DVN CES2025 Report

2025 January 31st

Wolfgang Huhn – Philippe Aumont – Martin Booth

Table of Content

Executive Summary 4
1. The car makers - Lighting 6
BMW 6
Honda 7
Scout 8
Afeela 9
Zeekr 10
Geely 11
XPeng Aeroht 11
2. The car makers – Interior 12
BMW Panoramic Display 12
New Honda Concepts at CES 16
Suzuki 18
Zeekr 20
Italdesign Quintessenza 21
Scout 23
3. The Automotive Lighting Suppliers 24
OPmobility 24
Koito 26
OLEDWorks 28
Hyundai Mobis 29
LG Innotek 30
Valeo 33
ELMOS 35
Kyocera SLD Laser (KSLD) 36
Zeiss 37
Appotronics 38
4. Cockpits 38
Ceres, Eastman, Covestro to Boost Holo-Transparent HUD 38
Hyundai Mobis and Zeiss: New Holographic HUD 41
AUO Smart Cockpit 42
Valeo Panovision 44
Elektrobit's SDV Innovations 45
Continental: Emotional Cockpit with Crystal Displays 46
Bosch Cockpit and ADAS integration platform 47
Harman's 'AI' Avatar and ADAS Infotainment HPC 48
5. Driver Monitoring Beyond Attention and drunk detection 49
Camera-Behind-Display DMS from Emotion3D and BHTC 49
FEV's 'AI' DMS 51
Omnivision/Philips 52
Continental's Invisible Biometrics Sensing Display 52
LG's 'AI' In-Cabin Sensing 52
InDJ Emotion Aware 'AI' 53
Cipia 54
CarUX for Harmonius UX 54

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

VinAI's DrunkSense 55
Corraction's Drunk-Drive Detection in Steering Wheel 56
6. Haptics, interior lighting and smart surfaces 57
Grewus Seat Haptics Experience 57
Inova Pioneers SDV Lighting 58
Kyocera Innovations at CES '25 59
Continental's Intelligent Window Projection System (beyond Interior Lighting) 60
TactoTek + Sundberg-Ferar = Design Freedom 61
7. ADAS 62
VALEO 62
QUALCOMM 63
Hailo 64
APTIV 64
Stradvision 64
Nvidia 65
Perciv AI 65
Carteav 66
Waymo 66
LG Innotek 66
Zoox 67
Smart Radar 68
Solid-Vue 68
AGC/Wideye 68
Seyond 69
Koito/NAL/Cepton 69
Leddar tech 69
Innoviz 70
Aeva 70
Steerlight's 70
8. Others 72
SoundHound and Lucid's New Voice Assistant 72
Far-Field Voice Capture 73
Gaming : Garmin launches Unified Cabin 2025 74
Gaming : P3 and 3SS: Infotainment Solutions at CES 75
Gaudio Lab's Award-Winning 'AI' Audio 76
Car to Home : Gentex Shows Next-Gen HomeLink System 77
Mobility : Xpeng Aeroth Shows "Land Aircraft Carrier" 78
Robotaxis 79
Smart Cities : First Part of Toyota's Woven City 80
List of main DVN Monthly Reports 81
DVN ecosystem and scientific community 82

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Executive Summary

CES® 2025, the tech event of the world, welcomed over 141,000 attendees from around the globe. With more than 4500 exhibitors, including 1400 startups, and more than 6000 media attendees, CES highlights the innovation and technology trends, including automotive. This year was also very strong in consumer electronics (TV, Kitchen, and stronger than ever connected health)

“CES is where innovation comes to life,” said Gary Shapiro, CEO and Vice Chair, Consumer Technology Association (CTA), owner and producer of CES. “From the largest companies to trailblazing startups, the entire tech ecosystem is at the show. CES is the stage for groundbreaking product launches, transformative partnerships, and serendipitous business moments that define the future of technology.”

CES 2025 by the Numbers*

- 4500+ exhibitors, including 1400 startups
- 141,000+ attendees, of which 40% were international from over 150 countries, regions, and territories
- 6000+ global media, content creators, and industry analysts
- Over 60% of Fortune 500 companies

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

- 300+ conference sessions with 1200+ speakers

CES 2025 was a good vintage, even if OEM presence was not that that strong. However, Tier #1 and Electronic (that the E of CES, including digital & software) were very strong.
As any January, the world's industries gather in Las Vegas for the biggest tech event on the planet, CES, to unveil their innovations that will shape our future.

For all industries, including automotive, software trends continue to dominate the industry's collective brainpower, but as automakers and suppliers take a moment to breathe and rethink the value of self-driving technology, pure-touchscreen interfaces, and maybe even 'AI', much of the emerging focus is on what can be done inside the cabin to keep drivers and their passengers safe, healthy, and entertained.

These trends reveal a shift toward more personalized and seamless interactions between occupants and their vehicles, with features like real-time hazard alerts, adaptive comfort settings, getting back control buttons, 'AI'-driven navigation systems, and more.

From an automaker perspective, supported by suppliers, high-interest topics include wider head-up displays, cooperation between Honda and Sony, Suzuki's new platform, and more power to everything.

Years ago, car manufacturers discovered CES in Las Vegas and presented their latest achievements. Now that infotainment is becoming increasingly important and development cycles are getting shorter, CES is a well-matched stage for the auto industry. But participation is still fluctuating. Even though several major automakers aren't present, including Hyundai and Mercedes who had previously planned to be there, there are still a great many exhibits to see. Magna, ZF, and Forvia are among the major tier-1s absent from CES this year.

Major themes of car interior CES 2025 were numerous, and sometimes contradictory; for instance, wider displays…and bringing back real buttons. Major takeaways include SDV Software-Defined Vehicles, improved driver experience, AI', personalized and contextual interactions within the vehicle, DMS Driver Monitoring Systems going beyond attentional monitoring by constantly interpreting the driver's emotions, voice recognition and other more intuitive direct interactions, and last, but not least, digital cockpit.

This is where major innovation is set to happen, encompassing most of the other topics. It comes from SDV, it. It includes AI to get personalization, and contextual interactions, voice systems, interior lighting, etc. We will see as many design ideas for digital cockpit as there are OEMs, and a significant method to create brand loyalty will come from the so-called "cockpit of the future." Tier-1 suppliers are adding value to the digital cockpit by developing innovative technologies which meld augmented reality head-up displays ARHUD with pillar-to-pillar screens, which enable information (and alerts) to be projected directly into the driver's eyeline without them having to take their eyes off the road. And from a safety standpoint, digital cockpit includes ADAS into integrated platforms

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

1. The car makers - Lighting

BMW

Two Neue Klasse EVs were on display without any show or presentation around. They spoke obviously for themselves. The design is really all new.

The sedan shows some takeovers, or better let's say interpretations, of the 3.0 CS and other BMW cars of the 1970s. The shark nose and the c-pillar line without the typical Hofmeister Knick may be examples. The window line is clearly without any example. The line of the front fender is taken over by a white stripe in the windows. The real lower window line sinks about 100 mm to open and light up the interior. The windscreen is taken long into the roof which is also pertly from glass.

The front is dominated by the wide kidney which include the lighting elements completely. The transparent headlamp's interior plays with 3D and mirroring effects using layers of film. Of course, the whole front is illuminated. We are looking forward to seeing and night-driving the serial car soon.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Honda showed aa e- SUV and an e-Sports car called Honda 0 Saloon and Honda 0 SUV. The lighting concept of the 0 Saloon with pop up headlamps is just a concept, we will see what really out of these studies come to the road as Honda announced on the CES. Anyway, the style is distinctive and a really new and clean Honda style.

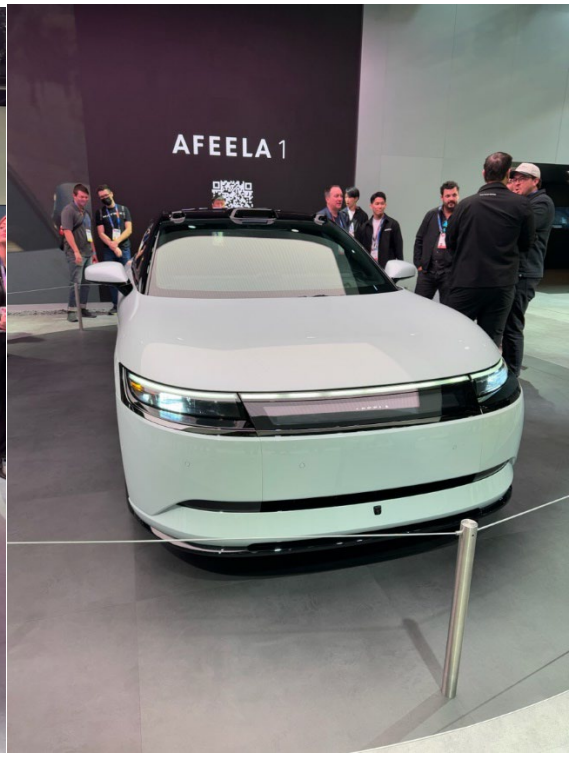
© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

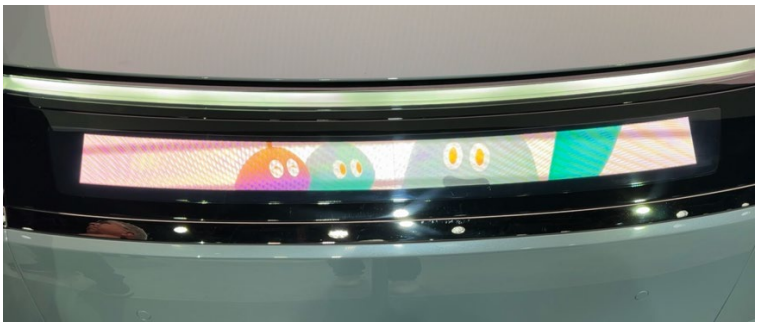
Scout, the VW brand, showed in the outside area their e-Pickup Truck and the SUV with front lamps with “golden” light color for differentiation. The color temperature looks really very low which means that they use special LEDs and give away some efficiency for styling, which is most usual in our business.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Afeela, the brand of Sony and Honda, was shown in the central hall (mainly home entertainment) beside the Sony booth. The Afeela car was presented 2 years ago and it seems the same car today. It has both front and rear miniled displays with very high resolution (they call Micro LED, but I won't go so far). The display showed "Welcome", Afeela", Happy birthday" and other text of this quality as well as videos form Sony entertainment movies and fun for children.

The car itself caries many sensors, especially Lidar sensors which are on the front roof above the windshield looking like black warts. Anyhow, this position is the optimum for the functionality. The lit logos in the displays are a must.





© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

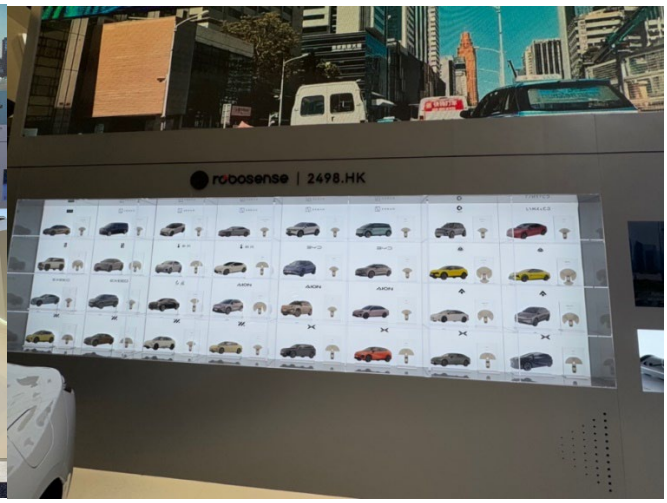
Zeekr

Zeekr is the third time on display at the CES. The EV company Zeekr concentrates on the message that autonomous ability using Nvidia and Waymo technology is close to be introduced into the Zeekr Van called Mix. Beside the Mix, the huge Van 009 Grand and the sports sedan 001 FR were on the booth.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Geely

Geely showed on a small booth one car and a display of their huge model range behind.



XPeng Aeroht

XPeng Aeroht showed 5.5 m long e-vehicle called eVtol equipped with a kind of drone-helicopter in the back. The vehicle shall have a range of 1000 km.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

2. The car makers – Interior

BMW Panoramic Display

The BMW Panoramic vision show was extremely innovative, from a product standpoint, and from BMW key message standpoint. We present the product in this week's Newsletter. But even more important is the message underlined by the show itself. The story was about shrinking presenters and visitors to cockpit scale. This bit of magic is supported by the BMW cockpit mockup at 10× life size.

This exercise demonstrates the BMW Panoramic Vision screen to be the centerpiece of the new system, when the new BMW Operating System X acts as an intelligence hub for the vehicle.

"High tech meets highly intuitive operation, a quarter of a century of pioneering work and technological leadership in operating concepts has been channeled into the new BMW Panoramic iDrive,' said Frank Weber, member of the board of management of BMW AG, responsible for development.

That's the very strong story for BMW, and the strong story for the whole CES, with multiple technologies focused on safe, healthy and entertainment mobility, mostly existing around HMI and cockpit.

It was introduced to the public in a very Vegas type of show, putting on stage a 10× life size cockpit, presented by a comedian, backed up by experts with a story for spectators to be shrunk, to dimensional consistency with the cockpit. BMW spent millions to make that story exist; their big exhibition area had just two cars on the side, and this Panoramic Display show at the center of stage. It really reflects the importance of user experience within the vehicle.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

And also, a strong story for DVN Interior, when Philippe has been shrunk to publish what becomes really in-depth report!

BMW Panoramic iDrive cockpit is a pillar-to-pillar projection display combined with a large center screen and an optional head-up display. This new layout will be introduced in 2025 on Neue Klasse, first in the iX3.

BMW Group showcased the close-to-production version of the new BMW iDrive with Panoramic Vision, powered by BMW's latest Operating System X.

The new iDrive merges four central elements into a display and operating concept. The main feature is the Panoramic Vision, a head-up display concept newly developed by BMW for projecting content. It reflects information from A-pillar to A-pillar onto a black printed surface in the lower section of the windshield. This information will be visible to all occupants.

The important driving information will be projected into the driver's line of sight on their side of the car, above the steering wheel. The driver can personalize the content in the central and passenger-side areas via the central display. The integration of the BMW Panoramic Vision creates a 3D effect for the occupants. The head-up display above the Panoramic Vision also shows integrated navigation and automated driving information directly in the driver's field of vision.

The Panoramic Vision is easy to operate. As many as six widgets (selected content) are possible and can be arranged as desired. A new multifunction steering wheel uses BMW's shy-tech approach: relevant buttons are illuminated to highlight available functions. The steering wheel serves as the primary physical control, and its buttons provide active haptic feedback.

The new design uses an optimal combination of analog and digital controls through the use of switches, buttons, touch and voice control. There are haptic switches for the windshield wipers, turn signal indicators, exterior mirrors, volume control, gear selectors and window de-icers (in

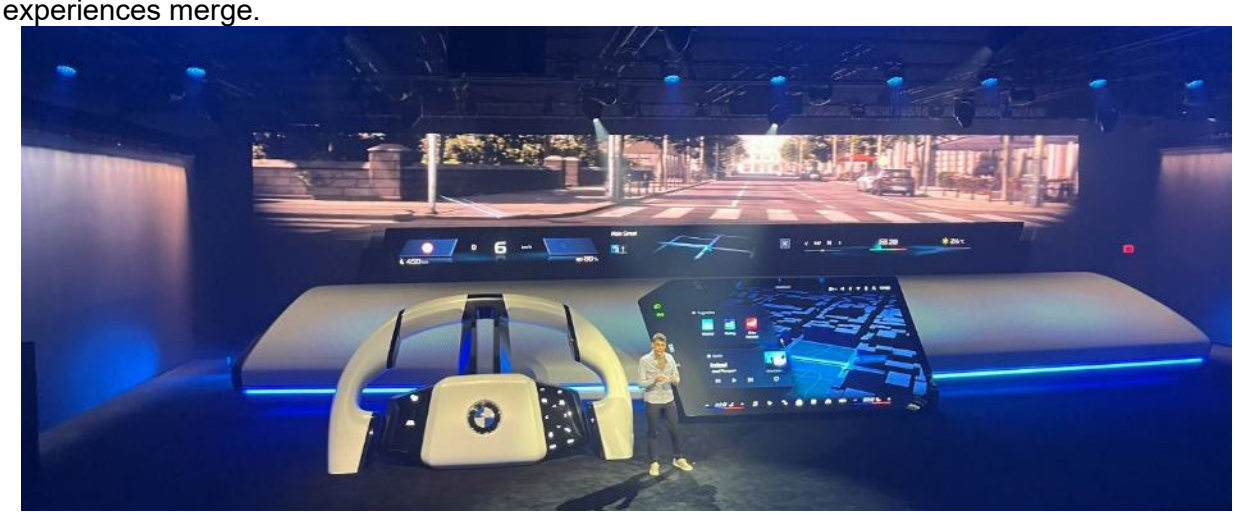
© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

accord with the new Euro NCAP initiative to encourage non-touchscreen controls for those functions). Other functions are optimized for operation using touch/voice control or via the steering wheel, such as telephone functions, media control systems, navigation, assisted driving, personalization of displays, etc.

BMW says the development phase included numerous studies conducted in the brand's usability labs, in which around 3,000 customers were involved. "High tech meets highly intuitive operation—a quarter of a century of pioneering work and technological leadership in operating concepts has been channeled into the new BMW Panoramic iDrive," said Frank Weber, member of the Board of Management of BMW, responsible for development.

BMW has opted for a mixture of voice, haptic buttons and touch points. Buttons are still helpful despite all the digitalization. There are haptic controllers for indicators, seat settings and volume, for example.

The new BMW Operating System X is based on an Android Open-Source Project (AOSP) software stack. It is stated to offer greater update and upgrade capability than the prior system. The BMW Operating System X works together with the Panoramic Vision, optional 3D head-up display, central display, and multifunction steering wheel in such a way that physical and digital experiences merge.



DVN image

Key takeaways on Interior, besides the BMW demonstration:

SDV

The software-defined vehicle SDV is a big thing here, as the electronic and software architecture allow better efficiency, ending up with an improved driver experience. It includes precise, scalable maps for more automated vehicles, platforms and tools for the efficient development and maintenance of SDVs as well as performant, energy-saving storage technologies. These technologies promise to further digitalize the automotive industry, increase efficiency, and further improve driving experience.

SDV is still in the early stage of deployment, mainly with dedicated hardware and software presentations. 'AI' is even more present than in 2024, though such solutions were not very visible yet. Nvidia's CEO made very ambitious announcements, touting the massive demand growth yet to come for their chips to support 'AI' training and inference needs, including for autonomous and assisted driving where the company intends to play a key role (e.g., use generative 'AI' to create driving scenarios).

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

AWS (Amazon Web Services, the cloud division of Amazon) has a big presence in the car, since their cloud is the biggest. They also do a part of computing. In any case, everything is digitalized, everything is connected, and everyone needs a cloud. We are erasing the boundaries between physical and digital. Google has almost no presence at this year CES.

Intel is presenting their vision for SDVs in several keynotes and talks. Highlights include the combination of high-performance computing, intelligent energy management and zonal controllers as well as 'AI'-supported solutions for end users.

Keysight presents solutions for the emulation and validation of SDVs, including virtual prototypes and vehicle-to-grid compatibility testing. The tools improve production processes, increase efficiency and reduce development times. One focus is on cybersecurity with automated test solutions.

Vector shows a comprehensive SDV package, consisting of a modular software platform, an open software factory and accompanying development services, and technologies such as OTA updates, parallel SIL and HIL testing, and SDV cloud integration.

Bringing Back Buttons

Actual, real, physical controls for safer and more intuitive HMI is another big thing! For example, Hyundai recently told Korea's JoongAng Daily they are reintroducing physical buttons in their vehicles, responding to growing demand for intuitive and accessible controls. It might be a matter of enthusiasm (for what was presented as an imminent wholesale shift to autonomous driving) having spurred automakers to jump the gun a bit with their interface designs. Now that it's apparent real self-driving is still a ways off, more human-centric interfaces with real controls are coming back. When driving will become more automated for real, drivers may one day welcome back pure-touchscreen interfaces.

For now, drivers are fed up with touch screens, and raise questions about their usability, especially while driving. Hyundai's decision follows feedback that tactile buttons provide a safer and more ergonomic way to adjust essential features like climate controls without diverting attention from the road.

This shift aligns with upcoming Euro NCAP standards, which will require physical controls for certain functions by 2026 for vehicles to achieve top safety ratings. Hyundai's refreshed Ioniq 5 already incorporates these changes, signaling a broader trend within the industry to prioritize safety and driver convenience.

Augmented Reality (AR) on the windshield

AR is conquering vehicles, especially windshields, with various technologies, because it is an ideal and elegant interface to provide drivers with relevant information and increase safety.

Driver Monitoring and other sorts of comfort and health monitoring

The amount of new driver monitoring systems was impressive—as was the potential that results from the data generated. This can be used to develop features that not only support drivers, but also significantly improve general road safety.

Comfort & Wellbeing everywhere

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Comfort is being redefined: from massage chairs to individually adjustable LED concepts. The car of the future will become an oasis of well-being and entertainment that could soon compete with the living room in terms of coziness.

Voice activation

Voice activation has been on table for decades, with many first applications along time, which were not very smart. Now, it seems we are getting smart voice HMI interaction thanks to LLM, and natural language supports. It will help simplify interactions, reduce buttons and touch screens, and overall distraction for better safety

Hyper-personalization

Thanks to 'AI', countless possibilities open up to adapt the vehicle to the individual preferences of the user. From 'AI'-generated wallpapers to experience programs and personalized driving profiles, the car becomes the perfect companion.
Let’s dive into much more detailed information:

OEMs

New Honda Concepts at CES

Honda images

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Honda showed two concept cars from their 0 series in 2024. These futuristic new models will be launched on the market in 2026. This year, the concepts are also in the spotlight at CES. Both are new electric concept cars, the sedan with a sportier character and the Space-Hub with a huge amount of space in the interior.
The Honda 0 Series is designed as a driver-oriented car, which is also evident in the interior, where you'll find a low seating position and a sporty-looking steering wheel. The sedan has wired steering, so very little input is required.

The Space Hub looks like a real spaceship. The smooth panels and the LED light ring at the back make it stand out from the crowd. The cabin of the Space-Hub is more spacious and looks more like a lounge thanks to the two rows of sofa-like seats. The two people sitting in the back also seem to admire the all-glass roof, which floods the interior with plenty of natural light.
Honda and Sony cooperate

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

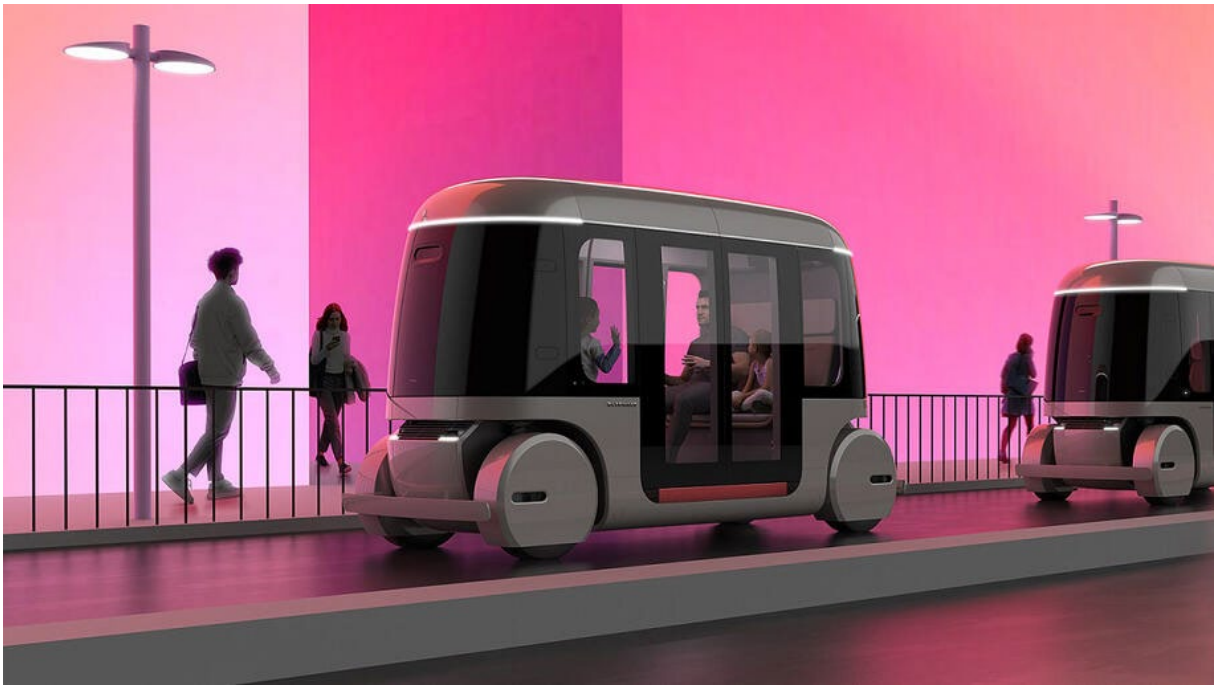
Sony Honda Mobility's Afeela presented the launch version of their first vehicle, the Afeela 1 sedan, fitted with a pillar-to-pillar physical display. It featured a lidar and two cameras mounted on the roof. Deliveries will start in California mid 2026, initially with a version priced at USD $103k and a targeted range at 500 km with a 91-kWh battery. The car is available to order and will be distributed via a direct-to-consumer model.
It is also exciting to see what happens within this collaboration between Honda and Sony, The body of the concept car shown in Las Vegas will only play a minor role. Sony is mainly concerned with connectivity and innovative solutions for operating the infotainment system. Entertainment and games are of course a must for the Playstation fathers. Presumably you can import your game saves into the car and play games such as Gran Turismo 7 or FIFA in traffic jams.

Suzuki


Suzuki EV Concept (L), Impact of small board (R) (DVN images)
Suzuki unveiled an EV concept, within a "Impact of the Small" lineup, featuring compact vehicles and cutting-edge autonomous tech. Impact of Small is Suzuki contribution to less impactful

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

mobility, thanks to small, simple, light, short, but beautiful, principles to be applied to product design, manufacturing processes, and city infrastructure.



Suzuki Glydways should be able to drive fully autonomously (Suzuki image)

Suzuki is indeed at CES for the first time, and they're showing also their work on autonomous driving. Together with technology company Applied EV, Suzuki has developed an autonomous electric platform designed for small cars. The robotic vehicles are designed to drive in defined areas and thus counteract the shortage of drivers in the industry. Glydways, a company that has developed an urban transportation system together with Suzuki in which small, autonomous vehicles use their own lanes, is taking the same approach. Even smaller is a versatile architecture for electric micromobility, based on technology developed in-house for electric wheelchairs. The result is robots that operate with artificial intelligence. Examples include the LM-A automatic Lomby delivery robot and the V3 snow clearing drone, which is being implemented by Everblue Technologies.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Zeekr

Zeekr 001 (DVN image)

Zeekr, the young Geely subsidiary, had a strong presence with three vehicles on display, including the 001FR capable of 0-100 km/h in 2.02 seconds as well as an EV charging setup. Zeekr also announced the release of an Nvidia Thor-based driving kit for the cars it will deliver to Waymo in the US this year. The fast-growing brand sold 222,000 vehicles in China as well as through 500+ showrooms abroad.

Zeekr Mix saloon (DVN image)

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Italdesign Quintessenza: Italian Style GT with Pickup Versatility

DVN images

To underline their commitment to the American market, Italdesign—supported by their operating subsidiary near Detroit, returns to the United States with their Quintessenza. After a first public presentation at the prestigious Pebble Beach Concours d'Elegance in August 2024, the show car is back at CES.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

The Quintessenza is not just a show car, but a true ambassador of the services that Italdesign offers to clients all over the world, thanks to their almost 60 years' experience in advanced and sustainable mobility, as well as the research they continue to conduct. By combining the dynamic power of an Italian style GT with the versatility of a pickup, the Quintessenza offers its four passengers an original design and functionality experience. The ability to rotate the rear seats 180 degrees promises an unforgettable panoramic and 'stargazing' experience. For the event in Las Vegas, the Quintessenza showed off the latest generation of in-wheel motors from Elaphe, a leading company in zero-emission powertrains and propulsion systems.

The cockpit combines the simplicity of your smart phone just installed on the wheel with a wide display underneath the windscreen for no-distraction interaction.

Quintessenza door

The Quintessenza's design harmoniously blends technology and human-machine interaction, incorporating elements of nature to create a unique bond between the car's occupants and the

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

outside world. The redefinition of electric propulsion by Elaphe, together with the innovative materials and technologies linked to nature used both inside and outside—Bcomp's linen fiber for the exterior and interior elements, Fili Pari's soft marble powder fabric for the dashboard and door panels, Stoll Italia's 3Dknit technology to reduce material waste, and Hero Flooring made with Nike Grind Rubber from recycled sports footwear—everything contributes to making the Quintessenza a sustainability champion.

Fabrizio Mina, CEO of Italdesign USA says the Quintessenza "is a testament to our ability to innovate, our technological potential and the end-to-end solutions we are able to offer since 1968. It creates a unique emotional experience, giving to the visitors the opportunity to see and interact with a vehicle that tomorrow they could be able to see on the streets of their city or, even better, use with their family to observe the world around them, creating long lasting memories".

Scout

Scout Interiors (DVN images)

Scout presented their very first products, the Traveler SUV and Terra pickup, both built on the same platform. BEV and EREV versions are offered; the latter was added recently to address the current resistance towards BEVs. Ranges are estimated at 560 and 800 km, respectively. These vehicles, which will be distributed via a direct-to-consumer model, will be VW Group's first to benefit from the Group's partnership with Rivian to share zonal and domain electronic architecture and software.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

3. The Automotive Lighting Suppliers

Suppliers from our automotive lighting business present at CES 2025 included OPmobility with a large booth in the West Hall, where we also found Koito, Hyundai Mobis, LG-Innotek and OLEDWorks with nice and informative displays. Valeo was present as usual with its own building on the central plaza. Elmos and Appotronics were placed in the Renaissance Hotel, Zeiss in the North Hall, K-SLD in the Westgate Hotel. This means you need to walk a few miles every day.

If you want to visit the suppliers on the CES, you need an invitation to see all. Valeo has a door like an exclusive club, strictly by invitation only and inside another special VIP area for customers only. Zeiss, K-SLD and Appotronics also opened only by appointment. All others had open areas for the public and additional closed rooms not for everyone.

OPmobility

The booth was big full of spectacular components and systems including full illuminated front ends, new decoration elements and info boards. A high-level booth to introduce the new company name in the US.

These 4 innovations were specially highlighted:

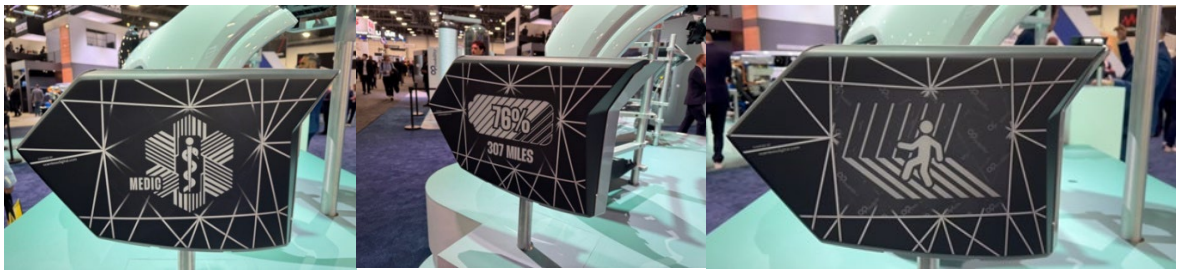
- Digital Front and Rear System: Large, customizable optical panel to highlight a brand's signature
- NHTSA-Compliant Adaptive Driving Beam, with a compact and scalable design to maximize uptake among manufacturers.
- Eco-Light Technology: High-efficiency headlights that reduce power consumption by up to 60% on low beam and over 70% on high beam.
- Surface LED Rear Lamp: Ultra-customizable alternative to OLED lamps (colours, animations).

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

OPmobility CES 2025 Team with decades of expert know how.

OPmobilty Audi Q6 etron frontend

OPmobility's Rivian front lamps including the first US ADB system on the market



OPmobility showed a new display concept using e-ink displays, familiar from e-book readers. These displays are not signal lamps because they do not provide illumination. They are passive, contrast changing and need another light source, e.g. daylight, to be visible. Obviously, this concept doesn't need homologation because it's not actively illuminated. Great idea, isn't it?

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Koito

Koito presented their ADB development that meets U.S. safety performance standards, as they plan to launch it in the market in 2025. As the next-generation ADB, they will demonstrate a "High-Definition ADB" with 16,000 segments including road projection function that visually conveys the state and intentions (messages) of the vehicle to other participants in the traffic.

Koito NAL Assistant Director, Virent Merchant

Koito's ADB demo was perfect to show to the public what ADB is, how is works and what benefits it has. New and surprising is that you can see the ADB light distribution from both perspectives. From the driver's seat and from the opposers view if you go behind a semi-transparent screen. Behind the screen you see clearly the blind-out zones and the illuminated zones. A great display to advertise the ADB function. Hector would love it.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

	Nova	Vista®-X90	Ultra
Appearance			
Usage	Surrounding monitoring (short-range)	Forward monitoring (medium-range)	Forward monitoring (long-range)
Features	Super wide-angle up, down, left and right	Used for purposes other than in-vehicle	Thin / high resolution
Detection distance	0.1m ～ 40m	2m ～ 175m	1m ～ 300m
Detection range	120° H x 90° V	90° H x 25° V	120° H x 25° V

Koito also presented their LiDAR lineup of "Nova" (short-range), "Vista-X90" (medium-range), and "Ultra" (long-range), which combine our optical and automotive technologies developed in lighting with Cepton's advanced sensing technologies. Koito took over Cepton which means we probably can expect some integrated solutions.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

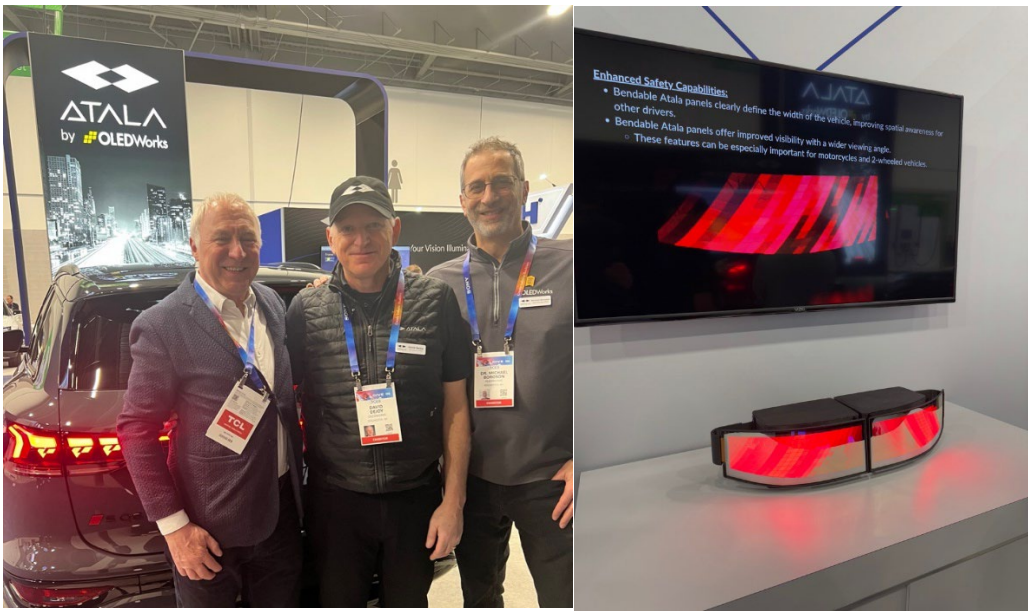
OLEDWorks

OLED maker OLEDWorks was allowed to display the Audi A5 rear end despite the car is not available in the US yet. An Audi SQ6 was on the booth, here they showed the different clear high contrast changeable signatures as well as the dynamic rear light Audi designed with OLEDWorks technology. Next step seems to be the bendable OLED which enables the next level of OLED styling possibilities.

Audi A5 with OLED rear lamps 2nd generation

OLED rear lamp sample for e.g. trucks and a white OLED panel were shown.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners



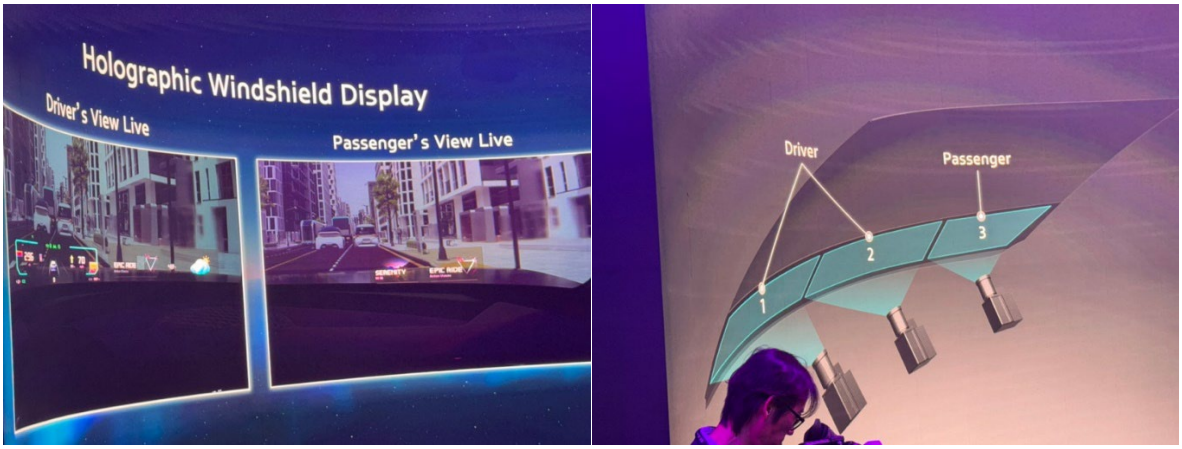
DVN with the OLEDWorks board David Dejoy and Michael Boroson

Hyundai Mobis

In the public part of the booth Hyundai Mobis showed e.g. a new holographic head up display with 3 holographic films from Zeiss. The driver sees his car related and infotainment information on 2 displays and in parallel the co-driver can watch a movie in the windscreen. This shall be a solution against motion sickness which you get while looking down to a screen for watching movies.

Co-developed with the leading German optics company ZEISS, the display will be featured in Kia's electric vehicle, the EV9, exclusively for its unveiling at CES. By integrating specialized optical film, the system provides easy access to key information while maintaining an open, spacious feel and improving overall driving safety. Hyundai Mobis plans to begin mass production of this advanced technology as early as 2027.

Hyundai Mobis will unveil its Human-Centric Interior Lighting technology, an adaptive lighting solution designed to adjust to the user's mood and environment. This innovative system offers 32 situational modes, including features to reduce driver stress, alleviate motion sickness, prevent dismounting hazards, and even provide UV-C sterilization.



© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

In the “by invitation only” part of the booth details of this holographic HUD concept were shown as well as several ADAS and AI supported concepts.

MCL (Micro Cylindrical Lens) type of a slim headlamp

Micro Cylindrical Lens MCL Headlamp

Several new, very slim, full low and high beam headlamps and interesting rear lamps were shown in the closed area of the Hyundai Mobis booth. One was allowed to communicate and to take photos, the MCL, the Micro Cylindrical Lens headlamp. The cost is -30% compared to a classic wafer based MLA solution by using injection molding. It also enhances the design flexibility by giving a uniform surface illumination by the micro-optics, its available in cube or line type and it offers a curvature design up to R500.

The line type has a lens opening of 240 mm x 15 mm with 15 modules with the high optical efficiency of 35% which leads to 1100 lm.

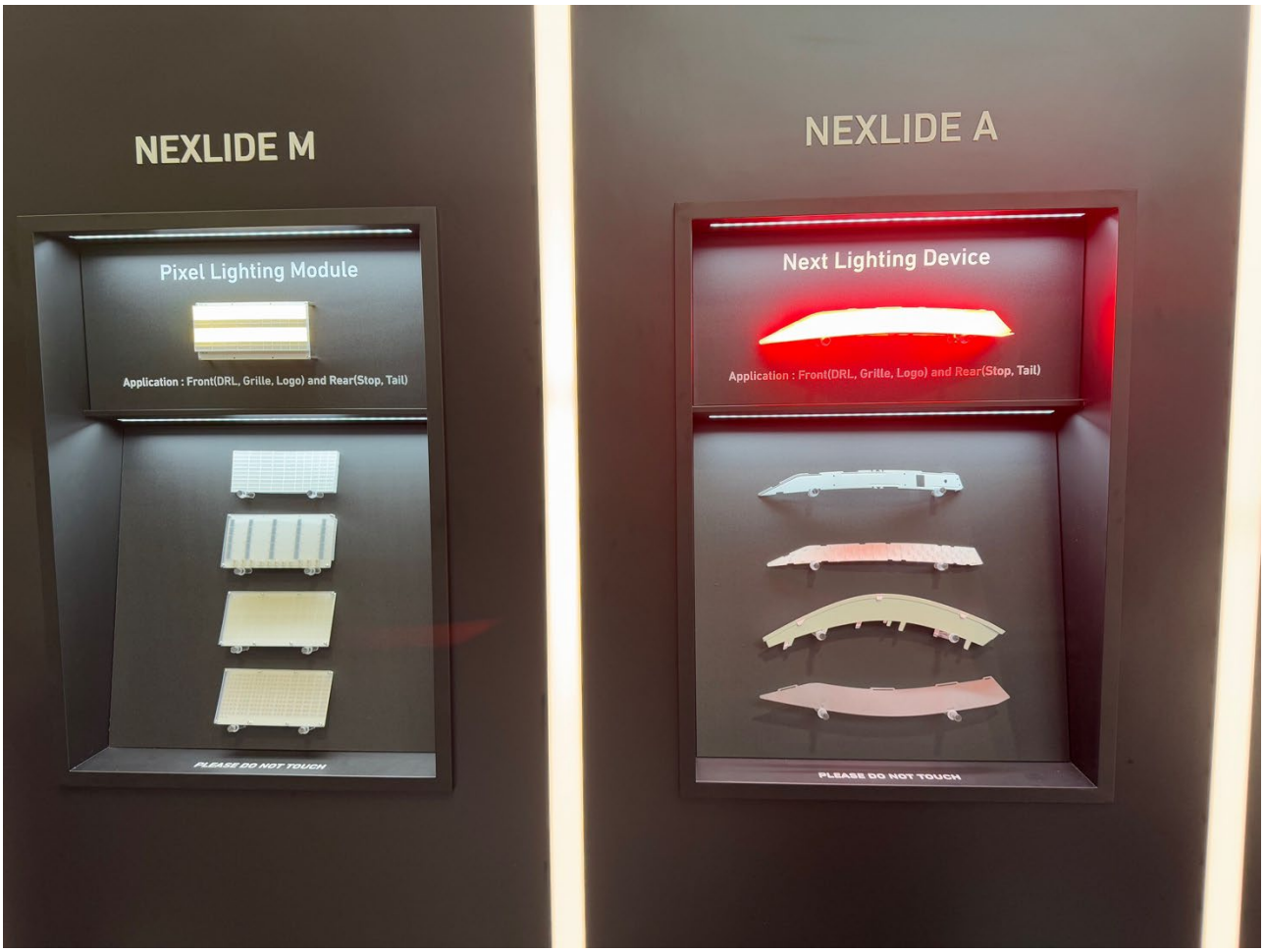
LG Innotek

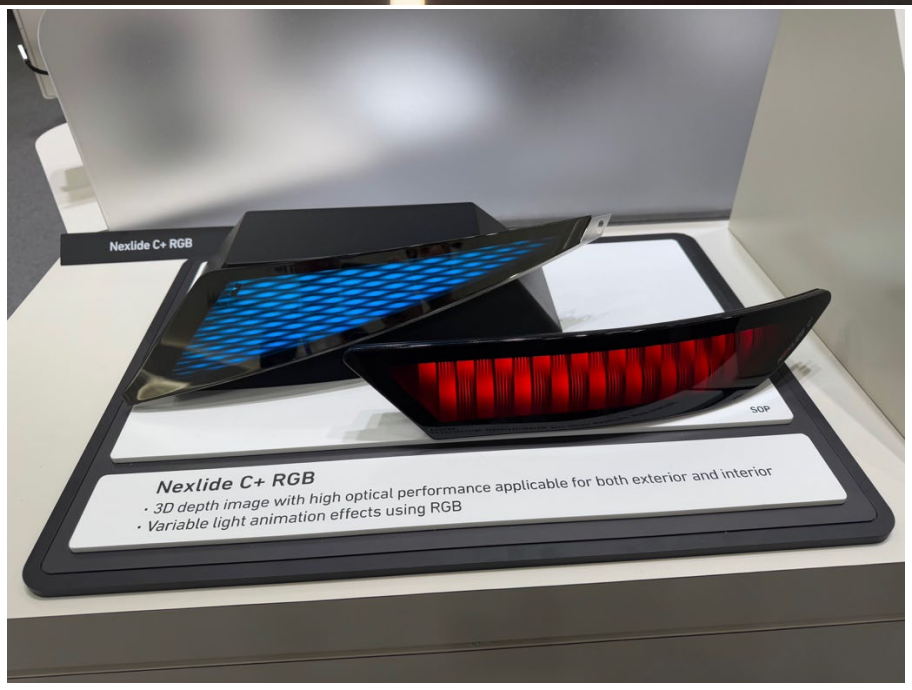
LG Innotek expert Seungtae Kwak explained the innovations

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

The Nexlide technology got an CES innovation award 2025.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners





© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Valeo

In its own building, in the central plaza outdoor area in front of North Hall, Valeo showed 4 series products previously shown, with the exception of the Audi "Spoilerlight", which is a CHMSL with a display underneath. This display projects a signal onto the rear screen to increase the size of the CHMSL with a different graphic. The effect is surprising, as something lights up in the rear window that wasn't there before. From the driver's perspective, the projection is invisible. Audi´s

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

idea was to use an effect that you normally want to avoid - the reflection of the CHMSL in the rear window - for a defined function.
The Spoilerlight is a standard feature on the Audi Q6 in China, and it is to be expected that we will see this nice and typical Audi feature on other Audi cars as well (and maybe even on non-Audi cars).

The giant front fascia of the Zeekr 7X features more than 1,700 LEDs, enabling users to personalise their vehicle, particularly during welcoming scenarios. The front also features an illuminated logo, as well as a horizontal line of light linking the 2 ultra-thin (15mm x 200), dual-function, adaptive headlamps (ADB) from the Valeo Thinbilite range

The front end of the Lynk & Co Z10 is equipped with 224 RGB LEDs. The 256 lighting colours available respond to a strong market trend for more design identity and information on the front fascia. Its horizontal design incorporates vertical light guides on either side of the hood to create a link with the A-pillars. The lighting function is provided by Valeo ThinBilite ultra-thin headlamps just 15 mm high.

The rear lights of the Audi A6 e-tron feature 10 OLED 2.0 digital panels, each with 45 individually controllable segments. OLEDWorks' 2.0 technology ensures a very high level of light homogeneity for the benefit of perceived quality. 8 light signatures are available so that the driver can personalise the style to his or her liking. The precision of the lighting segments made possible by the latest generation of OLEDs makes it possible to communicate and alert other road users by displaying specific symbols, when coupled with a detection system. The solution offers enhanced signage for greater road safety.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

ELMOS

Elmos showed some LED and OLED multichannel drivers. These microcontrollers enable the animation of LED rear lights, front position lights or segments of OLED rear lights. My personal experience is that the PCBs in the lamps become empty when these elements are used. Elmos is also known for its bus programmable LED drivers for interior applications. The honeycomb in the picture is made up of 35 dynamically backlit single hexagons connected to a UART over CAN interface.

As a world's first, Elmos presented a quantum random number generator (QRNG) at the CES that is only 2 mm x 2 mm x 0.55 mm in size. Cybersecurity needs random numbers for encryption of all channels going in and out of the car (and more or less every device), real random numbers are fundamental. The time at which an LED emits photons is absolutely random because it's a quantum effect. Elmos detects whether a photon is emitted (1) or not (0) in a very small time window. This effect hasn't been used before. Today, thermal noise is often used, but it needs much more energy and it is likely that future quantum computers will be able to hack this.

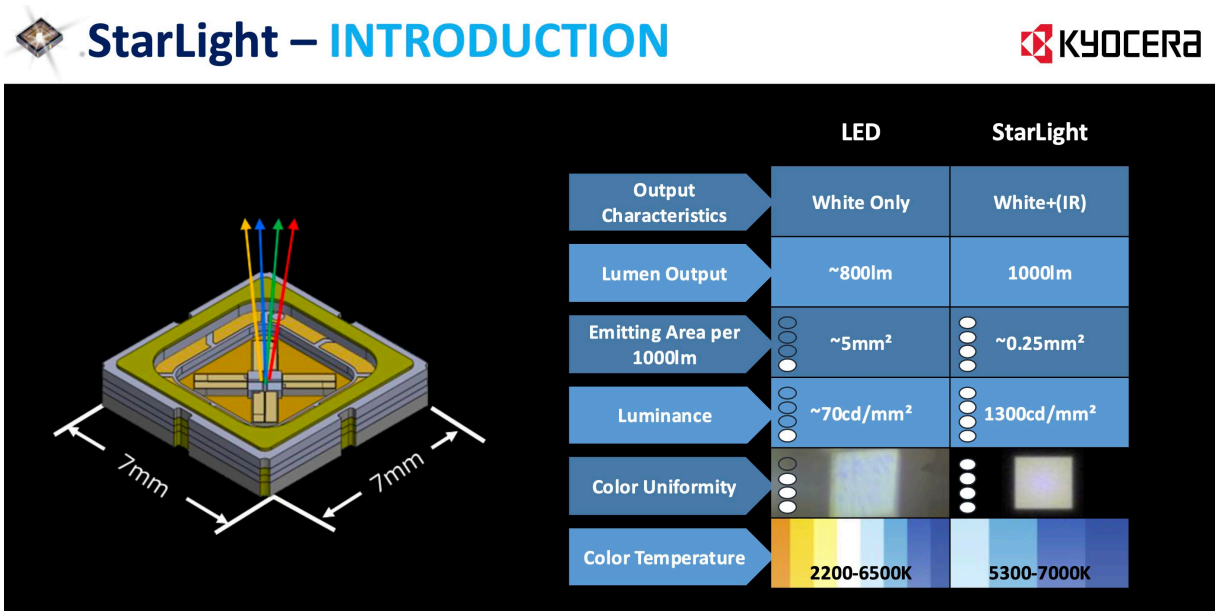
Andreas Niebeling, WH, Tobias Kleining

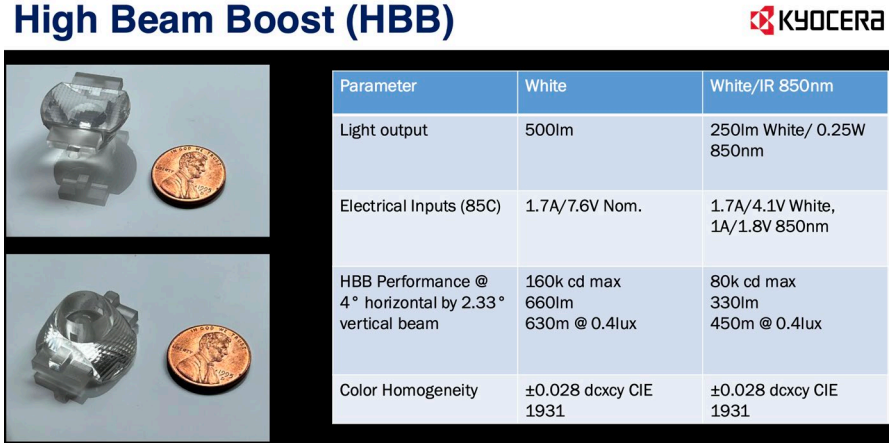
© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Kyocera SLD Laser (KSLD)

KSLD showed to invited guests only their Laser innovations. The Gen 2 Laser has a high precision and no color fringe anymore. Also, the safety concept is improved because the Lasers feed the phosphor for the white-conversion from the side. Before the Lasers hit the phosphor from below and transmission of the blue Laser would occur if the phosphor would (theoretically) break.

This new side feeding concept enables visible and IR emission from the same source.



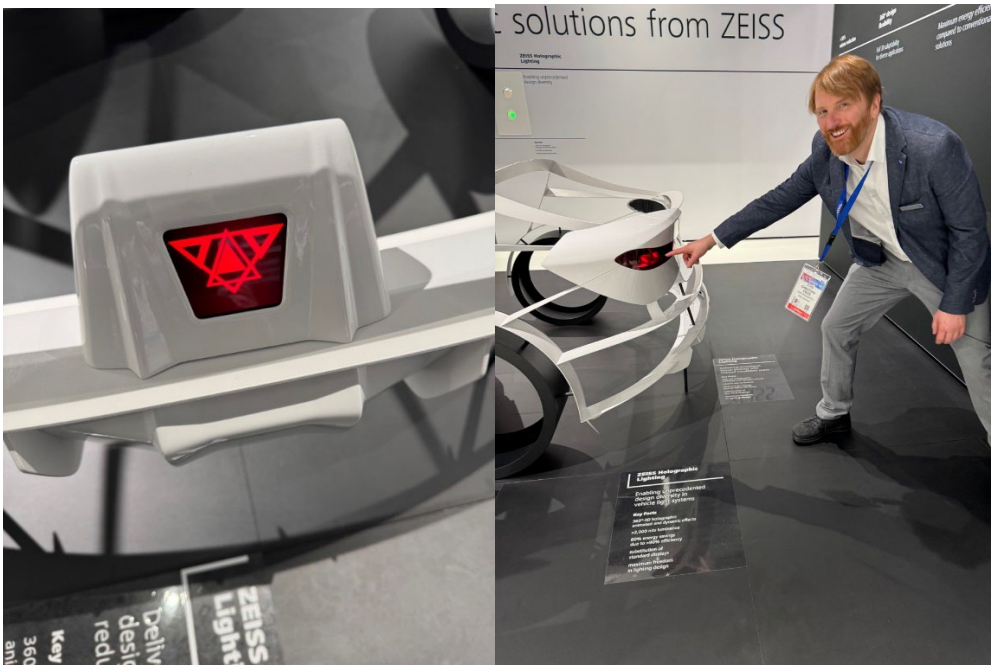


© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Zeiss

The company Zeiss from Jena, Germany, is specialist for holographic films. Their holographic films have a wide bandwidth of usage. The holographic HUD was shown at the Hyundai Mobis booth and also at the Zeiss booth in a mockup. It looks clear, bright and three dimensional. Another, more surprising application is the energy harvesting with glass surfaces. The holo-film transmits the IR part of the sun radiation along the inside glass into the frame where the standard photo voltaic cells convert the energy into electrical power.
Other applications were the holographic logo, side lamp, invisible driver monitoring camera behind holographic film, Laser DMD holographic HUD. All with the same holographic film!

Holographic signature lamp



Holographic Logo / Christoph Erler, head of Automotive at Zeiss explains the holographic tail lamp

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Appotronics

Last company I like to mention is Appotronics. They had a booth in the Renaissance hotel, visiting by appointment only. Appotronics deals with very innovative Laser applications such as Laser MEMS scanning for headlamps and for HUD, RGB Laser projectors, and Laser ADB headlamps with DMD. Unfortunately, it was not permitted to take a photo. If Appotronics delivers some pictures DVN will publish as soon as they arrive.

4. Cockpits

Ceres, Eastman, Covestro to Boost Holo-Transparent HUD

DVN image

Eastman, Ceres Holographics, and Covestro have signed a memorandum of understanding (MOU) to explore the commercial production of the cutting-edge holographic in-plane transparent displays (HIPTD) laminated solution for automotive and transportation glazing applications they have jointly developed. This collaboration focuses on enabling next-generation HUDs, addressing the growing demand for enhanced convenience, safety, and user experience features among automakers.

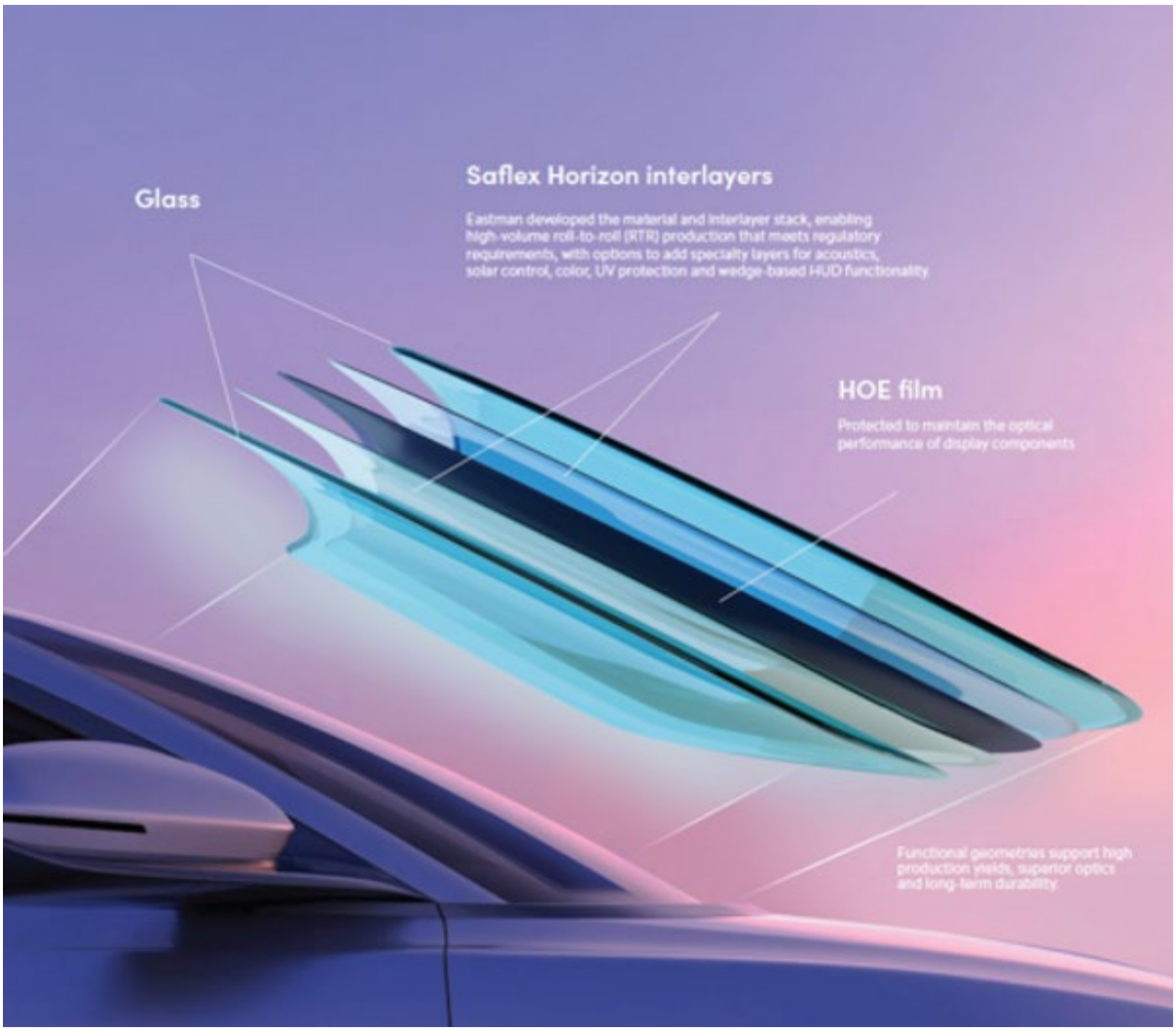
© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Eastman-Ceres CES Team with DVN Interior (DVN image)

These new displays overcome the performance, size and geometric limitations of traditional HUD systems, enabling the practical and scalable implementation of multiple displays in one windshield and elsewhere in side-light glazing. Proofs of concept developed with automakers were showcased at CES.

Eastman employs approximately 14,000 people around the world and serves customers in more than 100 countries. The company had 2023 revenue of approximately USD $9.2bn and is headquartered in Kingsport, Tennessee, USA. Ceres Holographics and Covestro are well known to DVN Interior members. The partnership aims to accelerate the commercialization of the HUD solution, with Eastman leveraging their relationships with automakers and tier-1 suppliers.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners



Eastman-developed HOE interlayer stack (Ceres Holographics image)

In 2024, Ceres and Eastman demonstrated the latest holographic transparent display HUDs to automakers in Europe, the USA, and China. These HUDs featured multiple transparent displays within a single, fully laminated windshield, each measuring up to 40 × 30 cm. Custom-designed holographic optical elements were incorporated into a single sheet of Bayfol HX film, laminated with Eastman's new developed interlayer stack, achieving the industry's largest field of view.
This achievement was enabled by combining Covestro's expertise in photopolymer films, Ceres' digital mastering and HoloFlekt roll-to-roll replication system, which produces finished films up to 140 cm wide, and Eastman's solutions to encapsulate functional films into automotive approved laminates.

At the SID2024 conference, Ford reported on their two-year program with the partners and glass laminator, validating the production process, and performance of the triple-screen holographic HUD system.
"We have been working closely with global OEMs for years and are now at a tipping point for adoption and scaling of this display technology," said Andy Travers, CEO of Ceres Holographics. "This is being driven by a combination of a desire for more safety-oriented and intuitive information display features, pressure from safety regulators to reduce driver distractions, and the accelerated

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

pace of innovation and associated need for differentiation among a new generation of car makers."
This agreement joins the material expertise of Covestro, Eastman's interlayer solutions and encapsulation know-how, as well as Ceres capabilities in mastering and high-volume manufacturing technology for the successful commercialization and industrialization of holography in transparent displays for windshields.

Meanwhile, Ceres and Appotronics announced another international partnership, combining Ceres technologies for in-car display solutions, including driver and passenger transparent heads-up displays (HUDs), and Appotronics projectors.

Ceres' HoloFlekt holographic-enabled display technology can now be combined with Appotronics ALPD®-based projection solutions to display information in bright, large and non-distractive formats on any glass surface to enhance safety, HMI and UX

Appotronics is a laser display technology enterprise, one of the first companies to list on the SSE STAR Market. The company has independently invented ALPD semiconductor laser light source technology that has become the go-to technology internationally.

Hyundai Mobis and Zeiss: New Holographic HUD

Hyundai Mobis image

Hyundai Mobis and Zeiss have entered a strategic partnership with the aim of bringing their new holographic HUD technology into mass production by 2027 and optimizing the information display in the vehicle.

The technological basis of the Holographic HUD is a projector developed by Hyundai Mobis that projects content such as driving data, navigation instructions and infotainment displays onto the

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

windshield. Zeiss contributes an ultra-thin, transparent film that is less than 100 micrometers thick. This film uses holographic technology to make the projected content visible by means of light beams. In contrast to conventional head-up displays, which only show basic information, the Holographic HUD enables a significantly larger and more comprehensive display across the entire width of the windshield.

The integration of the technology is intended to increase driving safety by displaying all important information in the driver's direct field of vision, and to expand the design options in the vehicle cockpit. Traditional displays on the dashboard could become superfluous, as the windshield serves as a large display. Another advantage is that passengers can also see content such as entertainment programs projected onto their area of the windscreen without impairing their unobstructed view.

Hyundai Mobis and Zeiss have already developed a functional prototype of the Holographic HUD, which has been presented to international car manufacturers. The two companies plan to expand their collaboration to other holographic applications in the future, including displays for vehicle interiors and exteriors. The aim is to develop further innovations that increase both comfort and safety in the automotive sector.

AUO Smart Cockpit

HMI solution provider AUO unveiled their Smart Cockpit 2025 at CES. The showcase, themed *“Infinite Future, Unlimited Possibilities,”* highlights cutting-edge microLED display HMI solutions, blending AUO’s innovative display technology with sustainable, human-centric designs and advanced systems from its subsidiary, BHTC.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

The Smart Cockpit 2025 incorporates an array of microLED display HMI solutions that extend across the sunroof, side windows, center console and steering wheel. AUO utilizes the transparent, large-size and flexible advantages of microLED displays to redefine smart cockpit design and expand human-machine engagement services. Meanwhile, in-vehicle computing has also been used to extend its applications to 'AI' and the Internet of Vehicles (IoV), delivering a seamless experience enriched by safer, more comfortable, intelligent and entertaining mobility services for both drivers and passengers.

AUO develops the Morphing Center Control as well with a human-centered approach. Normally, it displays information on the flat surface of the central console. When specific functions are activated, the buttons rise and provide tactile feedback, demonstrating a new way for HMI.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

AUO's Horizon Image Glass integrates the dashboard, central information display and co-driver display through in-vehicle computing solutions to create an integrated panoramic view, providing vehicle occupants with a clear forward vision and infotainment on the road

Valeo Panovision

Valeo Panovision (DVN image)

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Valeo maintained their full presence with two sites, featuring a wide range of technologies. Valeo also announced a partnership with AWS, aiming to reduce SDV development time by 40 per cent. Their main interior feature from their Brain division is Valeo Augmented Panovision, hidden displays are projected onto the windscreen to keep the driver's attention focused on the road. It includes seeing machines DMS engine to detect drowsiness, and infotainment options when the vehicle is not in use. And an in-car demonstrator was presented in front of the Center Plaza booth.

Elektrobit's SDV Innovations

DVN images

Elektrobit, a Continental daughter company, is showcasing the industry shift toward software-defined vehicles (SDVs). They updated what they presented last year, with infotainment capabilities and production components.

DVN Interior met with Dr Siegfried Dirr, VP, Head of Engineering Services & Technologies. He highlighted what they call "theming", like HMI elements, that they can directly incorporate into physical system, after development, kind of off-line into a virtual environment. 'AI' also helped to get more creativity within the cockpit. Linux, which is open-source software, is now used for safety-related applications, helping the whole chain from development to maintenance with a system open to all.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

A demonstrator is presented on their booth (pic), with hardware and software demo installed, It is a Next-Gen Digital Cockpit: a futuristic, pillar-to-pillar curved display powered by technologies like AMD hardware, Unreal Engine, and Google Android Automotive.

Its virtual software solutions drive efficient development, branding, localization and evolution throughout the vehicle's lifecycle for an elevated user experience. Integrated partner technologies from Elektrobit's SDV ecosystem include AMD automotive-grade hardware, Google Android Automotive and Gemini AI, Epic Games' Unreal Engine for 3D rendering and Here navigation.
They also confirm the power of Android, and theming there allows to develop easily specific and context-based tuning.

They worked directly with automakers including VW, Ford, Honda, and JLR, among others. In collaboration with partners like Sony Honda Mobility, AWS, Siemens, and Sonatus, Elektrobit was involved with the Afeela vehicle; it emphasizes Elektrobit's commitment to open-source solutions for resource-efficient, future-proof SDV development.

Continental: Emotional Cockpit with Crystal Displays

Continental image

Continental and Swarovski Mobility are presenting a new display concept for the vehicle cockpit called "Emotional Cockpit" at CES. The display and user interface consists of two displays set in Swarovski crystal.
The small upper display is the central input unit for the driver and front passenger. The 3.5-inch display called Widget Crystal works with micro-LED technology, which promises high-colored brilliance, among other things. The transparent crystal body is intended to create the impression of information floating freely in space. In addition to displaying weather data or the charging status, the small screen also serves as an interaction surface for the 'AI' assistant.
The lower 12.3-inch display is equipped with "Full Array Local Dimming" technology, which enables targeted control of the backlight for higher brightness and richer black levels. A coating called "Aurora Borealis" provides an optical effect on both displays, which uses light reflections to create a colored shimmer that is supposed to resemble the aurora borealis.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Bosch Cockpit and ADAS integration platform

Bosch Mobility presents highlights from the areas of connected mobility, automated mobility, and powertrain systems and electrified mobility.

The cockpit & ADAS integration platform is a scalable, modular platform. It combines the system functions for assisted and automated driving and infotainment in one high-performance computer. Thanks to this capability, this Bosch vehicle computer can simultaneously detect lanes, park automatically, and process personalized navigation and voice assistance functions.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Harman's 'AI' Avatar and ADAS Infotainment HPC

Harman image

Together with Cerence AI, Harman presented an avatar that uses 'AI' and is designed to act as an assistant. "Luna" has the potential to completely change the way people interact with their cars. Already pre-integrated into Cerence AI's AI voice assistant platform, the system can be adapted to new 'AI' technology. With personalized, 'AI'-powered interactions that anticipate needs and respond naturally through voice and visual elements, “Ready Engage” creates a connection between a vehicle and its occupants. This should feel friendly and intuitive for the occupants.
Harman has announced another partnership: with HL Klemove (Korea), the supplier has integrated the domain controllers for cockpit and ADAS into a Central Compute Unit (CCU). This utilizes Harman's Ready Upgrade Cockpit Domain Controller and Klemove's Level 2 software stack and ADAS sensors. In the next phase of their collaboration, the two companies will develop a product-ready CCU platform that integrates the companies' latest cockpit and ADAS capabilities, offering automakers faster time-to-market and full customization flexibility.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

5. Driver Monitoring Beyond Attention and drunk detection

Driver monitoring is now mandatory in all vehicles, and performance still needs to be normalized. However, new technologies are showing up, including using DMS to interpret driver emotions. Here's a first look:

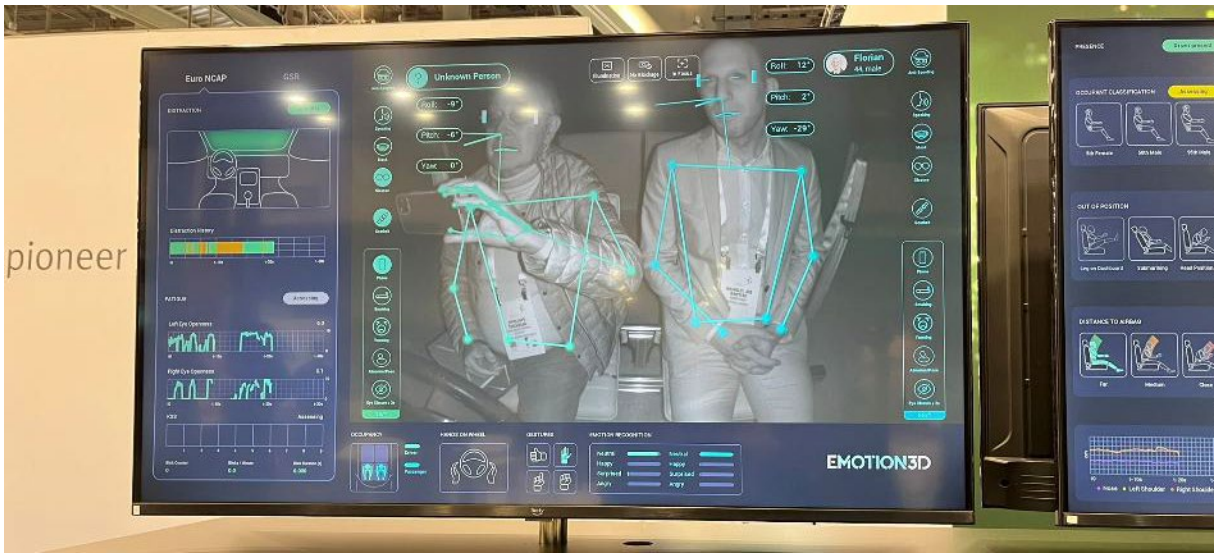
Camera-Behind-Display DMS from Emotion3D and BHTC

DVN images

Emotion3D and BHTC, (who specialize in automotive display and control systems) showcased an innovative joint system of display and DMS. The system integrates advanced features that address active safety and user experience, setting a new benchmark for in-cabin monitoring systems.

A key highlight of the system is its unique design: a strategically placed camera positioned behind the display. This approach not only maintains an aesthetically pleasing in-cabin appearance but also ensures maximum safety through a reliable monitoring method. Emotion3D brings their expertise in processing the distinctive image characteristics generated by this configuration, resulting in a seamless and effective solution for real-world applications.
“We’re excited to collaborate with Emotion3D to deliver a system for future in-cabin safety and convenience,” said Alexander Waldeyer, Manager Technical Marketing & IP at BHTC. “This system marks a significant step forward for the industry, combining cutting-edge technology with user-centric design.” Emotion3D also highlighted the importance of this partnership in advancing in-cabin technology. “Our collaboration with BHTC allows us to showcase how our *CABIN EYE* software can adapt to unique hardware setups,” said CEO Florian Seitner. “We aim to enhance in-cabin safety and comfort, leveraging advanced AI techniques, to continuously innovate and shape the automotive in-cabin industry.”

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners



Emotion 3D presented as well their DMS technology, including all new features, such as seat belt, leg-on-the-dashboard, out-of-position, hands-on-wheel, to prevent submarining, distance-to-airbag, and GSR, and EuroNCAP-required features.

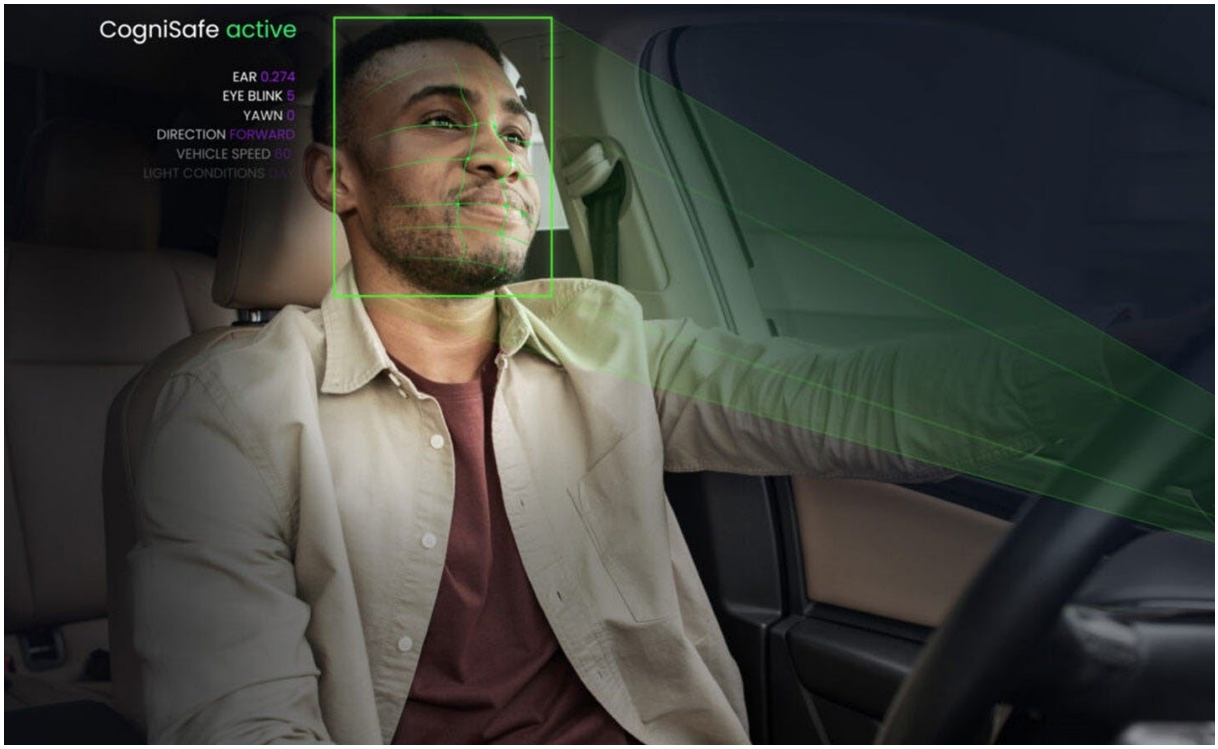
Emotion 3D technology, as its name suggests, goes beyond DMS, they have now one program at SOP in India, and several RFQs requesting it in Asia.
Emotion 3D keeps using their original business model, they sell and license software; this model is more challenging in China, where automakers reject upfront payments.

Emotion3D and MOIA (ride pooling) have developed an 'AI' solution to manage tasks of driver safety, in application for upcoming autonomous operations with the ID.Buzz in Hamburg.
The software uses 'AI' to take over safety tasks such as detecting if the doors can be opened or closed, and checking the permitted number of passengers and correct use of seatbelts. Within seconds, it signals the self-driving vehicle to start driving or, if necessary, to hand over to the fleet control center.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

In the coming months, the interior analysis and customer experience of automated processes will be tested. Safety drivers will also be on board during this phase to monitor the processes.

FEV's 'AI' DMS



FEV, a Germany-based engineering services provider for the automotive industry, has introduced CogniSafe, an 'AI'-supported DMS.

CogniSafe is designed to enhance road safety by detecting driver inattention, fatigue, and distraction in real-time, the company claims. This new system uses deep learning and computer vision technologies to ensure driver alertness under various conditions. It features a network of cameras operating in both visible light and infrared spectrums, enabling comprehensive analysis of the driver's behaviour from multiple angles.
The system is equipped to monitor the driver's gaze, evaluates eye conditions such as the percentage of eye closure (PERCLOS), and assesses head posture to determine levels of alertness and fatigue.

FEV Intelligent Mobility & Software group vice-president Dr Thomas Hülshorst said: “CogniSafe is a holistic, innovative system that uses a variety of sensors and combines them with 'artificial intelligence' to precisely analyze driver behavior and alertness. With our latest development, we are actively reducing accidents caused by human error. At over 90 per cent, these make up the majority of all accidents".

Moreover, CogniSafe is adept at recognizing behaviors that may compromise safety, like texting or drinking while driving. Upon detection, it alerts the driver through visual and acoustic signals and can trigger safety measures, including emergency braking or lane assistance activation.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Omnivision/Philips

Omnivision and Philips present an in-cabin monitoring system designed to track vital signs such as heart rate and breathing patterns, with the goal of enhancing driver and passenger comfort. By integrating this data with vehicle settings, the system promises to adjust lighting, climate, and even suggest breaks or route changes based on physiological responses.
Omnivision's senior automotive marketing manager Ritesh Agarwal says automakers "are continuously looking to add value and differentiate their brands by adding novel features that increase the comfort level in cars. This in-cabin solution will bring added value to automotive consumers and shorten time to market for tier-1 [suppliers]".

Continental's Invisible Biometrics Sensing Display

Continental image

Continental is returning to CES with their Invisible Biometrics Sensing Display, covered in greater detail later in this newsletter.

LG's 'AI' In-Cabin Sensing

LG image

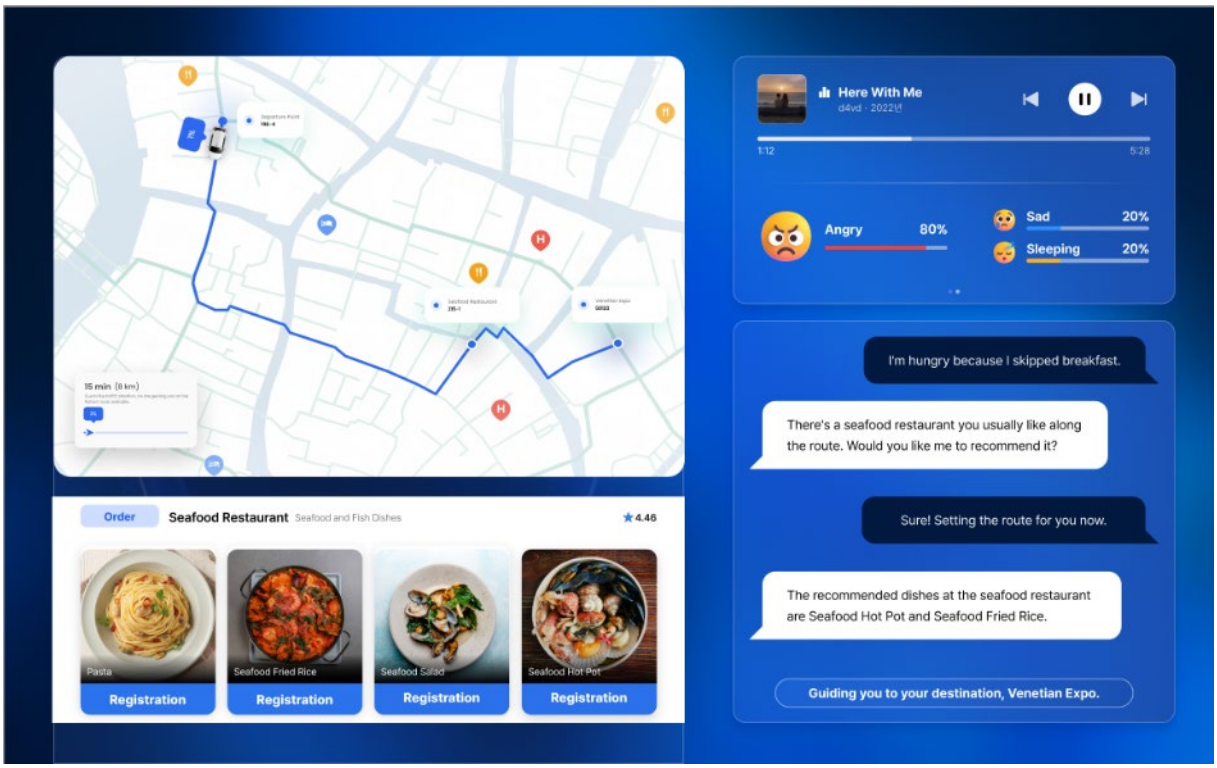
LG showcases their "AI In-Vehicle Experience". This sensing solution is designed to bring greater safety and convenience to the driving experience.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

The system starts by detecting and analyzing both the driver and vehicle interior in real time through two key systems: DMS, and the Driver and Interior Monitoring System (DIMS). Both systems are demonstrated through immersive, interactive simulations.

The in-cabin sensing solution adapts to individual preferences and needs, delivering tailored services such as personalized driving routes, real-time updates on road conditions, and information on nearby infrastructure and points of interest. The DMS can identify driver's physical health and emotional state through real-time heartrate monitoring and facial expression recognition. This system helps improve road safety by alerting users to their level of alertness and overall wellbeing, as well as giving them an effortless way to track their health over time.

InDJ Emotion Aware 'AI'



InDJ image

South Korea's InDJ is a company of experts in emotion recognition 'AI', to make human-machine interactions seem more intelligent and empathetic. With award-winning solutions presented at CES, the company expands its technological reach into connected automotive applications.
InDJ's Connected Car Infotainment Assistant uses internal and external sensors to continuously analyze the emotional states of drivers and passengers in real time. By gauging mood and sentiment, the system can provide tailored music recommendations, optimize navigation routes, adjust in-cabin temperature settings, and act as a virtual personal assistant. The result is a safer and more comfortable driving experience—one that feels deeply personalized and responsive to user needs.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Cipia

MulticoreWare, specialists in software and engineering solutions, and Cipia, specialists in 'AI'-driven in-cabin monitoring, are collaborating to unveil a groundbreaking demonstration of sensor fusion technology. This system combines 60-GHz radar and infrared camera technologies to precisely track driver and occupant vital signs, including child presence detection, even under complex conditions.
Technology, optimized for edge computing platforms, enhances safety and decision-making by enabling real-time monitoring and proactive interventions. MulticoreWare's expertise in radar sensor processing and Cipia's advanced computer vision 'AI' complement each other; together, they aim to deliver integrated safety features for software-defined vehicles.

CarUX for Harmonius UX

CarUX Windshield Reflective Solution (CarUX image)

CarUX Technology, under the slogan "More than Display, and Far Beyond," showcased new vision solutions for automotive products based on their rubric **Harmonious User Experience** "HUE"
CarUX automotive solutions feature organic shapes that integrated into vehicle styles. The displays are characterized by outstanding performance, including ultra-low reflection rate, high brightness, high contrast, wide color gamut, energy efficiency, and fast response times. In addition to CarUX's ongoing AM miniLED, MicroLED as well as the first OLED solution are in their portfolio of vision solutions.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

VinAI's DrunkSense

At CES, VinAI showcased their DrunkSense system (as well as Touch2Park) in an exclusive in-vehicle demonstration, reaffirming their integration capabilities and commitment to delivering mobility experiences.

They call DrunkSense the world's first passive drunk driving detection system without requiring a breathalyzer, achieving 85 per cent sensitivity—8 percentage points higher than that of the industry standard. It is part of the InteriorSense Suite, including:

• MirrorSense, which adjusts mirrors with 10mm accuracy based on the driver's position—another world-first innovation
• Driver Monitoring System (DMS): Compliant with EU's General Safety Regulations, the system provides AI-powered safety through enhanced occupant monitoring.
• Touch2Park: It is the winner of the 2024 AutoTech Breakthrough Award. This L^2 smart parking solution enables effortless parking by a simple touch.
• Jelly View: A revolutionary 3D transparent mode offering comprehensive exterior and undercarriage visibility.
• Advanced 360° Surround View Monitoring System: The system eliminates blind spots and enhances external awareness for safer navigation.

VinAI, part of the Vingroup ecosystem, ranks among the top 20 'AI' R&D companies globally. The company's Smart Mobility division drives the next level of automotive safety and comfort through a strong portfolio. VinAI's technologies and features have been integrated into various models from automakers worldwide.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Corraction's Drunk-Drive Detection in Steering Wheel

Volvo image

Corraction ran a demo at CES with subjects whose alcohol level was above the legal limit. The company is an Israeli startup specializing in in-cabin cognitive neuro-monitoring, and they've developed NeuroMonitor, a software-based system designed to detect driver impairments, including those caused by alcohol consumption.

The unique aspect of the system is that it detects impairment through the hands via sensors in the steering wheel that are fed into an 'AI' software system which declares whether the driver is too impaired to drive or is over the legal limit.

The company is backed by Volvo, Goodyear, Blackberry and venture capital. NeuroMonitor evaluates the driver's cognitive state by analyzing brain activity through micro-movements of muscles. These subtle movements are detected using existing in-vehicle sensors, such as those in the steering wheel or seat, eliminating the need for additional hardware.
The system continuously monitors signs of impairment, including alcohol intoxication, fatigue and inattention, providing real-time assessments of the driver's condition.
Using 'artificial intelligence' and machine learning, the system detects a range of blood-alcohol concentration levels with minimal false alerts, identifying impairment before physical symptoms become apparent.

The U.S. government is actively progressing toward mandating impaired driving prevention technology in all new vehicles. This initiative aims to reduce the significant number of fatalities caused by alcohol-impaired driving, which accounted for 30 per cent of all traffic-related deaths in 2020.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

6. Haptics, interior lighting and smart surfaces

Grewus Seat Haptics Experience

DVN image

Grewus, based in Hamburg, Germany, has been developing and making haptic actuators and acoustic components since 2007. Those kinds of components are increasingly being used on automotive smart surfaces. At CES this year, Grewus showed an updated demo seat, demonstrating the value of haptics in a vehicle seat, and in gaming situation.

DVN at Grewus Booth with Managing Director Elisa Santella (DVN image)

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Using haptic actuators powerful enough to be felt by seat occupants, and small enough to be packaged into the seat without spoiling comfort, helps the seat to become an affective element of the HMI system. Haptic feedback to the seat occupant, especially the driver, delivers warning signals immediately understood and felt in case of a safety hazard. It is even important in case of autonomous and electric vehicle It is as well a local alert, which will not bother any other occupant of the vehicle.

Inova Pioneers SDV Lighting

DVN-I's Philippe Aumont (L), Inova's Thomas Nickl (R) (DVN image)

Inova Semiconductors showcased their advancements in software-defined lighting (SDL) and software-defined vehicles (SDV) at CES. Renowned for innovative chips that enhance digital displays and LED control, Inova introduced new technologies:
• ISELED LED Technology: A smart lighting architecture featuring pre-calibrated LEDs, managed by a minimal-computation microcontroller capable of controlling up to 4,079 LEDs. The system supports multivendor solutions and Ethernet integration via ISELED Alliance partners.
• Inova Display Link (APIX): this technology underpins in-vehicle infotainment systems, offering high performance across all car displays.
• APXpress: A cutting-edge development for infotainment and automated driving (ADAS), supporting data rates up to 32 Gbit/s for seamless connectivity and advanced sensor integration. Series production is targeted for 2029.

Inova’s chip designs emphasize minimal size, weight, and power consumption while delivering maximum performance, to be used for infotainment and dynamic lighting solutions.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Kyocera Innovations at CES '25

Kyocera images

Kyocera's exhibits at CES showed off their latest innovations in aerial image display technology, 'AI'-based depth sensor, wireless optical underwater communication, millimeter-wave sensors, camera/lidar fusion sensor, bifocal mirrors and other solutions for safer autonomous driving.
Kyocera's 'AI'-based depth sensor camera, which offers world-record resolution in measuring extremely small and shiny/semi-transparent objects, is a versatile tool for numerous requirements. It enables accurate measurement of objects that are difficult to measure with conventional methods and achieves 10 times higher accuracy than traditional monocular measurements.

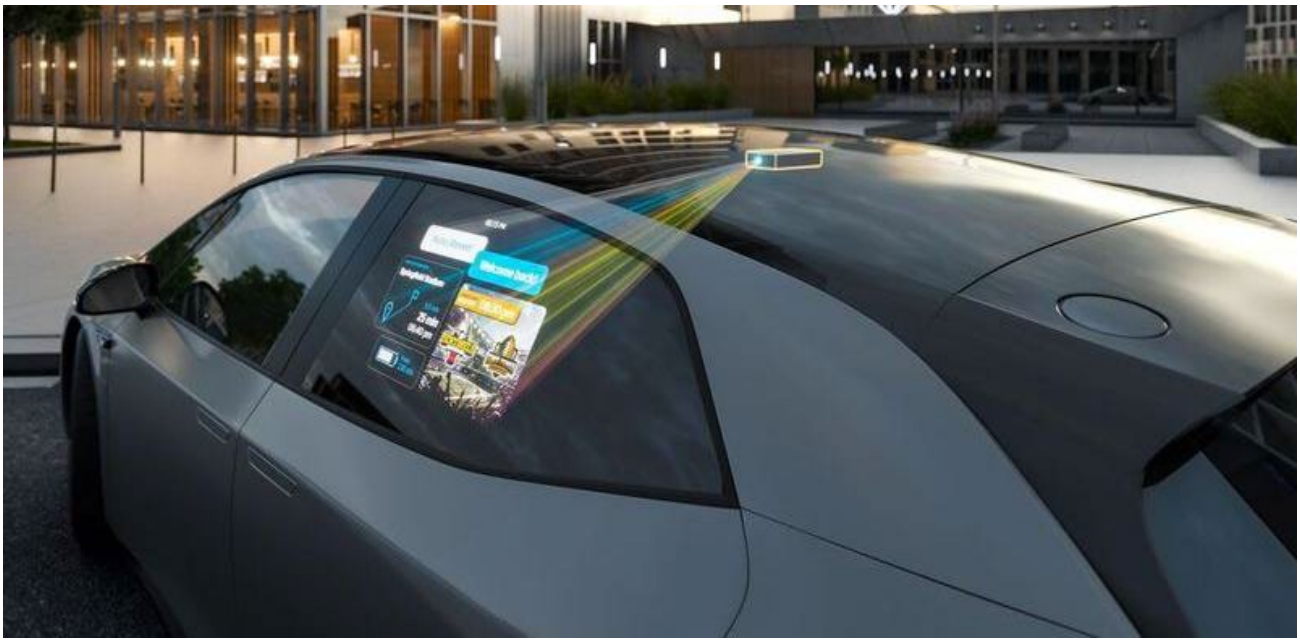
Kyocera has developed a millimeter wave sensor that can accurately detect minute vibrations without contact. This technology helps improve healthcare by accurately measuring heart rate and other changes in vital signs from almost anywhere, such as in a car (DMS) or bathroom, while respecting the user's privacy. In addition, Kyocera has developed a SLAM (simultaneous localization and mapping) technology using millimeter waves that can replace mechanical lidar systems using 4D imaging radar. With the increasing demand for driver assistance systems, this technology enables more precise and safer driving through sensing, even in poor weather conditions, at a very low cost.

Electronic car mirrors are becoming increasingly popular, but drivers with age-related farsightedness (presbyopia) often have difficulty focusing them due to differences in distance and

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

field of vision. Like a head-up display, Kyocera's bifocal mirror displays a magnified image in the distance, making it easier for drivers to adjust their focus and immediately see the image clearly. The AR technology also supports driving safety by instantly displaying information recognized by the rear-view camera in the mirror.

Continental's Intelligent Window Projection System (beyond Interior Lighting)



Continental image

Continental presented a technology to project content visible from the outside onto the rear side windows of the vehicle. This allows the vehicle to communicate directly with its surroundings when parked. As examples, the supplier mentions the charge status of electric vehicles or the logo of the favorite club. The system uses a miniature projector with corresponding software. The projection surface is an electrically dimmable side window.

When the projector is active, the window is completely darkened. The imaging unit is installed in the headliner of the vehicle. The required installation space is less than half a liter.

The "eTravel.companion" is integrated into the functional scope of the projection system as a software component. This is an AI-based travel companion. It uses data on driving habits, geo and weather data as well as other information from the vehicle sensors to create new user experiences. Continental is cooperating with the platform provider Banbutsu. The Berlin-based company (founded in 2019) operates a digital platform and provides personalized and context-based content. Based on data, learned preferences and the current situation, the software generates suggestions in real time that can be displayed in the side window even before getting into the vehicle.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

TactoTek + Sundberg-Ferar = Design Freedom

DVN images

TactoTek announced at CES during a Design Hour session, a strategic partnership with Sundberg-Ferar, a leader in industrial design and innovation. This collaboration seeks to merge their unique strengths, combining TactoTek's advanced electronic integration techniques (IMSE, as the technology for thinner, smaller, and low power electronic integration into car trim, with Sundberg-Ferar's 90 years of expertise in human-centered design, and design harmony. Together, they are dedicated to redefining the landscape of design and technology, beauty and function, creating next-generation solutions that elevate user experiences across several sectors, including mobility and consumer electronics.

"Working with TactoTek represents a significant step forward in our mission to create meaningful solutions," said David Thimm, Director of Design at Sundberg-Ferar. "By integrating our design capabilities with TactoTek's technology, we can offer forward thinking companies unparalleled innovation. We are committed to delivering products that not only look and work great but also provide enhanced durability, manufacturing efficiencies and simplified structural complexities."

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

7. ADAS

VALEO

They had a number of demo vehicles in the parking lot, and a comprehensive display of SDV technologies. Highlights included a scalable FMVSS127 solution – with up to 4x corner radars, VGA thermal camera and front camera. While they can pass the new standards with a camera only system it depends on the exact configuration of the vehicle (for example, a high hood-line SUV poses challenges) and there maybe tradeoffs in false positives and braking smoothness. They also have a single box L2+ solution (VSS360) using Mobileye (EQ6) plus Renesas + ASIC (for ultrasound) compute.

For Software Defined vehicles, Valeo showed a cloud based development suite, that can go from natural language inputs to code generation to reconfigure the dash-board UI (for example), test the system on a digital twin and then remotely push the code to actual hardware for HIL testing. As more OEMs move towards central compute platforms, it becomes possible to manage ADAS and IVI on a single piece of hardware and Valeo showed a Qualcomm based system capable of doing this.

Valeo VSS360 demo vehicle: Source Valeo

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

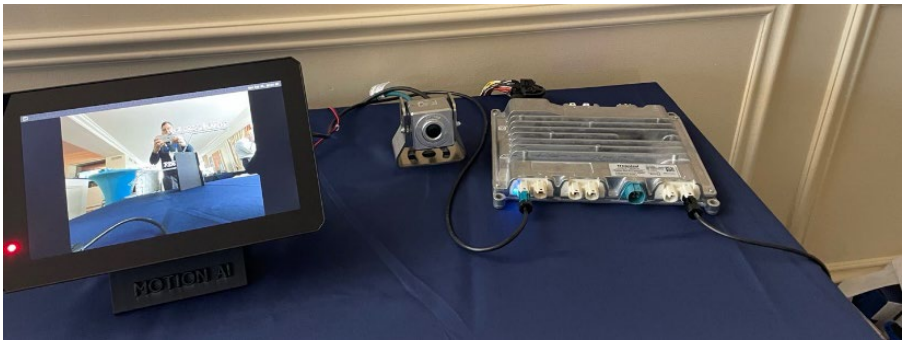
QUALCOMM - I spoke to Rajat Sagar, VP of the Automotive BU at Qualcomm who briefed me on the latest trends in automotive compute. There is a growing convergence of ADAS and IVI into a single ECU, as we saw at Valeo and LG, which can be done with the latest Snapdragon Ride Flex SoC. This is possible with a combination of software (virtualization) and hardware features. Full ASIL-D can be achieved with an integrated safety-island. Qualcomm acquired the Arriver ADAS/AD software stack from Veoneer in 2022 and has since worked to optimize for its SoCs. BMW is a lead partner and will bring this to market on the Neue Klasse EVs in 2025. As more compute power becomes available, more ODD's and corner cases can be handled by the AD system, allowing for a better driving experience.

MAGNA – Tom Herbert, Director of Product Management told me Magna is moving to more of a total system focus, including central compute. As more sensors are added, not just perception, but fusion becomes important. Magna has a partnership with Flir for thermal cameras and is also working with others in this space. Imaging radar is getting better and finding applications in L2+ systems. Lidar has become less of a focus for Magna in the last couple of years.

Mobileye - was showing the new Eyeq6 processor in a number of applications. The Mobileye solution is scalable from L2+ platforms all the way to Robotaxi (Mobileye Drive) by increasing the sensor set and number of processors. A basic system can run on a single CPU, and the full L4 system uses 4 processors. The VW ID.Buzz based Robotaxi was on display with 9 lidars (Innoviz), 13 cameras (11 plus one redundant and one for traffic light recognition) and 5 imaging radars. This rolls out in 2026 as a service. Holon was also showing a shuttle vehicle based on a similar system. The increased performance of the EQ6 allows for better driving performance (time between disconnects). Imaging radar continues to improve – with resolutions of less than 0.3º that allows (for example) a VRU to be detected at 240m with as close as 1m of separation, and a palette next to a guard rail to be detected at 180m.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Hailo - is a smaller AI processor vendor and had a demo suite off the show floor. Raspberry Pi has released a low cost Hailo Compute board and SDK that allows it to be integrated into robotics and other applications. TTControl has developed an off-road ECU based on a Freescale iMX.8 plus Hailo H8 accelerator. Hailo was showing a number of other automative related demos with Tier IV, Perciv, Renesas and iMotion.



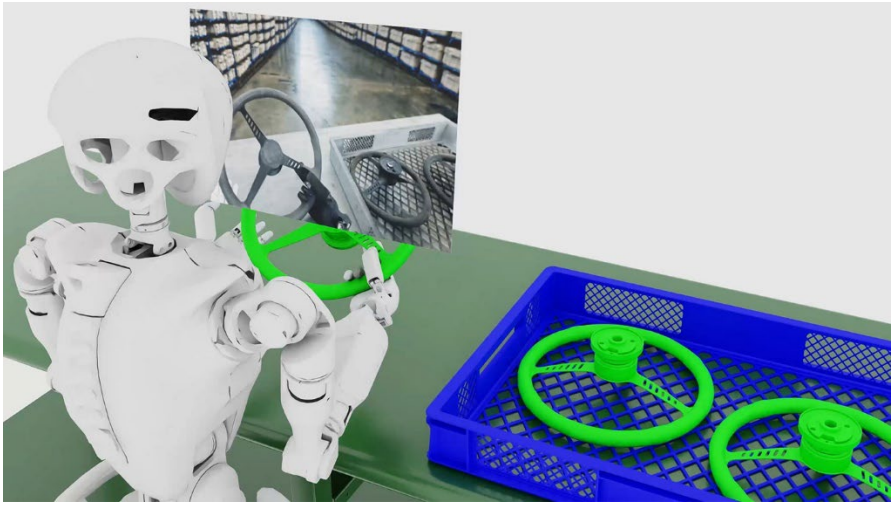
Hailo-based TTControl ECU

APTIV - was showing its latest Gen6 ADAS Platform that includes hands-off urban pilot and a perception solution that includes a birds-eye camera with short-range radar to eliminate blind-spots.

Stradvision - was showing its latest perception solution running on TI's TDA4 processor for L2 applications including valet parking and 3D surround view. The Stradvision stack also runs on AMD's Versal™ SoC and Renesas's R-CarV4H platform giving OEMs and Tier1's a choice of hardware solutions. Over 2M vehicles are already on the road using the Stradvision software.

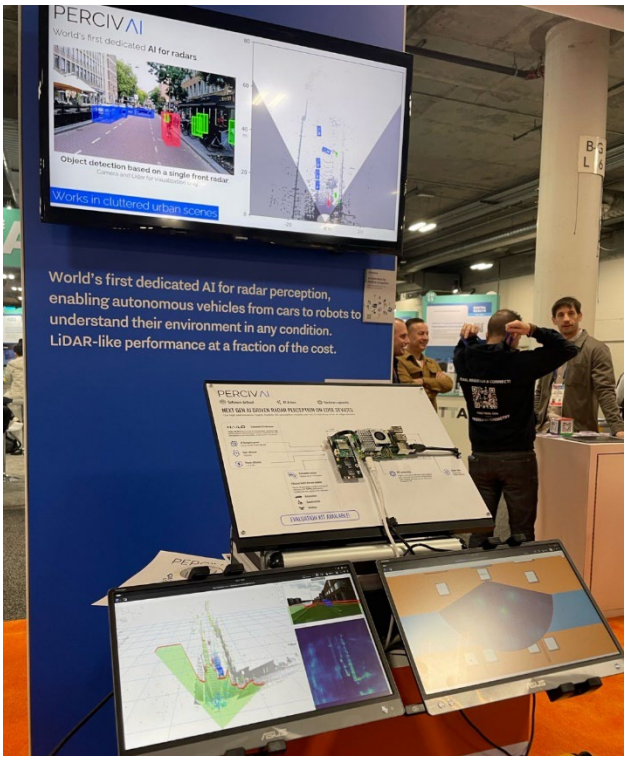
© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Nvidia's primary automotive news centered around its COMOS platform, which is a foundational model for developing physical AI, including robotics and autonomous driving. The foundational model allows for large amounts of synthetic data to be generated that can be used to train your driving models, reducing the need for collecting real-world data which is one of the biggest costs in AI development.



Perciv AI – was showing a radar perception stack – which can also be fused with camera data for a "Lidar-like" performance. They were using ZF and Smart Micro Radar for their demo running on a Hailo 8 processor (13 TOPS performance) – and can run some functions just on an ARM CPU. The software is hardware agnostic – and can run on sensor or zonal compute – or on a larger central compute platform.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners



Carteav – was showing an autonomous shuttle demo – running live from Florida – using a golf-cart type vehicle – equipped with short-range radars, Robosense Lidar and cameras. They also have a "uber-like" app to book a ride. The primary application is to serve private communities or other fenced in areas where a low speed vehicle like this are appropriate.

Waymo – was showing their 6th generation Robotaxi – based on a Zeeker minivan. Reducing cost of the hardware was a primary goal – so front and rear lidars have been removed (the corner lidars now cover a wider field of view) and the system has HD Radar. Another improvement was to "weatherize" the sensors better – and you can see wiper blades on the cameras now. These cars are already testing in San Francisco and other markets.

Waymo 6th Generation Zeeker Van

LG Innotek was showing solutions for autonomous driving, including its own Lidar unit that is soon to be available. LG is showing a central compute platform based on Qualcomm's Snapdragon Ride SoC and software that also integrates LG's IVI and ADAS capabilities.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

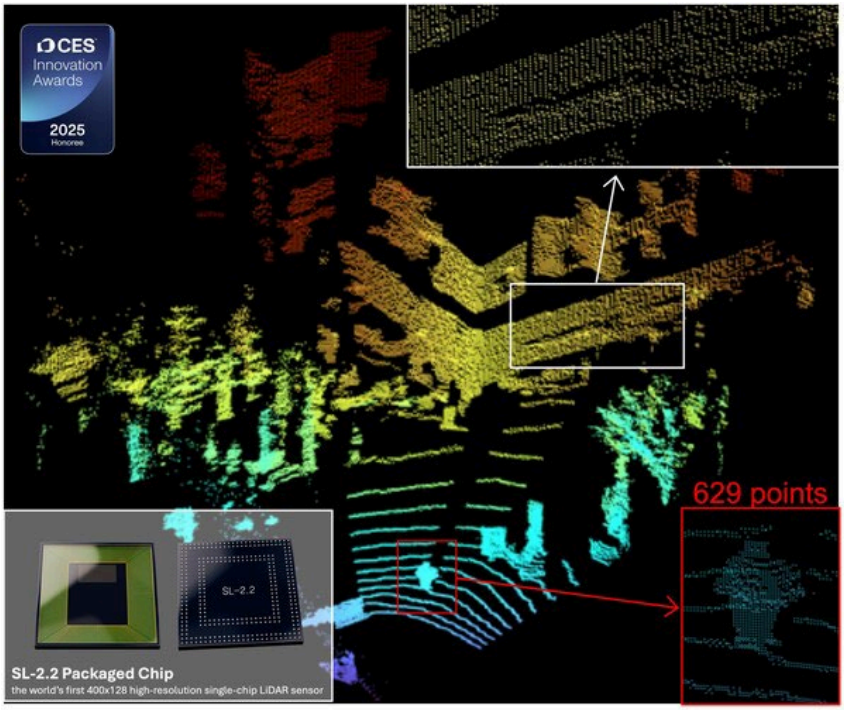
LG Innotek Lidar

Zoox had a demo vehicle on display – the vehicle uses 14-18 cameras, 4 corner lidars and radar. Testing has already begun in San Francisco and Las Vegas and public service should roll out later this year.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Smart Radar. Is using the Nextchip Soc for radar signal processing and achieving close to 1° resolution – so not quite as good as the Mobileye demo, but an alternative using off-the shelf components to look at.
The LiDAR vendors were quite well represented in the West Hall, including Seyond, Innoviz, Koito/Cepton, Hesai , Solid-Vue and others.

Solid-Vue was showing its SL2.2 lidar chip offering 400x128 resolution. The device is CMOS based and allows a totally solid-state lidar.



AGC/Wideye was showing lidar integration solutions with Luminar and Hesai and is also working with Aeva. There are a few innovation cleaning options, including nozzles at the side of the lidar "bump" and a nozzle at the top of the wiper arm that can spray at the right position to clean the glass.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Seyond has developed its own ASIC to reduce the cost of its high-performance Falcon K lidar. They also have cost reduced units (Robin series) that can be used for side lidar applications including blindspot monitoring. I asked Yang Han why this was a better solution that radar – and he told me that for level 3 systems and even L2+, it still has much better resolution and less false positives. Nio is one of the first OEMs to use that.

Koito/NAL/Cepton were showing behind windshield lidar demo and a cool HD-adaptive beam lighting demo that can be controlled by the ADAS system to enhance nighttime detection performance.

Leddar tech has moved from being a lidar technology supplier to a software vendor, with a perception and early fusion (Radar) solution that was running on an TI demo platform. Early fusion can double the detection range and result in less false positives and they are working on a number

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

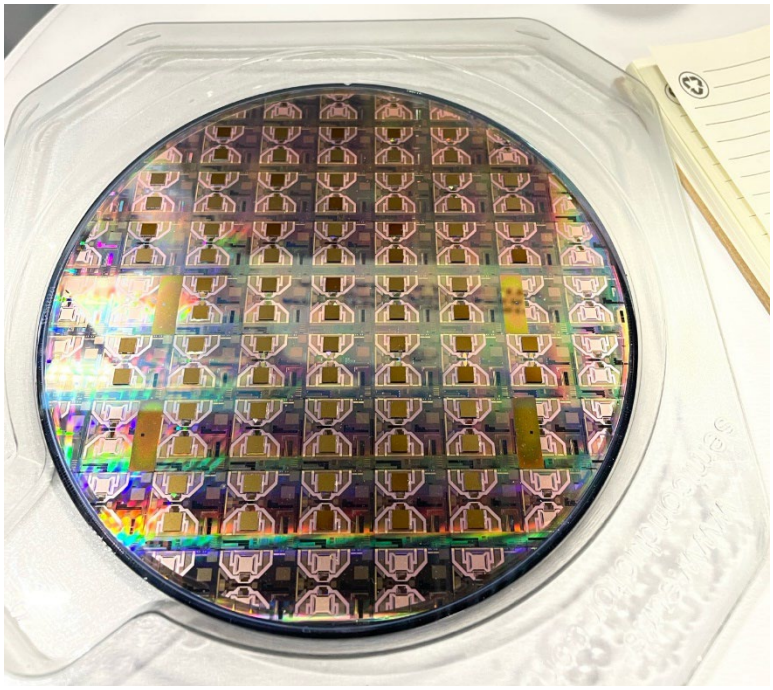
of truck and vehicle programs for this technology. China OEMs are targeting a based cost of $300 for the whole L2 system, including sensors, compute and software.

Innoviz was showing their first generation integration on a BMW i7 and the Innoviz Two on the VW ID.Buzz platform they are developing with VW and Mobileye. BMW integrates the lidar in the grille, and has a spray based cleaning solution on the side of the cover. The VW uses 3 roof, 4 corner and 2 side lidars that can achieve a resolution of down to 0.05x0.05 and produce a clean point cloud, even with a partially blocked cover. The lidar processing is done by a Renesas R-Car SoC, fusion is done separately. 905nm still offers the best cost/performance tradeoffs according to Christian Bornhoeft (VP Sales). They continue to look at 1550nm and FMCW but that is not ready for primetime yet.

Aeva introduced a new slimline FMCW LIDAR, the Atlas Ultra, with production in 2026 and was showing a behind the windshield integration with AGC Wideye. Resolution has increased 3x versus the previous model and the Ultra is full-automotive grade, with passive cooling, using Aeva's own silicon.

Steerlight's CEO (Francois Simoens) showed me their first SOI wafer that includes OPA and Wave Guides on the substrate. The add a flip chip controller to build a full solid-state lidar. The initial applications will be industrial 2-D solutions with prototypes this year and production in 2026.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners



In Summary – ADAS has become mainstream and an increasing set of features are being added. Camera based systems are great for L2/L2+ driving, but radar and lidar will become more important as we move to L3 and beyond. Robotaxi services are starting to take off and as hardware costs are reduced we will see many more deployments. Many OEMs are moving to central compute solutions and as increasing amounts of compute power become available additional ODDs can be addressed

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

8. Others

SoundHound and Lucid's New Voice Assistant

Lucid has launched the Lucid Assistant, developed in partnership with SoundHound AI, which leverages generative 'AI' technology for a hands-free drive experience.

The new voice assistant is powered by SoundHound Chat , the voice platform that was the first into full production with a voice assistant that integrates the latest generative 'AI' technology. This integration will give drivers access to a voice assistant with interactive knowledge discovery, real-time data, and effortless in-vehicle controls.

Now live and available to Lucid Air owners, the Lucid Assistant responds to the wake words “Hey Lucid”. Drivers and passengers can ask questions in a natural and conversational way to receive fast, accurate responses through SoundHound’s technology. This technology ensures that the assistant selects the correct response from the most appropriate domain – whether that’s an answer powered by generative 'AI', or real-time questions about weather, sports, stocks and more. The voice assistant lets users access Lucid’s full car manual and can provide answers to almost any question about the vehicle. Drivers can also use voice to control features such as navigation, and many of the Lucid Assistant features and functions can also be accessed without needing a cellular connection.

When processing queries, the SoundHound system uses a proprietary approach which the makers claim massively reduces the risk of 'AI' hallucinations—misleading, wrong, and unpredictable responses which are a real problem with LLMs. The assistant is available in English, Spanish, French, Arabic, German, and Dutch, with additional languages coming soon.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Far-Field Voice Capture

Voice control is an enduring quest, looking for hands-free functionality, good for both safety and convenience. Far-field voice capture allows drivers to interact with in-car systems for navigation, phone calls, or media control without taking their hands off the wheel or eyes off the road.

In this context, far-field technology's ability to distinguish between the driver's voice and other background sounds, such as road noise, music, or conversations among passengers, becomes essential. This enhances the reliability and responsiveness of voice assistants within vehicles.

Ark Electronics USA, a global electronics manufacturer, created Ark X Laboratories to deliver voice experience to the market. Their next generation of advanced, high performance far-field voice capture solutions, featuring Cirrus Logic, Sensory and NXP technologies, are Amazon pre-qualified and production ready. This provides voice-enabled IoT products and smart devices.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Gaming : Garmin launches Unified Cabin 2025

Garmin image

The Garmin Unified Cabin 2025—a CES Innovation Award winner this year—comes with infotainment and safety features., every passenger having a unique experience. The product comes with infotainment features, such as personalized voice assistants for every seat in the car, zoned audio and six displays across four zones.

It also includes safety features, such as child presence detection and computer vision and augmented reality for better views of the front and rear blind spots.

It is powered by Qualcomm Technologies' Snapdragon Cockpit Elite platform. Key features include backseat child presence detection, ultra-wideband capabilities, and driver monitoring to ensure road focus even amidst rich entertainment options. Passengers can enjoy personalized gaming or streaming experiences at their seats, using Bluetooth headphones and smartphones that connect to each individual screen.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Gaming : P3 and 3SS: Infotainment Solutions at CES

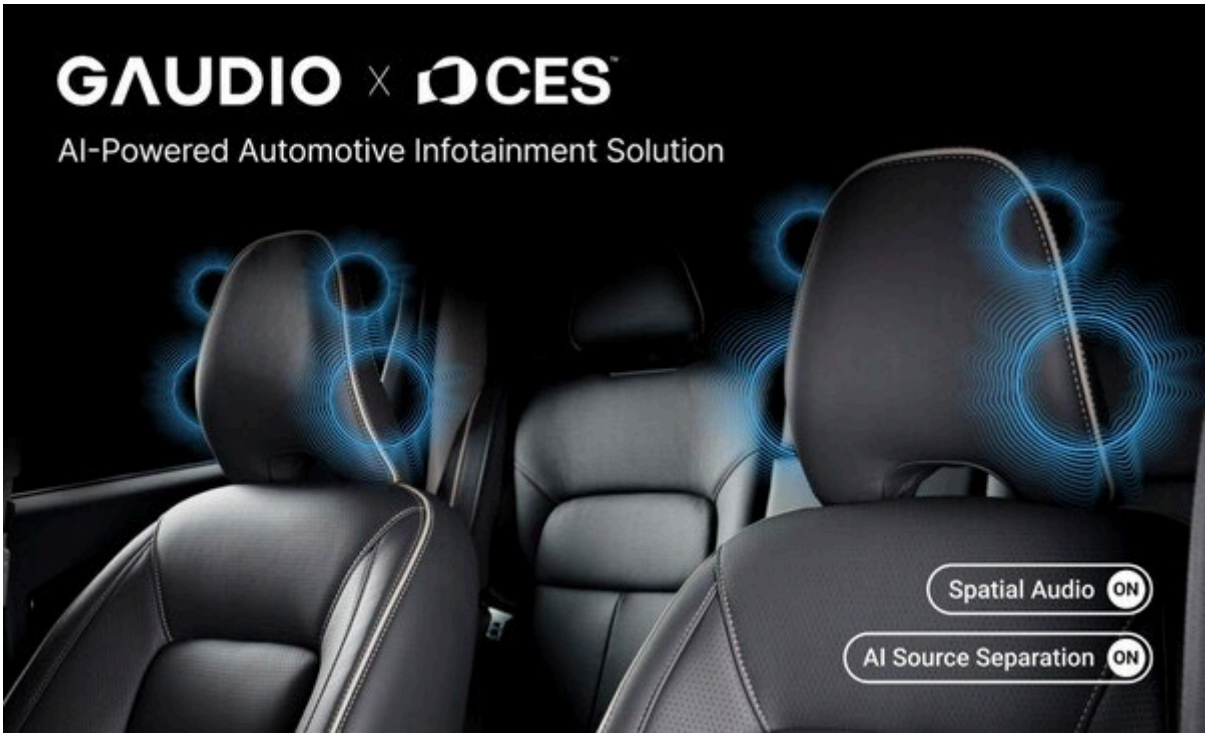
P3 / 3SS image

P3 and 3SS demonstrate at CES how vehicle manufacturers can rapidly integrate in-vehicle entertainment as part of an advanced infotainment system with P3's Sparq OS and 3SS's 3Ready Automotive.
Sparq OS is a dynamic and rapidly developing IVI solution developed by P3, based on Android Auto. Sparq OS's cockpit platform includes a diverse app store, smart navigation, digital and personal voice assistant, charging, media and entertainment. It features fully automated over-the-air software and firmware updates, ensuring always-up-to-date functionality and promoting sustainability.
3Ready Automotive is an in-vehicle entertainment solution that can be deployed in a very short time. It is a "powerful technology and content-rich platform", 3SS says, that is available as Entertainment as a Service (EaaS), delivering "super-aggregated entertainment to vehicle displays, abundant with appealing content, apps and services".
With this, automakers can stay in control of their customer experience, branding and feature roadmap with 3Ready Automotive. They can also manage, style, tailor and target the content on-the-fly, remotely, across their fleet, such as promotions, trending video content, social media, and live conferences. Car makers benefit from a long-term loyalty-enhancing always-open line of communication with owners of their vehicles. This also opens multiple new revenue streams, leveraging novel content monetization opportunities, enabled by 3Ready's inherent flexibility.

With the pre-integrated P3 and 3SS platform, auto makers have the opportunity to deliver a diverse entertainment selection including content from the world's most popular services, out-of-the-box, and based on Android Automotive.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Gaudio Lab's Award-Winning 'AI' Audio

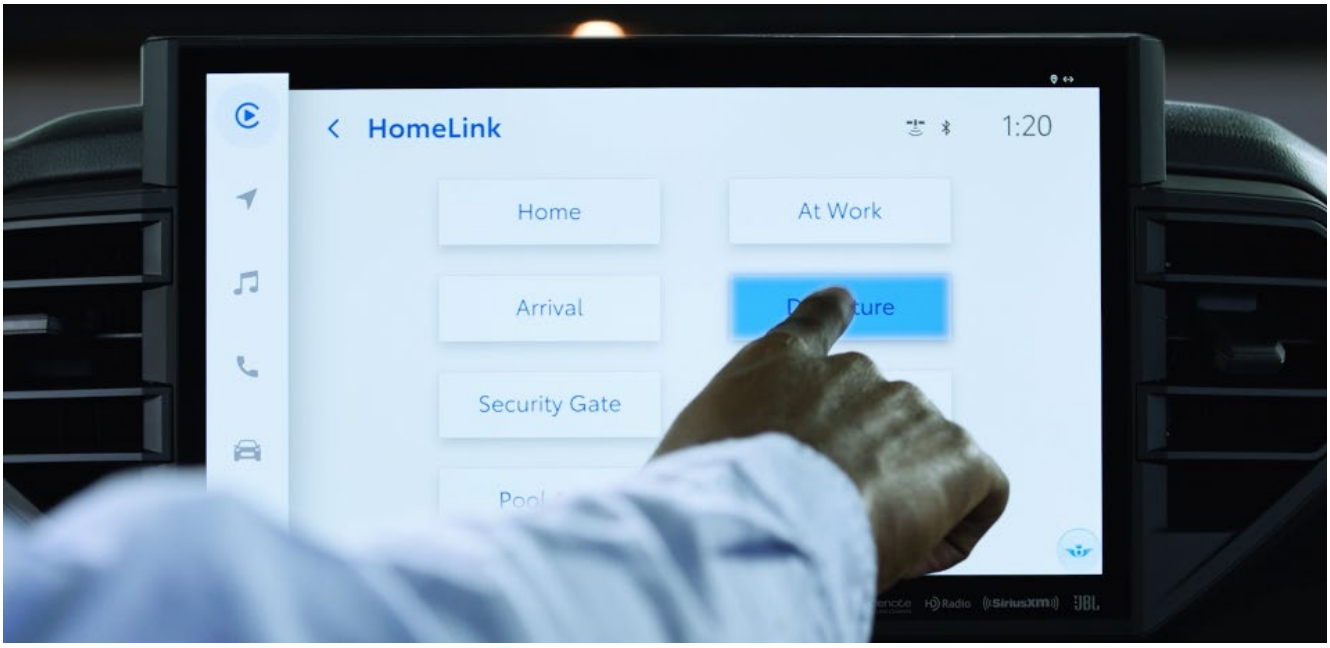


Gaudio Lab, an 'AI' audio technology company and three-time CES Innovation Award winner, is showing their latest solutions this year at CES. Highlights include the “Gaudio Music Replacement,” an 'AI' tool addressing copyright challenges in global video content by automatically replacing copyrighted music with context-appropriate alternatives, and a new automotive audio infotainment system featuring features like vocal removal, panoramic soundscapes, and seat-specific sound preferences.

Gaudio Lab’s award-winning portfolio spans 'AI'-powered content creation, noise reduction, loudness management, and spatial audio technologies. Their booth at CES 2025 features demos of these solutions, including the innovative karaoke feature Gaudio Sing and Gaudio Studio for source separation and noise reduction, further cementing their role as pioneers in 'AI' audio technology

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Car to Home : Gentex Shows Next-Gen HomeLink System



Gentex image

Gentex is showing the latest version of their HomeLink car-to-home automation system. The updated HomeLink, celebrating its 30th anniversary, integrates seamlessly with Apple CarPlay and Android Auto and supports smart home devices from major brands like Amazon and Samsung SmartThings. It also offers Wi-Fi-enabled control of garage doors via smartphone or vehicle-integrated apps. It unifies the link between a connected car and a smart home.

The new HomeLink employs multiple technologies—RF for entry-critical devices, Long-Range Bluetooth for global compatibility, and cloud-based API integration for smart home systems. Users can control individual devices or trigger pre-set scenes directly from a HomeLink button in their vehicles.

To simplify setup and management, Gentex has introduced a new HomeLink app, which enables device updates, remote garage door activation, and integration with automaker apps and infotainment systems. The system's expanded capabilities ensure HomeLink remains a leader in car-to-home automation, with over 110 million equipped vehicles on the road today.

Gentex also offers HomeLink Smart Home Solutions, a program delivering professionally installed and monitored smart home systems, including lighting, security,

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Mobility : Xpeng Aeroth Shows "Land Aircraft Carrier"

DVN image

Xpeng Aeroht presented at CES their new land-air vehicle combination. The Land Aircraft Carrier is intended as a flying car for mass production.
With its modular design, the land-air vehicle combination from Xpeng Aeroht combines a ground module for driving (kind of like a Cybertruck with 6 wheels) with an air module for flying. The 5.5(L) × 2(W) × 2(H)-meter "mothership" with battery-electric six-wheel drive transports the eVTOL in the trunk. The Land Aircraft Carrier has an 800V silicon carbide platform, which is said to offer a combined CLTC range of more than 1,000 km (WLTP value not yet available). The three-axle floor module charges the eVTOL with electricity while driving and parking.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

A command triggers autonomous separation, during which the arms of the flying cab and the landing gear are extended. It can then take off for up to six flights. After landing, the air module reconnects electronically with the ground module, folds up the arms and disappears into the luggage compartment. The panoramic cockpit of the aircraft is made of carbon fiber and features a dual six-rotor design with folding propellers and arms. The two-seater 270° panoramic cockpit is designed to provide good all-round visibility during flight operations. The intelligent flight control system includes fly-by-wire technology with triple redundancy, electronic fencing, multi-source navigation and dual environmental adaptability and electromagnetic compatibility. Propulsion, power supply, communication, flight control and operation are redundant, and there is also an automatic emergency response.

More than 3,000 orders have already been placed for the Land Aircraft Carrier. As the world's first modular flying car to be produced in series, it is set to be delivered by 2026. It will be manufactured in a special facility for modular flying cars in Guangzhou (China). Up to 10,000 flying modules are to be produced there each year.

Robotaxis

Robotaxis are reflecting progress toward L^4 and L^5 automation, the ultimate goal that CES has showcased for years now. Robotaxi players were present with Waymo and Zoox, as in 2024. This mobility mode is quickly gaining in maturity with Waymo reaching 175,000 paid rides per week between Phoenix, San Francisco and Los Angeles, and launches are planned in Austin, Atlanta, Miami and Tokyo. The company displayed the existing Jaguar iPace as well as the Zeekr and Hyundai vehicles which will be operational in 2025 with Waymo’s Gen 6 HW and SW. Zoox presented their purpose-built vehicle which will be used for commercial rides in San Francisco and Las Vegas in the coming weeks.

As said, these technologies support mobility to be more comfortable, personalized, and safer. And the emphasis is on doing! Demos and showcases are all well and good, but in the end, what counts is what actually ends up in the product and inspires customers. We are, at DVN Interior, excited to see what progress we'll see all along the new models until next CES!

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

Smart Cities : First Part of Toyota's Woven City

Toyota image

After three years of construction, Toyota announced at CES that they have completed the first section of their city of the future, called Woven City, in Japan. Over time, around 2,000 residents are to move into the city, including researchers, Toyota employees and retirees, as company boss Akio Toyoda said at CES.

The Japanese car manufacturer also announced Woven City on the site of a former factory at the foot of Mount Fuji at CES five years ago. The idea behind it is to create a place where technologies of the future can be tried out in everyday life. This includes, for example, robots for the elderly and small drones with lanterns that can accompany you when you go jogging. Toyota's autonomous shuttles are to be used for transportation.

Toyoda also emphasized that the Group is also interested in rocket technology. "Because the future of mobility should not just be reduced to Earth—or a single car company," he said, with an obvious dig at billionaire techbro Elon Musk, who owns Tesla and SpaceX. Toyota's first step was to invest in the Japanese rocket company Interstellar Technologies.

© 2025 DrivingVisionNews.com · all rights reserved · all trademarks are the property of their respective owners

List of the main DVN monthly reports

Main reports launched in 2008-2020

Koito company profile
China lighting market
The Wonderful World of Passenger Car lighting
Tier 2 and 3 contribution on automotive lighting
ZKW company profile
Simulations in automotive lighting
Mercedes-Benz profile
LED technologies in automotive lighting
LEDs Thermo-Electrics
Interior Lighting
BMW and lighting
Lighting and ADAS
Materials in lighting
Laser Head lighting
Automotive lighting Regulations worldwide
Israeli Startups
Jaguar Land Rover and lighting
Engineering companies involved in lighting
Japanese lighting market
Status of w/w Regulations
Korea Lighting Market
SL Corp profile
ADB/Matrix Beam
India Car Industry and Lighting Market
Vision of lighting 2025-2030
Automotive lighting Regulations worldwide
Vehicle Lighting in USA
New ADB technologies
Interior Lighting
Camera technologies
Varroc profile
Volkswagen profile
US automotive lighting industry
Materials in Vehicle Lighting
The Future of Exterior Lighting
IAA Frankfort Autoshow
DVN Munich WS
GENEVA Autoshow
US Lighting
Marelli AL Profile
50 years Light Styling
ADAS and Lighting

Main reports launched in 2021

Evolution of LEDs
New Models July-October 2020
Audi Lighting & ADAS
Lighting in development countries
ADB Update
DVN Shanghai WS
Innovations in Rear Lighting
Global Landscape of Automotive LED Suppliers

Reports launched in 2022

Technologies presented in CES 2022 Laser
light automotive lighting
ISAL report
DVN US workshop
Worldwide Demographic Development
Models launched May to August
DVN Shanghai report
VISION congress
Paris Autoshow + last Vehicle models
L.A. Autoshow

Reports launched in 2023

CES Report
TU Darmstadt Lighting Institute
DVN Paris Workshop
Universities and Lighting
MLA Technology
Models launched in H1-2023
DVN Tokyo Workshop
ISAL Report
DVN US Workshop
Osram Company Profile
DVN Shanghai Workshop

Reports launched in 2024

CES
New cars of the semester
DVN Munich Workshop
OLED Technology
Beijing Autoshow
Display Week 2024
DVN Detroit Workshop
ALE, June 2024
Indian vehicle lighting market
DVN Pune Workshop summary
New cars 2024
Nichia company profile
Test houses
Shanghai DVN event summary

Reports to be launched in 2025

CES and Bharat Mobility Global
Expo
Regulation UNECE 155 &156
DVN Munich event summary
Dekra testhouseCompany Profile
ALE + shanghai motorshow report
Czech Republic automotive lighting
ecosystem
RGB leds status

DVN ecosystem and scientific community

DVN is a reference in the world of Lighting, Interior comfort and Lidar

Car Makers

Audi
Avatr Technology
Bentley
BMW
Ferrari
Ford
Ford Otosan
General Motors
Genesis
Hero MotoCorp
Honda
Hyundai
Jaguar-Land Rover
Kia
Lotus cars
Lucid Motors
Mazda
Mercedes-Benz
Mitsubishi Motors
Nio
Nissan
Renault
Rivian
Seat
Stellantis
Subaru
Toyota
TVS
SAIC Volkswagen
Volvo Cars
Zoox

System Suppliers and Tier 1s

Adient
Anrui
Appotronics
Aspöck Systems
Braslux
Cepton
Ceres Holographics
Chongqing Rebo
Continental
Creat
Diode Dynamics
Elba
F2J Industry
Feka
Fiem Industry
Flex-N-gate
FORVIA designLED
FORVIA HELLA
GHSP
Grupo Antolin
Hascovision
Hitachi
Ichikoh
J.W. Speaker
Keboda
Koito
Lightworks
Lumax
Luxit
Maier
Magna
Marelli
Marquardt
Mind
Mobileye
Mobis
Muth Mirror Systems
Nordic Lights
Odelo Farba
OPmobility
Panasonic
Polycontact
Prettl group
Rehau
SL Corporation
SMR Automotive
Stanley
The Lighting Consultants
Toyota Boshoku
Uno Minda
Valeo
Varroc
Weidplas CH
Xingyu
Zanini
ZKW
Zodiac

Light Source Suppliers

ams OSRAM
APT Electronics
Brightek
Dominant Opto Tech.
Everlight Electr.
HC Semitek
Kyocera SLD Laser
LG Innotek
Liteon Technology
Lumileds
Nichia
OLEDWorks
Refond
Samsung LED
Seoul Semiconductor

Tier 2s and service providers

A2Mac1
Ascorium
AML Systems
Ansys
ASAP
ASYST Technologies
Auer Lighting
BASF
Bluebinaries
Brightview Technologies
Capgemini
CLM Search
Coindu
Covestro
Dajac
DBM Reflex
Delo
Die haptiker GmbH
Docter Optics
Dow
Edag
Elmos
Endego
Ennostar
Euro Moulders
EV Group
Focuslight
Fusaware
Grewus
HJ Optics
Huawei
Idemitsu
Infineon
Inova Semiconductors
Instrument Systems
Integrity
Joysonquin
Leonhard Kurz
L.E.S.S.
LMT
Luminus
Mektec
Microvision
Maxell Frontier
MD Group
Melexis
Microchip
Microrelleus
Mitsui Chemicals
Mocom
Nalux
NBHX Trim
Oerlikon
ON Semiconductor
Polyrise
Preh
Ray Group
S&P Global Mobility
Sabic
Seaborough
Seoyoneh-Ewha
Shihu
SP3
Sunny Automotive Optech
Suzhou Senbo
Synopsys
TechnoTeam
Toshiba lighting
TQ Technology
Uni Tooling
Ventura
W.L. Gore & Associates
WLOPT
X2F
Xunchi

Universities, NGO and labs

Alliance for Automotive Innovation
ARAI
Automotive Research Association of India
BMDV
Bundesministerium für Digitales und Verkehr
CATARC
China Automotive Technology and Research Center
CEA Leti
Darmstadt university
DEKRA
Department for transport, UK
DTI
Danish Technological Institute
Estaca
École supérieure des techniques aéronautiques et de construction automobile
Fraunhofer (FEP, IAP, ILT, IMS)
Fudan university
GTB
Hannover Leibniz
Hochschule Aalen
Hochschule Magdeburg-Stendal
Icahn School of Medicine at Mount Sinai
Light and Health Research Center
ICAT
International Centre for Automotive Technology
Idiada
Institut d'Optique
JASIC
Japan Automobile Standards Internationalization Center
KBA
(Kraftfahrt-Bundesamt)
KATRI
Korea Apparel Testing & Research Institute
KIT
Karlsruhe Institute of Technology
Kotsa
Korea Transportation Safety Authority
LCOE
Laboratorio Central Oficial de Electrotecnia
L-LAB
MLIT
Ministry of Land, Infrastructure, Transport and Tourism
NHTSA
National Highway Traffic Safety Administration
OICA
International Organization of Motor Vehicle Manufacturers
Pacific Northwest National Laboratory
RDW
RISE Research Institutes of Sweden
Sapphire STS
SMMT
Society of Motor Manufacturers And Traders
SMVIC
Shanghai Motor Vehicle Inspection Certification
TNO
Traficom
Transport Canada
UMTRI
Université Gustave Eiffel
UTAC
VDA
Verband der Automobilindustrie
VEDECOM
Vrije Universiteit Brussel
YoungNam University

DVN
Lighting