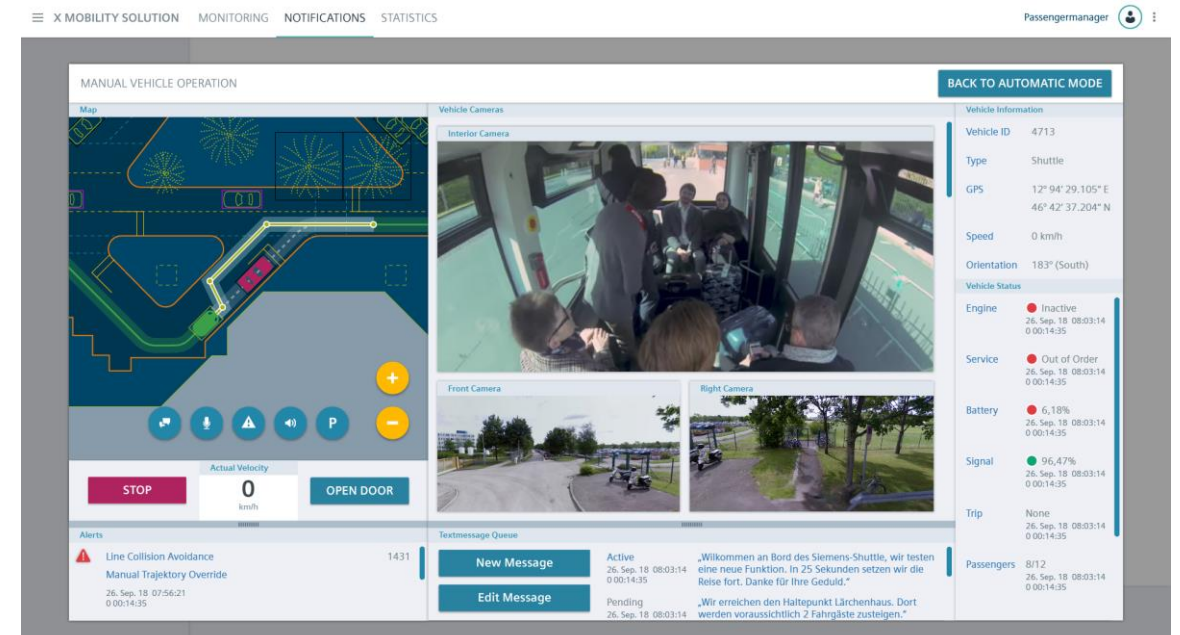
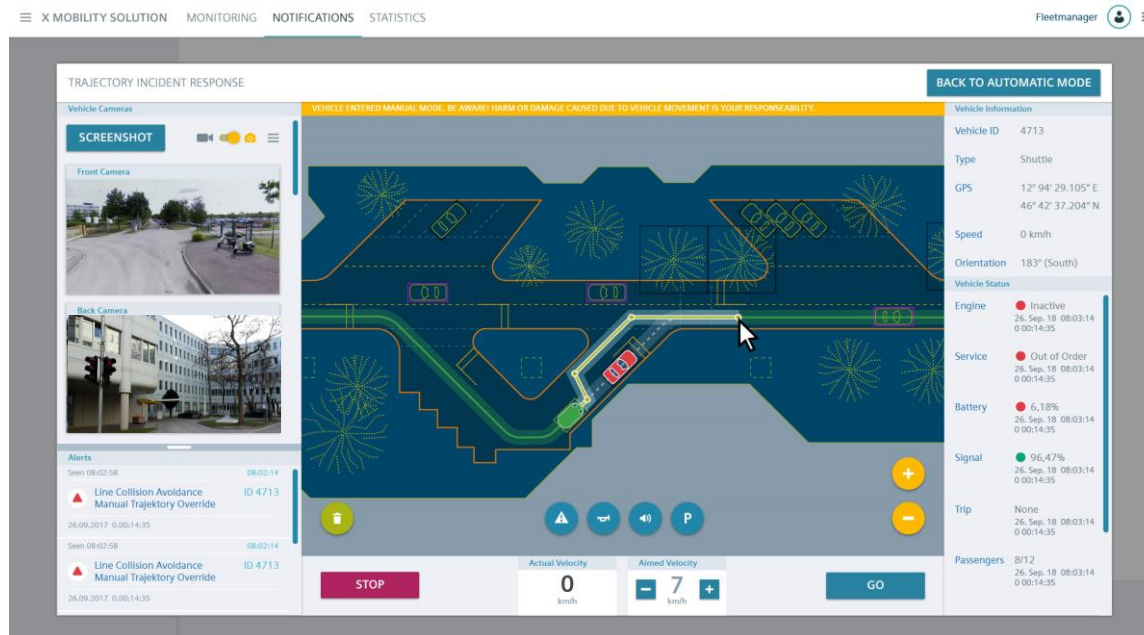


Incident Management

- Trajectory incident response
- Conflict detection and resolution
- Vehicle operation and guidance

Passenger Management

- Direct communication
- Video surveillance
- Passenger information and announcements
- Check-In/Be-Out, e-ticketing



Individual public transport – advanced platooning system and first/last mile



Backend collects passenger requests and calculates transport recommendations in real time traffic → pools passenger requests into dynamic routes and ensures availability of right amount of shuttles



- Shuttles could be coupled into platoons
- Safe and regulated drive through the city
- For optimal individualization of mobility, platoons could be decoupled on the last mile



- Solving the first and last mile
- Connecting also areas with lower demand by mobility on demand solutions
- Smooth and efficient trips across all modes of transportation

Singapore 2030

- 6.9 million inhabitants
- Population density: 10,900 km²
- 75% of all passenger km made by public transport
- Island wide AV deployment for public transport

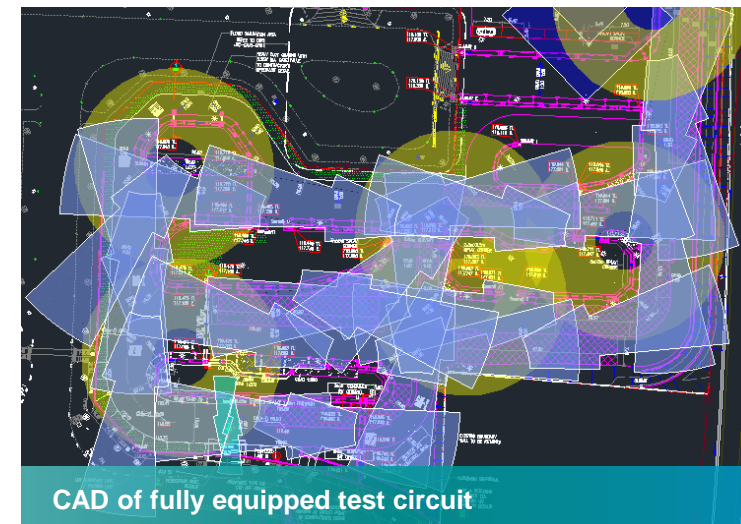


Singapore – We bring the Siemens SDV Suite to CETRAN test field

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Centre of Excellence for Testing and Research of Autonomous Vehicles (CETRAN)



ILO1 showcases new and innovative mobility concepts

HEAT Hamburg: Siemens SDV Suite in public space close to the Elbphilharmonie



- Joint public funded project: Vehicle/infrastructure, V2X communication, Advanced Traffic Management
- AVs as mode of transport in public space
- Evaluation of legal framework

Test beds in relevant environments – Together in an eco-system of strong partners

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Urban

Munich OTS 1.0



Singapore CETRAN, RFI, etc.



Hamburg HEAT



Interurban

KoRa9



Other projects

Rail adaption Potsdam

