



Enhanced traffic management

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Main observations about state-of-the-art for traffic management

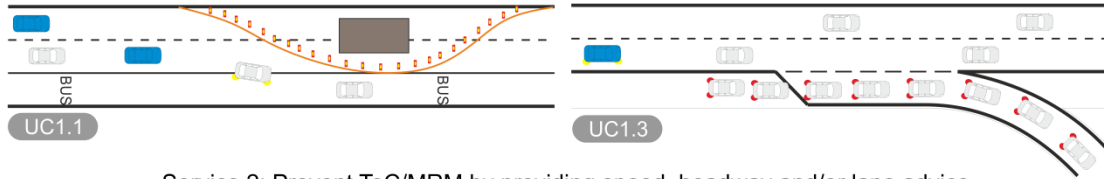
- General approaches
 - Coordinated network-wide traffic management
 - Using KPIs, hierarchical controls via layered architectures, TMaaS
- Cooperative systems
 - V2X / VANETs / C-ITS
- Machine learning techniques (AI)
 - Traffic light control and congestion / queue length predictions
- **Conclusion**
 - No (readily available) implementations of more advanced TM schemes
 - Focus on solving partial problems with specific measures

Developing TransAID's services for traffic management in transition areas

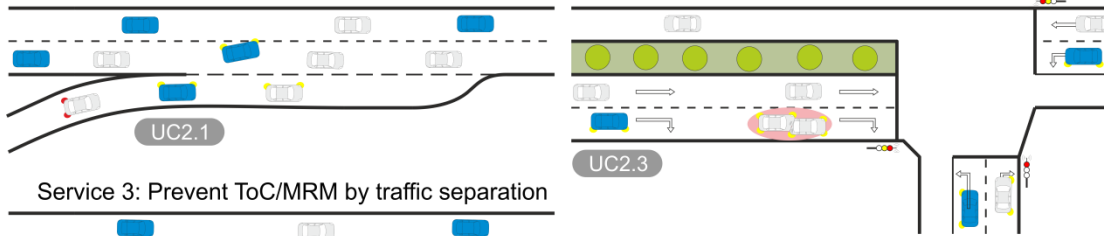
- Solutions take the form of these actions:
 - **Prevent** ToC/MRM
 - **Manage** or support ToC/MRM
 - **Distribute** (in time and space) ToC/MRM
- Assess solutions based on impacts measured by **KPIs**:
 - **Traffic efficiency**
 - Network-wide: average speeds and throughput
 - Local: tempo-spatial diagrams
 - **Traffic safety**
 - Number of events with time-to-collision < 3 sec
 - **Environmental impact**
 - CO₂ emissions

Services and use cases

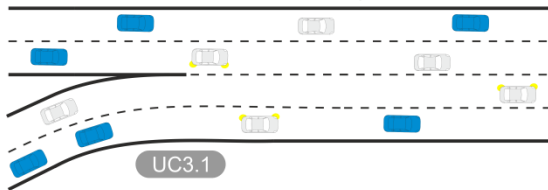
Service 1: Prevent ToC/MRM by providing vehicle path information



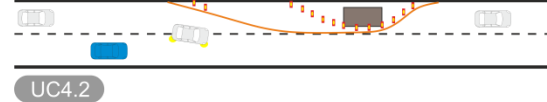
Service 2: Prevent ToC/MRM by providing speed, headway and/or lane advice



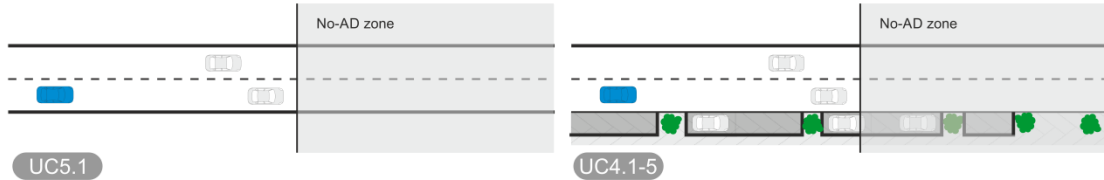
Service 3: Prevent ToC/MRM by traffic separation



Service 4: Manage by guidance to safe spot



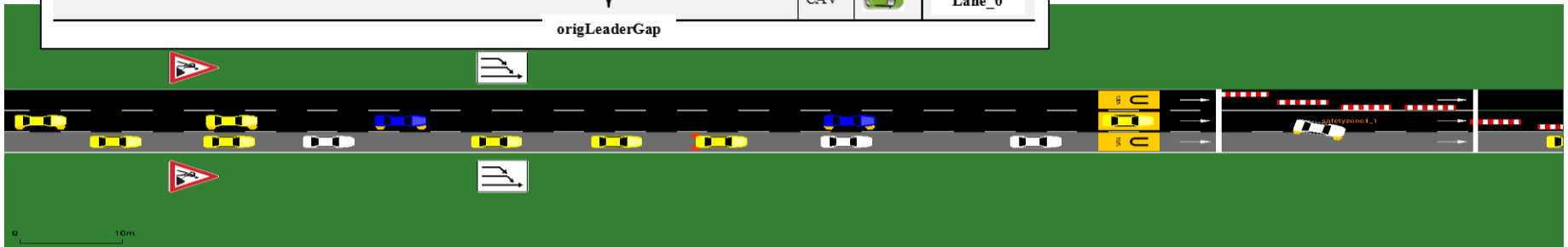
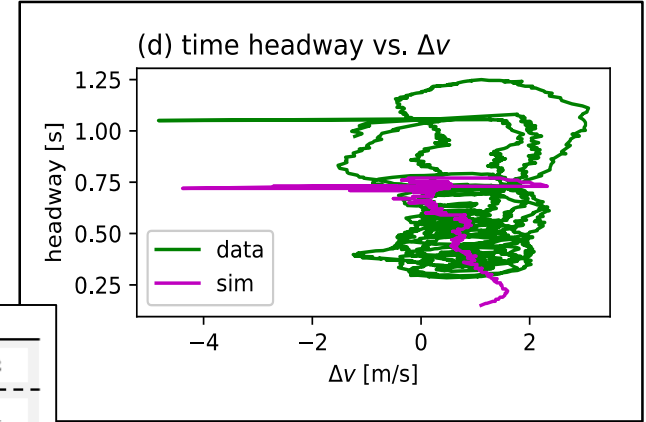
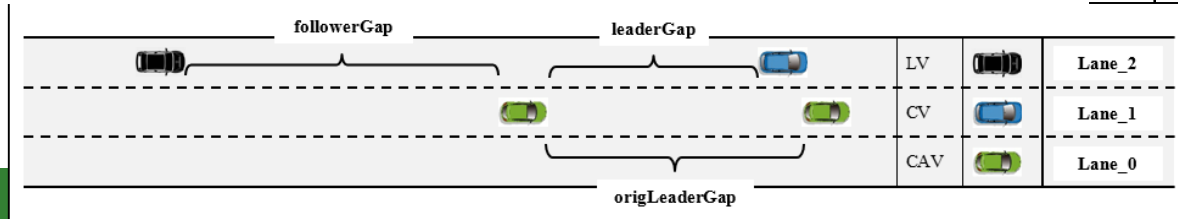
Service 5: Distribute ToC/MRM by scheduling ToCs



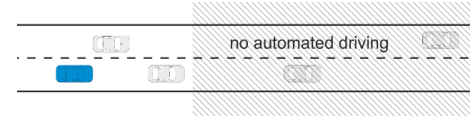
Simulating the impact of traffic management



SUMO
SIMULATION OF URBAN MOBILITY

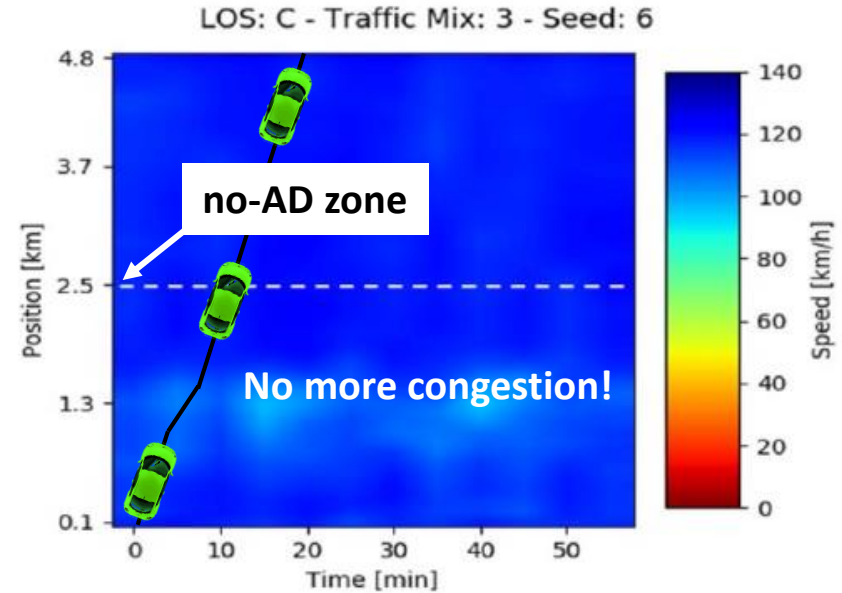
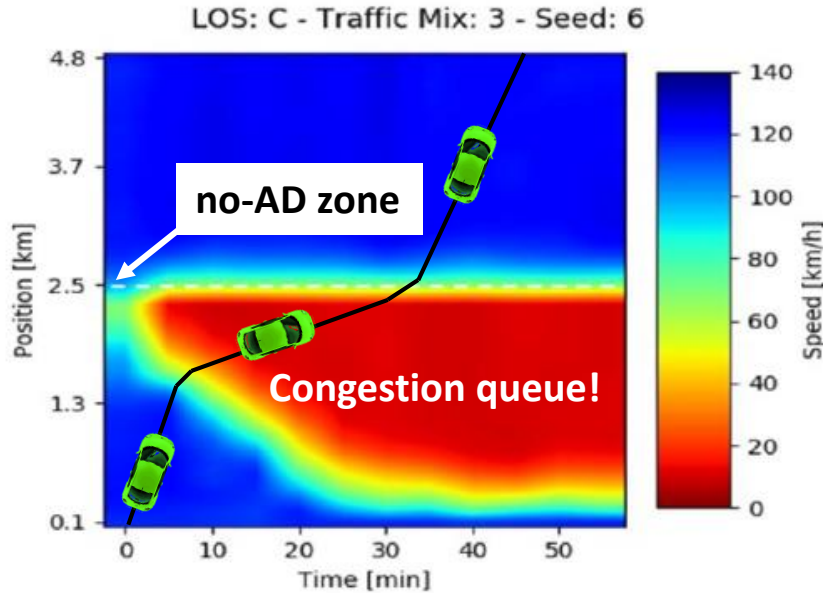


Example use case 5.1 (Distribute the TORs within a dedicated TOR area)



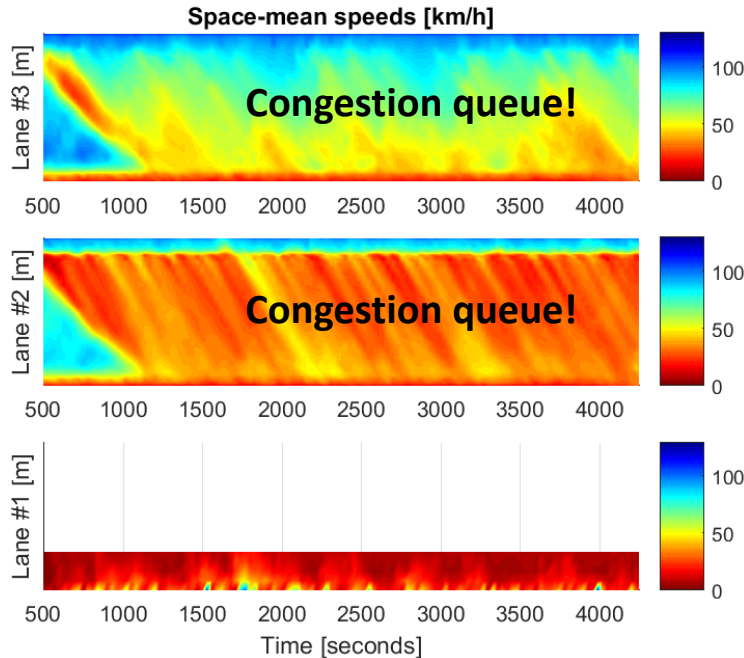
Without traffic management

With traffic management

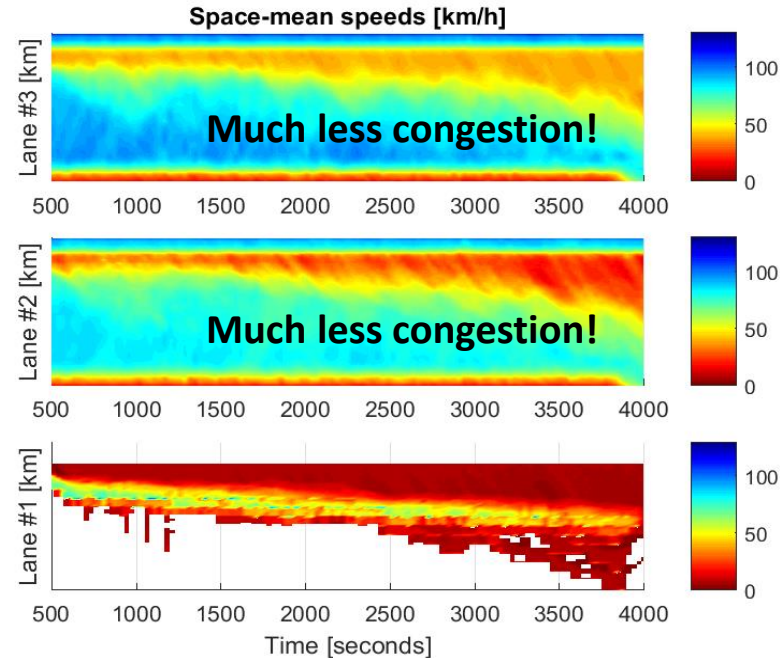


Example use case 1.3 (queue spillback at motorway exit ramp)

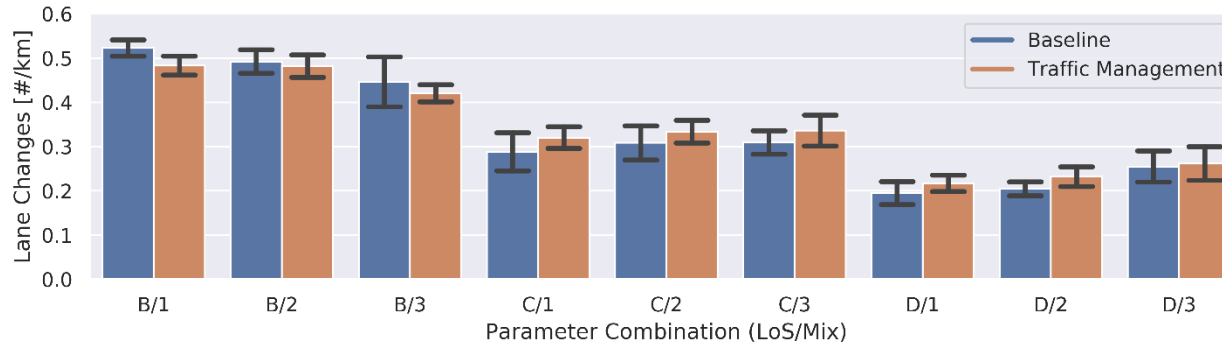
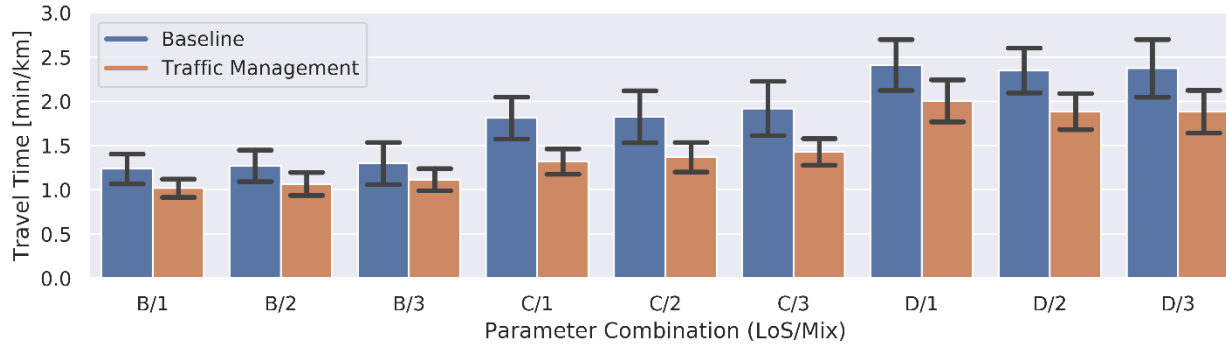
Without traffic management



With traffic management



Measuring the impact (e.g., travel times, number of lane changes, ...)





Questions? Let`s stay in touch!

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