

Managed Automated Driving (MAD)

- Infrastructure-based vehicle automation for urban areas -

Problems:

- Complex urban traffic situations
- Limited vehicle view (ODD)
- Economic limits of CCAM (large roll-out)
- Energy consumption, climate impact



MAD Concept: MAD is ...

... full infrastructure-based automated driving
 ... for all AVs in urban areas (PT, freight, private)

- Complete sensory coverage of the traffic area via road capturing units
 → „A sensor on each lamp post“

- Complete control and management of vehicles from the infrastructure
 → „Stack in edge, vehicle as actuator“

Architecture concept

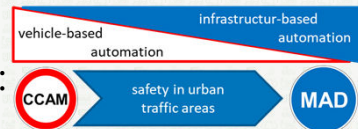
RCU: Remote Operation Center; EPU: Edge Processing Unit; RCU: Road Capturing Unit; MAV: Managed Automated Vehicle.

Roadside architecture concept

MAD sectional operation (Similar to air (ATM) and rail (ETCS) domain)

- One edge controls all AVs in its section, hand-over of AVs from section to section
- Overall management of all AVs in urban area (MAD Section) in Back-End

... recommended and necessary transformation:

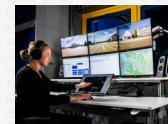


Key Goal:

MAD - Proof of feasibility

Expected Results:

- Whitepaper Architecture;
- New Stack for MAD-Vehicles (MAV);
- New Road Capturing Units (RCU);
- Edges; Backends for MAD
- Test and Validation: Proof of safety;



Consortium:

- DLR German Aerospace Center
 - Institute for Vehicle Concepts, Institute of Transportation Systems
- FZI Forschungszentrum Informatik;
- GFT Integrated Systems GmbH;
- Intel Deutschland GmbH;
- VITRONIC Bildverarbeitungssysteme GmbH;
- MATRIX VISION GmbH