



BME  
Automotive  
Technologies

# Innovations Shaping Tomorrow's Mobility

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Cooperative Technologies



Autonomous Systems

# Research Topics



Cooperative  
Traffic Control



Unmanned Aerial  
Vehicles



Autonomous  
Vehicle Control



Simulation and  
Modelling



Cooperative  
Perception &  
Cloud Control



Safety & Security



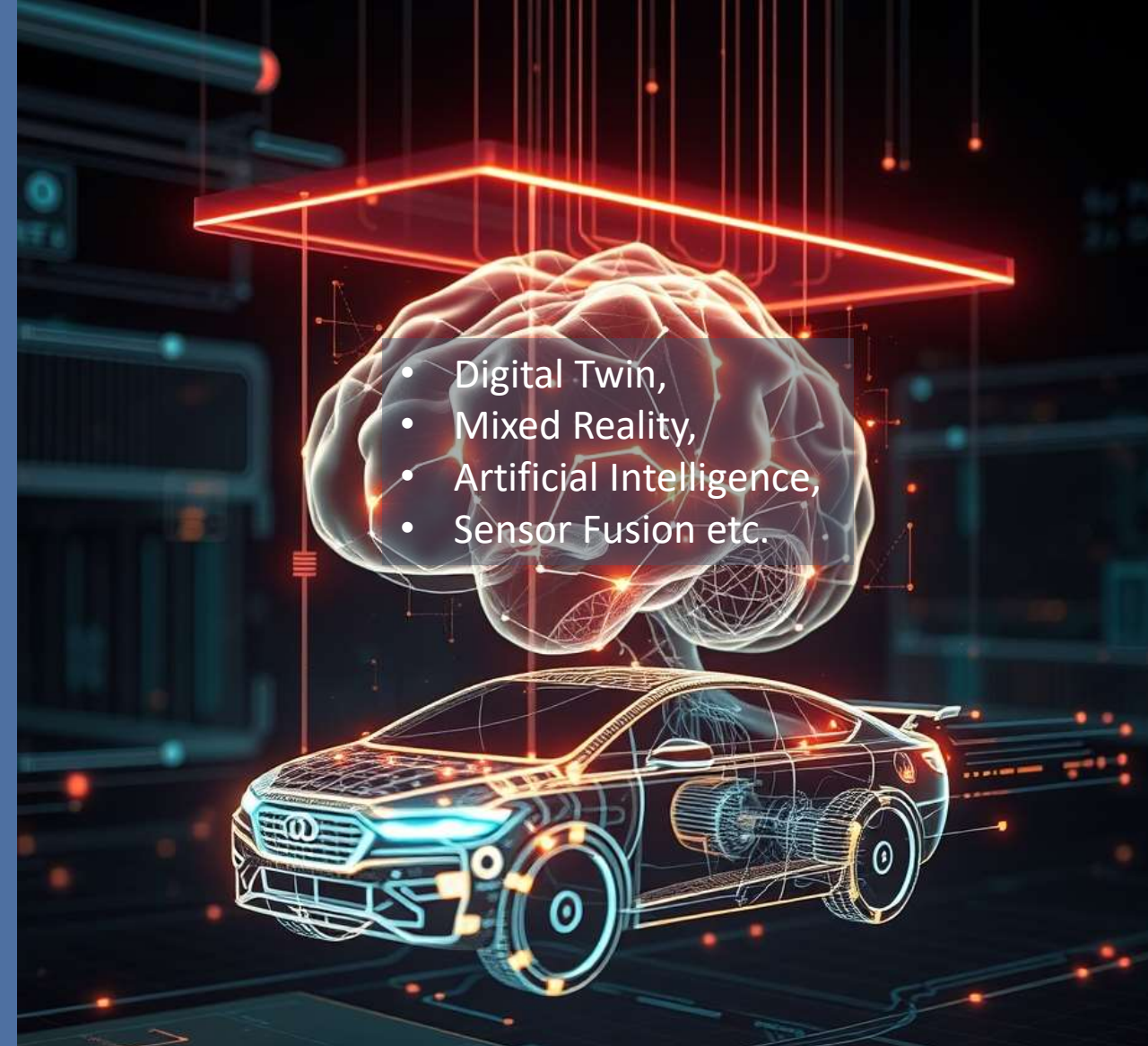
Unmanned  
Ground Vehicles




Ultra-Reliable  
Low Latency  
Communication  
(URLLC)



Precision  
Localization and  
HD maps

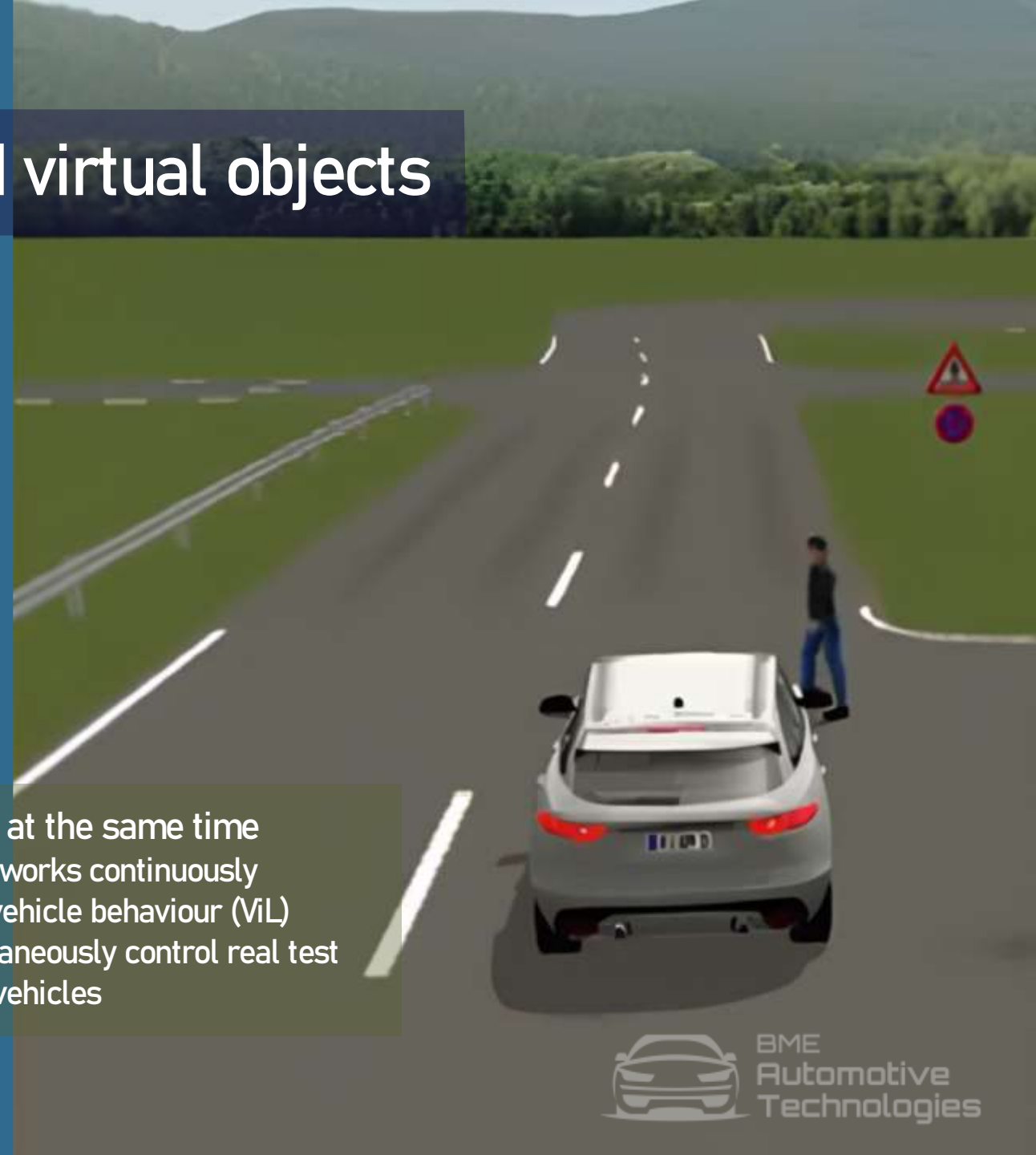
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- Digital Twin,
  - Mixed Reality,
  - Artificial Intelligence,
  - Sensor Fusion etc.

## Technologies

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- Accident avoidance (Patent & Spin-off)
  - Full-scale Head-Up display (Patent & Spin-off)
  - Smart Road (Patent & Spin-off)
  - Matlab, ZalaZONE

## Application

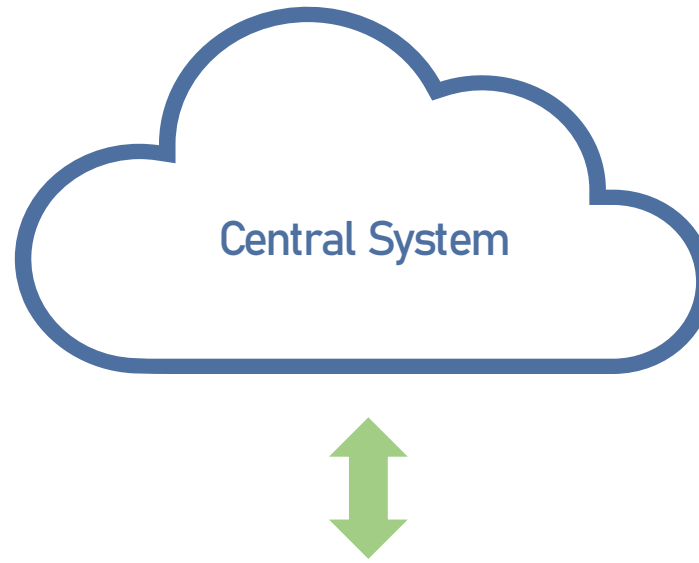
# Mixed-reality testing with real and virtual objects



Real and virtual objects at the same time

- Real-time digital twin works continuously
- Virtual objects affect vehicle behaviour (ViL)
- The system can simultaneously control real test elements and remote vehicles

# Cooperative perception and control



- Object Fusion
- Effort Management
- Trajectory Planning
- Cloud Control
- Waypoint Assignment



# Environmental perception – smart roads?



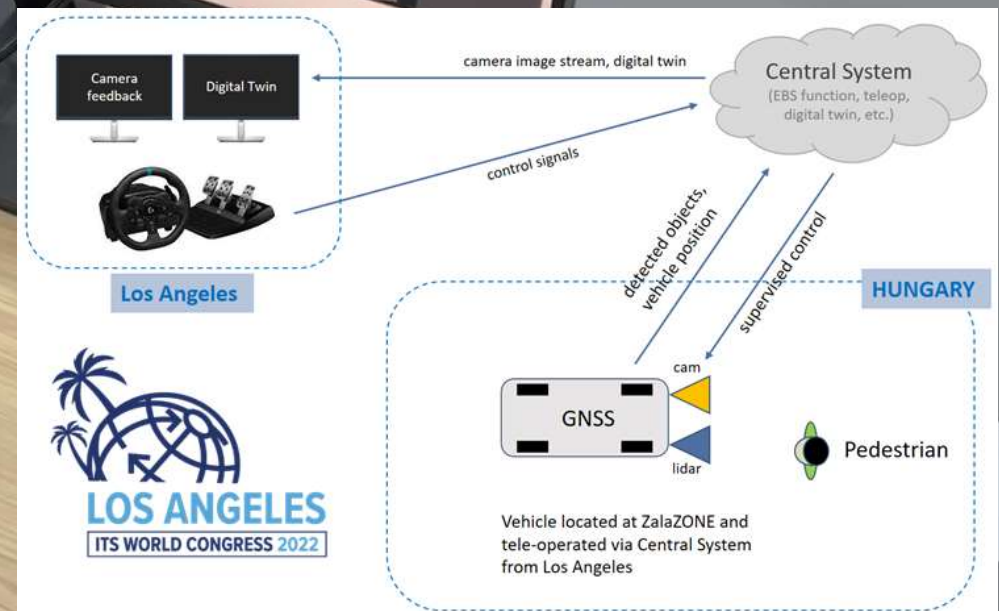




# Vehicle control at dynamic limits



# From where can the smart car be remote controlled?







**Széchenyi Plan  
Plus**

Let's build  
Hungary together!



GOVERNMENT  
OF HUNGARY



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