
BOSCH
Bosch
Experience
Days | 2025
ADAS | COMPUTE | SOFTWARE & SERVICES

Dear customers and partners,

We face a rapidly evolving landscape with intensifying competition and shifting consumer demands. Geopolitical tensions further necessitate the need for localized and global strategies. Today, we will showcase exciting solutions designed to meet regional needs while leveraging our global expertise and presence.

Artificial Intelligence and innovative technologies are central to our efforts to provide seamless experiences. Your engagement as valued partners fosters innovation and drives competitive, cost-effective solutions.

Collaboration has never been more crucial. By working together, we unlock new potential, increase our agility, and shape a resilient future. Thank you for your continued support. Enjoy the event, and prepare to be excited by the solutions we have in store!

Warm regards,

Stefan Buerkle
Regional President Cross-Domain Computing Solutions Americas

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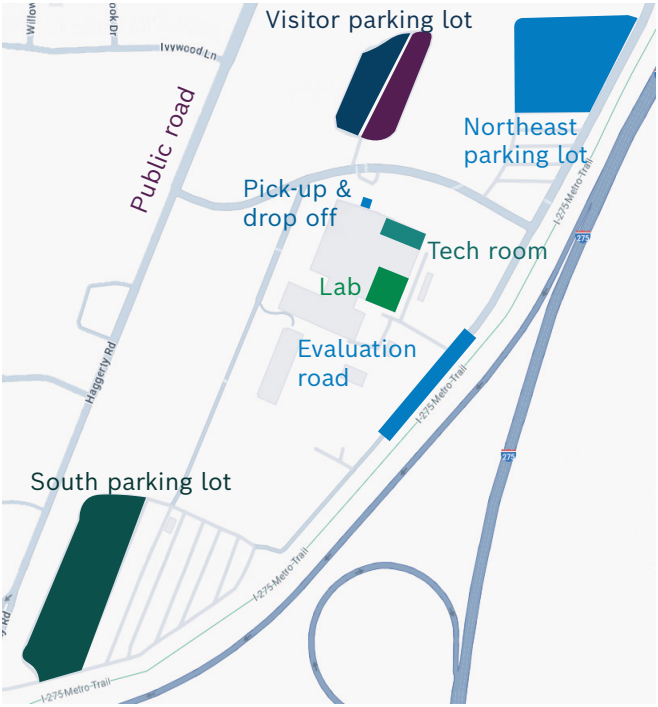

Presentations

Tech room

- Scalable compute platforms
- Powernet - 48V - E/E Architectures

- Scalable ADAS SW & services
- E2E AI foundation models for ADAS solutions
- Interior sensing solutions

- Scalable ADAS hardware
- DSI3 ultrasonic sensor bench
- ADAS XiL cluster testing
- Keysight x Bosch - Radar over-the-air testing and release

- ETAS AI & cybersecurity solutions
- ETAS mildleware solutions
- Connected map services
- Vehicle localization system

Vehicle demos

Visitor Parking Lot

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Northeast Parking Lot

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Evaluation Road

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Parking solutions

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Advanced Driver Assistance Systems

We present our latest advancements in Advanced Driver Assistance Systems (ADAS), emphasizing enhanced safety and driver convenience. These advancements include **innovative parking and trailering solutions**, a range of driver assistance features integrated across various vehicle segments, a **precise localization service** (SaaP), and proactive safety systems such as **wrong-way driver warnings** and **interior sensing solutions**. A key highlight will be the North American debut of the **radar generation 7 sensors**, showcasing the benefits of its advanced sensor technology.

Parking solutions

Inside
ADAS software table
ADAS hardware table
Ultrasonic sensor DSI3

Outside
Valet park assist
Parking perception
3D occupancy grids

Trailering solutions

Inside
ADAS software table

Outside
Trailer 360° surround view system
Trailer tow coach backup assist
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Driving solutions

Inside
ADAS software table
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Outside
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Sensor technology

Inside
ADAS hardware table
Ultrasonic sensor DSI3

Outside
Radar generation 7

Interior sensing solutions

Inside
Interior sensing solutions demo table

Outside
Interior sensing solutions

Compute

Experience our **powerful and scalable compute platforms**, the backbone of modern vehicle functionality. Have a first glance at our **new ADAS ECU** and the **seamless integration of cockpit and ADAS functions in our fusion ECU**, enabling features like adaptive cruise control, parking assist, and immersive cockpit experiences utilizing Generative AI. This showcases our commitment to providing the **robust computational power** needed for the next generation of vehicles.

Compute technologies

Inside
Scalable compute table
PowerNet | 48V

Outside
Cockpit and ADAS integration platform

Software and services

Explore the foundational technologies driving the transition from software to AI-defined vehicles. Discover how our **connected map services** enable a seamless driving experience via crowd-sourced map services, and ETAS's **robust middleware and cybersecurity solutions** ensure data integrity and vehicle security in the connected world. This section highlights Bosch's comprehensive approach to enable the development and deployment of **safe, secure, and intelligent mobility solutions** for the future of connected and automated driving.

Shift left

Inside
Keysight x Bosch - radar over the air testing & release
ADAS XiL testing solutions

Software and services

Inside
ETAS middleware
ETAS AI & cybersecurity

Mapping and localization

Inside
Connected map services
Vehicle localization software

Outside
Bosch driving assist - hands-free
Vehicle localization software

Advanced Driver Assistance Systems

Expert insights

Elizabeth Kao
Director
ADAS Product
Management

Driving safety and efficiency: Advanced sensor technologies

1.Can you explain the concept of sensor fusion and how it can optimize ADAS sensor suites? What are the key benefits of this approach?

Sensor fusion combines data from multiple sensor types, like cameras, radars, and ultrasonics, to create a richer understanding of the environment, especially for challenging edge cases. Cameras excel at object detection and classification, but struggle in low light or bad weather. Radars perform better in these conditions but are better at detecting large metal objects, while ultrasonics are cost-effective for close-range detection. By fusing data, we improve performance across various real-world conditions, allowing us to optimize ADAS features.

2. In your experience, what are some common misconceptions about the necessity of high-cost sensors like LiDAR and radar in every vehicle?

At Bosch, we believe in “Invented for life,” delivering safety and comfort to everyone, not just luxury vehicles. While high-cost sensors exist, we aim to make safety features like automatic emergency braking (AEB) accessible to mass-market vehicles. Bosch delivers AEB with a camera and radar suite, demonstrating that advanced safety isn’t solely reliant on expensive LiDAR.

3. How does machine learning play a role in enhancing safety systems such as automatic emergency braking, particularly in adverse conditions?

Our AEB is trained using AI techniques, combining sensor fusion with the latest AI advancements to process vast amounts of data, particularly for edge cases. We train with multiple data scenarios, such as a child walking between vehicles or pedestrians wearing unexpected clothing at night. AI helps train our models to accurately detect when braking is needed in AEB situations.

4.Looking ahead, what innovations do you foresee in the automotive industry regarding ADAS and autonomous driving, and how can manufacturers prepare for these changes?

The top two innovations are AI and software-defined vehicles. AI enables end-to-end AI, taking sensor fusion all the way through planning and behavior for smooth and natural ADAS features. We are also leveraging foundational models and reinforcement learning to handle complex real-world scenarios. Manufacturers can prepare by abstracting hardware from software, enabling them to change hardware and offer new software features throughout the vehicle‘s life.

Watch the full interview with Elizabeth Kao on our website!

Do you want to know more about sensor fusion?
Join Elizabeth Kao for her keynote at AutoSens on June 11, 2025, in Detroit!

Tech room

Scalable software solutions for driving and parking (Presentation)

Explore Bosch's scalable software stack, offering OEMs flexible and compatible driving and parking assistance functions, enhancing safety and comfort for end consumers.

- Entry segment
- Mid segment
- High segment

ADAS end-to-end AI powered by GPT technology (Presentation)

Discover how Bosch's latest end-to-end AI technology for ADAS, powered by GPT, enhances perception, planning, and reaction in critical situations, optimizing performance and reducing development time and costs.

Interior sensing solutions (Interactive demo)

Experience interior sensing solutions using a high-resolution, wide-angle display-integrated camera for comprehensive driver and occupant monitoring, enhancing safety features and consumer acceptance while helping to meet regulatory standards.

Scalable ADAS hardware solutions (Presentation)

Discover how Bosch's scalable ADAS hardware solutions offer cost-effective, high-quality ADAS functionalities from SAE Levels 0 to 4, supporting both centralized and decentralized E/E architectures for enhanced safety and performance across all customer segments.

Ultrasonic sensor DSI3 (Interactive bench demonstration)

See the perception chain using ultrasonic DSI3 sensors with Elmos ASICs. Evaluate the system's performance in static use-cases through a comprehensive bird's eye view representation of the environmental model.

ADAS vehicle demos

01 Valet park assist

Experience an automated parking system that is specifically designed for human-like parking in large parking facilities. Driving up to 6 mph to a parking spot, performing the park-in maneuver with minimal user interaction by automated function hand-over. This function supports the driver with feature-rich virtual surround view on the route.

Technical features

- Automated function hand-over minimizes driver interaction requirements
- Synthetic view combines sensor perception and map information
- Target selection on parking map for intuitive destination choice
- Route navigation and guidance to destination
- Holistic user experience with limited user interaction

Vehicle setup

12 ultrasonic sensors

4 wide field-of-view camera heads (3MP)

OneParking software package

Valet Park Assist transforms the parking experience by making it more efficient, less stressful, and more intuitive. This technology not only enhances convenience but also serves as an enabler for complete urban end-to-end mobility solutions, bringing us closer to safer and more efficient transportation.

Parking perception 2A

Enjoy more efficient and safer parking experiences with our comprehensive parking perception technology. Utilizing ultrasonic sensors, video cameras, and radar, this solution detects parking spaces, lines, objects, and pedestrians in real-time, giving you complete awareness of your surroundings while parking.

Technical features

- Multiple perception methods (ultrasonic, video, and radar)
- AI-based parking space, line, and object detection
- Real-time pedestrian identification for enhanced safety
- Ultrasonic generation 7 / Camera based parking spot detection
- Video CNN-based early park space detection

Vehicle setup

12 ultrasonic sensors generation 7

4 wide field-of-view camera heads (3MP)

Radar generation 6

OneParking software package

Our parking perception solutions offer unmatched flexibility by providing perception capabilities across ultrasonic, video, and radar platforms. This sensor-agnostic approach empowers OEMs to select the exact configuration that meets their design and cost requirements, ensuring that reliable, intuitive parking assistance is accessible across all vehicle segments without compromising performance quality.

2B Ultrasonic sensor generation 7

Enhance your vehicle's parking and maneuvering capabilities with our next-generation ultrasonic sensors. These advanced sensors provide improved sensitivity and precision for object detection, making parking safer and more intuitive while supporting a wide range of automated parking functions.

Technical features

- Enhanced sensitivity for superior object detection
- Improved performance in challenging weather conditions
- Support for advanced parking spot detection
- Real-time environmental modeling

Vehicle setup

Multiple ultrasonic sensors positioned around vehicle

Integration with OneParking platform

Our generation 7 ultrasonic sensors continue Bosch's tradition of excellence in proximity sensing technology. By providing more accurate, reliable environmental data, these sensors enable increasingly sophisticated parking assistance features while ensuring maximum safety and convenience for drivers in challenging parking situations.

Video-only 3D occupancy grids for parking applications 03

Experience exceptional environmental awareness with our revolutionary 3D occupancy grid technology. Using only camera inputs, this pure vision-based AI solution creates detailed virtual scene renderings of your parking environment, showing all detected objects including vehicles, trees, poles, and bushes with high accuracy and robustness.

Technical features

- Pure vision-based AI solution for 3D perception
- Transformer neural network trained with parking camera data
- High-resolution occupancy grid with voxel size down to 5cm
- Detection of ramps and hanging objects for complete spatial awareness
- Enhanced virtual view for superior user experience

Vehicle setup

4 wide field-of-view camera heads (2MP)

Our video-only 3D occupancy grids technology is a crucial building block for end-to-end AI solutions in parking applications. By providing detailed environmental modeling without additional sensors, it enables more intuitive parking experiences while laying the groundwork for future advances in autonomous vehicle capabilities.

4A Trailer tow coach backup assist

Make difficult trailer maneuvers simple with our ‘Trailer tow coach backup assist’. This innovative system provides visualizations and guidance hints on your vehicle’s head unit to help you navigate challenging trailer situations, without requiring expensive automatic steering control hardware.

Technical features

- On-screen guidance for steering inputs during trailer maneuvering
- Visual cues and instructions for optimal trailer positioning
- Software-based solution compatible with existing vehicle hardware
- Integrated as part of the OneParking software package

Vehicle setup

Vehicle backup camera

Compatible head unit display

Trailer detection software

Trailer tow coach backup assist democratizes advanced trailering assistance by making it accessible to a wider range of vehicles and drivers. This software-focused solution delivers significant user benefits without requiring complex hardware, helping to build driver confidence and enhance safety during challenging trailer maneuvers.

Trailer 360° surround view system 4B

Gain complete situational awareness while towing with our innovative trailer 360° surround view system. This technology uses your vehicle's surround view cameras plus a single trailer-mounted camera to create a comprehensive 360° top view of both your vehicle and trailer, significantly reducing blind spots.

Technical features

- Time-based historic image compilation from trailer camera
- Enhanced surround view without full trailer camera system
- Integration with vehicle's existing camera system
- Seamless display on vehicle's infotainment screen
- Transparent trailer view combines vehicle and trailer camera images

Vehicle setup

4 wide field-of-view camera heads (2MP)

1 rear-facing wide field-of-view trailer-mounted camera (3MP)

Compatible infotainment display system

Integrated as part of the OneParking software package

Our trailer 360° surround view system represents a breakthrough in trailering visibility and safety. By enabling drivers to "see through" and around their trailers, this technology reduces stress, prevents accidents, and transforms the trailering experience from a challenge into a confident, controlled activity.

5A Anywhere parking trailer

Say goodbye to stressful trailer parking with Anywhere parking trailer. Simply select your desired parking location on the top view display, and the system automatically steers your vehicle to perfectly position the trailer, preventing common issues like jack-knifing while making challenging spaces accessible.

Technical features

- Driver-selected target parking location via touchscreen interface
- Automated steering for optimal trailer positioning
- Jack-knife prevention technology
- Enhanced HMI experience for intuitive control
- Compatible with OneParking software platform

Vehicle setup

Surround view camera system

Electronic steering control interface

Compatible display screen

Trailer hitch sensors

Anywhere parking trailer transforms one of the most challenging aspects of trailering into a simple, stress-free experience. By giving drivers unprecedented control and confidence when parking with a trailer, we’re making trailer ownership more accessible and enjoyable for everyone.

Trailer hitch guidance 5B

Connect to your trailer quickly and easily, without the need for a spotter, using Trailer hitch guidance. This system automatically steers your vehicle when reversing to perfectly align with your trailer hitch, making the connection process quick, easy, and stress-free.

Technical features

- Automated steering to align vehicle with trailer coupler
- Precise positioning using rear view camera-based visualization
- Clear guidance displayed on vehicle screen
- Integration with existing rear view camera systems
- Compatible with OneParking software platform

Vehicle setup

Rear-view camera

Electronic steering control interface

Compatible display screen

Trailer hitch guidance eliminates the frustration and potential damage that can come with manually aligning a vehicle to a trailer. By automating this challenging maneuver, we're enhancing the towing experience while protecting both vehicle and trailer from connection mishaps, making trailering more accessible to all drivers.

06 Automatic emergency braking

Protect yourself and vulnerable road users with our advanced Automated emergency braking system. This critical safety technology detects potential collision scenarios with vehicles, pedestrians, or other road users and automatically applies braking force to mitigate or prevent accidents, even in challenging visibility conditions.

Technical features

- Enhanced pedestrian detection range and accuracy using radar and video
- Improved response time for emergency braking scenarios
- FMVSS127 compliance for regulatory requirements
- Integration with existing vehicle safety systems
- Advanced sensor fusion enhanced with AI for reliable detection

Vehicle setup

Front radar sensor

Multi-purpose camera

Sensor fusion processing unit

Our Automatic emergency braking system represents Bosch's commitment to creating greater safety on our roads. By providing robust protection for both vehicle occupants and vulnerable road users, this technology makes a significant contribution to road safety while helping manufacturers meet increasingly stringent safety regulations.

Deep learning-based fusion and radar perception 07

Experience the future of ADAS with our fully AI-driven approaches to sensor fusion and radar perception. These advanced technologies deliver more comprehensive environmental awareness and robust detection capabilities, while reducing development time and application effort for vehicle manufacturers.

Technical features

- Deep learning-based central radar perception fusing multiple radar inputs
- Early-stage fusion of radar and video data through AI processing
- Enhanced detection of dynamic objects (cars, trucks, VRUs)
- Improved road boundary and free space detection
- Reduced manual application efforts for scalable development

Vehicle setup

Front and corner radar sensors

Camera systems for video input

High-performance processing for neural network computation

Our deep learning-based fusion and radar perception technologies represent the next evolution in environmental sensing for vehicles. By leveraging the power of artificial intelligence, we're enhancing both performance and development efficiency, paving the way for increasingly capable driver assistance systems and autonomous driving functions.

08 Interior sensing solutions

Transform your vehicle's cabin into an intelligent space that enhances safety, comfort, and compliance with our interior sensing solutions. Using advanced camera and radar technology, the system monitors driver attention and occupant status, supporting regulatory compliance while enabling personalized in-vehicle experiences.

Technical features

- Driver engagement and alertness detection
- Occupant classification and presence detection
- Hands-on steering wheel detection for L2 functions
- Child presence detection for enhanced safety
- Impaired driving detection capabilities

Vehicle setup

High-resolution, wide-angle display-integrated camera

Cabin sensing radar

Driver/occupant monitoring system

UWB sensor as an alternative child presence detection method

Our interior sensing solutions are meeting the growing demand for both personalized in-car experiences and enhanced safety monitoring. As vehicles become more automated and regulations more stringent, this technology safeguards that the human element remains properly supported, protected, and engaged throughout the driving experience.

Radar generation 7
(location point cloud)

09

Experience unprecedented detection capabilities with our cutting-edge generation 7 radar sensors. With industry-leading sensitivity and precision, these sensors detect pedestrians, motorcycles, and other vulnerable road users from significant distances, providing crucial reaction time to prevent accidents.

Technical features

- Industry-first 22nm RFCMOS system-on-a-chip technology
- Superior sensitivity for detection of small objects even at high temperatures
- Vertical integration with key components developed and produced in-house
- Extended detection range compared to traditional systems

Specifications

- Front radar with 0.2-530m detection range
- Corner radar with 0.2-320m detection range
- Horizontal angle precision of 0.1°, separability of 2.2°
- 2000 locations processing at 50ms cycle time

Radar generation 7 represents a significant leap forward in sensor technology, providing the foundation for more capable and reliable driver assistance systems. With industry-leading performance and innovative in-house chip technology, these sensors help fulfill Bosch's commitment to safer mobility while offering cost-effective solutions for all vehicle segments.

11A Bosch driving assist - hands-free with Connected map services

Experience the freedom of hands-free highway driving with our cost-efficient ADAS solution. This system provides a convenient and natural driving experience on suitable roads, combining advanced sensor technology with sophisticated mapping services for enhanced safety and comfort.

Technical features

- Hands-free capability on compatible highways
- Cost-oriented solution for centralized architectures
- Radar road signature for accurate localization
- Connected map services integration for enhanced function availability
- Driver monitoring to ensure attentiveness

Vehicle setup

1 front and 4 corner radar sensors

Multi-purpose camera

Driver monitoring camera

Bosch ADAS ECU

Connected map services

Bosch driving assist - hands-free with connected map services provides a cost-effective highway driving solution that balances performance with value. By combining proven sensor technology with connected map services, we help manufacturers deliver this increasingly expected feature while maintaining high safety and reliability standards.

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Compute

Expert insights

Auston Payyappilly
Director Product Management Compute Performance

Driving innovation: Compute platforms for the next generation of vehicles

1. Can you explain how Bosch's scalable compute platform integrates Cockpit and ADAS functionalities to enhance the overall driving experience?

Bosch's scalable compute platform integrates cockpit and ADAS functionalities into a cohesive system, enhancing communication between vehicle systems and enabling real-time data sharing. This integration streamlines development, reduces costs, and delivers a comprehensive experience that combines safety with user features.

2. How does Bosch ensure that its compute platforms can handle the increasing demands of integrated cockpit and ADAS functionalities?

Bosch leverages high-performance computing architectures, including multi-core CPUs and powerful GPUs, to meet the demands of integrated cockpit and ADAS functionalities. The modular design allows for the integration of new features while ensuring safety and performance, adapting to evolving requirements.

3. What strategies does Bosch employ to ensure scalability and flexibility in its compute platforms?

Bosch employs a modular design that facilitates easy upgrades and customization for manufacturers, ensuring scalability and flexibility. By developing software solutions compatible with various hardware configurations and fostering partnerships, Bosch stays ahead of industry trends and adapts to the changing automotive landscape.

4. What are the key benefits of integrating Generative AI into vehicle cockpits, and how does it enhance the interaction between occupants and their vehicles?

Integrating Generative AI into vehicle cockpits provides personalized user experiences and seamless interactions by analyzing occupant behavior

and preferences. This technology enables real-time adjustments to the cockpit environment, aligning with occupants' desires and driving conditions.

5.What future trends do you foresee in the development of smart cockpits, and how can manufacturers prepare for these changes?

Future trends in smart cockpits will focus on greater connectivity, enhanced personalization, and deeper AI integration. Manufacturers should invest in adaptable platforms, collaborate with tech partners, and prioritize user-centric design to meet evolving customer demands for new features.

Watch the full interview with Auston Payyappilly on our website!

Do you want to know more about the future of smart cockpits?
Join Auston Payyappilly for his presentation at AutoSens on June 11, 2025, in Detroit!

Tech room

Software-defined vehicle | Future E/E architectures & powernet (Presentation)

Interactive presentation desk to show multiple transition paths from existing E/E architectures to vehicle-centralized, overall software-defined vehicle story as well as 48V overall approach.

Scalable compute platforms (Presentation)

Explore Bosch’s scalable compute platforms designed to host a wide range of cockpit, ADAS, and vehicle features. This presentation details how our platform solutions provide the flexibility and performance required for various functions, enabling OEMs to tailor offerings across all vehicle segments.

Compute vehicle demos

Cockpit & ADAS integration platform 10A

Smart cockpit

Transform your in-vehicle experience with our integrated smart cockpit solution. Featuring premium Dolby audio and the Evoco AI voice assistant, this system delivers intuitive control and personalized, emotion-aware intelligent in-car entertainment, all presented through a dynamic and customizable interface.

Technical features

- Dolby audio system for premium sound quality
- Evoco AI voice assistant for natural interaction
- Emotion-aware intelligent responses
- Revised home screen for improved usability
- AI-based 3D car model change for personalization

Vehicle setup

3 high-resolution displays

Qualcomm Flex fusion SoC processing platform

QNX Hypervisor with Android Guest operating system

Multiple cameras and sensors for environment perception

Our smart cockpit solution represents the next generation of in-vehicle experience, where technology serves to enhance human comfort and enjoyment. By seamlessly integrating entertainment, information, and control systems, we're creating vehicles that respond to drivers' needs with intelligence, making every journey more enjoyable.

10B Cockpit & ADAS integration platform
Driving features

Experience cutting-edge driving assistance features powered by our integrated computing platform. From interior sensing solutions to adaptive cruise control, this system leverages radar and camera technology to enhance safety, awareness, and overall driving enjoyment on a single powerful processing platform.

Technical features

- Interior sensing for driver monitoring and safety
- Adaptive cruise control for comfortable highway driving
- Video perception processing for environmental awareness
- Radar perception for reliable object detection
- Advanced driver assistance functions up to Level 2

Vehicle setup

- Qualcomm Flex fusion SoC
- QNX hypervisor with Android Guest operating system
- Camera heads (3MP surround and 8MP front)
- Front and corner radar sensors
- 3 high-resolution displays

Our cockpit and ADAS integration platform demonstrates how computing consolidation can enhance both functionality and efficiency in modern vehicles. By running sophisticated driver assistance systems alongside other vehicle functions on a single hardware platform, we are enabling more capable, responsive, and safer driving experiences while optimizing system architecture.

Cockpit & ADAS integration platform 10C

Parking features

Make parking effortless and stress-free with our 360° surround view system powered by our fusion computing platform. This seamless solution ensures that maneuvering and parking in any situation is intuitive and safe, with comprehensive environmental awareness presented through a user-friendly interface.

Technical features

- 360° surround view visualization
- Automated parking assistance
- Intuitive user interface for parking maneuvers
- Integration with vehicle's central computing platform
- Comprehensive environmental modeling

Vehicle setup

Qualcomm Flex fusion SoC

4 camera heads (3MP) for enhanced 360° surround view

12 ultrasonic sensors for proximity detection

Dedicated displays for information presentation

Our cockpit and ADAS integration platform demonstrates the power of consolidated computing architecture for modern vehicles. By providing comprehensive parking assistance and visualization on the same hardware that runs other vehicle functions, we are creating more efficient, capable vehicles that make every aspect of driving - including parking - more enjoyable and less stressful.

Notes

Software & services

Expert insights

Bernd Graef
Customer Chief Engineer North America

Driving the future: The shift to software-defined vehicles

1. How is ETAS helping the automotive market accelerate the transition to software-defined vehicles (SDVs)?

ETAS supports the transition to software-defined vehicles by providing a flexible vehicle software platform including middleware solutions, highly integrated development tools, and out-of-the-box security solutions. These enable manufacturers and Tier suppliers to efficiently implement and manage automotive software, ensuring rapid adaptation to market demands - from fast prototyping to series rollout, shortening time to market.

2. ETAS is known for its deep cybersecurity expertise. How are your solutions designed to secure increasingly connected and complex vehicle systems?

ETAS has a comprehensive cybersecurity portfolio to protect connected vehicles from evolving threats throughout their lifecycle. We ensure that cybersecurity isn't just an afterthought – it's integrated. Effective protection requires a multi-layered security concept from embedded cybersecurity for ECUs and onboard communication, to secure vehicle IT infrastructure. We ensure constant protection by continuous in-vehicle-intrusion detection and backend incident response via managed services.

3. Can you share an example of how software tools have enabled customers to reduce development time or improve performance?

Complex automotive systems are difficult and time consuming to describe with traditional, rule-based coding. Our tools, such as ASCMO, simplify the creation of AI models that can describe these systems based on training data for various vehicle domains. Another great example is the ETAS Embedded AI Coder, designed to enable the safe, fast, and efficient deployment of these neural networks to electronic control units (ECUs).

4. Integration and openness are hot topics in the industry. How does ETAS ensure its tools and services remain interoperable across diverse ecosystems and hardware architectures?

At ETAS, we make sure our tools and software work well with other systems by adhering to industry standards and providing open APIs for seamless integration. Additionally, we actively participate in driving new collaboration models and open standards, such as the Eclipse SDV working group or AUTOSAR.

5.Looking ahead, what emerging technologies or challenges do you see shaping the future of automotive software?

With the software-defined vehicle, the focus is obviously shifting more towards software, making it increasingly important to master software development. Emerging technologies such as AI and machine learning will be crucial, from development to series production. Additionally, cybersecurity threats and regulatory compliance will significantly influence automotive software development, requiring continuous innovation and adaptation.

Watch the full interview with Bernd Graef on our website!

Tech room

ADAS XiL testing solutions (Interactive demo)

See how Bosch is improving the development of ADAS systems by various shift-left solutions. We‘ll demonstrate our ADAS XiL testing environments, a suite of simulation tools that validate and verify our ADAS software. Learn how this approach improves software quality, reduces development time, and contributes to safer, more reliable ADAS features.

Keysight x Bosch radar over-the-air testing and release (Interactive demo)

See the future of radar testing, where we will be demonstrating over-the-air and virtual ADAS testing solution, developed together with Keysight. This technology enables faster development cycles and higher quality radar systems. Learn how this technology virtualizes real-world scenarios, accelerates validation, and improves sensor fusion capabilities.

Connected map services (Presentation)

At our table demonstrator, you will discover how we are reshaping driver safety and comfort with connected map services (CMS). We will guide you through our live maps and simulations, showcasing how it can leverage your ADAS systems.

Vehicle localization system
(Interactive presentation)

Visitors can experience the signal flow from VLS including all interfaces (GNSS satellites, correction data and additional vehicle on-board-sensors). Product specifications, test drives, compatible sensors and the dataflow will also be displayed.

ETAS middleware solutions
(Interactive tabletop demo)

Unlock true freedom with ETAS Vehicle Platform Software (middleware) designed to give you full control over your project. ETAS supports you with unmatched flexibility, tailored solutions, and cost-effective options for scalable automotive software. Running on more than 4 billion ECUs worldwide, our safe, secure, reliable, and future-ready technology fits your needs and use cases.

ETAS AI & cybersecurity solutions
(Presentation)

With 20+ years of cybersecurity expertise, ETAS helps you anticipate evolving threats, meet regulations, and protect vehicles across their lifecycle. We deliver solutions safeguarding both road users and your business. We’re also pushing AI boundaries, as shown with our Embedded AI Coder. We’re building a bridge between the AI and hardware world, saving companies development costs and resources.

Software & services vehicle demos

11B Connected map services

Enhance your driving experience with our cloud-based Connected map services that improve both safety and comfort. Our crowd-sourced HD maps and hazard warning services keep you informed about upcoming road conditions and potential dangers, increasing driver awareness and enabling more natural, human-like assisted driving experiences.

Technical features

- **Road signature service**
  - Radar and/or video-based lane-level localization
  - Localization map (landmarks for high precise localization)
  - Planning map (road lane geometry and semantic information like traffic signs)
  - Behavior map (human-like driving)
- **Road hazard service for upcoming danger alerts**
  - Wrong-way driver warning system
- Compatible with third-party SD maps (Google, TomTom)
- Compatible with various sensor configurations

Vehicle setup

GPS/GNSS receiver

Cellular connectivity for cloud communication

Connected map services represent a crucial element in our vision for safer, more comfortable mobility. By connecting vehicles and road users through the cloud, we are creating an ecosystem that enhances the capabilities of individual vehicles while contributing to overall road traffic safety and efficiency - a significant step toward safer roads.

Vehicle localization system 12

Navigate with centimeter-level precision using our Vehicle localization system. This software-based solution provides highly accurate positioning that enables advanced driver assistance features even in challenging conditions, increasing the availability and robustness of safety systems while reducing hardware requirements.

Technical features

- Centimeter-level positioning accuracy (≤10 cm)
- ASIL B safety integrity level for critical applications
- High availability across diverse environments
- Software-as-a-Product approach for flexible integration
- Compatible with various GNSS receiver options
- Compatible with both centralized and decentralized architectures

Vehicle setup

GPS/GNSS receiver

Inertial measurement unit (e.g., integrated in airbag ECU)

Vehicle wheel speed sensors

Our Vehicle localization system transforms standard positioning components into a high-precision localization system that enables the next generation of driver assistance features. This SaaP solution delivers significant TCO reduction compared to dedicated hardware approaches while providing the robust, reliable positioning data that tomorrow's mobility technologies demand.

Notes

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How was your experience?

Scan the QR code and share your feedback with us!