Enabling Synergies Between Cloud and Car

Highly Automated Driving Powered by Microsoft Cloud

Tomorrow’s transport will be connected and highly automated. Vehicle2X (V2X) communication will help reduce accidents and optimize traffic, demanding close cooperation between infrastructure operators, transport system manufacturers and end user equipment manufacturers. IAV follows an integrated, functional approach to define the features and components required for vehicles, infrastructure and vulnerable road users.

With Microsoft as a partner, IAV will show how integrating IT solutions in the car supports progress toward safe and comfortable automated driving.

One potential use case: Road side units (RSU) detect vulnerable road users equipped with a Windows device. Approaching highly automated vehicles are warned by V2X messages sent to the local infrastructure. The car reacts by reducing speed so that it passes the vulnerable road users safely and comfortably. This also reduces the risk of rear-end collisions. The cloud enables active safety functions using validated data.

As one of the leading development partners to the automotive industry, IAV offers more than 30 years of experience and a range of skills second to none. With our expertise in the entire vehicle, and the passion to match, we provide technically perfected solutions that balance both rational and emotional aspects.

With IAV as a leading engineering company and Microsoft as market leader for mobility and productivity solutions, we can create synergy effects nobody has seen before.
Automated Driving Can Boost Your Productivity

Highly automated driving enhances driving comfort and relieves the pressure on the driver by taking care of the vehicle’s lateral and longitudinal control. Different sensor data technologies are fused to model the vehicle’s surroundings, using the advantages of each sensor. Today combinations of camera and radar sensors are used for comfort functions such as Adaptive Cruise Control, Lane Keeping Assist and Traffic Jam Assist. When it comes to safety functions, information received via Vehicle2X communication may also be used to verify the information captured by the sensors. This higher level of reliability can boost the driver’s productivity while the vehicle is in highly automated driving mode. The driver can focus his attention on alternative tasks to free up time later. The next steps towards the future of mobility are supported by:

Algorithm development
- Image processing
- Trajectory planning
- Sensor data fusion
- Highway chauffeur function
- Cloud as enabler to connect external sensors
- Emergency braking w/o V2X

System development
- Vehicle implementation
- System integration
- System verification & validation
- Reliability concepts
- Road testing

Productivity solutions
- Language assistance
- Intelligent calendar functions
- Live meetings
- One device for all locations