Smart Mobility Systems for Smart Cities

Envision Charlotte 2017
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Individual traffic will not be a solution to ensure efficient mobility. But congestion...
Vehicle and infrastructure evolution will create a greater diversity of traffic services, providers and modes.
A first step – Intelligent Parking: Modular system set-up to support multiple intelligent traffic and smart city management purposes

Main System:
- Modular infrastructure-based sensor-network
- Permit management solutions
- Control Centre
- Communication with end-users

Connected Systems:
- Traffic Management
- Off-street parking availability
- Energy management
- Payment systems
- Multimodal transport offerings
- Lighting management

Benefits:
- Reduced traffic and emissions
- Adequate use of resources
- Increased safety
- Optimized revenues

Sensor & communication network & local processing capabilities for Smart City
Towards a smart urban mobility system that fully connects vehicles, people and infrastructure

Vehicle
- Good coverage in all areas (independent from installed base)
- Vehicle knowhow: status...
- Routing information: destination, ...

Urban / Intersection
- Speed
- Traffic jam
- Road blockings
- Hazard warning
- Routing
- Hazard warning
- Driver awareness

Fusion enables
- 100% Coverage
- Reliable availability of data in urban areas (complex situations)
- Preparation of driving strategies
- Redundancy and Resilience

Urban / Intersection
- Real time information of “unseeable” objects
- Road blockings
- Prediction of behaviour
- Parking Information
- “view around the corner”
- ...

Infrastructure
- 24/7 coverage of targeted (hot spots) areas
- Enables additional security layers
Making the road more intelligent ...

- End-2-end management of AD (sub-)tasks between embedded platforms & smart road management unit
- Dependable platform for ‘fog’ compute node along A9
- Virtual sensor concept
- Management of autonomous-driving lane
Vision 2050: The future of urban mobility will be exciting

- All vehicles will be autonomous (GoA 3\(^1\) or higher)
- Especially for low density traffic; vehicles will connect/scale for larger distances (vehicle transporters or connected driving)
- Traffic flow supported by intelligent streets/roads and distributed control centers
- Safety levels will improve significantly for high and low density traffic
- Energy consumption will be reduced
- Capacities and flexibilities will be increased dramatically
- Seamless intermodal travelling will be standard

\(^1\) GoA Levels 0 – 4 = Grade of Automation according to International Electrotechnical Commission / Commission Électrotechnique Internationale, International Standard 62290-1
Thank You