Thu, 23 January 2025
Weekly Newsletter

DVN Interior

NEWSLETTER #245

Editorial

DVN Interior Workshop At Köln This April

Interior technologies presented at CES 2025 were very much focused to make mobility more comfortable, personalized, and safer. The number 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 support drivers and potentially improve general road safety. This week's in-depth piece highlights these in-car sensing technologies, whose development is primarily driven by convergence of regulations and technology readiness.

You'll see as well in this week's interior news that these sensing technologies, complemented by software, 'artificial intelligence', and machine learning, can passively manage driver-impairment situations due to alcohol or other substances—likely a next step in regulations.

The next DVN Interior Workshop will be on 8-9 April in Köln, Germany. You'll find the latest version of the docket in today's newsletter as well as on the website. Watch for more information as we finalize and fine-tune the lecture lineup and exhibitions.

Sincerely yours,

Philippe Aumont
DVN-Interior General Editor

In Depth Interior Technology

DMS is Getting Serious!

3D EMOTION DISPLAY (DVN IMAGE)

We've published information about DMS (driver monitoring systems) in our most recent two newsletters, as part of our coverage on CES 2025. That coverage has included material about 3D Emotion, Valeo, Smart Eye, LG, Continental, Cipia, and Gentex. CES confirmed DMS presence almost everywhere. From 2026, the European Union will require all new vehicles sold in the region to be equipped with a camera-based DMS.

That all makes this a good time to review the DMS domain more broadly.

DMS principles

Using cameras mounted in the vehicle's cabin to track the driver's gaze, DMS detects whether a driver's eyes are on the road. A driver distracted by a phone, children, pets, drowsiness, or intoxication can be detected. Today's typical DMS will issue alerts to the driver if a lack of attention is detected, but it is not difficult to see how DMS could be incorporated into AV (autonomous vehicle) systems so the car could intervene to prevent an accident if the DMS determines that the driver is distracted or impaired.

But does that idea make sense? Is it still worthwhile to monitor the driver if the car is driving itself? Paul McGlone, CEO of Seeing Machines, says: "If you have a car with a steering wheel that offers either partial or full autonomous capability, there will be a requirement for a driver monitoring system. If you get to a robotaxi that has no steering wheel, there will still be requirements for monitoring in cabin, for things like health. But we think it's going to be many decades before the majority of vehicles have no steering wheel".

Most experts think DMS will be applied even in full AVs, as the technology will be needed for applications such as sensing passenger size and weight for the safe deployment of airbags. Beyond that, DMS could also be adapted to focus on the rider (no longer driver) experience, automatically sensing and adjusting settings to make passengers more comfortable or offering reminders that objects have been left in the vehicle.

Regulations and ratings

Euro NCAP's Driver State Monitoring (DSM) systems are designed to enhance vehicle safety by detecting driver fatigue and distraction. These systems use technologies like eye-monitoring sensors to directly observe the driver's alertness and attention

Seatbelt reminder

The seatbelt remains the single most important item of safety equipment in the car. Without it, occupants are unrestrained and other protective devices such as airbags are unable to work properly without the controlled, predictable kinematics which a seatbelt can provide.

Euro NCAP has, for many years, rewarded seatbelt reminders (SBR) and such systems remain a central part of occupant status monitoring. In addition to SBR, new technologies exist which can monitor the condition of the driver: whether or not they are alert and paying attention to the driving task.

Find our recent DVN Interior coverage of SBR with IEE, Toyota, Polycontact.

Established in 1997, the European New Car Assessment Programme (Euro NCAP) has been a global leader in automotive safety innovation, influencing safety practices across Europe and beyond through several rigorous safety protocols. In 2020, they introduced Driver Monitoring Systems (DMS) as part of their safe driving criteria, addressing emerging concerns around driver distraction, drowsiness, and overall alertness.

This initiative was part of a broader commitment to adapting safety standards to new technological capabilities and changing driver behavior patterns.

DEVANT IMAGE

Driver Monitoring Systems in Euro NCAP

In the current implementation of the Safety Assist / Safe Driving assessment protocol (2023, Version 10.4), the DMS is assessed per its performance in these areas:

- **Sensing Capabilities**: The DMS must accurately monitor a diverse range of drivers, considering variations in age, gender, stature, skin tone, and other physical factors. It should function reliably in different conditions, accommodating factors such as lighting, eyewear, and facial hair.
- **Driver State Detection**: The DMS must identify driver states like distraction, fatigue, and unresponsiveness. This includes recognizing behaviors such as prolonged glances away from the road, signs of drowsiness, and delayed reactions.
- **Vehicle Response**: Upon detecting impairment, the DMS should respond with appropriate interventions, such as warnings or other safety actions, to mitigate risks. The effectiveness and timeliness of these responses are crucial in ensuring driver and occupant safety.

DMS become even more important in the 2026 implementation, which will incorporate more detailed scenarios, making DMS and Occupant Monitoring Systems (OMS) even more integral components of a vehicle's total safety rating. Among the notable additions:

DUBIZZLE IMAGE

- **Non-fatigue-related impairment detection**: The DMS will need to extend beyond fatigue and distraction detection to assess signs of alcohol and drug impairment through behavioral indicators.
- **Advanced seatbelt detection**: The DMS will need to detect seatbelt usage, but also verify proper positioning and fastening for maximum effectiveness.
- **Occupant Classification**: Enhanced monitoring will account for passenger size, position, and posture to optimize restraint systems, such as airbags.

Driver Engagement

(note: all 2026 Euro NCAP protocols with version number 0.9 are under final review, and might undergo minor changes.)

Euro NCAP published some new definitions this past November:

Driver State Monitoring (DSM): a system which can determine the state of the driver.

Direct Monitoring: Driver state determination is supported by sensor(s) directly observing the driver.

Indirect Monitoring: Driver state determination is achieved indirectly through means other than sensor(s) directly observing the driver (e.g., steering input).

Transient state: The driver's focus on the primary task of driving/controlling the vehicle is temporarily reduced but can be immediately reversed (e.g., visual inattentiveness due to engaging in secondary tasks).

Non-transient state: the driver's focus on driving cannot be restored without appropriate recovery time.

Long distraction: A single, long distraction which takes the driver's gaze away from the forward road view.

Short distraction / visual attention time sharing (VATS): Repeated short gazes away from the forward road view, such as fiddling with a phone.

Impairment: Impaired driving negatively impacts driving performance, resulting in an increased crash risk. Impairment may either build up over time (typically drowsiness/sleepiness) or present itself from the start of the journey (non-fatigue related, e.g., from the use of licit/illicit drugs).

Microsleep: A temporary episode of sleep after fatigue builds up, which may last up to several seconds.

Sleep: greater than a few seconds.

Owl- or lizard-type movement: A shift of visual attention away from the road.

Eyelid aperture: distance between the point where the straight line drawn in the y-axis direction from the midpoint of line segment connecting the outer and inner corners of the driver's eye overlaps the lower edge of the upper eyelid and upper edge of the lower eyelid. Measured when the driver is awake and attentive.

Driver engagement assessment total points: 30

The North American regulatory island

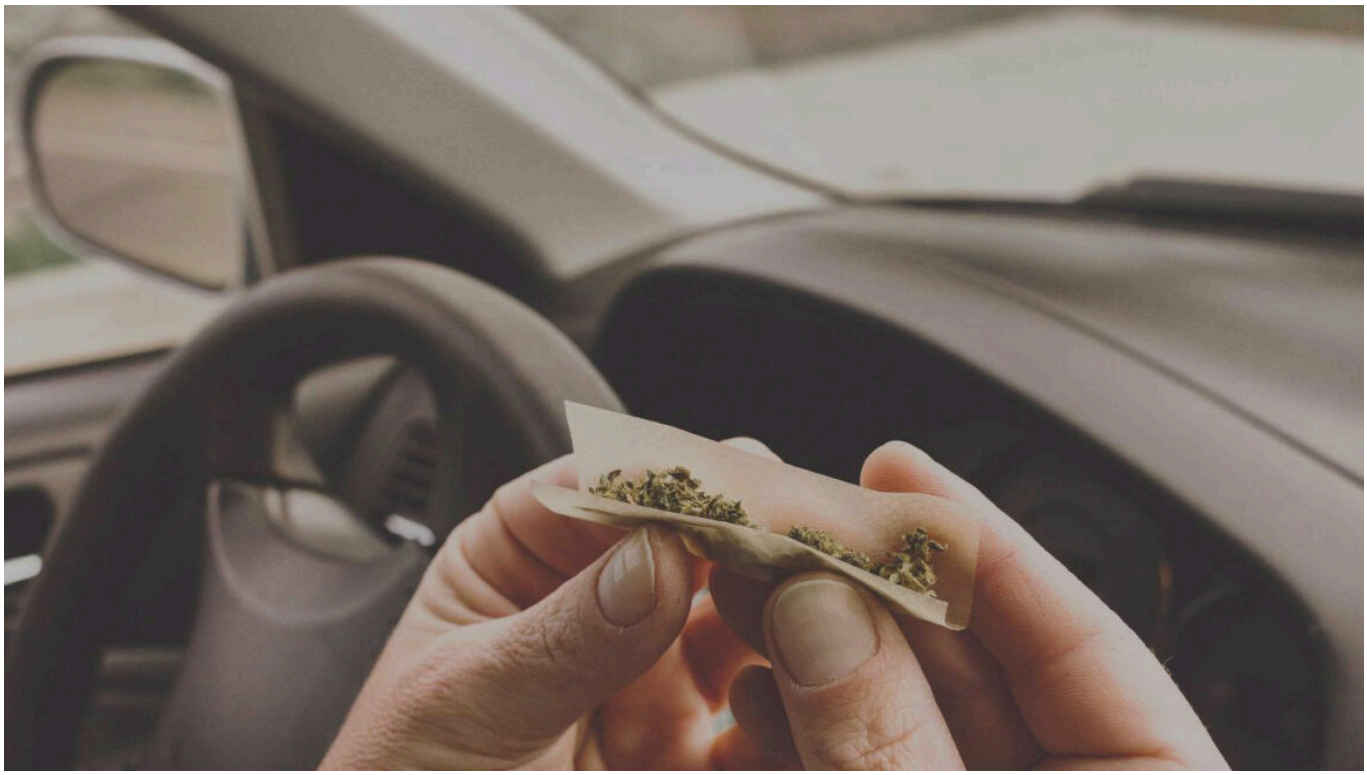
Impaired driving accounts for around one-third of road fatalities in the USA, according to NHTSA, but technology targeted at preventing it remains divisive. The agency's advanced notice of proposed rule-making (ANPRM) was published in December 2023, gauging the practicalities of mandating alcohol and impairment detection for light-duty passenger vehicles.

Advanced (typically camera-based) DMS recently became mandatory for all new vehicles under General Safety Regulation 2 (GSR2), but alcohol detection wasn't part of the scope. Instead, automakers are required to include a provision for installing aftermarket alcohol interlocks, which support driver rehabilitation by enabling them to avoid a ban if they test themselves at the start of every journey.

NHTSA is supporting stakeholders with the development of passive systems. Founded in 2008, the Driver Alcohol Detection System for Safety (DADSS) is a public-private partnership with the Automotive Coalition for Traffic Safety (ACTS), focused on advanced and test prototype-stage solutions. The project is named in the ANPRM, which notes that it has demonstrated technologies that provide consistent, reproducible alcohol measurement that correlates with traditional methods.

Work is ongoing, with recent developments including a collaboration between Magna and Senseair unveiled at the 2024 CES. This augments a traditional driver monitoring camera with another that measures how cabin air absorbs infrared light. Absorption differs between alcohol and CO_2, and Senseair claims a detection accuracy of 0.0003 mg/l without the driver actively conducting a breath test.

Consumer view



AVIVA IMAGE

In the meantime, consumers are cautious. A recent survey by the Future of Privacy Forum found accuracy ranked as the top concern for alcohol and impairment detection (60 and 59 per cent, respectively), followed by privacy (48 and 46 per cent of respondents). Conclusion is that the system should not function as an onboard police officer; collected data should be used solely for safety purposes and not for punitive actions.

Although NHTSA acknowledges the importance of drug detection systems, this capability will not be required as part of the final rule. The agency notes that drug use spans prescription and OTC medicines, as well as illegal substances, and the effects on users are more diverse.

Anyway, algorithms to detect drug-related impairment have ethical, legal, and logistical challenges which need further research and development.

Mitsubishi and Seeing Machines

Mitsubishi Electric Mobility Corp. ("MEMCO") has announced a collaboration agreement with Seeing Machines covering DMS/OMS and Guardian (Fleet). This is a collaboration agreement, not a simple tier-1 / tier-2 purchase agreement, which implies that from now MEMCO will bid only Seeing Machines for auto RFQs.

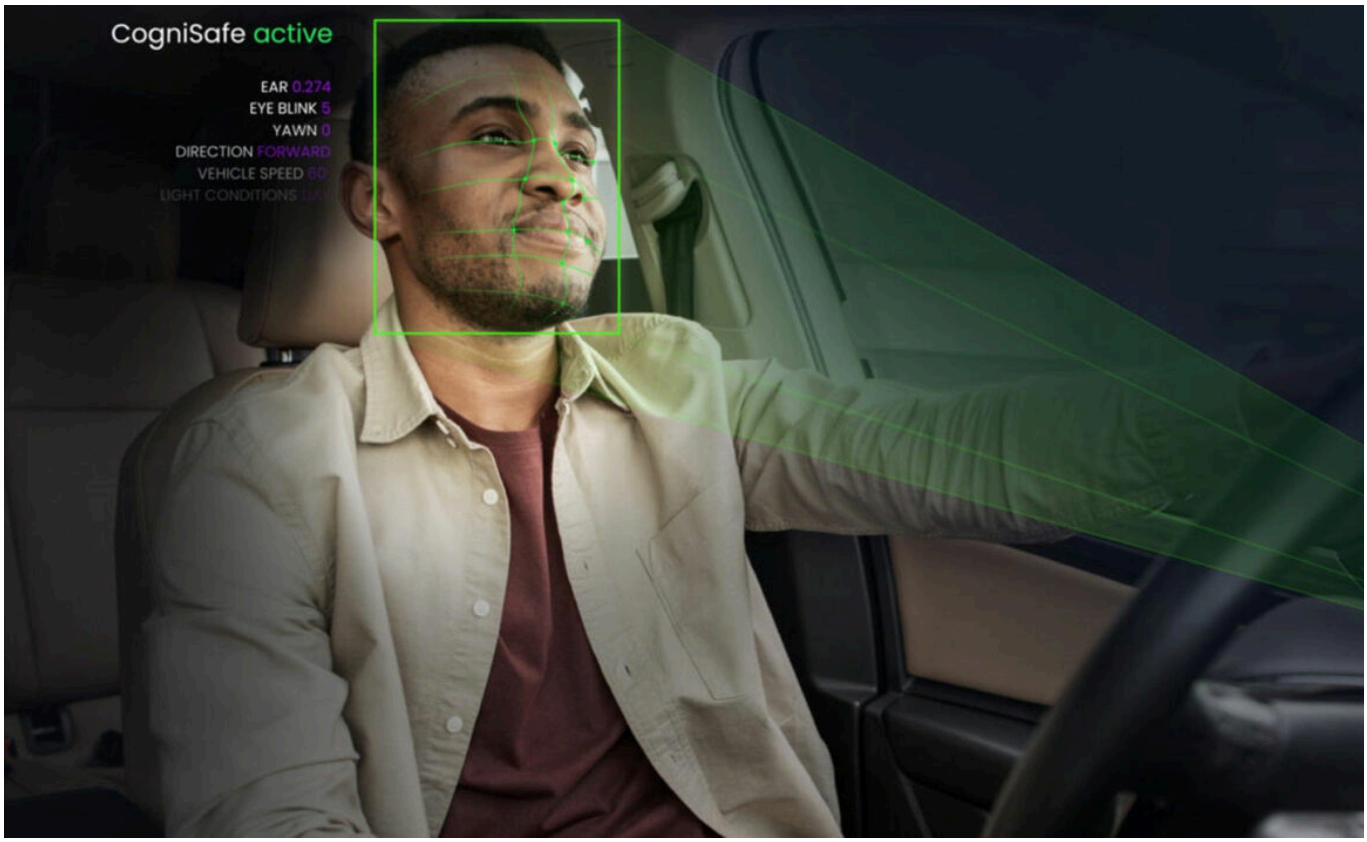
Seeing Machines now has three global tier-1 partners, each with a slightly different regional automaker concentration: Magna (N. America); Valeo (Europe); MEMCO (Japan). All are established in China, too.

It is assumed Mitsubishi Motors, Nissan, and Subaru will be the first automakers targeted by MEMCO. Toyota is the big win but has a well-established DMS partnership with Aisin/Denso; Mazda's decision for DMS is unknown but likely still in play.

The strategy appears to center on MEMCO targeting Denso for DMS in both auto RFQs and commercial vehicles. Denso offers aftermarket DMS for trucks (using signals from Xperi) mostly in Japan. Guardian Gen3 is now to be marketed in the fleet aftermarket in N. America, Europe and Japan using the established MEMCO distribution channel, instantly massively expanding customer reach.

MEMCO has a 19.9-per-cent stake in Seeing Machines as part of the agreement, now making it the largest investor. This number is significant and signals an intent for a real long-term partnership. Seeing Machines is pursuing close partnerships across auto and commercial vehicles, rather than competing with tier-1 partners, by becoming a 'software tier-1'—blurring the lines between collaboration partner and competitor.

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.

Interior News

VinAI's DrunkSense

INTERIOR NEWS

DVN IMAGE

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.

Corraction’s Drunk-Drive Detection in Steering Wheel

INTERIOR NEWS

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.

Grewus Seat Haptics Experience

INTERIOR NEWS

DVN IMAGE

DVN AT GREWUS BOOTH WITH MANAGING DIRECTOR ELISA SANTELLA (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.

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.

Brusarosco Mulls Sustainable Leather Solutions

INTERIOR NEWS

BRUSAROSCO IMAGE

An example of Brusarosco's environmentally conscious processes is the use of tannins from locally-grown Italian chestnuts to avoid chromium and glutaraldehyde.

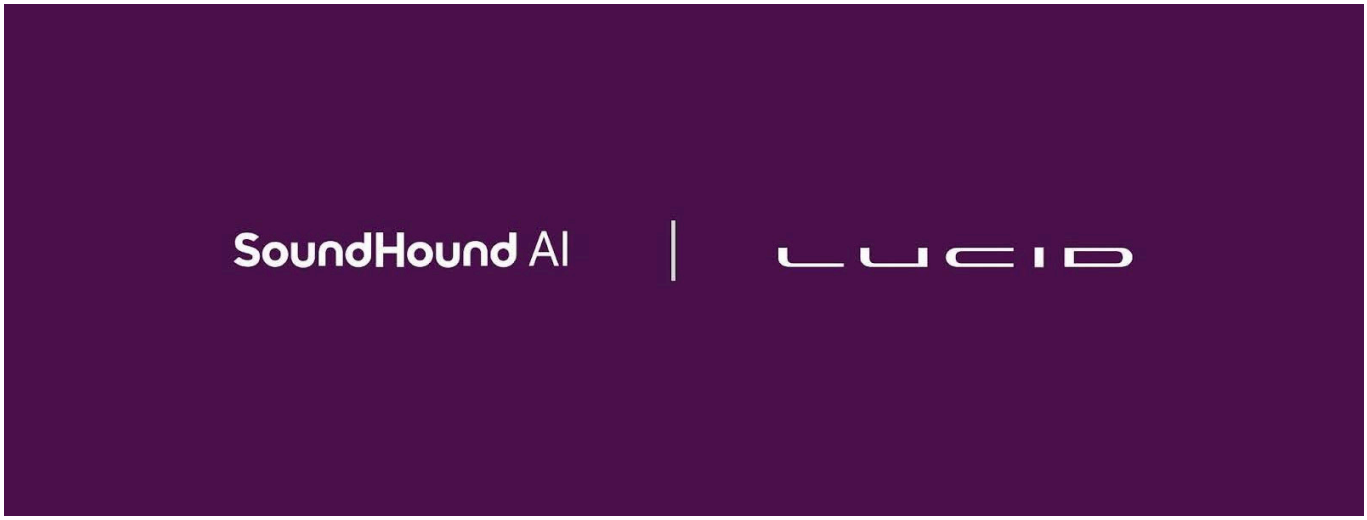
B-Foglia is a soft and luxurious aniline leather and preserves the feel and natural beauty of genuine leather while meeting the quality standards of the automotive industry. B-Terra uses the same tanning technology as B-Foglia, but has a little more coating to meet more stringent durability requirements.

B-Natura is Brusarosco's third important product and is an organic nappa leather product with a smooth and homogeneous surface and even grain. It uses some of B-Foglia's chestnut tanning technology, but also uses the leaves and pruning of olive trees. This increases the use of the organic product, saves water and reduces the use of synthetic chemicals, avoiding any "pickling phase".

Brusarosco is based in Arzignano, Italy, between Verona and Venezia. Brusarosco's products are internationally certified to automotive quality and environmental standards, have received the Leather Working Group's Gold rating and have been certified "Excellent" by the I.CE.C for their traceability back to the farm. The company has also achieved the ISO 14001 environmental standard.

SoundHound and Lucid's New Voice Assistant

INTERIOR NEWS



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.

Hyundai Palisade: Big New SUV Has De Luxe Interior

INTERIOR NEWS

HYUNDAI IMAGES

The highlight of the new Palisade is its interior. With an extended wheelbase, which is now over 290 cm, even more space has been created. Two 12.3" screens dominate the dashboard and provide state-of-the-art infotainment and vehicle data. Despite the digital features, Hyundai remains true to its physical buttons, which make operation intuitive.

The previous generation had already been described as a “hub of relaxation and comfort”, but the all new Palisade seems to take things to a new level. The three-row SUV has been totally redesigned and now appears much grander and luxurious than before.

Inside there is now seating for up to nine passengers, with the center console doubling as an extra seat in the front row. The interior design focuses on “family” and “luxury,” with the seats, armrests and other components using soft and comfortable materials inspired by high-end furniture, said Song Hyun, head of the interior design group at Hyundai. The island-type console provides a much roomier front interior space compared to other cars. Promising the best living space in its segment for every passenger, the third row features heated and reclining seats like the first and second rows.

The armrest folds upwards, turning the center console into a backrest. The center console has USB-C charging ports (100 W), a wireless charging pad and cup holders. The instrument panel is vast and arguably steals the show. The upper section sits high in the driver’s line of sight and is almost pillow-like while the lower section sits below a concaved area in the center.

The steering wheel has a minimalist design and replaces the traditional H-sign with four dots representing the letter "H" in Morse code. Subtle ambient lighting and round door handles round off the high-quality interior design.

“Various add-ons to the new Palisade make it the best choice not only for a family car, but also for people who love outdoor activities like camping,” said Lee Chul-min, vice president of the marketing division at Hyundai Motor.

Nio ET5: Between Sport and Comfort

INTERIOR NEWS

NIO IMAGES

The Nio ET5 is 4,790 mm long, 1,960 mm wide with the mirrors folded in and 1,499 mm high. The electric saloon offers a sporty silhouette and short front and rear overhangs. The lidar and the cameras on the roof are striking, and there are also cameras on the sides.

The vehicle can be accessed via the key, or keyless via the charging card or the app. The wheelbase of 2,888 mm promises plenty of space in the interior. The door handles extend electrically, while an electric motor supports the opening of the doors and offers a soft-close function. The cockpit has an open and cool design. The first thing you notice is the slightly too high seating position, which is probably due to the battery. The sports steering wheel is two-tone and not too thick, but the buttons are only partially illuminated. The 14-way electrically adjustable front seats are very comfortable and offer good lateral support despite the somewhat slippery artificial leather. Seat heating and ventilation as well as massage are included in the comfort package. The same applies to the front passenger seat. Surprisingly, there is no glove compartment, but there are large storage compartments in the doors, under the center console and a lockable storage compartment. The rear offers plenty of space in all directions as well as heated seats.

The minimalist ambience has almost no buttons or switches. The rubber-like door trim is very stylishly illuminated at night with the ambient lighting, but does not look particularly high-quality during the day. To

start the car, all you have to do is move the gear selector on the center console.

The large panoramic roof allows plenty of light into the interior, but does not have a roller blind. The trunk under the electric tailgate is not particularly easy to load due to the small opening, and at 386 l it is not very large.

In the cockpit of the ET5, a clearly laid out 10.2" driver display and a 12.8" touchscreen, which stands upright on the center console, provide information. While driving, operation is very difficult, because there are always at least two or three clicks that are required and distract from the driving task. You should enter the address for the navigation system before setting off. It is also essential to log in to the vehicle, because without the saved, individual user profile, the seat, steering wheel and mirror settings will no longer fit. And these can only be adjusted when the vehicle is stationary and only using the steering wheel buttons in conjunction with the display.

The voice assistant offers a remedy, at least for most inputs: Nomi Mate (€600) greets the occupants as soon as they enter the vehicle with information about the weather, for example. It understands almost everything from every seat. It can also be used, for example, to switch off the central display; the corresponding field could not be found in the menus. The app can be used to open the windows and doors, switch on the lights and, above all, control the pre-conditioning for the interior and battery. A heat pump is standard in the ET5.

More than 20 ADAS systems mostly functioned smoothly and can be individually adjusted. The adaptive cruise control with lane departure warning works very well on the highway and starts automatically in traffic jams. In the city, however, it sometimes seems overwhelmed, as it often brakes sharply for no apparent reason. The turn-off assistant shows a camera image on the display. The automatic high beam dipped too late and was deactivated for this reason. The speeding warning comes very early, but can be quickly switched off with Nomi's help.

The Design Lounge

Rebooted Interior for Twingo E-Tech Show Car

THE DESIGN LOUNGE

RENAULT IMAGES

COFFEE CORNER
DVN
Interior

At the Brussels Motor Show, Renault revealed the interior of their Twingo E-Tech electric prototype, a show car previewing the design approach of the future production vehicle, set to go on sale in 2026. True to the spirit of the first generation with its spacious and functional layout, the interior revisits the iconic features of the first Twingo.

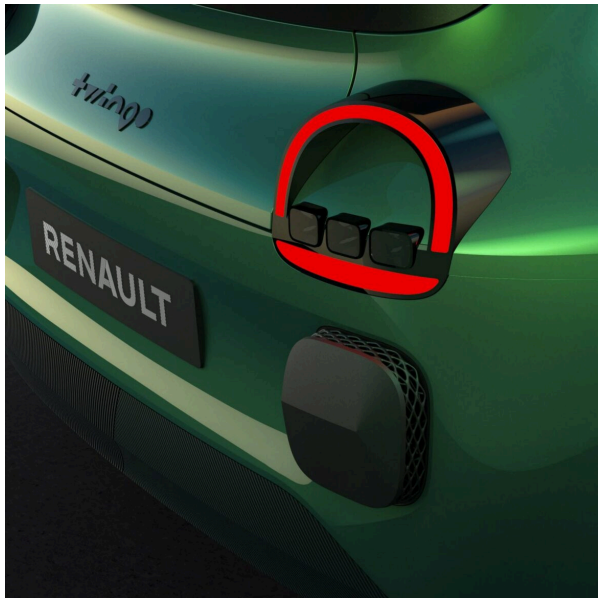
The dashboard is airy, cylindrical and suspended is both attractive and functional. It is an eminently modern vehicle with a 7” digital instrument panel and a 10.1” central multimedia screen. As well as providing connectivity, these features add a fresh, dynamic touch to the onboard experience, with their original graphics. Sitting alongside the three buttons for the air conditioning, the red hazard warning lights button in a translucent bubble stands out visually, evoking memories of the first Twingo.

Every aspect of the interior is designed to make life easier: the streamlined layout includes easily accessible stowage, with spaces under the dashboard and the two front seats to store bags and everyday objects, and a flat space under the cylinder, running the width of the cabin, that allows passengers to keep a book, their phone or even their sunglasses within easy reach.

The original upholstery of the Twingo E-Tech is inspired by the colourful patterns of the first-generation model. It matches the exterior body colour, with subtle touches on the front door panels and on the dashboard facing the passenger. Given that show cars are an opportunity to explore and test new ideas, the vehicle’s floor is made of tinted cork, a material that is both resistant and durable.

The Twingo's strength has long been its ability to adapt easily to everyday needs. Reflecting this, the rear bench slides and folds in two 50/50 sections, adapting to every situation.

With its generous rounded glass roof, the cabin is bathed in natural light, bringing a sense of space.



The interior is designed to be attractive, practical and smart in every way, creating an experience that all the passengers can enjoy. Examples include the front headrest with a magnetic area for rear passengers to fix their phones, or an elastic strap that doubles as a map pocket to keep a water bottle close at hand. The seatback adjustment knob is inspired by skateboard wheels, in a nod to the urban environment.

Show cars are an opportunity for Renault to present the design plans of future vehicles to the public. They also serve a practical purpose in allowing engineers to test and optimise the various features. For example, a number of changes have been made in terms of function and design since the show car was first unveiled at the Paris Motor Show last October. The lower part of the front end, for example, now conceals an air intake, the rear wheel arch extensions are smaller, and the black bumpers have been redesigned and printed in a honeycomb pattern using a 3D printer. In terms of appearance, the front door handles no longer have an illuminated surround, a quarterlight has been added near the rearview mirror and the shape of the rear lights has been changed. These developments illustrate Renault's commitment to continuously fine-tuning the design and features of its vehicles throughout the development process.

Continuing a story that began over 32 years ago, the Twingo E-Tech electric prototype is a show car designed on the AmpR Small platform, previewing the future production vehicle that will arrive on the market in 2026.

Callum Reveals Skye EV's Luxury Interior

THE DESIGN LOUNGE

CALLUM IMAGE

The interior is showcased within the Callum Skye prototype. It features a high-end 2+2 enclosed cabin with sophisticated design and premium hand-selected materials, and is finished in Callum signature 'Vitamin C' orange with the 'accent loop' door surrounds in a contrasting satin gunmetal grey. A Skye design highlight is the horizontal bar graphic that runs from front to rear of the vehicle, bisecting the doors.

The interior also features bright silver metallic finish around the compact cabin, with matching accents on the center console and steering wheel. Callum color, material and finish designer Charlotte Jones said, "Inside, the bright silver, premium metallic coated finish on the doors, dash and center console matches the Callum level of quality in our recent Jaguar C-X75 project while saving essential weight. Additionally, this prototype features body panels made from flax composite with bio-resin, which is being explored as a potential option for production models."

In the center of the cabin, a sleek console houses switchgear and creates a line running between the two front seats, the tip of which expands into a geometric shape with touchscreen rotary dials for HVAC controls. The clean dash features a central touchscreen with Apple CarPlay and Android Auto and a glove compartment trimmed in Bridge of Weir leather.

The sports seats are trimmed in supple and sumptuous 'Arctic Pearl' white Bridge of Weir leather in a semi-aniline finish, with a matching removable rear bench seat, suitable for children. The bright white leather is complemented by contrasting accents in 'Vitamin C' orange. Other highlights are leather pull straps on the doors and glove compartment, along with steering wheel accents.

Callum signature 'deconstructed tartan' has been digitally printed onto the leather on the door cards, center console and glove compartment, once again featuring a 'Vitamin C' highlight stitch for additional tactility. Meanwhile, the interior has been hand-trimmed by craftspeople at the Bridge of Weir Advanced Design Studio, based within Callum's Warwick facilities.

The Callum Skye made its public debut in May 2024 – it is the firm's first vehicle to be designed and engineered in-house from the ground up. It has been developed for on- and off-road, while offering refinement and style.

News Mobility

Mercedes Highly Automated Speed Limit Rises to 95 km/h

NEWS MOBILITY

MERCEDES-BENZ IMAGE

From Spring, some Mercedes-Benz models will be allowed to drive on the road at up to 95 km/h in a highly automated mode. According to the automaker, they have received approval from the German Federal Motor Transport Authority for this.

The assistance system known as "Drive Pilot", which has now been further developed, can therefore be found in the S-Class and the EQS. The models should be available in Germany from spring 2025. According to Mercedes, the cost will remain unchanged at €5,959. Vehicles already built with the system will receive the update free of charge, over the air or in the workshop.

On the highway, the assistance system can take over the driving task under certain conditions: previously at up to 60 km/h in traffic jams. Now at up to 95 km/h in the normal flow of traffic behind a vehicle in front on the right-hand lane of the highway. When the system is active, the driver no longer has to concentrate on the traffic.

The assistance system has a redundant design. This means that important functions such as electrics, steering and brakes are duplicated. If the handover to the driver fails, the system stops the car automatically - so that it can be tracked by the traffic behind.

Over 35 sensors supply data to the assistance system. These include cameras, radars, ultrasonic sensors, and lidar. Combined with detailed digital map material, Drive Pilot recognizes which freeway lane the car is in to within a few centimeters, according to Mercedes.

L^3 still requires a human driver to be ready ready to take control of the vehicle at any time if requested to intervene by the vehicle. Therefore, a DMS is necessary to monitor the driver.

Currently, the legal limit for highly automated driving in Germany is 130 km/h. Mercedes-Benz aims to reach this speed by the end of the decade with their assistance systems.

General News

ADNOC (XRG) Takes Over Covestro

GENERAL NEWS

ADNOC – COVESTRO IMAGES

Following the end of the additional acceptance period on 16 December, 2024, ADNOC International, a wholly-owned indirect subsidiary of XRG P.J.S.C., announced that a total of 172,591,806 shares in Covestro have been included in their voluntary public takeover offer to all Covestro shareholders. Together with the shares previously acquired, this corresponds to 91.3 per cent of all outstanding shares of Covestro.

At around 70 per cent, the takeover offer, together with the shares previously acquired, had already significantly exceeded the minimum acceptance threshold of 50 per cent plus one share by the end of the initial acceptance period on 27 November, 2024.

“We are very pleased that so many of our shareholders have followed our recommendation and accepted the offer. This is very good news for Covestro, our employees and all other stakeholders. The strategic partnership with ADNOC is exactly the right step for Covestro at the right time,” says Dr. Markus Steilemann, CEO of Covestro. "With ADNOC respectively XRG as strong and long-term-oriented partner, we will be able to execute on our ‘Sustainable Future’ strategy even more consistently. As part of the XRG Group and following the closing of the transaction, we will be in a position to further accelerate our ongoing transformation.”

XRG sees Covestro as the foundational platform of its Performance Materials and Specialty Chemicals business and is convinced of Covestro's strategic perspective and its vision to become fully circular. The takeover of Covestro marks a significant milestone in XRG’s strategy to become a top five global chemicals player.

The offer will be subject to customary closing conditions in relation to merger control, foreign investment control, EU foreign subsidies clearances. Closing is not expected before the second half of 2025.

Covestro is one of the world’s leading manufacturers of high-quality polymer materials and their components. Covestro supplies customers around the world in key industries such as mobility, building and living, as well as the electrical and electronics sector.

The company is geared completely to the circular economy. In addition, Covestro aims to achieve climate neutrality for its Scope 1 and Scope 2 emissions by 2035, and the Group’s Scope 3 emissions are also set to be climate neutral by 2050. Covestro generated sales of €14.4bn in fiscal year 2023. At the end of 2023, the company had 48 production sites worldwide and employed approximately 17,500 people.

Cooling EV Sales Create Cuts, Job Losses

GENERAL NEWS

Suppliers are reducing workforce in response to slowing EV sales growth**.**
They have announced more than 50,000 job cuts in 2024, including Bosch, Continental, Forvia, Michelin, Schaeffler, Valeo, and ZF.

Some cuts will take effect through 2028 as these companies adjust manufacturing capacity as well as engineering and other support functions. "The greatest impacts on employment are probably still ahead of us," says Matthias Zink, president of European supplier association CLEPA

The delays and reductions in BEV capacity investments have a knock-on future impact. Automakers put plans in place based on profitability assumptions; the longer it takes to reach the planned capacity targets, the greater and more prolonged impact there is on margin and earnings.

Volkswagen is looking for cost savings of €4bn and making moves toward closing plants in Germany, something they have never before done. VW has concluded they must adjust their regional manufacturing footprint to the realities of a smaller European market.

Audi announced in November plans to cut 2,000 jobs.

Stellantis is making cuts in North America and Europe.

Ford is is cutting 4,000 jobs in Europe by the end of 2027 and has cut working days at their Cologne plant to adjust for weaker BEV demand than the company had anticipated.

General Motors cut 1,000 employees from their software teams in August 2024, delayed installing BEV capacity and in December 2024 sold its stake in a BEV battery plant under construction to their joint-venture partner.

Nissan will cut 9,000 jobs globally and reduce global production capacity by 20 per cent.

BYD has asked suppliers to reduce prices by 10 per cent to meet the automaker's cost-reduction targets.

In Europe, competition from lower-cost manufacturers, particularly from China, is forcing established suppliers to streamline operations and reassess their product offerings.

Moreover, the pushback from labor unions against automaker and supplier cuts indicates the potential for conflict as companies navigate necessary restructuring efforts**.** The balance between maintaining a skilled workforce and achieving operational efficiency will be critical as well while automakers and suppliers seek to align their strategies with the realities of the market.